The International Standard Classification of Occupations has been developed by the International Labour Office to provide a basis for the international comparison of occupational data and to afford guidance to countries wishing to develop or improve their systems of occupational classification. It is the result of a number of years of work by the International Labour Office, which has at every stage systematically consulted the governments and interested agencies and sought the counsel of occupational specialists throughout the world.

In particular, its preparation was actively assisted by the International Conference of Labour Statisticians, which meets under the auspices of the International Labour Organisation. In 1949 the Seventh Conference recognised nine "major groups" of occupations; these, with certain modifications, constitute the basic framework of the present system. The Eighth Conference (1954) adopted a provisional list of minor groups. Three years later the Ninth Conference endorsed the major, minor and unit groups of the present system and urged countries to make occupational information available in conformity with the resulting classification.¹

The classification has been designed as a comprehensive, multi-purpose instrument for use in the organisation of occupational information. It is composed of definitions of occupations and of groups of occupations embodied in a corresponding classification structure. The latter was designed with a twofold aim in view; its general groupings are intended to facilitate the classification of statistics derived from labour force inquiries, particularly population censuses, while the final subdivisions are calculated to meet the requirements of employment placement for a more detailed classification.

An important contribution to the development of an international standard classification usable for both statistical and placement purposes had been made earlier, when the International Classification of Occupations for Migration and Employment Placement (I.C.O.M.E.P.), drawn up by the International Labour Office in co-operation with the Organisation for European Economic Co-operation, was published in 1952. Although this classification was designed primarily to fit in with a programme to further migration from Europe, it drew upon the work of the International Conference of Labour Statisticians; as it was the only international system in existence during that period, it proved of great value to a number of countries pending the development of the present multi-purpose international standard classification. For the benefit of governments which have framed their national occupational classification systems on the lines followed by the I.C.O.M.E.P. the I.L.O. has prepared a conversion table (available on request) which shows the relationship between the two systems.

The publication of the International Standard Classification of Occupations marks the accomplishment of a difficult task. In a certain sense it also represents the beginning of a new phase, in which emphasis will be placed upon refinement and improvement.

## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>III</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Major, Minor and Unit Groups</td>
<td>19</td>
</tr>
<tr>
<td>Major Group 0: Professional, Technical and Related Workers</td>
<td>27</td>
</tr>
<tr>
<td>Major Group 1: Administrative, Executive and Managerial Workers</td>
<td>55</td>
</tr>
<tr>
<td>Major Group 2: Clerical Workers</td>
<td>60</td>
</tr>
<tr>
<td>Major Group 3: Sales Workers</td>
<td>65</td>
</tr>
<tr>
<td>Major Group 4: Farmers, Fishermen, Hunters, Loggers and Related Workers</td>
<td>69</td>
</tr>
<tr>
<td>Major Group 5: Miners, Quarrymen and Related Workers</td>
<td>78</td>
</tr>
<tr>
<td>Major Group 6: Workers in Transport and Communication Occupations</td>
<td>83</td>
</tr>
<tr>
<td>Major Group 7/8: Craftsmen, Production-Process Workers and Labourers Not Elsewhere Classified</td>
<td>93</td>
</tr>
<tr>
<td>Major Group 9: Service, Sport and Recreation Workers</td>
<td>182</td>
</tr>
<tr>
<td>Major Group X: Workers Not Classifiable by Occupation</td>
<td>193</td>
</tr>
<tr>
<td>Armed Forces: Members of the Armed Forces</td>
<td>195</td>
</tr>
<tr>
<td>List of Titles Used</td>
<td>196</td>
</tr>
<tr>
<td>Alphabetical List of Occupational Titles</td>
<td>215</td>
</tr>
</tbody>
</table>
INTRODUCTION

PURPOSES

As its name implies, the International Standard Classification of Occupations (I.S.C.O.) is a system of classifying defined and coded occupations and groups of occupations for international use.

The main purposes of an international classification of occupations are—(a) to facilitate international comparisons of statistical data originating at the national level, (b) to give guidance to governments wishing to develop or revise national occupational classification systems; and (c) to serve as a means of identifying specific national occupations of international interest.

International Comparisons

The precise meanings of national occupational titles—even common titles such as "nurse", "plumber" and "fireman"—are often difficult to ascertain outside the country using them; this greatly complicates the task of making statistical comparisons of any meaning. The new classification is intended to bridge this gulf in international understanding by providing a system of defined occupational titles and code numbers whose meanings are unequivocal and which may readily be used for purposes of country-to-country comparisons.

If the proposed system is to operate successfully each country will have to identify the national occupational categories (or parts or combinations of categories) which are comparable to the categories employed in the international classification; in other words, it will have to establish convertibility to the I.S.C.O. However, the suggestion that such a "conversion table" be drawn up should not in any way be taken as implying that the national system should be abandoned.

Guidance in Developing National Occupational Classification Systems

A country developing a national occupational classification system or refining an existing system may find the new international classification of great value. The usual procedure followed will probably consist of the preparation of national occupational definitions by modifying the international definitions so that they describe the work as performed in the country and fitting the definitions so prepared into a classification structure which follows the international pattern. In this way a considerable amount of both labour and funds (which may be needed otherwise for basic research) will be saved.
The international standard classification may be used for the collection and comparison of occupational information at the international level. For example, international migration programmes can be facilitated if surplus workers in countries of emigration and jobs to be filled in countries of immigration are classified and matched in terms of I.S.C.O. occupations.

The main factor to be taken into account when deciding to apply the classification system in a given situation will be the end sought after. To make broad statistical comparisons between countries it will rarely be necessary to use more details than are afforded by the unit (three-digit) groups, since the information obtained in censuses does not normally permit classification in greater detail. For some purposes the ten major groups alone will suffice, particularly where the data obtained can be cross-classified with other types of information. The definitions of the occupations (five digits) can often be used to illustrate the content of the broader groups, while in strictly national application they are pertinent to such functions as placement and employment counselling.

Multi-Purpose Character of the I.S.C.O.

Many countries maintain two or more separate national occupational classifications; in some cases it is frankly admitted that the classifications have developed independently, while in others it is argued that different methods of classification are needed to attain different objectives. Still, whatever the reasons given, it is evident that the existence of several systems side by side seriously complicates the task of administrators and others correlating occupational data from different sources within the same country. The drafters of the international standard classification set out to devise a system which could be used for all purposes. It is believed that the use of the major and minor groups will provide significant data for general economic and social analysis. These and the unit groups appear particularly suitable for comparisons of census data. The occupations (five digits) are expected to serve primarily in placement work and for similar administrative purposes.

Countries maintaining two or more different systems of occupational classification need experience no special problem in establishing convertibility to the I.S.C.O., though convertibility must be established separately for each system to be used in international comparisons.

Basis of Occupational Classification and Grouping

Classification on Basis of Work Performed

The occupations identified and coded in the international standard classification are defined in terms of the work customarily performed in most countries by the workers concerned; the definitions provide descriptions of their functions, duties and tasks, and occupations of workers performing similar types of work are brought together in larger groups.

The factors which influence the work performed by an individual include the following: his industrial affiliation or the branch of economic activity in which he is engaged; his status, that is, whether he is self-employed, works for another or has others working for
him; and his occupational qualifications, or the combination of skill, knowledge and ability which he brings to his work. These factors, however, have not been taken into account in the I.S.C.O. when classifying occupations or determining the composition of groups. For the classification of individuals according to the industry in which they are employed there is a separate international standard classification, viz. *The International Standard Industrial Classification of All Economic Activities*¹, while for the classification of individuals by status a minimum standard list of groups has been recommended by the United Nations Statistical Commission.² These systems may, if desired, be used in conjunction with the occupational classification system.

A classification system developed as a means of comparing, on an international basis, data on work performed will inevitably ignore to a great extent occupational qualifications as such and may well prove an unsuitable instrument for examining them. There are two reasons for this: firstly, occupational qualifications are not absolute, and secondly, their measurement is frequently a matter of judgment. Differences in the training facilities and opportunities for employment experience available in different countries make it possible for a worker considered highly skilled in one country to be in fact much less skilled than a worker in another, although the two individuals perform comparable work. In addition, the identification and definition of such characteristics as skill, knowledge and ability is far less objective than that of functions, duties and tasks.

*Scope of an Occupation*

The segment of work called an "occupation" in the international standard system represents the scope of the work performed in that occupation in most countries. It is, however, recognised that, owing to differences in national practices in the organisation of work and in the extent of economic development and accompanying specialisation of work, the scope of an occupation as defined internationally may be broader or narrower than the group of duties making up a given national occupation.

*Basis of Grouping of Occupations*

A unit group in the I.S.C.O. is a group of occupations related to each other by the general similarity of the characteristics of the work they entail. The most important feature of a unit group is that the occupations included are more closely related to each other than to occupations outside the unit group as regards the functions involved and the skills, knowledge and abilities required for satisfactory performance. Other aspects of the work characteristics of different occupations are also taken into account in forming some of the unit groups. Combinations may be based on materials worked on, workplace environment, the specialised equipment used (if any) and similar relationships. The particular skills, knowledge and abilities of the workers concerned have an intimate connection with such factors.

As the I.S.C.O. is intended, inter alia, to provide a basis for the reporting of occupational data—especially data derived from population censuses—for international comparison, the number of unit and minor groups is fairly strictly limited. The 201 unit groups nevertheless provide sufficient detail for most purposes, and more detailed subdivisions are available, whenever required, at the occupation (five-digit) level.

Separate unit groups are not normally provided where the numbers of workers covered would be small in all countries; exceptions are made for "key occupations" of considerable socio-economic importance such as those carried out by certain relatively small groups of professional workers.

The coverage of the whole range of occupations found in a modern industrialised community in a relatively short list of minor groups necessarily implies that the common occupational characteristics which link together the different components of the various minor groups are frequently of a broad or general nature. This is especially true, for example, in respect of craftsmen and production-process workers (covered by major group 7/8), where the kind of material used or worked is an important criterion in the formation of some of the minor groups. In other cases the kind of process employed and the equipment used are significant criteria; sometimes the environment must be taken into account as well. Attachment to a common industry has not been used as a basis for combining unit groups into minor groups.

It is expected that the minor groups will be widely used for the international reporting of occupational statistics; hence subdivisions which most countries seemed unlikely to be able to use have generally been avoided. Condensation at the minor-group level, besides facilitating the task of countries in supplying data for international comparisons, also helps to keep the detail involved in such comparisons within manageable proportions.

The major groups of the I.S.C.O. closely resemble the broadest groups found in most existing national classifications. They constitute a convenient summarisation of the minor groups rather than a basis for occupational classification in themselves.

**BASIC COMPONENTS OF THE SYSTEM**

The International Standard Classification of Occupations consists of three inseparable basic components, namely code numbers, titles and definitions. As the structure of the classification is based primarily on the nature of the work done, the code number and title of an occupation or group must obviously not be considered separately from the corresponding definition, which defines the scope and content of the occupation or group concerned.

In the classification structure all civilian occupations are divided into ten major groups, including the supplementary major group X (Workers Not Classifiable by Occupation). Members of the armed forces are included in a separate group. The complete list of major groups is as follows:

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Title</th>
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<tbody>
<tr>
<td>0</td>
<td>Professional, Technical and Related Workers</td>
</tr>
<tr>
<td>1</td>
<td>Administrative, Executive and Managerial Workers</td>
</tr>
<tr>
<td>2</td>
<td>Clerical Workers</td>
</tr>
<tr>
<td>3</td>
<td>Sales Workers</td>
</tr>
<tr>
<td>4</td>
<td>Farmers, Fishermen, Hunters, Loggers and Related Workers</td>
</tr>
<tr>
<td>5</td>
<td>Miners, Quarrymen and Related Workers</td>
</tr>
<tr>
<td>6</td>
<td>Workers in Transport and Communication Occupations</td>
</tr>
</tbody>
</table>
INTRODUCTION

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/8</td>
<td>Craftsmen, Production Process Workers, and Labourers Not Elsewhere Classified</td>
</tr>
<tr>
<td>9</td>
<td>Service, Sport and Recreation Workers</td>
</tr>
<tr>
<td>X</td>
<td>Workers Not Classifiable by Occupation</td>
</tr>
<tr>
<td>—</td>
<td>Members of the Armed Forces</td>
</tr>
</tbody>
</table>

These major groups are divided into 73 minor groups, which are in turn made up of 201 unit groups. The major, minor and unit groups constitute the international classification endorsed by the Ninth International Conference of Labour Statisticians. Finally, the unit groups are subdivided into occupations, of which there are 1,345 in all.

The decimal coding system employed facilitates understanding of the general structure of the classification and reflects the relationships between occupations and groups of occupations. The assignment of code numbers is as follows:

**Major groups.** Major groups are identified by the initial digit in the code number; major group 7/8 utilises two initial digits.

**Minor groups.** Minor groups are identified by code numbers of two digits separated by a hyphen (-). The first digit indicates the major group in which the minor group falls. Exceptionally, the eleventh and twelfth minor groups terminating major group 0 (minor groups 0-X and 0-Y) are identified by letters.

**Unit groups.** Unit groups are identified by code numbers of three digits, the first two representing the minor group to which the unit group belongs.

**Occupations.** Occupations are identified by code numbers of five digits, the first three representing the unit group in which the occupation is included. A point (.) separates the final two digits from the unit-group code number.

_Scheme of Coding Occupations within Unit Groups_

The coding system provides for three types of subdivisions (or occupations) within the unit group, the last two digits of the five-digit code indicating the nature of the subdivision. Apart from a few unavoidable exceptions, the rules followed are those given below.

**Code numbers ending in the digits .10** designate general occupations within unit groups. The word “general” is used here to indicate an occupation which requires the ability to perform all of the duties listed in the definition of the unit group as a whole, but without specialisation in any one phase, or to perform all the basic duties listed, including those which are highly specialised.

**Code numbers ending with the digits .11 to .89 inclusive** designate “specialised” occupations within a unit group which are identified individually by specific title, and are listed, where possible, in the sequence of the work process. Depending upon the number of individual occupations to be accommodated within the range of numbers available, these code numbers are fixed arbitrarily at intervals of 10 (.20, .30, .40, etc.), 5 (.15, .20, .25, .30, etc.) or less (.12, .14, .16, .18, .20, etc.).

Lastly, **code numbers ending with .90** designate “residual” occupations. This designation covers occupations within a unit group for which no specific titles are given elsewhere in the group (i.e. under code numbers running from .11 to .89 inclusive). The “residual” groups may also include specialised types of occupations which belong to the unit group.
concerned by reason of the characteristics of the work performed but are not sufficiently numerous to warrant the establishment, in an international system, of a separate definition, title and code number. The work descriptions are much briefer than those given for the occupations with specific titles.

Definitions

As the basis for the identification of occupations for the purposes of the I.S.C.O. is the type of work involved, the definition of each basic category in the classification (i.e. each occupation) is expressed in terms of the work performed. The definition of each occupation begins with a short statement outlining the general function of the worker, followed by a description of the major duties carried out. The description of the major duties explains what is done and how, mentioning the method followed and, where relevant, the materials, equipment and tools used; the purpose of the work is stated when not otherwise apparent. The definition may also mention possible variations in the way in which the work may be performed in different establishments or industries and duties which are performed by some workers in the occupation concerned but do not usually constitute a duty inherent in that occupation.

An "occupation" as defined above identifies a type of work to which numerous individual positions or jobs attach. The definitions of "residual" categories (i.e. those with five-digit code numbers ending in .90) do not contain a general description of functions; they consist primarily of a list of examples of types of work performed by workers who are covered by the unit group concerned and who are not elsewhere classified.

The definition of a unit group begins with a short summary statement, followed by a recapitulation of the functions described in each of the definitions of occupations the group contains.

Wherever necessary, the phrase "performing other tasks relating to the foregoing" (or a similar phrase) is added to cover the work performed by workers classified in the residual subdivision of the unit group.

Exclusions are mentioned at the end of definitions of some occupations and unit groups to avoid possible ambiguity.

The definition of a minor group begins with a short summary statement, which is followed by a recapitulation of the introductory statements of unit group definitions. Where there is only one unit group within the minor group, as a rule the definition of the latter is very brief; a more detailed description will usually be found in the unit group definition. The definition of a major group provides only a broad general indication of the nature of the occupations covered in the major group.

Occupational Titles

The titles of the occupations and groups of occupations are rendered in descriptive form in order that they may be widely understood in the different regions of the world. Account has been taken of common usage, although in many cases the wide variations in national practices and terminology have made an arbitrary choice unavoidable. The titles, therefore, should not be regarded as more than a convenient nomenclature suggestive
of the nature of the occupations included in each category. To identify positively the types of workers covered reference must be made to the definitions.

The major-group titles give only the broadest indication of the nature or type of function with which the worker is concerned (i.e. professional and technical, managerial, clerical, sales work, farm work, mine work, transport and communication work, crafts and production processes, service work, defence forces).

The minor-group titles usually recapitulate some or all of the principal types of occupations named in the titles of the unit groups they cover. The unit-group titles are generally brief and consist of one or a few collective nouns or plurals relating to the types of occupations they cover; wherever necessary these titles include the phrase “and related workers” so as to cover occupations included in the group but not mentioned in the title itself.

The subdivisions of unit groups consisting of individually identified occupations are given the professional, technical, trade or craft title commonly applied to the individual worker performing the function concerned (e.g. architect, buildings; hammersmith; metal sprayer; housekeeper); the residual categories are as a rule given titles which recapitulate the unit-group title and terminate with the word “other”.

Indented definitions shown within a few occupations, but without code numbers, relate to important specialisations of workers classified under the code title to which they refer; they have not been allotted separate code numbers in the international system because in many cases it would not be essential to distinguish the different groups of workers concerned, and in some countries the specialisation may not even exist. For example, given under the heading “Baker, General” (8-22.10) there are two indented definitions, viz. “Baker, Bread” and “Baker, Pastry”.

NOTES ON CHARACTERISTICS OF PARTICULAR OCCUPATIONAL GROUPS

The following notes, arranged by major group, are intended to throw light on the nature of certain groups and thereby facilitate the interpretation of parts of the classification structure. The information given here should not, however, be regarded as a substitute for the definitions of occupational groups appearing later.

Major Group 0: Professional, Technical and Related Workers

Many of the definitions of professional occupations refer to the possession by workers in the group concerned of a diploma or university degree or equivalent qualification. In some countries it is not compulsory for persons practising certain of these professions (such as that of architect) to have obtained such qualification, although the great majority of the workers concerned may have done so. In such cases it must be decided whether, in the light of local conditions, persons describing themselves as “architect” in the national census or other inquiries need to be further questioned concerning diplomas or other evidence of qualifications. In most practical applications performance of the duties described in the definition in the I.S.C.O. would take precedence over possession of the formal qualifications mentioned.

Although of considerable socio-economic significance, the different specialised types of engineers are all included in a single unit group (0-02, Engineers). Practical difficulties of
data collection in censuses and related statistical inquiries preclude further detail at this level of the classification. It is subdivided at the occupation (five-digit) level.

Some countries do not have any workers in unit group 0-42 (Midwives) because the (five-digit) duties involved are performed by professional nurses (classified in unit group 0-41) and in particular by persons classified under Nurse, Professional (Specialised) (0-41.20).

Although as a general principle workers undergoing formal education (i.e. apprentices or learners) are classified with the workers in the occupation being learned, it is clearly not appropriate to classify apprentices in the professions. Many such apprentices eventually become "technicians" but do not complete the theoretical courses needed to qualify them for practising as professionals. Hence they are not included among fully qualified professional workers. Student nurses are not classified with fully qualified professional nurses in unit group 0-41; instead they are classified in unit group 0-49 (Nurses Not Elsewhere Classified). Similarly, articled clerks in lawyers' offices are not classified as jurists but in unit group 2-99 (Clerical Workers Not Elsewhere Classified); and articled clerks in accountants' offices are classified in unit group 2-01 (Book-keepers and Cashiers), not among professional accountants.

University professors are classified in unit group 0-61 (University Teachers), although a university professor does not necessarily give courses of lectures; he may devote a considerable proportion of his time to research and may also advise governments or private institutions in scientific or other fields. However, for purposes of international comparison it is desirable to classify all university professors in unit group 0-61. Also included here are private tutors or coaches who give extra-mural private tuition to university students.

Teachers of pictorial art or painting, music, drama, dancing and the like are classified with painters, sculptors, actors or musicians, etc., according to their specialities. The majority of such teachers are not connected with primary, secondary or tertiary educational institutions. Frequently teachers in a conservatorium or college of music are also solo performers or members of an orchestra.

Unit group 0-71 (Clergy and Related Members of Religious Orders) includes only persons who perform sacerdotal or other functions closely related to religious worship. Persons in holy orders performing essentially lay occupations such as teacher, nurse, librarian or editor are classified as such even though their membership of a holy order may sometimes be considered as conferring on them a special status. High dignitaries of a religious sect or order, such as bishops, directly participating in or supervising religious ceremonial and performing associated functions are classified in unit group 0-71.

**Major Group 1: Administrative, Executive and Managerial Workers**

Elected officials performing legislative or administrative functions in government, provincial or local government administration are classified in unit group 1-01 (Administrators and Executive Officials, Government). Members of legislative bodies and persons holding other government, provincial or local government appointments who have another occupation simultaneously, e.g. in private business or professional practice, are excluded from this group.

Administrators, executive directors and managers of government or semi-governmental industrial and other undertakings (e.g. farms, mines, factories, railways, hospitals, etc.) are classified with similar workers in privately owned undertakings in minor group 1-1.
The extent to which government or other public ownership extends into various economic activities therefore does not affect the scope of unit group 1-01.

Employees of central and local government and other public authorities or bodies whose work consists primarily in carrying out professional tasks in engineering, geology, chemistry, astronomy, agronomy, medicine, law or other scientific and professional fields are classified in major group 0, as are also professional accountants, social workers, librarians, economists, actuaries and other professional workers in public employment. It is not uncommon to find, both in public and private employment, persons qualified in law, economics, accountancy or other fields who are not performing corresponding professional functions in their jobs; for statistical purposes they are classified in the group corresponding with the work they actually perform—whether unit group 1-01 (Administrators and Executive Officials, Government), major group 2 (Clerical Workers) or some other group.

Minor group 1-1 (Directors, Managers and Working Proprietors) includes workers whose primary functions are to plan, organise, direct and co-ordinate the activities of public or private undertakings and organisations (other than agricultural enterprises). In view of the diversity of the occupational characteristics of managers and directors in the different countries, the most convenient method of subdividing this group for purposes of international comparison is to follow the broad divisions of the International Standard Industrial Classification of All Economic Activities.

Excluded from minor group 1-1 are persons who, although sometimes given the title of "manager" or "director", exercise primarily professional functions (e.g. accountants, architects, engineers, chemists, pharmacists, lawyers) or whose work is mainly of a technical, craft or service character. Farm managers are classified in unit group 4-01. Also excluded from minor group 1-1 are working proprietors who perform professional, technical, craft or service functions, whether they employ assistants or not; such working proprietors are numerous in the professions of accountant, architect, engineer, pharmacist, physician, lawyer, tailor, milliner, carpenter, electrician, barber, launderer, photographer, undertaker, etc. In particular, working proprietors in the wholesale and retail trade are classified among Sales Workers (minor group 3-0). Working proprietors engaged in farming operations are classified in unit group 4-01 (Farmers and Farm Managers).

**Major Group 2: Clerical Workers**

This major group covers a great diversity of jobs and accounts for an important fraction of the total labour force in the more economically advanced countries. A large proportion of clerical workers are covered by unit group 2-99 (Clerical Workers Not Elsewhere Classified). This follows largely from the practical consideration that in censuses and other statistical inquiries the information obtained about the occupation performed frequently does not permit more refined classification. When making censuses a cross-classification by branch of industry is particularly valuable when dealing with groups of this kind.

Clerical workers, both in government and private employment, who have completed courses of higher education or obtained university degrees are quite numerous in some countries. Although they may perform complicated and important tasks and other clerical workers may be responsible to them, their occupations are not basically changed by such circumstances. In some national classifications telephone, telegraph and related telecommunication operators (classified here in minor group 6-7) and postmen and messengers
(minor group 6-8) are included among clerical workers. To bring these classifications into line with the I.S.C.O. it would be necessary to allocate these workers to separate subgroups—a procedure most countries already follow.

Unit group 2-01 (Book-keepers and Cashiers) includes workers whose function is to sell tickets in theatres and at other fixed locations. Workers who travel on vehicles and sell tickets to passengers are classified in major group 6. Although the collection of cash is frequently an important aspect of the activities of certain workers (e.g. time-payment collectors, account or debt collectors, gas and electricity meter readers) these workers are not classified with cashiers but are allocated to unit group 2-99 (Clerical Workers Not Elsewhere Classified), as are workers whose work consists entirely of collecting rents or insurance premiums. Frequently the duties of some workers classified as in unit group 3-11 (Insurance and Real-Estate Salesmen) include collecting also.

Private secretaries are included in unit group 2-11 (Stenographers and Typists); as a rule they do some stenographic and typing work, but they also make appointments, receive visitors and perform various duties to relieve their superiors of routine clerical work. The practical problems of collecting data in statistical inquiries preclude the use of separate unit groups for stenographers and typists. Receptionists in doctors' and dentists' consulting rooms, hotels, etc., are classified in unit group 2-99.

**Major Group 3: Sales Workers**

Working proprietors in retail stores are classified in major group 3 on the grounds that, as most retail stores are small, most proprietors perform primarily the work of salesmen. Wholesale and retail working proprietors have been grouped together in a single minor group (3-0), as when conducting inquiries on occupational characteristics it is not always easy to obtain enough information to separate wholesale from retail businesses. The distinction between Working Proprietors, Wholesale Trade (unit group 3-01) and Working Proprietors, Retail Trade (unit group 3-02) is intended to be made on the same basis as the corresponding subdivision of major group 61 of the *International Standard Industrial Classification of All Economic Activities*.

Minor group 3-3 (Salesmen, Shop Assistants and Related Workers) includes specialised and general sales personnel in both wholesale or retail trade. Unit group 3-32 (Street Vendors, Canvassers and Newsvendors) includes self-employed workers in addition to assistants on wages or salary. Consequently unit group 3-02 (Working Proprietors, Retail Trade) does not include self-employed street vendors and the like.

**Major Group 4: Farmers, Fishermen, Hunters, Loggers and Related Workers**

Workers in this major group participate directly in the work of farming, fishing, hunting or logging and forestry. The broadest interpretation is given to "farming". It covers, for example, persons growing mushrooms in cellars, raising animals of any kind (including dogs or fur-bearing animals) and cultivating rubber plantations. Landowners who lease or rent all their land to others and do not farm any land themselves are not regarded as farmers. Managers of agricultural undertakings who exercise only administrative control, and do not supervise operations on the spot, are classified in major group 1 (unit group 1-19). Similarly managers of machinery pools or of undertakings providing spraying, sheep-shearing or other agricultural services are included in unit group 1-19.
However, the workers sent by these undertakings to farms to perform agricultural services are included in major group 4.

Unit group 4-1 (Farm Workers Not Elsewhere Classified) covers foremen, specialised farm workers, general farm hands and agricultural labourers; included are members of farmers' families who work in farm occupations on the home farm. Excluded are persons employed by farming undertakings whose occupations place them in another occupational group (e.g. book-keeper, motor mechanic).

Specialised farm workers whose primary function is tractor driving are an important and well-defined group in certain countries; but the spread of farm mechanisation has meant that in some countries general farm hands have become responsible for driving tractors and also for operating various other agricultural machines. The tasks performed by farm hands throughout the world vary a great deal as regards their nature and as regards qualifications required; and the functions of the different farm workers frequently overlap. Hence only a single unit group covering both farm labourers and other farm workers, is provided.

Major Group 5: Miners, Quarrymen and Related Workers

As in the preceding major group, the occupations included here range from highly specialised (skilled) workers to labourers, but workers whose occupations are not intimately related to the general activity in question are classified elsewhere. For example, the following workers in mining enterprises are excluded: electricians, boiler-firemen, carpenters, hoist operators and bulldozer operators (open-cast mines).

Included are workers who sink shafts or drive tunnels to expose minerals or for other purposes such as the construction of roads or railways or for water-conservation projects. In some national classifications workers in this group are subdivided according to the type of mineral mined or quarried. The type of mineral mined does have some effect on the work performed by the workers concerned, but as different minerals predominate in the mining industry of the various countries, it is impractical to introduce into the international classification a sub-classification of mining occupations by type of mineral. The same result can be achieved by cross-classification by branch of industry.

Unit group 5-01 (Miners and Quarrymen) is intended to cover specialised mining and quarrying and related occupations directly concerned with the operations of extracting ores, minerals, rock, etc. Ancillary and less specialised workers and labourers in mining and quarrying, or in well drilling and mineral treating at the mine site, are covered by unit group 5-99 (Miners, Quarrymen and Related Workers Not Elsewhere Classified) in particular, drivers of shuttle cars or of animals hauling ore or minerals in mines and quarries are included. These drivers, especially those working underground, are not closely related to road transport drivers; the duties and responsibilities of the two types differ considerably. This is one case where work environment is a more important consideration, for these drivers work in close association with other mineworkers and are, in addition, often promoted to extracting work in mines and quarries; on the other hand, they seldom transfer to driving road transport vehicles in other industries.

All drivers of railway locomotives and drivers of motor trucks or other vehicles for hauling products away from mines, quarries or oil wells are excluded from this major group and classified in major group 6.
Major Group 6: Workers in Transport and Communication Occupations

Workers classified in this major group are directly concerned with the movement and control of means of transporting passengers and freight, and with the transmission of communications. Many classes of workers employed in the transport and communication industry (e.g. those who service and repair vehicles, or load and unload them, those who serve food on board, administrators of transport and communication undertakings and clerks in such undertakings) are not directly concerned with the movement of means of transport or transmission of communications and hence are not included. On the other hand, workers who perform transport and communication functions are included whatever the form of undertaking in which they are occupied.

Unit group 6-02 (Engineer Officers, Ship) includes the occupation of Marine Engineer-Superintendent, who is not a member of a ship's crew. This officer is not employed in a dockyard or workshop but supervises the operations of a company's fleet as regards engines and mechanical equipment. The work of ship engineer officers and flight engineers is clearly distinguishable from that of shore-based or ground-based engineers in workshops by the special environment or working conditions and by the proportion of total working time devoted to different duties.

Minor group 6-4 (Drivers, Road Transport) includes most—but not all—workers driving road vehicles transporting persons or objects. The exclusion of haulage drivers operating shuttle cars or handling animals in mines and quarries has already been mentioned; in addition, the driving of vehicles is often an incidental part of certain occupations (such as those of police patrolmen, commercial travellers and physicians) not included in major group 6. Hawkers and other itinerant salesmen using vehicles are classified in major group 3; on the other hand, persons delivering goods already ordered, or regularly delivering (usually daily) bread, milk, ice and the like to householders, are regarded as working in transport occupations even though they may make incidental cash sales to persons who are not regular customers.

Postmen and Messengers (classified in unit group 6-8) may use vehicles (e.g. bicycles or motorised vehicles) or ride animals to deliver mail, documents and other items. Postal truck drivers not performing the functions of postmen or postal clerks but simply transporting mail and parcels in bulk (for example, between post-office establishments and airports, wharves or railway stations or between post offices) are classified in minor group 6-4 (Drivers, Road Transport).

Inspectors and Supervisors, Transport (classified in unit group 6-61) have responsibility for certain operations or activities which occupy various kinds of workers but are neither managers nor foremen; they are concerned especially with promoting the regular flow of traffic and the efficient operation of the service or the vehicle used. Technical inspectors (leading technicians or craftsmen) who inspect and control maintenance and repair work on equipment and installations are also excluded from this group and from unit group 6-93 (Inspectors, Traffic Controllers and Dispatchers, Communication).

Included are Station Master, Railway and Goods Agent, Railway, who, within the limits of a particular station or goods yard, perform certain functions of a managerial nature but are differentiated from managers by being occupied with routine traffic operations.

Railway signalmen are classified in unit group 6-62, lighthouse keepers and lock
INTRODUCTION

operators in unit group 6-92. Such workers, in common with those in the preceding unit group, do not move about in ships, aircraft or vehicles, but they are responsible for controlling the movement of means of transport.

The working environment of ticket sellers and collectors on board vehicles is an important factor differentiating them from office personnel who sell tickets (classified in major group 2). Along with other important factors ticket selling on trains and on buses or trams is done by railway conductors (classified in unit group 6-51) and by Conductors, Road Transport (unit group 6-91). Those whose principal function is selling tickets on board other vehicles, ferry boats, etc., are classified in unit group 6-92 (Workers in Transport Occupations Not Elsewhere Classified).

**Major Group 7/8: Craftsmen, Production-Process Workers, and Labourers Not Elsewhere Classified**

More than half the unit groups of the I.S.C.O., and about two-thirds of all the titles with five-digit code numbers, are found in major group 7/8. The wide variety of occupations among craftsmen and production process workers raises particular difficulties as regards their arrangement into suitable groups; an indication of the structure of this major group is therefore given below to facilitate understanding of this part of the classification.

The 20 minor groups fall into three classes.

First there are the 15 minor groups numbered 7-0 to 8-4; these consist of groups of closely related craftsmen and associated specialised workers (corresponding approximately with the notions of "skilled" and "semi-skilled"). The relationships between the workers included in a particular minor group are reflected in such factors as the use of similar materials (e.g. fibres, piece-goods, leather, metals or wood) or processes (as in printing occupations) or the specialised training required (as in electrical and electronics occupations); hence the workers included in a particular minor group are generally familiar with similar types of tools or machines or production processes. The scope of these minor groups of occupations does not in any way correspond to that of particular industries.

Secondly, there is a miscellaneous (or residual) minor group of craftsmen and production process workers, namely minor group 8-5 (Craftsmen and Production-Process Workers Not Elsewhere Classified). Unlike the preceding minor groups, in which the component unit groups are related to one another by definite occupational affinities, this one contains—

(a) miscellaneous unrelated unit groups, composed of craftsmen and specialised workers, not numerically large enough to merit separate minor groups; and

(b) a residual unit group covering mainly workers engaged in production-process jobs which are not sufficiently specialised to warrant inclusion in any of the preceding unit groups in the major group, together with rare types of craftsmen and specialised workers not classified elsewhere.

Finally, there are four minor groups, one of which (minor group 8-7: Stationary-Engine and Excavating and Lifting Equipment Operators and Related Workers) covers primarily operators of mechanical equipment not directly connected with production processes; the three other groups contain mostly occupations of workers who, in some classifications, are assimilated to labourers, viz. Packers, Labellers and Related Workers (minor group 8-6); Longshoremen and Related Freight Handlers (minor group 8-8); and Labourers Not Elsewhere Classified (minor group 8-9).
Up to ten unit groups are provided in each of the minor groups 7-0 to 8-4 inclusive; the unit groups usually comprise a variety of occupations, although some of them may be of relatively narrow scope, e.g. unit group 7-72 (Cabinetmakers) or unit group 7-95 (Glaziers), compared with others, e.g. unit group 7-11 (Tailors, Dressmakers and Garment Makers).

Most of the minor groups contain residual unit groups with the exception of unit group 8-59, which is a special case; these residual groups do not contain occupations requiring negligible skill. Workers in some highly skilled occupations, who are not sufficiently numerous to justify the creation of separate unit groups, are classified in residual unit groups; similarly treated are workers in some of the less common "semi-skilled" occupations, many of them being identified separately under occupational titles carrying five-digit code numbers. However, workers whose occupations do not involve sufficient specialisation and training to justify inclusion in the same minor group as more skilled workers are excluded. For example, those engaged in routine assembly work in manufacturing the simpler kinds of electrical goods are not classified in unit group 7-69 (Electrical and Electronics Workers Not Elsewhere Classified); on the basis of the work they perform, they are not classifiable in minor group 7-6 (Electricians and Related Electrical and Electronics Workers) but are allocated to unit group 8-59 (Miscellaneous Craftsmen and Production-Process Workers Not Elsewhere Classified). Similarly, sorters and washers of fruit and vegetables in canning factories and poultry dressers are classified in unit group 8-59, and not in minor group 8-2 (Millers, Bakers, Brewmasters and Related Food and Beverage Workers).

Not all workers who might be considered as engaged in "processing" operations are classified in major group 7/8. A distinction is drawn, for example, between cooks who prepare meals in kitchens of hotels, restaurants or private houses and are regarded as service workers (classified in unit group 9-12), and cooks preparing food in bulk in an industrial enterprise concerned with food manufacturing (classified in unit group 8-25). Launderers, Dry Cleaners and Pressers (unit group 9-51) have been included in major group 9 on the grounds that throughout the world at the present time most of the workers concerned are launderers in private homes, hotels and the like and are akin to other service workers. Mineral Treaters (unit group 5-21) are classified in major group 5 (Miners, Quarrymen and Related Workers); they work at the mine site, are frequently regarded as mineworkers, and may transfer to or from mine working.

The considerations which determine the scope of some of the groups need special emphasis. Minor group 7-6 (Electricians and Related Electrical and Electronics Workers) is intended to include only workers whose functions involve the application of specialised knowledge of electricity, electronics and magnetism and training in its practical application. Excluded are workers not conforming with these conditions, such as minders of machines turning out electrical fittings, coil winders (classified in unit group 8-59) and metal workers making parts for electrical machinery (classified in minor group 7-5). Radio operators usually have technical training and sometimes may do running repairs on their installations; their principal duties, however, are closely related to those of telegraphists and other telecommunications operators, who are classified in major group 6; hence they are also classified in that group.

Minor group 7-9 (Bricklayers, Plasterers and Construction Workers Not Elsewhere Classified) is in some respects a miscellaneous or residual group, but it does not include
unskilled construction workers, who are classified in unit group 8-99 (Labourers Not Elsewhere Classified). Nor does minor group 7-9 cover many specialised groups engaged partly in the construction industry, e.g. Carpenters and Joiners (classified in unit group 7-71), Painters and Paperhangers, Construction and Maintenance (classified in unit group 7-81), electricians (classified in minor group 7-6), Plumbers and Pipe Fitters (classified in unit group 7-55), structural-metal workers (classified in unit group 7-57), Operators of Earth-Moving and Other Construction Machinery Not Elsewhere Classified (classified in unit group 8-74).

Minor group 8-9 (Labourers Not Elsewhere Classified) includes certain types of workers whose occupations would not commonly be associated with labourers, e.g. scene shifter (stage hand), coach cleaner (railways). Excluded, as the title implies, are certain types of workers who might for some purposes be considered as general labourers, viz. farm, forestry and mine labourers (classified in major groups 4 and 5) and dock labourers (classified in minor group 8-8). Individuals working as specialised labourers may have acquired a good deal of experience and cannot be regarded as completely unskilled, but, in a general sense, this minor group includes workers in “unskilled” occupations not specifically allocated to any other group. This is not to say that there are no unskilled workers in other groups; a relatively low level of skill is associated, for instance, with Packers, Labellers and Related Workers (minor group 8-6) and with Building Caretakers, Cleaners and Related Workers (minor group 9-3). As a general principle, workers engaged in production-process operations involving the use of hand tools or machines are not to be regarded as labourers. Such workers have been placed in minor groups 7-0 to 8-4 as appropriate, but those performing the simplest production-process functions are classified in minor group 8-5.

Major Group 9: Service, Sport and Recreation Workers

Workers in protective service occupations (other than members of the armed forces) are covered by minor group 9-0 (Firefighters, Policemen, Guards and Related Workers). There are institutional arrangements in a few countries under which the personnel carrying out some of these functions are, from the purely legal standpoint, members of the armed forces. The most suitable place in the classification for such persons for purposes of international comparisons would be minor group 9-0, although it may well be that for some uses of occupational data the countries concerned prefer a different approach. Similar considerations apply to customs examiners and immigration officials (passport control) who, in some countries, are organised as special police forces; they are classified in unit group 2-99 (Clerical Workers Not Elsewhere Classified) unless performing the duties of an administrator or executive officer (in which case they are classified in minor group 1-0).

Minor group 9-11 (Housekeepers, Housekeeping Stewards and Matrons) includes managers of boarding and lodging houses who are considered as housekeepers rather than as belonging to the group Directors, Managers and Working Proprietors (minor group 1-1). Workers in domestic service occupations in private households are not distinguished from other domestic service workers in the I.S.C.O. unit groups, although separate provision is made at the five-digit code level for housekeepers, cooks, maids and valets. The International Standard Industrial Classification of All Economic Activities contains group 841 (Domestic Service (private)), so that, by cross-classification according to the branch of economic activity, it is possible to find the number of persons employed by
private households according to occupation; gardeners, chauffeurs and other types of employees in private households, who are classified in different major groups in the I.S.C.O., could in this way be identified.

Major Group X: Workers Not Classified by Occupation

Since the hopes of job-seekers who have not worked before cannot be taken as indicating their occupation, there is no alternative in a census type of inquiry into the actual occupations of the population to classifying them in a group apart; hence the I.S.C.O. contains a special unit group (X-19) for new workers seeking employment. No subdivision of this group is needed. On the other hand, there is nothing to prevent employment services classifying job-seekers according to their aptitudes and training from allocating new workers to specific occupational groups.

Unit groups X-29 (Workers Reporting Occupations Unidentifiable or Inadequately Described) and X-39 (Workers Not Reporting any Occupation) cover workers in the civilian labour force concerning whom insufficient information or no information is available to permit their allocation to one of the preceding major groups of occupations. As in the case of unit group X-19, such groups may be necessary in connection with certain uses of the classification (e.g. for reporting census data) but not in other applications. In practical work, utilising punched cards, the use of these code numbers would permit the preliminary separation and listing by mechanical means of the cases where follow-up action is needed to obtain the necessary information. The minor groups in major group X are not intended to cover persons excluded from the civilian labour force (such as retired workers, alien diplomatic personnel or non-integrated tribal peoples). Such classes are sometimes identified in the population census; classifications other than that based on occupation may be used for the purpose.

Armed Forces

Like the related international standard classifications, based on industry and status, the I.S.C.O. covers the whole economically active population, including the armed forces, in accordance with the recommendations of the United Nations Statistical and Population Commissions. Although not allotted a code number in the I.S.C.O., the final group (Armed Forces), when used, may be given any code number desired.

Notes on the Classification of Apprentices, Foremen and Instructors

Separate titles and codes are not provided for apprentices, foremen and instructors. These workers stand in a particular relationship to the occupation with which they are concerned, but for practical purposes this relationship can be recorded by some supplementary device so that proliferation of occupational titles in the classification of occupations is avoided.

Apprentices

The term “apprentice” refers to a status, not an occupation. It implies that the worker is in a learning status regarding the functions of the occupation and, as a rule, has entered into a formal agreement with his employer. In the I.S.C.O. apprentices are classified
according to the occupation being learnt on the grounds that some will be in their first year of training and others more advanced, but no account is taken of consequent variations in their qualifications or experience. If the need exists, apprentices may be identified in practical classification work by using an additional digit in the occupational code or by some other practical device.

As has already been indicated in connection with major group 01, learners (or apprentices) working in a formal learning status with an employer practising a profession such as architecture, law, pharmacy or accountancy are not classified either according to the above rule or among the fully qualified professional workers in the same occupation but under such occupational titles as draughtsmen, clerks (legal), laboratory assistants and book-keepers. Student nurses are not classified with fully qualified professional nurses but in the residual groups of nurses not elsewhere classified (0-49).

**Foremen**

The term foreman also represents in many respects a status rather than an occupation. There are two main types of foremen, namely (a) those who work with a group of workers performing particular functions and who themselves carry out some of the duties in addition to exercising supervision, assigning work and co-ordinating the efforts of the group, and (b) those who do not as a rule perform any of the work themselves but carry out the other duties of foremen described above, sometimes supervising workers in more than one occupation.

The foreman is normally a craftsman or other specialised worker who has been given additional duties; occupationally he can be considered as belonging to the occupation performed by the workers under his supervision and he is classified here with them. Where appropriate he is classified as an all-round worker in the craft or work concerned, for example: foreman carpenter (7-71.10: Carpenter, General), foreman printer (8-01.10: Printer, General). Most foremen of the second type could be classified according to the same method; foremen who are not closely allied with one particular craft or specialised occupation must be classified in a residual group, for example: foreman, farm (4-11: Farm Workers Not Elsewhere Classified); foreman, public works (7-99.90: Construction Workers Not Elsewhere Classified, Other). If the need arises, foremen may be identified by adding a sixth digit to the code number or by some other means.

**Instructors**

Instructors are workers who are engaged in teaching or instructing other workers in the technical aspects of their occupation during the course of their regular employment; this is commonly known as on-the-job training. Instructors are therefore distinct from foremen, who may give instruction as a part of their duties; they are also distinct from teachers in technical schools. Occupationally they are classified according to the craft or specialised work in which they instruct. If the need arises they may be identified by adding a sixth digit to the code number or by some other means.

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1 See page 8.
MAJOR, MINOR AND UNIT GROUPS

Major Group 0: Professional, Technical and Related Workers

0-0 Architects, Engineers and Surveyors
  0-01 Architects
  0-02 Engineers
  0-03 Surveyors

0-1 Chemists, Physicists, Geologists and Other Physical Scientists
  0-11 Chemists
  0-12 Physicists
  0-19 Physical Scientists Not Elsewhere Classified

0-2 Biologists, Veterinarians, Agronomists and Related Scientists
  0-21 Veterinarians
  0-22 Biologists and Animal Scientists Not Elsewhere Classified
  0-23 Agronomists, Silviculturists and Horticultural Scientists

0-3 Physicians, Surgeons and Dentists
  0-31 Physicians and Surgeons
  0-32 Dentists

0-4 Nurses and Midwives
  0-41 Nurses, Professional
  0-42 Midwives
  0-49 Nurses Not Elsewhere Classified

0-5 Professional Medical Workers Not Elsewhere Classified and Medical Technicians
  0-51 Pharmacists
  0-52 Optometrists
  0-53 Medical Technicians
  0-59 Professional Medical Workers Not Elsewhere Classified

0-6 Teachers
  0-61 University Teachers
  0-69 Teachers Not Elsewhere Classified

0-7 Clergy and Related Members of Religious Orders
  0-71 Clergy and Related Members of Religious Orders

0-8 Jurists
  0-81 Jurists
<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>0-9</td>
<td>Artists, Writers and Related Workers</td>
</tr>
<tr>
<td>0-91</td>
<td>Painters, Sculptors and Related Creative Artists</td>
</tr>
<tr>
<td>0-92</td>
<td>Authors, Journalists and Related Writers</td>
</tr>
<tr>
<td>0-93</td>
<td>Actors, Musicians, Dancers and Related Workers</td>
</tr>
<tr>
<td>0-X</td>
<td>Draughtsmen, and Science and Engineering Technicians Not Elsewhere Classified</td>
</tr>
<tr>
<td>0-X1</td>
<td>Draughtsmen</td>
</tr>
<tr>
<td>0-X9</td>
<td>Science and Engineering Technicians Not Elsewhere Classified and Laboratory Assistants</td>
</tr>
<tr>
<td>0-Y</td>
<td>Other Professional, Technical and Related Workers</td>
</tr>
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<td>0-Y1</td>
<td>Accounts, Professional</td>
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<tr>
<td>0-Y2</td>
<td>Social Workers</td>
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<tr>
<td>0-Y3</td>
<td>Librarians and Archivists</td>
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<tr>
<td>0-Y4</td>
<td>Economists, Actuaries and Statisticians</td>
</tr>
<tr>
<td>0-Y9</td>
<td>Professional, Technical and Related Workers Not Elsewhere Classified</td>
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**Major Group 1: Administrative, Executive and Managerial Workers**

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<tbody>
<tr>
<td>1-0</td>
<td>Administrators and Executive Officials, Government</td>
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<td>1-01</td>
<td>Administrators and Executive Officials, Government</td>
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<tr>
<td>1-1</td>
<td>Directors, Managers and Working Proprietors</td>
</tr>
<tr>
<td>1-11</td>
<td>Directors, Managers and Working Proprietors, Mining and Quarrying, Manu-</td>
</tr>
<tr>
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<td>facturing, Construction, Electricity, Gas, Water and Sanitary Services</td>
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<tr>
<td>1-12</td>
<td>Directors and Managers, Wholesale and Retail Trade</td>
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<td>1-13</td>
<td>Directors, Managers and Working Proprietors, Banks and Other Financial In-</td>
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<td>stitutions, Insurance and Real Estate</td>
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<tr>
<td>1-14</td>
<td>Directors, Managers and Working Proprietors, Transport, Storage and Com-</td>
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<td>Directors, Managers and Working Proprietors, Service Industries</td>
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**Major Group 2: Clerical Workers**

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<tr>
<td>2-0</td>
<td>Book-keepers and Cashiers</td>
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<td>2-01</td>
<td>Book-keepers and Cashiers</td>
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<td>2-1</td>
<td>Stenographers and Typists</td>
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<td>2-11</td>
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<td>2-9</td>
<td>Other Clerical Workers</td>
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<td>2-91</td>
<td>Office-Machine Operators</td>
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<td>2-99</td>
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**Major Group 3: Sales Workers**

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<tbody>
<tr>
<td>3-0</td>
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<tr>
<td>3-01</td>
<td>Working Proprietors, Wholesale Trade</td>
</tr>
<tr>
<td>3-02</td>
<td>Working Proprietors, Retail Trade</td>
</tr>
</tbody>
</table>
MAJOR, MINOR AND UNIT GROUPS

3-1 Insurance and Real-Estate Salesmen, Salesmen of Securities and Services, and Auctioneers
   3-11 Insurance and Real-Estate Salesmen, Salesmen of Securities and Services, and Auctioneers

3-2 Commercial Travellers and Manufacturers' Agents
   3-21 Commercial Travellers and Manufacturers' Agents

3-3 Salesmen, Shop Assistants and Related Workers
   3-31 Salesmen and Shop Assistants
   3-32 Street Vendors, Canvassers and Newsvendors
   3-39 Salesmen, Shop Assistants and Related Workers Not Elsewhere Classified

Major Group 4: Farmers, Fishermen, Hunters, Loggers and Related Workers

4-0 Farmers and Farm Managers
   4-01 Farmers and Farm Managers

4-1 Farm Workers Not Elsewhere Classified
   4-11 Farm Workers Not Elsewhere Classified

4-2 Hunters and Related Workers
   4-21 Hunters and Related Workers

4-3 Fishermen and Related Workers
   4-31 Fishermen and Related Workers

4-4 Loggers and Other Forestry Workers
   4-41 Loggers and Other Forestry Workers

Major Group 5: Miners, Quarrymen and Related Workers

5-0 Miners and Quarrymen
   5-01 Miners and Quarrymen

5-1 Well Drillers and Related Workers
   5-11 Well Drillers and Related Workers

5-2 Mineral Treaters
   5-21 Mineral Treaters

5-9 Miners, Quarrymen and Related Workers Not Elsewhere Classified
   5-99 Miners, Quarrymen and Related Workers Not Elsewhere Classified

Major Group 6: Workers in Transport and Communication Occupations

6-0 Deck Officers, Engineer Officers and Pilots, Ship
   6-01 Deck Officers and Pilots; Ship
   6-02 Engineer Officers, Ship
6-1 Deck and Engine-Room Ratings (Ship), Barge Crews and Boatmen
  6-11 Deck Ratings (Ship), Barge Crews and Boatmen
  6-12 Engine-Room Ratings, Firemen and Oilers, Ship

6-2 Aircraft Pilots, Navigators and Flight Engineers
  6-21 Aircraft Pilots, Navigators and Flight Engineers

6-3 Drivers and Firemen, Railway Engine
  6-31 Drivers and Firemen, Railway Engine

6-4 Drivers, Road Transport
  6-41 Drivers of Motorised Vehicles
  6-42 Drivers of Animals and Animal-Drawn Vehicles
  6-43 Drivers Propelling Their Vehicles

6-5 Conductors and Brakemen, Railway
  6-51 Conductors and Brakemen, Railway

6-6 Inspectors, Supervisors, Traffic Controllers and Despatchers, Transport
  6-61 Inspectors and Supervisors, Transport
  6-62 Traffic Controllers and Despatchers, Transport

6-7 Telephone, Telegraph and Related Telecommunication Operators
  6-71 Telephone and Telegraph Operators
  6-72 Radio Communication Operators

6-8 Postmen and Messengers
  6-81 Postmen
  6-82 Messengers

6-9 Workers in Transport and Communication Occupations Not Elsewhere Classified
  6-91 Conductors, Road Transport
  6-92 Workers in Transport Occupations Not Elsewhere Classified
  6-93 Inspectors, Traffic Controllers and Despatchers, Communication
  6-94 Workers in Communication Occupations Not Elsewhere Classified

6-10 Sales Representatives
  6-11 Sales Representatives

6-11 Farmers

6-12 Agricultural Labourers

6-13 Fishermen

6-14 Sporting and Recreational Fishermen

6-15 Fish Farming Occupations

6-16 Farming Occupations Not Elsewhere Classified

Major Group 7/8: Craftsmen, Production-Process Workers,
and Labourers Not Elsewhere Classified

7-0 Spinners, Weavers, Knitters, Dyers and Related Workers
  7-01 Fibre Preparers
  7-02 Spinners and Winders, Textile
  7-03 Weavers, Loom Fixers and Loom Preparers
  7-04 Knitters and Knitting Machine Setters
  7-05 Pattern-Card Preparers
  7-06 Bleachers, Dyers and Finishers of Textiles
  7-09 Textile Fabric and Related Product Makers Not Elsewhere Classified

7-1 Tailors, Cutters, Furriers and Related Workers
  7-11 Tailors, Dressmakers and Garment Makers
  7-12 Fur Tailors and Related Workers
  7-13 Milliners and Hatmakers
  7-14 Upholsterers and Related Workers
  7-15 Patternmakers, Markers and Cutters (Textile Products, Leather Garments and Gloves)
7-16 Sewers and Embroiderers (Textile and Fur Products, Leather Garments and Gloves)
7-19 Apparel and Related Product Makers Not Elsewhere Classified

7-2 Leather Cutters, Lasters and Sewers (except Gloves and Garments) and Related Workers
7-21 Shoemakers and Shoe Repairers
7-22 Cutters, Lasters, Sewers (Footwear) and Related Workers
7-23 Harness and Saddle Makers
7-29 Leather-Product Makers Not Elsewhere Classified

7-3 Furnacemen, Rollers, Drawers, Moulders and Related Metal Making and Treating Workers
7-31 Furnacemen, Metal
7-32 Annealers, Temperers and Related Heat Treaters
7-33 Rolling-Mill Operators, Metal
7-34 Blacksmiths, Hammersmiths and Forgemens
7-35 Moulders and Coremakers
7-36 Metal Drawers and Extruders
7-39 Metal Making and Treating Workers Not Elsewhere Classified

7-4 Precision-Instrument Makers, Watchmakers, Jewellers and Related Workers
7-41 Precision-Instrument Makers, Watch and Clock Makers, and Repairmen
7-42 Jewellers, Goldsmiths and Silversmiths
7-43 Jewellery Engravers

7-5 Toolmakers, Machinists, Plumbers, Welders, Platers and Related Workers
7-50 Fitter-Machinists, Toolmakers and Machine Tool Setters
7-51 Machine-Tool Operators
7-52 Fitter-Assemblers and Machine Erectors (except Electrical and Precision-Instrument Fitter-Assemblers)
7-53 Mechanics-Repairmen (except Electrical and Precision-Instrument Repairmen)
7-54 Sheet-Metal Workers
7-55 Plumbers and Pipe Fitters
7-56 Welders and Flame Cutters
7-57 Metal-Plate and Structural-Metal Workers
7-58 Electro-Platers, Dip Platers and Related Workers
7-59 Metal Workers Not Elsewhere Classified

7-6 Electricians and Related Electrical and Electronics Workers
7-61 Electricians, Electrical Repairmen and Related Electrical Workers
7-62 Electrical and Electronics Fitters
7-63 Mechanics-Repairmen, Radio and Television
7-64 Installers and Repairmen, Telephone and Telegraph
7-65 Linemen and Cable Jointers
7-69 Electrical and Electronics Workers Not Elsewhere Classified

7-7 Carpenters, Joiners, Cabinetmakers, Coopers and Related Workers
7-71 Carpenters and Joiners
7-72 Cabinetmakers
7-73 Sawyers and Woodworking Machine Setters and Operators
7-79 Woodworkers Not Elsewhere Classified
7-8 Painters and Paperhangers
   7-81 Painters and Paperhangers, Construction and Maintenance
   7-82 Painters (except Construction and Maintenance)

7-9 Bricklayers, Plasterers, and Construction Workers Not Elsewhere Classified
   7-91 Bricklayers, Stonemasons and Tile Setters
   7-92 Plasterers
   7-93 Cement Finishers and Terrazzo Workers
   7-94 Insulation Appliers
   7-95 Glaziers
   7-99 Construction Workers Not Elsewhere Classified

8-0 Compositors, Pressmen, Engravers, Bookbinders and Related Workers
   8-01 Compositors and Typesetters
   8-02 Pressmen, Printing
   8-03 Stereotypers and Electrotypers
   8-04 Engravers, Printing (except Photo-Engravers)
   8-05 Photo-Engravers
   8-06 Bookbinders and Related Workers
   8-09 Printing Workers Not Elsewhere Classified

8-1 Potters, Kilnmen, Glass and Clay Formers and Related Workers
   8-11 Glass Formers, Cutters, Grinders and Finishers
   8-12 Potters and Related Clay and Abrasive Formers
   8-13 Furnacemen and Kilnmen, Glass and Ceramics
   8-14 Decorators, Glass and Ceramics
   8-19 Glass and Ceramics Workers Not Elsewhere Classified

8-2 Millers, Bakers, Brewmasters and Related Food and Beverage Workers
   8-21 Millers, Grain and Related Products
   8-22 Bakers and Pastrycooks
   8-23 Sugar and Chocolate Confectionery Makers
   8-24 Brewers, Wine Makers and Related Workers
   8-25 Curers, Freezers, Cooks and Related Canners and Preservers
   8-26 Butchers and Meat Cutters
   8-27 Dairy Workers
   8-29 Food Processers Not Elsewhere Classified

8-3 Chemical and Related Process Workers
   8-31 Batch- and Continuous-Still Operators
   8-32 Cookers, Roasters and Other Heat Treaters, Chemical and Related Processes
   8-33 Crushers, Millers, Calenderers, Chemical and Related Processes
   8-34 Paper-Pulp Preparers
   8-35 Paper Makers
   8-39 Chemical and Related Process Workers Not Elsewhere Classified

8-4 Tobacco Preparers and Tobacco-Product Makers
   8-41 Tobacco Preparers
   8-42 Cigar Makers
   8-43 Cigarette Makers
   8-49 Tobacco-Product Makers Not Elsewhere Classified

8-5 Craftsmen and Production-Process Workers Not Elsewhere Classified
   8-51 Basketry Weavers and Related Workers
   8-52 Tyre Builders, Vulcanisers and Related Rubber-Product Makers
MAJOR, MINOR AND UNIT GROUPS

8-53 Plastics-Product Makers
8-54 Tanners, Fellmongers, Pelt Dressers and Related Workers
8-55 Photographic Dark-Room Workers
8-56 Makers of Musical Instruments and Related Workers
8-57 Stone Cutters and Carvers
8-58 Paper-Product Makers
8-59 Miscellaneous Craftsmen and Production-Process Workers Not Elsewhere Classified

8-6 Packers, Labellers and Related Workers
8-61 Packers, Labellers and Related Workers

8-7 Stationary-Engine and Excavating and Lifting Equipment Operators and Related Workers
8-71 Operators of Stationary Engines and Related Equipment and Boiler Firemen
8-72 Crane and Hoist Operators
8-73 Riggers and Cable Splicers
8-74 Operators of Earth-Moving and Other Construction Machinery Not Elsewhere Classified
8-75 Material-Handling Equipment Operators
8-76 Oilers and Greasers (Stationary Engines, Motor Vehicles and Related Equipment)

8-8 Longshoremen and Related Freight Handlers
8-81 Longshoremen and Related Freight Handlers
8-89 Labourers Not Elsewhere Classified
8-99 Labourers Not Elsewhere Classified

Major Group 9: Service, Sport and Recreation Workers

9-0 Fire Fighters, Policemen, Guards and Related Workers
9-01 Fire Fighters and Related Workers
9-02 Policemen and Detectives
9-09 Guards and Related Workers Not Elsewhere Classified

9-1 Housekeepers, Cooks, Maids and Related Workers
9-11 Housekeepers, Housekeeping Stewards and Matrons
9-12 Cooks
9-19 Maids, Valets and Related Service Workers Not Elsewhere Classified

9-2 Waiters, Bartenders and Related Workers
9-21 Waiters, Bartenders and Related Workers

9-3 Building Caretakers, Cleaners and Related Workers
9-31 Building Caretakers
9-32 Charworkers, Cleaners and Related Workers

9-4 Barbers, Hairdressers, Beauticians and Related Workers
9-41 Barbers, Hairdressers, Beauticians and Related Workers

9-5 Launderers, Dry Cleaners and Pressers
9-51 Launderers, Dry Cleaners and Pressers
INTERNATIONAL STANDARD CLASSIFICATION OF OCCUPATIONS

9-6 Athletes, Sportsmen and Related Workers
   9-61 Athletes, Sportsmen and Related Workers

9-7 Photographers and Related Camera Operators
   9-71 Photographers and Related Camera Operators

9-8 Embalmers and Undertakers
   9-81 Embalmers and Undertakers

9-9 Service, Sport and Recreation Workers Not Elsewhere Classified
   9-99 Service, Sport and Recreation Workers Not Elsewhere Classified

Major Group X: Workers Not Classifiable by Occupation

X-1 New Workers Seeking Employment
   X-19 New Workers Seeking Employment

X-2 Workers Reporting Occupations Unidentifiable or Inadequately Described
   X-29 Workers Reporting Occupations Unidentifiable or Inadequately Described

X-3 Workers Not Reporting Any Occupation
   X-39 Workers Not Reporting Any Occupation

Armed Forces: Members of the Armed Forces
MAJOR GROUP 0

PROFESSIONAL, TECHNICAL AND RELATED WORKERS

Workers in this major group conduct research and apply, in a professional capacity, scientific knowledge and methods to a variety of technological, economic, social, industrial and governmental problems, carry out technical tasks auxiliary to scientific research, development and practice, and perform religious, educational, legal, artistic and literary functions. Those classified in this major group perform tasks which usually require training in a specific scientific or other professional field, at a university, technical institute or similar establishment or which require creative ability in literature or art or talent in entertaining.

0-0 Architects, Engineers and Surveyors

Workers in this minor group design, plan, organise and supervise the construction, manufacture, installation, operation and repair of structures and equipment, supervise and participate in land and water surveys, and perform other architectural, engineering and surveying tasks. Those classified in this minor group have obtained a university degree in architecture or engineering or an equivalent qualification, or have completed a recognised course of training in surveying, and frequently hold a licence or certificate issued by a professional or governmental organisation. Excluded are workers primarily performing administrative or managerial functions (classified in major group 1).

0-01 ARCHITECTS

Workers in this unit group design buildings, supervise their construction and plan the layout and co-ordinate the development of urban areas. Those classified in this unit group have obtained university degrees in architecture or equivalent qualifications and frequently hold licences or certificates issued by a professional or governmental organisation. Excluded are Civil Engineers and Naval Architect (unit group 0-02).

0-01.20 Architect, Buildings. Designs buildings and supervises their construction; discusses proposed construction with employer to ascertain the style and type of building required; gives advice on estimated cost, building time and other relevant matters; designs building, co-ordinates ornamental and structural features, having regard to local regulations and architectural styles; prepares drawings or scale models to show appearance of completed building; draws detailed plans and compiles specifications and bills of quantities for use of builders; inspect constructional work to ensure that building is erected according to terms of contract. May plan and supervise alterations and repairs to buildings. May specialise in particular types of buildings. Excluded is Civil Engineer (Building Construction) (0-02.04).

0-01.30 Town Planner. Plans the layout and co-ordinates the development of urban areas: arranges and supervises the collection of data relative to development of area; examines data to ascertain nature, extent and rate of the municipality's growth and development; consults appropriate specialists and prepares plans for future developments, including zoning of industrial and residential areas, location of parks, schools and streets, and other features; examines specific proposals affecting development of area and makes suggestions or issues directions as authorised and required.

0-02 ENGINEERS

Workers in this unit group design, plan, organise and supervise the construction, manufacture, installation, operation and repair of
structures and equipment, carry out tests and inspections, perform research and give technical advice. Their functions include the performance of professional engineering tasks related to the construction and repair of buildings, roads, airports, railways, bridges, tunnels, public-health and sanitation systems; the construction, manufacture, installation, operation and repair of electrical and electronic systems, mechanical equipment, and equipment used for chemical processes; the extraction of solids, semi-liquids and gases from the earth and treatment prior to direct use or further processing; the performance of other professional engineering functions, for instance in forestry and agriculture. Those classified in this unit group have obtained university degrees in engineering or equivalent qualifications and frequently hold licences or certificates issued by a professional or governmental organisation. Mechanical and electrical engineers working as members of ships' crews are classified with Engineer Officers, Ship (unit group 6-02).

Civil Engineers

Workers classified under the uncoded subheading Civil Engineers plan, organise and supervise construction work related to the provision of roads, bridges, tunnels and other transportation facilities, the erection of buildings and the installation, operation and maintenance of hydraulic and sanitation systems, carry out inspections and tests, perform research work and give technical advice.

0-02.02 Civil Engineer, General. Plans, organises and supervises constructional work related to the provision of roads, bridges, tunnels and other transportation facilities, the erection of buildings and the installation, operation and maintenance of hydraulic and public health systems; considers projects and makes surveys to ascertain most suitable site for construction; estimates nature and volume of air, land or water traffic to determine effect on project; examines soils and subsoils to ascertain probable effect on construction work and suitability as building materials; discusses project with other specialists such as electrical or mechanical engineers; plans location of foundations, conduits, pipe lines and other ground work; calculates stresses, strains, water flow, effects of winds and temperatures, gradients and other factors; prepares plans, specifications and estimates of materials and costs; determines type of earth-moving, hoisting and other machinery and equipment for use in construction; prepares work schedules and directs operations as work proceeds; tests and examines new and old structures and plans and organises repair work.

0-02.04 Civil Engineer (Building Construction). Plans, organises and supervises the erection or repair of buildings; performs basic tasks similar to those of Civil Engineer, General (0-02.02) but specialises in the erection or repair of housing estates, factories and public or commercial buildings, especially those in which steel or reinforced concrete is used. May specialise in a particular aspect of building construction and be designated accordingly.

0-02.06 Civil Engineer (Highway and Street Construction). Plans, organises and supervise the layout, construction and maintenance of streets and highways: performs basic tasks similar to those of Civil Engineer, General (0-02.02) but specialises in the layout, construction and maintenance of municipal, rural or trunk roads; cooperates with government and other officials in working out efficient and safe traffic systems. May specialise in a particular type of road construction and be designated accordingly.

0-02.08 Civil Engineer (Airport Construction). Plans, organises and supervises the construction of airports and landing fields: performs basic tasks similar to those of Civil Engineer, General (0-02.02) but specialises in the layout and construction of airplane runways, hangars, control towers and other airport buildings.

0-02.10 Civil Engineer (Railway Construction). Plans, organises and supervises the construction, maintenance and repair of railway tracks and other railway structures: performs basic tasks similar to those of Civil Engineer, General (0-02.02) but specialises in the laying of railway tracks and the construction of terminal yards and railway buildings. May construct bridges and tunnels for railway tracks. May survey railway traffic problems and make recommendations to improve standards of safety and efficiency.

0-02.12 Civil Engineer (Bridge Construction). Plans, organises and supervises the construction or repair of bridges: performs basic tasks similar to those of Civil Engineer, General (0-02.02) but specialises in the construction or repair of one or more types of fixed or movable bridges; pays special attention to the weight and strength of the materials used.

0-02.14 Civil Engineer (Tunnel Construction). Plans, organises and supervises the construction or repair of tunnels or subways: performs basic tasks similar to those of Civil Engineer, General (0-02.02) but specialises in the construction or repair of tunnels and subways; gives instructions on the drilling and blasting equipment to be used, the types of supports for tunnel roofs and walls, the size and location of ventilating shafts and other aspects of projects. May install ventilating systems designed by and manufactured under the supervision of mechanical engineers.

0-02.16 Civil Engineer (Sanitary). Plans, organises and supervises the construction or operation of structures, equipment and other engineering works related to the disposal of waste matter, the provision of clean water or air to other factors affecting cleanliness and health: performs basic tasks similar to those of Civil Engineer, General (0-02.02) but specialises in the construction and operation of sewage-disposal systems, watersheds, water-filtration plants, water storage and distribution plants, garbage-reduction equipment, devices for the control of obnoxious industrial gases and similar constructions.
MAJOR GROUP 0

0-02.18 Civil Engineer (Hydraulic). Plans, organises and supervises the construction of hydro-power, irrigation or navigation projects; performs basic tasks similar to those of Civil Engineer, General (0-02.24) but specialises in draining or irrigating land, stabilising the flow of streams and open waters by dredging, designing and constructing drainage systems; may specialise in a particular type of hydraulic engineering and be designated accordingly.

0-02.20 Civil Engineer (Soil Mechanics). Examines soils and subsurfaces and ascertains their effect on constructional work and their suitability as building materials; makes surveys and takes samples of surface and subsurface soils; examines samples or arrangements for analysis as required; makes calculations and gives advice on such matters as suitability of proposed foundations for bridges or buildings, slopes of cuttings, and thicknesses of soil dams, and retaining walls; prepares specifications for soil mixtures to be used for roads, embankments and other constructions.

0-02.22 Civil Engineers, Other. This group includes civil engineers not elsewhere classified, for example, those specialising in inspecting, testing, consulting or research and planning and those organising and directing the construction of structures not mentioned elsewhere in this unit group.

Electrical Engineers

Workers classified under the uncoded subheading Electrical Engineers design electrical and electronic systems and equipment and plan and supervise their manufacture, installation, operation and repair, carry out inspections and tests, do research work and give technical advice.

0-02.24 Electrical Engineer, General. Designs various electrical and electronic systems and equipment and plans and supervises their manufacture, installation, operation and repair; plans lay-out of systems and equipment; prepares sketches, drawings or wiring diagrams and specifies method of construction and materials to be used; estimates labour, material and other construction and installation costs; supervises construction and installation of systems and equipment; inspects completed work for efficient operation and compliance with specifications and safety standards; plans and supervises operation of large systems and equipment, such as radio broadcasting or power stations. May specialise in designing, in planning or in supervising a phase of general electrical engineering, such as construction, installation, operation or repair, and be designated accordingly.

0-02.26 Electronic Engineer. Designs electronic equipment and plans and supervises its construction, installation, operation and repair; performs basic tasks similar to those of Electrical Engineer, General (0-02.24) but specialises in electronic equipment, such as radio and television transmitters and receivers, radar equipment, or medical and industrial electronic equipment.

0-02.28 Electrical Engineer (Power Generation). Designs electricity generating stations, and plans and supervises their construction, operation and repair: performs basic tasks similar to those of Electrical Engineer, General (0-02.24) but specialises in electricity-generating stations.

0-02.30 Electrical Engineer (Power Distribution and Transmission). Designs systems for the distribution and transmission of electric power, and plans and supervises construction and repair; performs basic tasks similar to those of Electrical Engineer, General (0-02.24) but specialises in systems for the distribution and transmission of electric power.

0-02.32 Electrical-Equipment Engineer. Designs electrical equipment and plans and supervises its construction, installation, operation and repair; performs basic tasks similar to those of Electrical Engineer, General (0-02.24) but specialises in electrical equipment, such as motors, generators, converters, transformers, switchgear and welding equipment.

0-02.34 Telecommunication Engineer. Designs telecommunication systems and equipment and plans and supervises their construction, installation, operation and repair; performs basic tasks similar to those of Electrical Engineer, General (0-02.24) but specialises in line or radio telephone and telegraph systems and equipment.

0-02.36 Electrical Engineers, Other. This group includes electrical engineers not elsewhere classified, for example, those specialising in inspecting or testing systems and equipment; carrying out research work; giving technical advice in electrical engineering.

Mechanical Engineers

Workers classified under the uncoded subheading Mechanical Engineers design engines, machines, vehicles and other mechanical equipment and plan and supervise their manufacture, installation, operation and repair, carry out inspections and tests, perform research work and give technical advice.

0-02.38 Mechanical Engineer, General. Designs various types of engines, machines, vehicles and other mechanical equipment and plans and supervises their manufacture, installation, operation and repair; determines type of mechanical device required, its probable cost and available means of production; makes drawings and mathematical calculations and prepares specifications showing details of constructions; plans methods of manufacture and supervises technical side of production; directs installation, maintenance and repair of mechanical equipment; tests mechanical equipment to ensure safety and efficiency and conformity with specifications. May specialise in designing, in planning or supervising, one phase of mechanical engineering, such as manufacture, installation or repair.

0-02.40 Mechanical Engineer (Machinery and Tools). Designs machinery and tools and plans and supervises their manufacture, installation, operation or repair; performs basic tasks similar to those of Mechanical Engineer, General (0-02.38) but specialises in one or more types of machinery or tools, such as agricultural, mining, textile or printing machinery, conveyors, cranes, machine or hand tools, machine attachments or instruments.
0-02.42 Mechanical Engineer (Turbines) (except Marine and Aeronautical). Designs turbines, except those used for ships or aircraft, and plans and supervises construction, installation, operation or repair: performs basic tasks similar to those of Mechanical Engineer, General (0-02.38) but specialises in gas, steam or water-driven turbines.

0-02.44 Mechanical Engineer (Reciprocating Steam Engines) (except Marine). Designs reciprocating steam engines, except those used for ship propulsion, and plans and supervises their construction, installation, operation or repair: performs basic tasks similar to those of Mechanical Engineer, General (0-02.38) but specialises in reciprocating steam engines used for railway locomotives, to supply motive power for machinery or for other purposes.

0-02.46 Mechanical Engineer (Internal Combustion Engines) (except Marine, Aeronautical and Automotive). Designs internal-combustion engines, except those used for ship, motor-vehicle or aircraft propulsion, and plans and supervises their construction and installation: performs basic tasks similar to those of Mechanical Engineer, General (0-02.38) but specialises in internal combustion engines such as petrol, diesel or gas engines, for driving machinery, propelling railway locomotives or for other purposes.

0-02.48 Mechanical Engineer (Boilers and Accessories). Designs boilers, boiler-house plant and accessories and plans and supervises their construction, installation, operation and repair: performs basic tasks similar to those of Mechanical Engineer, General (0-02.38) but specialises in coal, oil-fired or gas-fired boilers, boiler-house plant and accessories.

0-02.50 Mechanical Engineer (Heating, Ventilating and Refrigerating). Designs equipment and layouts for heating, ventilating, refrigerating and similar systems and plans and supervises their manufacture, installation, or repair: performs basic tasks similar to those of Mechanical Engineer, General (0-02.38) but specialises in systems for heating buildings, supplying purified air, removing foul air, cooling storage rooms, providing water for automatic fire-extinguishing devices or for similar purposes.

0-02.52 Mechanical Engineer (Automotive). Designs passenger or delivery cars, trucks, farm tractors, motor cycles or other motor vehicles and plans and supervises their manufacture and testing: performs basic tasks similar to those of Mechanical Engineer, General (0-02.38) but specialises in one or more types of motor vehicles or in engines, chassis, bodies, brakes, or other vehicle components.

0-02.54 Mechanical Engineer (Aeronautical). Designs aircraft and aircraft equipment and plans and supervises their construction, testing or repair: performs basic tasks similar to those of Mechanical Engineer, General (0-02.38) but specialises in one or more branches of aircraft engineering such as the design and construction of aircraft or the fuselages, wings, undercarriages, propellers, engines or other component parts.

0-02.56 Mechanical Engineer (Marine). Designs marine equipment for ships and plans and supervises their manufacture, installation, testing or repair: performs basic tasks similar to those of Mechanical Engineer, General (0-02.38) but specialises in one or more types of marine equipment such as main and auxiliary engines, pumps, steering gear, shafting, winches and similar equipment on ships. May check ship's equipment during trial runs. A marine engineer working as member of ship's crew is classified with Engineer Officers, Ship (unit group 6-02).

0-02.58 Mechanical Engineers, Other. This group includes mechanical engineers not elsewhere classified, for example, those specialising in inspecting, testing, research or giving technical advice; designing or planning and supervising the manufacture, installation or repair of mechanical equipment not specifically mentioned elsewhere in the unit group.

Chemical and Metallurgical Engineers

Workers classified under the uncoded sub-heading Chemical and Metallurgical Engineers design, supervise and carry out research related to the construction, installation and operation of equipment, plant and works in which substances undergo chemical or physical changes.

0-02.60 Chemical Engineer, General. Develops new or improved techniques for manufacturing chemicals and other products requiring chemical processing and designs and supervises the construction, installation and operation of equipment, plant and works in which the manufacturing and processing are carried out: studies details of product-producing methods employed in existing processes or in laboratory; undertakes process research to check details and to obtain additional information on possible improvements in the process or in commercial production possibilities; decides whether test plant is necessary to ascertain efficiency of processes or to obtain additional information; designs full-size plant after determining kind of equipment required and ascertaining optimum conditions and other essential factors; supervises installation of new equipment or alterations to existing equipment; supervises and co-ordinates activities of workers operating grinders, mixers, vats, stills, reactors, evaporators and other equipment to ensure efficient treatment of raw materials by chemical, mechanical and other means; supervises adjustments to plant according to results of laboratory tests or quality requirements; supervises construction of new plant and works and the maintenance and repair of existing plant; investigates faults and failures occurring in processes; establishes and enforces standards for testing and inspecting machinery and equipment; co-operates closely with chemists and mechanical, electrical and civil engineers and with firms manufacturing items of equipment. May specialise in a particular phase of chemical engineering such as research, design or supervision of construction or operation of plant and works, and be designated accordingly.

0-02.62 Chemical Engineer (Chemical Products Other than Petroleum). Develops new or improved techniques for manufacturing chemical products and designs and supervises the construction, installation and operation of equipment, plant, and works for manufacturing such products: performs basic tasks similar to those of Chemical Engineer, General (0-02.60) but specialises in a branch of the chemical product industry, such as acids, alkalis, salts, fertilisers, dyes, explosives, plastics, synthetic rubber, rubber products, paper and allied products.
liquids, and gases from the earth, and 

0-02.64 Chemical Engineer (Petroleum). Develops new or improved techniques for initial treatment and refining of petroleum and designs and supervises the construction, installation, and operation of equipment, plant and works for such refining; performs basic tasks similar to those of Chemical Engineer, General (0-02.60) but specialises in the petroleum industry.

0-02.66 Metallurgist (Extractive). Develops and controls methods of extracting metals from ores; studies problems of extracting metals from ores to determine methods of producing metal of optimum quality and maximum amount; decides temperatures, mixtures and other variables to be used in processes; investigates methods of improving processes; supervises and coordinates activities of workers engaged in carrying out various processes. May specialise in ferrous or non-ferrous metals or in a particular kind of metal.

0-02.68 Metallurgist (Physical). Investigates properties and treatment of metals and supervises production of basic metals and alloys: conducts microscopic, x-ray, spectroscopic and other studies of metals and alloys to determine their physical characteristics, such as crystal-line structure and dispersion of alloy particles through basic metal and the presence of impurities, fractures and other defects in metal samples; develops rolling and heat-treating processes to obtain desired characteristics, such as ductility, malleability, lightness and strength; tests alloys to ensure their compliance with prescribed standards; experiments with techniques and materials involved in conversion of metallic powders into solid metals; supervises processes such as reheating, alloying, rolling, drawing, casting, and forging; consults with other engineers to develop methods of production. May specialise in ferrous or non-ferrous metals, or in a particular kind of metal.

0-02.70 Ceramic and Glass Engineer. Develops and controls methods of manufacturing bricks, pottery and glassware: tests physical and chemical properties of materials used in manufacture of bricks, pottery and glassware; selects combination of materials according to type and quality of product; designs equipment and apparatus used in production; determines temperatures at which shaped materials are to be baked and methods to be used in other parts of the process; tests samples of products for adherence to standards. May specialise in a particular type of product.

0-02.72 Chemical and Metallurgical Engineers, Other. This group includes chemical and metallurgical engineers not elsewhere classified, for example, those designing and supervising construction and operation of plant for the manufacture and distribution of gas; and studying and developing the efficient use of fuel.

Mining Engineers

Workers classified under the uncoded subheading Mining Engineers plan, organise and supervise the work of extracting solids, semi-liquids, liquids and gases from the earth, and their treatment prior to direct use or further processing, carry out inspections and tests, and give technical advice.

0-02.74 Mining Engineer (General). Plans, organises and supervises the work of extracting metallic and solid non-metallic minerals from the earth and their treatment prior to direct use or further processing: makes geological and topographical surveys to determine location, size and slope of mineral deposits and character of surrounding strata; plans surface developments such as location of shaft or mine entrance and of crushing and tipping plant, water and power supplies and transportation facilities; evolves methods of extraction best suited to character, type and size of deposit, and decides on type of machinery and equipment to be used; makes surveys to develop safer working conditions and to improve production methods; supervises mining or quarrying operations, either underground or at surface; supervises treatment of minerals at mine or quarry, for example washing, crushing and flotation. May specialise in a phase of general mining engineering such as exploration or development and be designated accordingly.

0-02.76 Mining Engineer (Metal). Plans, organises and supervises the work of extracting metallic minerals from the earth and their treatment prior to direct use or further processing: performs basic tasks similar to those of Mining Engineer, General (0-02.74) but specialises in the extraction of gold, platinum, silver, iron, copper and other metallic minerals by underground or surface operations, and in treatment by crushing, flotation, or other means.

0-02.78 Mining Engineer (Other than Metal). Plans, organises and supervises the work of extracting solid non-metallic minerals from the earth and their treatment prior to direct use or further processing: performs basic tasks similar to those of Mining Engineer, General (0-02.74) but specialises in extraction of coal, stone, clay, diamonds and other solid non-metallic minerals by underground or surface operations and in treatment such as washing.

0-02.80 Engineer, Petroleum and Natural Gas. Plans, organises and supervises the work of extracting, storing and transporting petroleum and natural gas: makes geological and geophysical surveys, and studies earth samples and other data to determine structural and stratigraphic peculiarities of area; decides type of derrick and drilling equipment to be used; supervises drilling operations and gives technical directions to achieve economical and satisfactory progress; devises methods for bringing wells into production, controlling flow of petroleum or gas, and treating oil to remove sediment and water; supervises maintenance of producing well, storage tanks and pipe transport system; determines petroleum-gas ratios of wells and designates allowable flow of petroleum or gas to meet pro rata regulations; compiles logs, production records and other data for each well and conducts special studies on subjects such as salt-water encroachment and operating equipment.

0-02.82 Mining Engineers, Other. This group includes mining engineers not elsewhere classified, for example, those planning, organising and supervising the work of extracting liquid and semi-liquid minerals, other than petroleum, from the earth; specialising in carrying out research work or in giving technical advice.
Engineers, Other

Workers classified under the uncoded subheading Engineers, Other, perform various professional, architectural and engineering functions not performed by those classified elsewhere.

0-02.84 Industrial Efficiency Engineer. Analyses production methods and makes the modifications necessary to ensure the maximum efficiency of manpower, machinery and equipment: examines records such as those relating to sales, output and materials wasted and studies layout of production plant; introduces new machines and rearranges machinery layout and flow of work to ensure the maximum output consistent with quality of products, costs, safety requirements and other factors; studies allocation of tasks and determines most efficient allotment; examines wage structures, evaluates work performed by similar types of workers and establishes basic rates of pay. May study manner in which particular tasks are performed and suggest improved methods. May be employed by a single organisation or act as independent consultant to any organisation needing advice and assistance.

0-02.86 Safety Engineer. Inspects industrial plants for hazards, proposes means of preventing or reducing industrial accidents and diseases, and designs safety devices: examines the plans and specifications of new premises, plant or equipment and ensures that adequate precautions have been taken to avoid hazards; inspects buildings, equipment and processes to locate hazardous workplaces; calculates weights which can be safely supported by floors; advises on the selection and use of goggles, safety belts, protective clothing, extractor fans, ventilators and similar safety equipment; seeks fire hazards, inspects fire-fighting equipment and advises on precautions to be taken against risk of fire; designs and supervises the manufacture and installation of machine guards and other devices to prevent accidents; investigates causes of accidents and introduces measures to prevent their reoccurrence; plans, organises and carries out educational programmes on accident prevention, using lectures, posters, films and other means.

0-02.88 Agricultural Engineer. Plans, organises and supervises various types of engineering work related to the use and development of agricultural lands, buildings, machinery and equipment: determines the layout and supervises the construction of farm buildings, electrical services, crop-processing plant and other farming utilities; plans and supervises the construction of irrigation, drainage, flood and water control systems; designs, develops and supervises the manufacture and installation of agricultural machinery such as pumps and irrigation equipment, harvesting and threshing machines, cultivators, sprayers and other farm implements. Engineers specialising in one aspect of agricultural engineering are classified according to the field of engineering in which they are engaged, such as civil engineering, mechanical engineering, electrical engineering.

0-02.90 Naval Architect. Designs and plans the construction, alteration or repair of ships: considers purposes of proposed ship, the relative needs of speed, fuel economy, cargo and passenger space and other details; prepares outline drawings of ship; calculates water pressures, stresses and strains on structural mem-

bers and other factors affecting design; prepares plans and specifications, showing construction of hull and superstructure and layout of power, heating, lighting, ventilating and refrigerating systems; prepares plans and specifications for alterations or repairs to ships; co-operates with marine engineers and other specialists as necessary. May supervise purchase and inspection of materials and construction of ships. May specialise in designing particular types of ships.

0-02.99 Engineers Not Elsewhere Classified. This group includes engineers not elsewhere classified, for example, those applying mechanical, chemical and other engineering techniques to problems arising in the manufacturing and processing of textiles.

0-03 Surveyors

Workers in this unit group supervise and participate in various types of land and water surveys and make calculations to determine exact locations and to delineate topographical and underground features for map or chart making, construction work, mining or other purposes. Their functions include surveying various types of land and water areas; surveying particular types of areas such as land, mine or marine areas; performing other types of surveys. Those classified in this unit group have completed recognised courses of training in surveying and frequently hold licences or certificates issued by a professional or governmental organisation. Those assisting surveyors by operating or taking care of instruments, transcribing field data, and performing similar work are classified in unit group 0-09 (Science and Engineering Technicians Not Elsewhere Classified and Laboratory Assistants).

0-03.10 Surveyor, General. Supervises and participates in various types of land and water surveys to determine exact locations and to delineate topographical features for map or chart making, construction work, mining or other purposes: examines available notes, maps, plans, deeds and other relevant documents and makes preliminary calculations necessary to conduct survey; examines and adjusts theodolites, compasses, plane tables and other surveying instruments; makes survey, directing helpers as required, to ascertain the exact locations and measurements of points, elevations, lines, angles, contours and other data of land surface, underground or underwater areas; makes calculations to verify accuracy of measurements made; keeps records of measurements and calculations and makes sketches of area surveyed; prepares detailed drawings and reports.

0-03.20 Surveyor (Land). Supervises and participates in surveys of land surfaces to determine exact boundaries and locations and to delineate topographical features for map making, construction work, land valuation or other purposes: performs basic tasks similar to those of Surveyor, General (0-03.10) but specialises in surveying land areas.
0-03.30 Surveyor (Mine). Supervises and participates in surveys of mines to determine exact locations and to delineate topographical and underground features for making plans of workings, calculating volumes of deposits, driving and connecting underground mine shafts and passages, and for similar purposes: performs basic tasks similar to those of Surveyor, General (0-03.10) but specialises in surface and underground surveys of mines and mining areas.

0-03.40 Surveyor (Marine). Supervises and participates in surveying bodies of water to identify shore lines and to delineate underwater topographical features for chart making, determining navigable channels and for planning the construction of piers, breakwaters and other marine structures: performs basic tasks similar to those of Surveyor, General (0-03.10) but specialises in surveying harbours, lakes, rivers and other bodies of water.

0-03.90 Surveyors, Other. This group includes surveyors not elsewhere classified, for example, those planning and participating in surveys by means of aerial photography; calculating latitude, longitude, angles, areas and other measurements of the earth's surface from field notes and numerical data obtained by surveying parties.

0-1 Chemists, Physicists, Geologists and Other Physical Scientists

Workers in this minor group engage in research and development and in tests, experiments and analyses of a practical nature, relating to the chemical composition and properties of, and possible changes in, substances; investigate physical phenomena, apply the laws of physics to practical problems; and perform other professional activities in the field of physical science.

0-11 Chemists

Workers in this unit group engage in research and development and in tests, experiments and analyses of a practical nature relating to the chemical composition and properties of substances and possible changes therein. Those classified in this unit group have obtained university degrees in chemistry or equivalent qualifications and frequently hold licences or certificates issued by a governmental organisation. Those doing work in the field of chemistry but not possessing these qualifications are classified in unit group 0-X9 (Science and Engineering Technicians Not Elsewhere Classified and Laboratory Assistants). Also excluded are pharmaceutical chemists (unit group 0-51: Pharmacists).

0-11.10 Chemist, General. Performs research and development work and carries out tests, experiments and analyses of a practical nature, relating to the composition and properties of and possible changes in substances in the field of chemistry: investigates basic properties and the transformations they can undergo; applies known laws, principles and methods to discovering and developing new chemical products, discovering new uses for existing products and new methods of production; applies known laws, principles and methods to industrial problems such as quality control and analysis of raw materials and finished products. May supervise other workers in laboratory investigations or in industrial processes involving chemicals.

0-11.20 Chemist (Biological). Performs research and development work and carries out tests, experiments and analyses of a practical nature relating to the composition and properties of and possible changes in substances in the field of biological chemistry: performs basic tasks similar to those of Chemist, General (0-11.10) but specialises in branches of biological chemistry, such as food chemistry, including proteins, vitamins, sugars, starches, food preservation and pasteurisation of milk; fermentation chemistry, including the study of enzymes, alcohol, acetone and yeasts; bacteriological chemistry, including mould fumigation, water pollution, sewage purification, and qualities of milk; preparation of sera and vaccines; and chemical endocrinology, including the extraction and preparation of hormones and the preparation of pituitary and thyroid extracts.

0-11.30 Chemist (Organic). Performs research and development work and carries out tests, experiments and analyses of a practical nature relating to the composition and properties of and possible changes in substances in the field of organic chemistry: performs basic tasks similar to those of Chemist, General (0-11.10) but specialises in branches of organic chemistry such as those dealing with the composition, constitution, reactions and syntheses of dyes, paints, petroleum, rubber, textiles and other substances the main constituent element of which is carbon.

0-11.40 Chemist (Inorganic). Performs research and development work and carries out tests, experiments and analyses of a practical nature relating to the composition and properties of and possible changes in substances in the field of inorganic chemistry: performs basic tasks similar to those of Chemist, General (0-11.10) but specialises in branches of inorganic chemistry, such as those dealing with the preparation, properties, molecular structure, and reactions of metals, acids, salts and other substances relatively free from carbon.

0-11.50 Chemist (Physical). Performs research and development work and carries out tests, experiments and analyses of a practical nature relating to the composition and properties of and possible changes in substances in the related fields of chemistry and physics: performs basic tasks similar to those of Chemist, General (0-11.10) but in addition is concerned with the relations between chemical change and energy transformation, the application of physical methods to the study of chemical change, and other physical phenomena.
and the use of physical laws in interpreting chemical behaviour and change, including crystallography, electrochemistry, thermodynamics, chemical kinetics, spectroscopy, refractometry, X-ray analysis, colloids, corrosion, and electrodeposition.

0-11.90 Chemists, Other. This group includes chemists not elsewhere classified, for example, those engaged in giving technical advice.

0-12 PHYSICIANTS

Workers in this unit group investigate physical phenomena and apply the laws of physics to practical problems. Those classified in this unit group have obtained university degrees in physics or equivalent qualifications. Those doing work related to the science of physics but not possessing these qualifications are classified in unit group 0-X9 (Science and Engineering Technicians Not Elsewhere Classified and Laboratory Assistants).

0-12.10 Physicist, General. Investigates physical phenomena and applies the laws of physics to practical problems: conducts fundamental research into physical phenomena in fields such as mechanics, heat, sound, light, electricity and magnetism, electronics and atoms to discover basic laws of the science of physics; conducts applied research and laboratory development activities to obtain and correlate quantitative data on properties and phenomena in these fields; applies the fundamental principles of the science to industrial problems, especially those dealing with highly precise and delicate measuring instruments, radio design and manufacture, optical instruments, and the physical testing of materials. A physicist specialising in a particular field of physics is classified elsewhere in this unit group.

0-12.20 Physicist (Mechanics). Investigates physical phenomena and applies the laws of physics in the field of mechanics: performs basic tasks similar to those of Physicist, General (0-12.10) but specialises in branches of mechanics, such as ballistics, aerodynamics, hydrodynamics, rheology, elasticity, high-pressure techniques, high-vacuum techniques, vibration measurement, analyses, and control of mechanical instruments and measuring devices.

0-12.30 Physicist (Heat). Investigates physical phenomena and applies the laws of physics in the field of heat: performs basic tasks similar to those of Physicist, General (0-12.10) but specialises in branches of heat, such as calorimetry, thermodynamics, heat engines, heat transmission and insulation, high-temperature effects and phenomena, low-temperature effects and phenomena, temperature measurements or heat radiation.

0-12.40 Physicist (Light). Investigates physical phenomena, and applies the laws of physics, in the field of light: performs basic tasks similar to those of Physicist, General (0-12.10) but specialises in branches of light, such as illumination, spectroscopy, colometry, optics, photography, or polarised light.

0-12.50 Physicist (Sound). Investigates physical phenomena and applies the laws of physics in the field of sound: performs basic tasks similar to those of Physicist, General (0-12.10) but specialises in branches of sound, such as the propagation and transmission of sound, the measurement and analysis of sound, architectural acoustics, physiological acoustics, supersonics, or the amplification, reproduction and recording of sound.

0-12.60 Physicist (Electricity and Magnetism). Investigates physical phenomena and applies the laws of physics in the field of electricity and magnetism: performs basic tasks similar to those of Physicist, General (0-12.10) but specialises in branches of electricity and magnetism, such as electrostatics; piezoelectricity and piezoelectric devices; direct current phenomena, instruments and devices; alternating current phenomena, instruments and devices; electrical measurements; resistance materials, devices and measurements; dielectrics and capacitance; magnetism, magnetic materials and measurements; or electromagnetism, measurements and devices.

0-12.70 Physicist (Electronics). Investigates physical phenomena and applies the laws of physics in the field of electronics: performs basic tasks similar to those of Physicist, General (0-12.10) but specialises in branches of electronics, such as conduction in gases; electron optics and applications; electronic tubes; electron tube circuits (excluding radio transmitters and receivers); electron emission; fluorescent materials; X-rays; photoelectricity; radio circuits (transmitters and receivers); the propagation of radio waves; antennas; or micro waves.

0-12.80 Physicist (Atomic). Investigates physical phenomena and applies the laws of physics in the atomic field: performs basic tasks similar to those of Physicist, General (0-12.10) but specialises in branches of the atomic field, such as nuclear structure and disintegration, generators of high-velocity particles, measurement and separation of isotopes, atomic and molecular structure, X-ray crystallography or cosmic rays.

0-12.90 Physicists, Other. This group includes physicists not elsewhere classified, for example, those engaged in giving technical advice; or controlling, testing and analysing physical properties of material.

0-19 PHYSICAL SCIENTISTS NOT ELSEWHERE CLASSIFIED

Workers in this unit group perform various activities in the field of physical science and are not elsewhere classified. Their functions include studying seismic, gravitational, electrical, thermal and magnetic phenomena to determine the structure and composition of the earth and the forces causing movement and warping of its surface; studying the constitution, structure, and history of the earth's crust; studying weather conditions and forecasting changes in weather; studying the sizes, masses, shapes, positions, distances, motions, orbits, characteristics, composition and structure of heavenly bodies. Those classified in this unit group have completed university courses or other appropriate training and studies.
0-19.20 Geophysicist. Studies seismic, gravitational, electrical, thermal and magnetic phenomena to determine the structure and composition of the earth and the forces causing movement and warping of its surface; investigates the origin and activity of glaciers and volcanoes and the course and phenomena of earthquakes; charts sea currents and tides; takes measurements concerning the shape and movements of the earth and acoustic, optical and electrical phenomena in the atmosphere; employs theoretical knowledge and research data to locate mineral deposits; selects fixed points on surface of the earth for use in making navigational charts and maps; predicts radio-communication and atmospheric conditions; carries out research necessary for developing water-supply and flood-control programmes. May specialise in a particular branch of geophysics and be designated accordingly.

0-19.30 Geologist. Studies the constitution, structure, and history of the earth's crust; conducts research into the formation and dissolution of rock layers, analyses fossil and mineral content of layers, and endeavours to fix historical sequence of development by relating characteristics to known geological influence (historical geology); studies the dynamic processes of great internal pressures and heat, volcanic disturbances, and air, water, and glacial erosion bringing about changes in the earth's crust (physical and dynamical geology); employs theoretical knowledge and research data to locate mineral deposits and to determine their probable area, slope and accessibility (economic geology); determines safe heights for buildings in a given area; prepares reports, maps and diagrams of regions explored. May specialise in a branch of geology and be designated accordingly.

0-19.40 Meteorologist. Studies weather conditions and forecasts changes in weather: interprets weather data, obtained with various instruments, to determine the causes which bring about atmospheric conditions such as rain, fog and snow; prepares weather maps from data on observations made simultaneously at many stations in a given area; predicts movement of air masses and pressure areas and forecasts temperature, wind, precipitation and cloud conditions; prepares past weather reports for a given area or region by examining, analysing and summarising data relating to wind, rainfall, sunlight, temperature, humidity and other phenomena over a period; conducts research into the physical nature of the laws governing air movement, and the phenomena of pressure and temperature changes; operates instruments used for making weather observations such as barometer, anemometer, thermometer, hygrometer, radio-sonde and specially adapted radio direction-finding and radio equipment. May develop, design and maintain meteorological instruments. May specialise in a branch of meteorology and be designated accordingly.

0-19.50 Astronomer. Studies the sizes, masses, shapes, positions, distances, motions, orbits, characteristics, composition and structure of heavenly bodies; observes heavenly bodies with telescopes equipped with complex devices and computes the positions of stars and planets and the orbits of comets and asteroids; makes statistical studies of stars and galaxies; prepares mathematical tables, showing the positions of the sun, moon, planets, and stars at given times, for use by air and sea navigators; studies the temperatures, luminosities, chemical composition and internal structure of stars and other heavenly bodies, using telescopes equipped with spectroscopes, photometers, bolometers and other radiation-recording instruments.

0-19.90 Physical Scientists Not Elsewhere Classified. This group includes physical scientists not elsewhere classified, for example, those directing experimental and research activities in a physical laboratory to develop new or improved methods for measuring physical characteristics.

0-2 Biologists, Veterinarians, Agronomists and Related Scientists

Workers in this minor group perform research in the science of living organisms, both plant and animals, and of soil properties and uses, and apply the results to the improvement of methods of conservation and utilisation, or to the prevention of disease, or the maintenance and promotion of health in plant or animal life.

0-21 Veterinarians

Workers in this unit group diagnose and give or prescribe medical or surgical treatment for diseases, injuries or other medical conditions of animals, and perform other functions requiring a scientific knowledge of veterinary medicine. Those classified in this unit group have obtained university degrees in veterinary medicine or the equivalent and possess licences or certificates showing that they are qualified and entitled to work in their profession.

0-21.10 Veterinarian, General. Diagnoses and treats, medically and surgically, diseases, injuries or other medical conditions of animals; examines sick animals, diagnoses nature of disorder and gives or prescribes medical or surgical treatment; conducts periodic physical examinations of dairy cattle and other animals and inoculates them against diseases such as cholera and rabies; investigates outbreaks of infections and takes measures to prevent them from spreading among animals; renders obstetrical services; advises owners of animals on sanitary measures and feeding, breeding and general care; performs autopsies to determine causes of death. May specialise in treating one class of animal, such as pets, dairy cattle, horses, poultry or swine, or in a branch of veterinary medicine, such as surgery or radiology.
0-22 BIOLOGISTS AND ANIMAL SCIENTISTS
NOT ELSEWHERE CLASSIFIED

Workers in this unit group perform biological research by laboratory or field studies and relate their findings to the prevention of disease or the maintenance and promotion of health in plant and animal life. Their functions include studying the origin, development, structure, physiology, distribution, heredity, environment, interrelationships, classification and other basic aspects of plant and animal life, relating their findings to the solution of medical, agricultural or other problems; studying bacteria and other microorganisms in relation to the health of human beings, animals and plants or to industrial processes; studying the effects of drugs, gases, dusts and other materials on the tissues, organs and physiological processes of human beings and animals and improving upon or discovering drugs for the prevention and treatment of diseases, or other medical uses; studying the characteristics and causes of animal diseases and the resultant structural and functional changes; conducting research in and developing scientific methods of breeding, caring for and managing domesticated animals, such as beef and dairy cattle, poultry, horses, hogs and sheep. Those classified in this unit group have obtained university degrees, frequently supplemented by post-graduate education. Excluded are Veterinarians (unit group 0-21).

0-22.10 Biologist, General. Studies, in laboratory or in nature, the origin, development, structure, physiology, distribution, heredity, environment, interrelationships, classification and other basic aspects of plant and animal life and relates findings to the solution of medical, agricultural or other problems affecting health and welfare of humans, animals and plant life; performs basic tasks similar to those of Biologist, General (0-22.10) but specialises in the study of animal life: performs basic tasks similar to those of Biologist, General (0-22.10) but specialises in the study of animal life. May specialise in a branch of zoology, such as embryology, morphology, cytology, invertebrate zoology, ichthyology, ornithology, mammalogy, entymology, parasitology, animal ecology.

0-22.20 Botanist. Studies in laboratory or in nature the origin, development, structure, physiology, distribution, environment, interrelationships, classification and other basic aspects of plant life, and relates findings to the solution of agricultural, horticultural, forestry or other problems; performs basic tasks similar to those of Biologist, General (0-22.10) but specialises in the study of plant life. May study and classify plant fossils. May specialise in a branch of botany, such as economic botany, plant ecology, plant taxonomy, algology, mycology.

0-22.30 Zoologist. Studies, in laboratory or in nature, structure, life processes, behaviour, growth and development, environment, classification and other basic aspects of animal life and relates findings to problems affecting health and welfare of humans, animals and plant life: performs basic tasks similar to those of Biologist, General (0-22.10) but specialises in the study of animal life. May specialise in a branch of zoology, such as embryology, morphology, cytology, invertebrate zoology, ichthyology, ornithology, mammalogy, entymology, parasitology, animal ecology.

0-22.40 Bacteriologist. Studies, in laboratory, bacteria and other micro-organisms in relation to health of human beings, animals and plants or to industrial processes; examines under microscope samples of fluids or solids, and isolates and identifies organisms according to physiological, morphological or other characteristics to determine whether they are harmful or benign and to ascertain their prevalence in organisms; studies growth, development and nutritional requirements of microorganisms by placing samples in fluid or other medium, controlling moisture, aeration, temperature, acidity and nutritional elements and observing conditions favourable for growth, reproduction or destruction; observes action of micro-organisms upon living tissues of plants, higher animals or other micro-organisms and on dead organic matter; makes chemical analyses of substances, such as acids, alcohols and enzymes, produced by micro-organisms on organic matter; makes records and reports of findings. May specialise in a particular branch of bacteriology, such as dairy, food, soil or public-health bacteriology, or in virology, immunology or serology. Excluded is Veterinary Bacteriologist (0-22.60).

0-22.50 Pharmacologist. Studies effects of drugs, gases, dusts and other materials on tissues, organs and physiological processes of human beings and animals, and improves upon or discovers drugs for the prevention and treatment of diseases or for other use in medicine: experiments with animals, such as mice, rats or guinea-pigs to determine effects of drugs and other substances, noting reactions on circulation, respiration, digestion or other vital processes; investigates preventative methods and remedies for diseases; standardises drug dosages or methods of immunisation against diseases by correlating results of experiments on animals and human beings; analyses food preservatives and colourings, vermin poisons and other materials to determine their toxic or non-toxic properties; standardises procedures for manufacture of drugs and medical compounds; detects and identifies poisons causing death, illness or injury; makes records and reports of findings. May specialise in a particular area of pharmacology such as the effects of drugs on a part of the body, development of new drugs in treatment of a specific disease, occupational diseases, toxicology, anaesthetics, antisepsics or disinfectants.
0-22.60 Veterinary Bacteriologist. Specialises, after qualifying to practice veterinary medicine, in study of bacteria and other micro-organisms causing diseases in animals: makes laboratory cultures of micro-organisms from body fluids and tissues of diseased animals, and identifies them by microscopic examination and bacteriological tests; tests virulence of pathogenic organisms by observing effects of inoculations on animals; investigates efficiency of vaccines, antigens, antibiotics and other materials used in the prevention, diagnosis and control of animal diseases.

0-22.70 Veterinary Pathologist. Specialises, after qualifying to practice veterinary medicine, in study of the nature and causes of animal diseases and resultant structural and functional changes: conducts laboratory experiments and interprets findings to determine the presence and degree of severity of disease in animals, the nature of the disease and the probable source of contamination or infection; recommends treatment or conducts further research.

0-22.80 Animal Scientist, Domestic Animals. Conducts research in and develops scientific methods of breeding, care and management of domesticated animals, such as beef and dairy cattle, poultry, horses, hogs and sheep; carries out experiments on the effects of different kinds of feed, environmental conditions, production of milk, eggs or other products, genetics, methods of slaughtering meat animals, the preparation and storage of products, and management practices; analyses experimental data, prepares reports and develops improved practices in housing, sanitation, equipment, disease and parasite prevention and control, and breeding techniques. May specialise by type of animal, by type of activity, such as breeding, physiology, nutrition or management or by product, such as meat, butter or cheese, and be designated accordingly.

0-22.90 Biologists and Animal Scientists Not Elsewhere Classified, Other. This group includes biologists and animal scientists not elsewhere classified, for example, those specialising in the study of reproduction in plants and animals and the laws of inheritance and variation; studying animal parasites; studying drugs related to veterinary medicine; surveying fish or wild life resources and determining methods of conservation and propagation; studying the nature, use and improvement of animal fibres such as wool, hair, bristles and feathers, and developing improved methods for converting them into various articles.

0-23 Agronomists, Silviculturists and Horticultural Scientists

Workers in this unit group study soil and crop problems related to agriculture, horticulture and forestry, develop improved methods of cultivation, processing, handling and storing of products, and design landscapes. Their functions include conducting experiments and investigations in field-crop problems and developing new and improved methods of growing crops to obtain higher yield and better quality; conducting experiments and investigations into and developing new and improved methods of breeding and cultivating fruits, vegetables, flowers or ornamental trees and shrubs, and to allied problems in production, storage and handling; conducting research in problems of forest propagation and culture and establishing and caring for forest stands; studying soil characteristics and uses and applying findings to problems in agriculture, horticulture and forestry; planning, preparing drawings of and supervising the ornamental development of an area of land, and planning facilities such as golf courses and parks; performing other scientific work pertaining to agriculture, horticulture and forestry.

0-23.20 Agronomist. Conducts experiments or investigations in field-crop problems and develops new and improved methods of growing crops to obtain higher yield and better quality: plans and carries out breeding studies at experimental stations or farms to develop and improve field crops, such as cotton, tobacco, grains, potatoes or flax, with regard to such factors as yield, quality, adaptation to specific soils or climates, and resistance to diseases and insect pests; plans and carries out crop-production studies to discover soil requirements, the best methods of planting, cultivating, harvesting and storing crops and the effects of crop rotation, drainage, irrigation, altitude and climatic conditions; develops methods for control of weeds, crop diseases, and insect pests. May specialise in a specific crop, group of field crops or technical activity such as production, breeding, weed and pest control, or irrigation.

0-23.30 Horticulturist. Conducts experiments and investigations, and develops new and improved methods, relating to the breeding and cultivation of fruits, vegetables, flowers or ornamental trees and shrubs and to allied problems of production, storage and handling: conducts breeding experiments to develop new or improved varieties having higher yield, better quality, more nutritional value, greater resistance to disease and greater adaptability to types of climate, soil, and uses or processes, such as canning or freezing; conducts experiments or investigations to determine the best methods of planting, spraying, cultivating and harvesting and most suitable rotation of crops, and fertilisation and utilisation of soil; determines soil and climatic requirements of crops and selects locations suitable for growth; determines best time for harvesting and optimum temperature and humidity for storage and transit. May specialise in studying one class of crop, such as fruits and fruit trees, vegetables, and flowers, and also engage in one or more activities, such as management of experimental stations, orchards, market gardens, or nurseries.

0-23.40 Silviculturist. Conducts research into problems of forest propagation and culture and specialises in the establishment and care of forest stands: conducts research on problems such as the rate of tree growth, the effects of thinning on forest yield, the dispersal of seed, the germination of different species, and the effects of fire and grazing on growth; develops forest stands by operating tree nurseries and through the transplanting of seedlings, the removal of infected trees, thinning, pruning
and other methods to encourage the growth of sprouts or seedlings; develops systems for the cutting down of trees so that the maximum and continuous yield will be obtained over long period of time by choosing trees of a certain maturity to be cut down and allowing younger ones to stand and grow; develops techniques for the measurement and identification of trees.

0-23.50 Soil Scientist. Studies characteristics and appropriate uses of soils and applies findings to problems of agriculture, horticulture and forestry: studies origins, composition and distribution of soils and classifies them according to standard types; makes chemical analyses of soil samples to determine their content of plant-food elements, such as nitrogen, phosphorus, and iron; conducts experiments in altering soil characteristics by changing plant-food or bacteria content; investigates responses of soil types to various tillage, fertilisation, crop-rotation and other practices, and studies effects of alternative practices on the long-term productivity of the soil; plans, develops and co-ordinates practices for soil erosion control, moisture conservation and land use; conducts experiments on farms or at experimental stations to determine the soil types best suited for different plants; advises on land use and management, for example, uses of industrial wastes as fertilisers, the breaking of fresh land for crops, mechanical cultivation. May investigate problems of stabilisation and drainage of soils used as foundations for roads, dams, buildings and other structures. May specialise in one or more branches, such as soil formation and classification, soil chemistry and soil microbiology.

0-23.60 Landscape Planner. Plans, prepares drawings for and supervises the ornamental development of an area of land, and plans amenities, such as golf courses and parks; studies condition of site, taking into account drainage, topsoil, trees, rock formations and buildings; prepares sketches and scale drawings for area, showing roads, footpaths, buildings, bridges, fences and sewers; recommends types of trees, shrubs and flowers to be planted and their location, harmonising improvements with existing land features and architectural structures; prepares specifications and cost estimates; supervises execution of plan details, including purchase of nursery stock, statuary and other items. May specialise in a particular type of landscape planning, such as golf-course or park planning.

0-23.90 Agronomists, Silviculturists and Horticultural Scientists, Other. This group includes agronomists, silviculturists and horticultural scientists not elsewhere classified, for example, those conducting research in soil erosion, moisture conservation and land use; conducts experiments on farms or at experimental stations to determine the soil types best suited for different plants; advises on land use and management, for example, uses of industrial wastes as fertilisers, the breaking of fresh land for crops, mechanical cultivation. May investigate problems of stabilisation and drainage of soils used as foundations for roads, dams, buildings and other structures. May specialise in one or more branches, such as soil formation and classification, soil chemistry and soil microbiology.

0-3 Physicians, Surgeons and Dentists

Workers in this minor group diagnose, prescribe and give medical, surgical and other forms of treatment for physical and mental disorders of the human body, conduct research into medical problems and perform related tasks requiring scientific medical knowledge. Those classified in this minor group have obtained a university degree in medicine, surgery or dentistry and possess a licence or certificate showing that they are qualified and entitled to work in their profession.

0-31 Physicians and Surgeons

Workers in this unit group diagnose, and prescribe and give medical and surgical treatment for, physical and mental disorders of the human body, conduct research into medical problems and perform related tasks requiring scientific medical knowledge. Their functions include conducting medical examinations, making diagnoses, prescribing medicines, performing minor surgical operations and giving other forms of treatment for various kinds of injuries, diseases and disorders; performing various kinds of major and minor surgical operations in the treatment of injuries, diseases or disorders; specialising in giving advice and medical or surgical treatment for particular kinds of diseases or disorders; investigating human diseases and disorders to ascertain their essential nature, cause, manifestations and results and to determine methods of treatment; studying the functions and biological activities of the human organism under normal and abnormal conditions to increase basic knowledge or to solve particular problems relating to human life; conducting examinations to detect and identify poisons in the human body and giving or prescribing treatment to counteract them; performing other related functions requiring a scientific knowledge of medicine. Those classified in this group have obtained university degrees in medicine, surgery, or a related medical science and possess licences or certificates to show that they are entitled and qualified to work in their profession.

0-31.10 Physician, General Practice. Conducts medical examinations, makes diagnoses, prescribes medicines, performs minor surgical operations and gives other forms of treatment for various kinds of injuries, diseases and disorders of the human body; examines patient and makes or arranges for X-ray examinations or special tests if further information is required; considers results of examinations and tests, consults specialists or other physicians as necessary and diagnoses nature of disorder; prescribes medicines, gives minor surgical or other treatment and advises patients on regimen necessary to preserve or restore health; administers drugs and anaesthetics as required; keeps records of patients examined, their disorders and the treatment given or prescribed. May compound medicines and drugs. May take charge of and direct hospital nurses.
0-31.20 Surgeon, General. Performs various kinds of major and minor surgical operations in the treatment of injuries, diseases or disorders of the human body: performs basic tasks similar to those of Physician, General Practice (0-31.10) but specialises in cases which require surgical treatment.

0-31.30 Medical or Surgical Specialist. Specialises in giving medical or surgical treatment and advice for particular kinds of diseases or disorders of the human body: performs basic tasks similar to those of Physician, General Practice (0-31.10) but specialises in a particular disease or disorder or in a particular branch of medicine such as dermatology, cardiology, gynaecology, laryngology, neurology, ophthalmology, psychiatry, roentgology (radiology) or urology. May be designated according to nature of specialisation. May give both medical and surgical treatment within field of specialisation.

0-31.40 Physiologist, Medical. Studies the functions and biological activities of the human organism under normal and abnormal conditions to increase basic knowledge or to solve particular problems relating to human life: observes reactions of human body to changes of altitude, compressed air, light, noise, toxic gas, humidity, temperature, speed and other conditions; considers factors of physical fitness, nutrition and limits of endurance; determines effects on vital functions such as digestion, metabolism and excretions, applying the principles of physical and chemical analysis and using microscopes and other instruments; records and reports findings and uses them as basis for research into related problems. May specialise in studying particular parts of the body.

0-31.50 Pathologist, Medical. Investigates human diseases and disorders to ascertain their essential nature, cause, manifestations and results and to determine methods of treatment: examines blood, tissues and secretions of persons needing or receiving medical treatment, using microscope or other instruments; makes tests and considers reports and findings of physicians, surgeons or other specialists; diagnoses nature of disorder; considers results of examination and decides on methods of treatment; locates, cleans and fills cavities in teeth and extracts harmful or useless teeth; makes wax or similar impressions and models of gums and other parts of mouth for use in making artificial dentures; makes and fits dentures; fits braces for straightening irregular or crooked teeth; treats diseases of the teeth, mouth or gums by medicine or surgery; administers general or specialised nursing care, in a hospital, clinic, sanatorium or other medical establishment, for the treatment of physical and mental disorders; providing a nursing service for employees or other persons in a department store, government office, factory, or similar industrial establishment; providing nursery care and advice in private homes, schools, welfare clinics or nurseries and performing other tasks associated with the provision of community health services; performing other professional nursing functions. Those classified in this unit...
group have graduated in professional nursing, possess licences entitling them to work in their profession and frequently possess diplomas or certificates for giving specialised nursing services.

0-41.10 Nurse, Professional, General. Provides professional nursing care for the sick, the injured or the infirm, assists physicians and performs other nursing tasks in hospital, clinic, sanatorium or other medical establishment for the treatment of various kinds of mental and physical disorders: helps patients to become adjusted to place of treatment; prepares instruments and equipment for use by physicians; administers drugs, medicines and injections, applies and changes surgical dressings and gives other forms of therapeutic treatment as prescribed by physicians; observes, measures and records body temperature, rate of respiration, pulse beat and other symptoms; notes mental condition of patients and reports on symptoms such as depression; encourages patients to participate in social, educational, diversional and other activities which help to restore health; performs massages, feeds and otherwise attends seriously ill patients; assists and instructs in use of artificial limbs and other orthopaedic aids; tends women during childbirth; gives first-aid treatment in emergencies. May assist in research into nursing practices. May take charge of and direct assistant nurses.

0-41.20 Nurse, Professional (Specialised). Specialises in a particular type of professional nursing in a hospital, clinic, sanatorium or similar medical establishment; performs tasks similar to those of Nurse, Professional, General (0-41.10), but specialises in a particular branch of nursing, such as obstetric, orthopaedic, pediatric or psychiatric nursing, or in a particular nursing task such as giving anaesthetics or assisting surgeons during operations.

0-41.30 Nurse (Industrial). Provides a professional nursing service for employees or other persons in establishments such as departmental stores, government offices or factories: gives first-aid treatment for accidents or illnesses occurring on premises; changes surgical dressings of injured employees able to continue working; keeps records of persons treated and prepares reports on accidents for use in compensation claims or for other purposes; gives instruction on personal hygiene and sickness prevention. May visit sick employees in their homes. May give or arrange economic, social or psychological assistance for employees and their families.

0-41.40 Nurse (Public-Health). Provides professional nursing care and advice in private homes, schools, welfare clinics or nurseries and performs other tasks associated with the provision of community health services: visits private homes and gives nursing care and treatment, under physicians' instructions, for various types of physical or mental illnesses and disorders; instructs families in the care of patients, in maternal and child care and in the maintenance of a healthy environment; assists physicians in child-welfare clinics; cooperates with school authorities in providing health services to pupils; gives first-aid treatment in emergencies; arranges convalescent care; carries out immunisation programmes and performs other nursing tasks in the provision of community health services. May specialise in a particular phase of public-health nursing, such as child welfare or tuberculosis or psychiatric nursing. May assist in public-health research.

0-41.90 Nurses, Professional, Other. This group includes professional nurses not elsewhere classified, for example, those providing consultancy nursing services to industrial and other organisations; assisting dentists or doctors in private practice; or giving nursing care to a patient in a private house.

0-42 Midwives

Workers in this unit group provide nursing care in apparently normal obstetrical cases, usually in private homes, and where there is no doctor in attendance. They have had extensive practical experience and usually possess licences or certificates permitting them to practise as midwives, but have not graduated at an approved college or school of nursing.

0-42.10 Midwife. Cares for apparently normal obstetrical patients, usually in private homes and where there is no doctor in attendance: gives help and advice before childbirth to ensure health and comfort of patient; assists mother during birth of child, seeking help of physician if necessary; gives nursing care to mother and child; instructs mother and other members of family in child care. May assist mother by performing household duties. A professionally qualified nurse specialising in obstetrics is classified as Nurse, Professional (Specialised) (0-41.20).

0-49 Nurses Not Elsewhere Classified

Workers in this unit group perform nursing tasks not carried out by Nurses, Professional (unit group 0-41) or by Midwives (unit group 0-42). Their functions include providing nursing care which does not require the training and theoretical knowledge of a professional nurse and performing other nursing functions. Those performing non-medical and non-technical services for patients in hospitals (for example, nurses' aides, ward maids and hospital porters and first-aid personnel) are classified under Service, Sport and Recreation Workers Not Elsewhere Classified, Other (9-99.90).

0-49.20 Practical Nurse. Provides nursing care which does not require the training and theoretical knowledge of a professional nurse: takes care of young children, elderly, infirm, crippled or mentally deficient persons who do not need the services of a professional nurse; tends sick persons under the supervision of a physician or professional nurse; gives medicines at prescribed intervals, changes dressings and reports any unusual symptoms, such as excessive respiration or cyanosis to professional nurse; assists patients to walk or transports them on wheel chair; performs other practical nursing tasks as required. May make beds, wash and feed patients, administer enemas, prepare and empty bedpans and prepare patients for medical examinations. Excluded is Midwife (0-42.10).

0-49.90 Nurses Not Elsewhere Classified, Other. This group includes nurses not elsewhere classified.
0-5 Professional Medical Workers Not Elsewhere Classified and Medical Technicians

Workers in this minor group compound and dispense medicaments, correct defects of vision by prescribing lenses or non-medical treatment, provide technical, medical and health services and render professional medical services not provided by those classified elsewhere.

0-51 Pharmacists

Workers in this unit group compound and dispense medicaments and related preparations according to prescriptions or formulae. Those classified in this group have obtained university diplomas and possess licences or certificates to show that they are qualified and entitled to work in their profession.

0-51.10 Pharmacist. Compounds and dispenses medicaments and related preparations according to prescriptions or formulae: prepares or supervises preparation of medicaments such as liquid medicines, ointments, powders, pills and tablets according to doctors' prescriptions or established formulae; dispenses medical and surgical products for internal use or external application according to prescriptions; handles poisons and toxic substances required for medical, domestic, industrial or agricultural purposes and dispenses them according to regulations; performs routine essays and tests to determine identity, purity and strength of drugs; replenishes and preserves stock; keeps stock records. May prepare and supply, and advise on the use of, items such as toilet and cosmetic products, agricultural and horticultural preparations, and veterinary medicines.

0-52 Optometrists

Workers in this unit group examine eyes and prescribe spectacles or treatment not involving the use of medicine, surgery or drugs, to conserve or improve vision.

0-52.10 Optometrist. Examines eyes and prescribes spectacles or treatment not involving the use of medicines, surgery or drugs, to conserve or improve vision: examines eyes and determines visual difficulties by means of various tests and instruments; refers clients with ocular disease symptoms to a physician: prescribes lenses or visual training, as necessary, to correct or improve vision: tests finished lenses to ensure conformity with prescription. May specialise in a particular phase of optometry such as prescribing and fitting contact lenses and telescopic spectacles, or examining and correcting visual deficiencies among industrial workers.

0-53 Medical Technicians

Workers in this unit group provide technical medical and health services to assist physicians in diagnosing illnesses and giving health treatment to individuals. Their functions include treating disorders by physical or other non-medical means, usually as prescribed by a physician; massaging clients or patients to improve circulation, soothe or stimulate nerves, facilitate elimination of waste matter, stretch contracted tendons and produce other therapeutic effects; operating X-ray equipment to make radiographs for diagnostic purposes or to give therapeutic treatment; performing other technical medical and health functions. Those classified in this unit group have completed prescribed courses of training and frequently hold licences or certificates issued by a professional or governmental organisation. Excluded are laboratory technicians classified with Science and Engineering Technicians Not Elsewhere Classified and Laboratory Assistants (unit group 0-X9).

0-53.20 Physiotherapist. Treats disorders such as fractures, sprains, paralysis, heart trouble or nervous diseases by physical or other non-medical means, usually as prescribed by a physician: instructs patients in remedial exercises to correct muscle ailments and deficiencies; administers massage and performs other body manipulations; gives artificial sun-ray, ultra-violet or infra-red ray treatments; provides therapeutic baths and other water treatments such as whirlpool and contrast baths, moist packs and compresses; utilises mechanical devices such as vibrating and exercising machines and instructs in use of prosthetic appliances; maintains clinical records. May specialise in a particular form of treatment such as heliotherapy, electrotherapy, hydrotherapy or mechanotherapy and be designated accordingly.

0-53.30 Masseur. Massages clients or patients to improve circulation, soothe or stimulate nerves, facilitate elimination of waste matter, stretch contracted tendons and produce other such therapeutic effects: plans treatment according to clients' needs or physicians' directions; rubs, kneads, strokes, vibrates and otherwise manipulates patients' body, using oil or other lubricant as required; instructs and supervises client in reducing, corrective or other physical exercises. May administer hot baths, heat treatment and ultra-violet or infra-red ray treatments in conjunction with massage.

0-53.40 X-Ray Operator, Medical. Operates X-ray equipment to make radiographs for diagnostic purposes or to give therapeutic treatment: prepares patient for exposure to rays and, when necessary, fixes lead plates to protect parts of body not to be exposed to X-ray; manipulates controls of machine to regulate the time and intensity of exposure; takes X-ray photograph or applies X-ray treatment under direction of radiologist; develops, fixes, washes and dries X-ray film; makes minor repairs to equipment; keeps records and files. May specialise in X-raying certain parts of body, or in diagnostic or therapeutic radiography, and be designated accordingly.
0-59 PROFESSIONAL MEDICAL WORKERS NOT ELSEWHERE CLASSIFIED

Workers in this unit group provide professional medical and health services not provided by those elsewhere classified. Their functions include diagnosing and treating, mainly by manipulative methods, disorders of bones, muscles, blood vessels and other tissues of the human body; relieving illness believed due to pressure upon nervous system at the spine by adjusting joints of the spine; planning, supervising and giving instruction in the preparation of therapeutic or other diets for individuals or groups in hospitals, institutions or other establishments; performing other professional medical functions. Those classified in this unit group have completed prescribed courses of training and frequently hold licences or certificates issued by a professional or governmental organisation.

0-59.20 Osteopath. Diagnoses and treats, mainly by manipulative methods, disorders of bones, muscles, blood vessels and other tissues of the human body: examines patient by making a structural analysis of body, using laboratory methods, instruments and other devices; considers results of examination and factors affecting health of patient, such as diet, age, sex and living conditions, and diagnoses nature of disorders; corrects disorders mainly by manipulation, or prescribes supports and other medical aids and appliances. May, if law permits, practice obstetrics, surgery, internal medicine or other branches of medical science.

0-59.30 Chiropractor. Relieves illness believed due to pressure upon nervous system at the spine by adjusting joints of the spine: diagnoses disorders by making a structural analysis of body, using manipulative and laboratory or instrumental methods; corrects position of displaced vertebrae by manipulation; advises patient on course of treatment to be followed, such as corrective exercises, diet or physiotherapeutic treatments.

0-59.40 Dietician. Plans, supervises and instructs in the preparation of therapeutic or other diets for individuals or groups, in hospitals, institutions or other establishments: determines dietetic value of foods and food products; plans menus and special diets with proper nutritional value; estimates and purchases required food, equipment and supplies; sees that food is properly prepared; ensures maintenance of sanitary conditions of eating places; instructs individuals and groups in applying the principles of nutrition to the selection and preparation of foods. May prepare educational nutrition materials. May specialise in a particular branch of dietetics and be designated accordingly.

0-59.90 Professional Medical Workers Not Elsewhere Classified, Other. This group includes professional medical workers not elsewhere classified, for example those diagnosing and treating minor ailments of the human foot; treating sickness through the application of various herbs and medicinal plants; treating patients with a system of physical culture and drugless treatment of disease by methods aimed to stimulate or assist nature; treating body ailments through mental influence and suggestion.

0-6 Teachers

Workers in this minor group educate and train boys and girls in schools and elsewhere, and youths and adults in universities, university colleges and other institutions of tertiary education and higher learning, in professional training institutions and in vocational and other training centres.

0-61 UNIVERSITY TEACHERS

Workers in this unit group conduct classes in universities, university colleges and other institutions of tertiary education and higher learning. Their functions include conducting college and university classes in arts and sciences and professional courses for graduates and undergraduates; performing other teaching functions related to the foregoing.

0-61.20 University Teacher (Arts). Conducts classes in one or more arts subjects for students of a university, college or other post-secondary-school educational institution; prepares and delivers lectures to students; prepares examination papers, conducts examinations and marks papers; studies current publications on arts subjects to keep up to date. May prepare outlines of courses, arrange schedule of classes, undertake tutorial work, conduct extension or refresher courses, conduct independent research in arts subjects and advise students on choice of subjects to obtain particular qualifications.

0-61.30 University Teacher (Sciences). Conducts classes in one or more science subjects for students of a university, college or other post-secondary-school educational institution; performs tasks similar to those of University Teacher (Arts) (0-61.20) but in one or more science subjects, and organises and supervises laboratory work by students.
0-61.90 University Teachers, Other. This group includes university teachers not elsewhere classified, for example those undertaking tutorial work at university level; teaching in professional training institutions, for example law schools or library schools; and advising students on choice of subjects to obtain particular qualifications.

0-69 Teachers Not Elsewhere Classified

Workers in this unit group educate and train boys and girls in nursery, primary and secondary schools and elsewhere, and youths and adults in vocational and other training centres below university level. Their functions include training and guiding children from the age of two years up to the age at which they are normally required to attend primary school; teaching reading, writing, arithmetic and other primary subjects to children below the minimum age for compulsory attendance at school and the age at which they qualify for a secondary education; teaching mathematics, physics and chemistry, history and geography, languages and one or more other subjects to children who have received instruction in primary subjects until they leave school; giving other forms of education and training below university level to children, youths and adults and special categories of individuals. Those giving technical instruction on the job to workers and special teachers of music, art, drama, dancing and the like, are classified according to the occupation in which they are giving instruction.

0-69.20 Teacher (Nursery School). Trains and guides children from the age of two years up to the age at which they are normally required to attend primary school: trains children in habits such as cleanliness, punctuality, co-operation and obedience; develops children's confidence by allotting them simple tasks and encouraging participation in games; develops co-ordination of mind and body through simple exercises, dancing and the use of apparatus and equipment for the construction of simple objects; develops natural aptitudes of children through music and poetry and activities such as modelling, drawing and painting. May advise parents on the development of desirable traits in children and the correction of undesirable ones.

0-69.30 Teacher (Primary School). Teaches reading, writing, arithmetic and other primary subjects to children between the minimum age of compulsory attendance at school and the age of entrance to a secondary school: prepares programme of work to be undertaken during school year by class; gives instruction in subjects and conducts discussion in class; supervises work in class; prepares, assigns and corrects exercises; sets examinations and corrects papers; maintains discipline; keeps various records. May teach several stages in one class in small schools, supervise extra-curricular activities and teach in homes, hospitals and other institutions. May have charge of other teachers instructing children within certain age groups or of a complete primary school.

0-69.40 Teacher (Secondary School). Teaches mathematics, science, history and geography, languages, or one or more other subjects to boys and girls who have received instruction in primary subjects: performs basic tasks similar to those of Teacher, Primary School (0-69.30) but specialises in teaching one or more subjects to boys and girls in various classes. May have charge of other teachers instructing in the same or related subjects, of a department in a school or of a complete school, and supervise extra-curricular activities. May also teach adults in evening classes.

0-69.90 Teachers Not Elsewhere Classified, Other. This group includes teachers not elsewhere classified, for example, those giving instruction to youths and adults in trade or business schools or in establishments for corrective training; undertaking tutorial work below university level; or giving instruction to mentally or physically handicapped children.

0-7 Clergy and Related Members of Religious Orders

Workers in this minor group conduct religious services, provide spiritual guidance and perform sacerdotal functions associated with the beliefs and practices of a religious faith or denomination.

0-71 Clergy and Related Members of Religious Orders

Workers in this unit group conduct religious services, provide for spiritual guidance and perform sacerdotal functions associated with the beliefs and practices of a religious faith, or denomination. Their functions include conducting religious worship and administering the ordinances of a religious faith or denomination as delegated by ordination, licence or other authorisation; performing various lay duties to assist ordained religious leaders in conducting services of worship and carrying out other activities associated with the religion; performing other functions related to the foregoing. Members of religious bodies performing non-religious functions such as nursing (minor group 0-4), teaching (minor group 0-6), social work (unit group 0-Y2) and other lay-workers (gardeners, craftsmen, service workers, etc.) are excluded.
0-81 Jurists

Workers in this minor group are engaged in such phases of law as conducting criminal or civil law suits, drawing up legal documents, giving legal advice, presiding over judicial proceedings and in other legal activities.

0-81.10 Lawyer, General. Performs general legal activities such as giving legal advice, drawing up legal documents, acting as agent in legal matters, and conducting criminal and civil lawsuits; examines circumstances and determines applicable law by studying codes, statutes, previous decisions and established regulations; advises client as to his legal rights and obligations and represents him in legal matters; draws up legal documents; conducts civil and criminal cases in courts of minor jurisdiction; prepares cases for presentation by barristers before higher courts. May advise clients as to legal rights and obligations. May specialise according to nature of case or type of court.

0-81.20 Solicitor. Advises clients on the legal aspects of personal and business problems, and represents them in minor lawsuits: examines circumstances, and determines applicable law by studying codes, statutory instruments and previous decisions; advises client as to his legal rights and obligations and tries to avoid recourse to litigation; represents client in transactions involving real estate and other matters of a non-litigious character; draws up legal documents; conducts civil and criminal cases in courts of minor jurisdiction; prepares cases for presentation by barristers before higher courts. May act as trustee, guardian or executor of an estate.

0-81.30 Barrister. Pleads civil or criminal cases in courts of justice: examines case and determines applicable law by studying codes, statutes, previous decisions and established regulations; correlates findings and drafts pleadings; conducts case in court of justice, examining and cross-examining witnesses and presenting final arguments in support of case. May advise clients as to legal rights and obligations. May specialise according to nature of case or type of court.

0-81.35 Prosecutor. Conducts prosecutions on behalf of civil authorities, in court proceedings, usually of a criminal nature: investigates circumstances of reported crime, with assistance of police if necessary, to obtain evidence; summons accused for trial; presents evidence to a grand jury, upon which decision is made, whether to indict the accused on strength of evidence offered; appears against defendant in court of justice and presents state’s evidence before a judge or jury.

0-81.40 Judge. Presides over judicial proceedings and pronounces judgment in a court of justice: takes oaths from parties and witnesses; rules on admissibility of evidence, methods of obtaining testimony and other matters of procedure; hears and inquires into evidence presented by both parties; weighs evidence and applies equitable principles and appropriate rules of law; determines rights and obligations of parties in the light of facts established or summarises facts of case for jury. Instructs members on points of law affecting case and directs them to reach a decision; pronounces judgment in the light of his own findings or those of a jury. May be designated according to type of court.
0-81.50 Notary. Draws up and authenticates legal documents, takes affidavits and administers oaths and affirmations; draws up and authenticates wills, contracts, agreements and other legal documents and preserves the originals; gives authenticated copies and duplicates of such documents; protests bills of exchange and promissory notes in case of non-acceptance or non-payment; takes affidavits and administers oaths and affirmations; executes wills; prepares ships' protests and other papers relating to mercantile marine matters; keeps various records.

0-81.90 Jurists, Other. This group includes jurists not elsewhere classified, for example, those drafting legislation and giving legal advice in national, provincial and local government departments and in publicly or privately owned organisations.

0-9 Artists, Writers and Related Creative Artists

Workers in this minor group create and execute artistic works by painting, drawing, engraving and sculpturing; plan and arrange artistic displays and carry out similar artistic activities; compose written material to inform, entertain or influence the public; act, play musical instruments, dance, sing, create and adapt musical works and dances, conduct vocal and instrumental music groups, make radio announcements and provide other forms of public entertainment. Excluded are Photographers and Related Camera Operators (unit group 9-71) and Designer (Industrial and Commercial Products) (0-Y9.62).

0-91 Painters, Sculptors and Related Creative Artists

Workers in this unit group create and execute artistic works by painting, drawing, engraving and sculpturing; plan and arrange artistic displays and carry out similar artistic activities. Their functions include painting landscapes, portraits, still life, abstract designs and similar compositions, using oil or water colours or other media; creating and executing illustrations for books, magazines, posters, charts, container labels and similar articles; creating and executing cartoons for various uses to delineate persons or events, usually in caricature; creating figures, monuments and other representative or decorative work, in the round or in relief, by chiselling stone, carving wood, modelling clay or similar processes; creating original designs and engraving or etching them by hand on metal, wood or other material for reproduction; designing, artistically decorating and furnishing the interiors of homes, public buildings, ships, and motion-picture and theatrical settings; creating and executing artistic effects for use in show windows and other places of display; restoring damaged, soiled and faded paintings; performing other artistic functions related to foregoing, such as teaching drawing, painting and sculpturing. Excluded are Photographers and Related Camera Operators (unit group 9-71), and Designer (Industrial and Commercial Products) (0-Y9.62).

0-91.20 Painter (Creative). Paints landscapes, portraits, still life, abstract designs and similar compositions, using oil or water colours, or other media: sketches preliminary outlines of composition, on canvas or other surface, from model, scene or memory; applies media to surface, endeavouring to harmonise lines, colours, design and mass into a unified and pleasing arrangement; coats painting, when dry, with varnish or other preservative. May specialise in media used or in type of subject reproduced and be designated accordingly.

0-91.25 Commercial Artist. Creates and executes illustrations for books, magazines, posters, charts, container labels and similar articles: studies specifications or discusses work with supervisor or client to determine subject matter, space limitations and similar information; reads literature or otherwise obtains information on subject matter to be illustrated; formulates design for creating desired effect; draws sketch of design from memory or model and submits it to supervisor or client for approval; executes drawing in desired medium, such as pencil, ink, oils, water colours, chalk or crayon. May letter drawings or illustrations and draw titles and title backgrounds for motion pictures. May specialise in a particular field such as fashion or story illustrations, or advertisements.

0-91.30 Cartoonist. Creates and executes cartoons for various uses to delineate persons or events, usually in caricature: determines subject matter of cartoon; sketches drawing on cardboard or paper from memory, imagination or model; completes cartoon by filling in lines and shadings, usually with pen and brush. May draw cartoons which are later photographed for motion pictures. May prepare captions and other descriptive matter for cartoons. May be designated according to type of cartoon drawn.

0-91.35 Sculptor, Creative. Creates figures, monuments and other representative or decorative work, in the round or in relief, by chiselling stone, carving wood, modelling clay or similar processes: selects material of desired proportions, quality and texture; sketches design of work and makes scale model in wax or plaster; measures model's surface and transfers measurements from model to block by marking it with points; carves or shapes material with appropriate tools, endeavouring to harmonise mass and lines into a unified and pleasing.
0-91.40 Engraver (Creative). Creates original designs and engravings by hand, on metal, wood or other material, for reproduction: prepares plate or block and draws design on it with ink or soft crayon; scratches design with fine sharp-pointed tools, according to method chosen; takes proofs and corrects engraving as necessary; transfers proofs to plate or block, and designs them; cleans selected material, by hand press. May pass on engraving for further reproduction by letterpress or rotogravure printing.

0-91.45 Etcher (Creative). Creates original designs and etches them on metal plates for reproduction: cleans plate's surface with solvent; prepares ground by mixing ingredients, such as wax and pitch or mastic, according to formula; spreads melted ground on heated plate by means of roller; smokes plate to strengthen ground as a resistant; scratches design through ground with needle; immerses plate in acid solution so that portions of metal not covered with ground will be corroded; washes etched plate and repeats process until lines have desired depth; takes proofs and makes necessary corrections to plate; transfers completed impression from plate to paper or other material by hand press. May etch on wood or glass.

0-91.50 Interior-Decoration Designer. Designs artistically and furnishes the interiors of homes, public buildings, ships, and motion picture and theatrical settings and stage settings; studies specifications or discusses work with supervisor or client to determine the requirements, space limitations and similar information; makes sketch of interior, showing wall decorations, colour scheme and arrangement of furnishings, and presents it for approval; estimates cost and amount of material necessary; supervises installation of fixtures, furniture, carpentry, drapery and other furnishings. May buy material required.

0-91.60 Painting Restorer. Restores damaged, soiled and faded paintings: examines condition of painting, using chemical, electrical and magnifying devices; removes painting from frame, backing or other support, relines painting by applying special glue, gauze or canvas to reverse side; adds lining and stretches relined painting; fills torn portions of painted surface with special mixture; removes accretions of materials from surface by use of solvents; restores colours by treating painting with vapours and rays: retouches faded or darkened colours and treats distortions and other defects.

0-91.90 Painters, Sculptors and Related Creative Artists, Other. This group includes painters, sculptors, and related creative artists not elsewhere classified, for example, those tattooing customers' skins with decorative designs; or repairing objets d'art, excluding paintings, by using same technique employed in original creation of objects.

0-92 Authors, Journalists and Related Writers

Workers in this unit group compose written material to inform, entertain or influence the public. Their functions include writing original literary works for publication or theatrical presentation; appraising the merits of artistic and literary works and writing critical opinions of them for publication; selecting, revising and arranging in suitable form general news of feature items for publication in newspapers and periodicals; collecting, by interview, investigation, attendance at meetings or other means, accurate and pertinent information and presenting it in clear and concise form for publication; writing original descriptive advertising texts extolling the merits of a certain product or other matter for presentation to the public through various media; selecting and assembling favourable and convincing publicity material for business or other organisations, and issuing it through various media; writing material for manuals, bulletins and other publications dealing with technical subjects; performing various other functions related to the foregoing.

0-92.20 Author. Writes original literary works for publication or theatrical presentation: determines subject matter; collects necessary data; plans and organises material in form required; writes fiction, biographies, essays, poems, plays or similar literary compositions; revises the composition to produce good literary style. May be designated according to type of writing done.

0-92.30 Critic. Appraises the merits of artistic or literary works and writes critical opinions of them for publication: reads written works or attends art exhibitions and film, musical or other artistic performances; revises the composition to produce good literary style. May be designated according to type of writing done.

0-92.40 Editor. Selects, revises and arranges in suitable form general news or feature items (such as sports, financial or society) for publication in newspapers and periodicals; selects topics of interest and assigns writing of editorials concerning specific types of news or items to specialist writers; examines written material for literary quality and conformity with established policy of organisation, and revises material, if necessary; decides form, space and position of articles; gives assignments to reporters, correspondents and photographers; writes headlines and supervises general arrangement of feature of publication. May write articles and commentary columns. May plan page lay-outs and check final proofs. May specialise in a particular field of news and be designated accordingly.
0-92.50 Reporter. Collects, by interview, investigation, attendance at meetings or by other means accurate and pertinent information for publication, and presents it in a clear and concise form: makes daily visits to sources, such as hospitals and police courts; interviews persons, attends public events or undertakes special assignments; makes notes of facts observed or makes verbatim record; writes news stories on basis of material collected; submits stories to editorial department for approval. May send reports from distant locations to publishing establishment by mail, telegraph or telephone. May specialise in one type of news and be designated accordingly.

0-92.60 Advertising-Copy Writer. Writes original descriptive advertisement texts extolling merits of a certain product or other matter for presentation to the public through media such as newspapers, radio, magazines or billboard posters: confers with employer or client to determine type and style of advertisement; examines matter to be advertised and notes its appealing features; determines contents of copy according to form of advertisement to be prepared; writes convincing copy or creates slogans and captions. May prepare pamphlets, leaflets or brochures of advertising nature.

0-92.70 Publicity Writer. Selects, assembles and prepares publicity material for business or other organisations and issues it through media such as newspapers, radio or magazines: examines matter to obtain most favourable publicity material; writes news releases and submits photographs for publishing or exhibiting, prepares advertisements for publication in newspapers or magazines; makes arrangements for billboard displays; writes script for radio advertising. May promote publicity by planning exhibitions, lectures and contests or by organising clubs.

0-92.80 Technical Writer. Writes material for manuals, bulletins and other publications dealing with technical subjects: reads earlier publications relating to subject; consults workers engaged in developing or improving equipment or processes; obtains technical information by observations and other means; writes and decides form of articles, bulletins, manuals and other material dealing with subject in general or a particular phase; directs preparation of illustrative material such as photographs, drawings and sketches. May specialise in a particular technical subject.

0-92.90 Authors, Journalists and Related Writers, Other. This group includes authors, journalists and related writers not elsewhere classified, for example, those editing general publications such as encyclopaedias; setting words to musical works; writing script for dialogue or commentary in entertainments or other types of programmes; adapting plays and stories for broadcasting or film production; editing and rewriting news articles according to broadcasting requirements.

0-93 ACTORS, MUSICIANS, DANCERS AND RELATED WORKERS

Workers in this unit group act, play musical instruments, dance, sing, create and adapt musical works and dances, conduct vocal and instrumental music groups, make radio announcements and provide other related forms of public entertainment. Their functions include playing parts in dramatic productions; playing one or more musical instruments as soloists, accompanists or members of an orchestra, band or other musical group; performing dances as soloists, with partners or as members of ballet or other groups; singing as soloists or as members of vocal groups; conceiving and writing musical compositions; directing rehearsals and conducting performances of orchestras and bands and of vocal groups; arranging and adapting melodies to suit type and style of orchestras and bands and to produce various kinds of effects; originating and planning dances; directing theatrical productions for stage, motion-picture, radio and television broadcasts; broadcasting news and other announcements and introducing radio or television programmes to audiences by reading prepared lines, reciting memorised scripts and making extemporaneous remarks; providing other related forms of public entertainment. Included are also those teaching drama, music, dancing and the like.

0-93.20 Actor. Plays parts in dramatic productions: rehearses part systematically, learning lines and cues assigned; interprets comic or serious parts, impersonating and portraying characters by speech or gesture. May sing or dance. May specialise in playing a particular part or in type of production and be designated accordingly.

0-93.25 Instrumentalist. Plays one or more musical instruments as a soloist, accompanist or member of an orchestra, band or other musical group: studies and rehearses scores; tunes instrument to proper pitch, if necessary; plays music, either reading score or depending on memory, manipulating keys, bow, valves, strings or percussion devices, depending on type of instrument being played; watches conductor for directions as to tempo, volume and entries. May improvise or transpose music. May compose or arrange music. Is usually designated according to instrument played.

0-93.30 Dancer. Performs dances as a soloist, with a partner or as a member of ballet or other group: performs exercises to limber up body, arm and leg muscles; rehearses dance routines; performs classical or modern dances to express a theme by co-ordinating movements of body and facial expression with musical accompaniment. May sing and provide other forms of entertainment. Usually specialises in a particular type of dancing, such as ballet, step, tap, or acrobatic, and is designated accordingly.

0-93.35 Singer. Sings as a soloist or member of vocal group: rehearses score and learns lines of composition to be sung; sings composition combining expression and quality of voice with acting and grace; watches conductor or prompter for directions. May play or dance. May be designated according to pitch of voice (such as baritone, soprano, tenor) or according to type of singing (such as opera singer or crooner).
0-93.40 Composer. Conceives and writes musical compositions; translates own creation of melody and harmony into musical signs and symbols; writes original music in various styles for solo or group rendition. May write words to accompany music. May specialise in a particular type of music and be designated accordingly.

0-93.45 Orchestra and Band Conductor. Directs rehearsals and conducts performances of an orchestra or band: selects musical compositions to be rendered and arranges programmes; trains group in proper rendition; arranges location of members of group so as to harmonise musical elements into a unified whole; directs group, in execution of musical compositions, by beating time and giving other signals to control changes in tempo and entries of members. May play an instrument during performance. May conduct a vocal group. May engage or discharge instrumentalists. May be designated according to type of orchestra or band conducted.

0-93.50 Vocal Group Conductor. Directs rehearsals and conducts performances of a vocal group in accompanied or unaccompanied singing: performs basic tasks similar to those of Orchestra and Band Conductor (0-93.45) but trains and conducts various types of choral groups.

0-93.55 Orchestrator. Arranges or adapts melodies to suit type and style of orchestras or bands and to produce various kinds of effects: determines instruments to be employed; writes musical score to produce desired musical effect; rewrites music written for one instrument or purpose into suitable form for other instruments or purposes. May copy parts for individual instruments from musical score.

0-93.60 Choreographer. Originates and plans dances: studies musical scores, themes and stage settings to harmonise dance with them; plans arrangements, steps and movements of dancers using a standard system of notation; trains and rehearses members of dance group according to arranged scheme.

0-93.65 Radio and Television Announcer. Broadcasts news and other announcements and introduces radio or television programmes to audiences by reading prepared lines, reciting memorised scripts or making extemporaneous remarks: reads news reports; acts as master of ceremonies for certain programmes originating at station; makes short announcements and advertises products in sponsored programmes; conducts prepared or informal interviews. May give eye-witness accounts of public meetings and sporting events. May assist in organising and producing programmes. Usually specialises in a particular type of announcing and is designated accordingly.

0-93.70 Theatrical Director. Selects performers and directs rehearsals of theatrical productions for stage, motion-picture, radio and television broadcasts: coaches actors in the general interpretation of roles; supervises and co-ordinates activities of scenery designers, sound technicians, property men and other specialists. Excluded are persons concerned with the management of cinemas, theatres, radio and television broadcasting stations and with the business and financial aspects of producing theatrical performances (classified in unit group 1-15).

0-93.90 Actors, Musicians, Dancers and Related Workers, Other. This group includes actors, musicians, dancers and related workers not elsewhere classified, for example, those studying the laws and principles of harmonies, melodies and other aspects of musical art; imitating persons, animals or inanimate objects; performing, on stage or music hall, in circus or on concert platform, activities such as contortions, hypnotism or illusions; training animals to perform tricks for public amusement; or entertaining audiences by operating marionettes.

0-X Draughtsmen, and Science and Engineering Technicians Not Elsewhere Classified

Workers in this minor group prepare working plans and other technical drawings, from sketches or notes, for engineering, manufacturing and other purposes; and perform technical tasks, usually under the direction and supervision of professionally qualified specialists in engineering, surveying, chemistry, physics, geology, biology, veterinary sciences, agronomy, silviculture, horticulture and similar scientific fields. Excluded are Medical Technicians (unit group 0-53).

0-X1 Draughtsmen

Workers in this unit group prepare working plans and other technical drawings, from sketches or notes, for engineering, manufacturing and other purposes. Their functions include preparing working plans and other technical drawings for buildings, structural-metal constructions, marine structures and equipment, electrical wiring and equipment, and machines, engines and other mechanised equipment; preparing geological maps, diagrams, profiles and cross-sections; preparing topographical and other maps; preparing other technical drawings.

0-X1.10 Draughtsman, General. Prepares working plans and other technical drawings, from sketches or notes, for engineering, manufacturing and other purposes; makes final sketch of proposed drawing, checking dimensions of parts, materials to be used, the relation of one part to another and the relation of the various parts to the whole structure; makes any adjustments or changes necessary or desired; prepares finished drawings from sketches, making necessary calculations and utilising knowledge of various machines, engineering practices, and other technical matters; makes charts and diagrams for representation of statistical and other data.

0-X1.15 Draughtsman (Architectural). Prepares working plans and other technical drawings from sketches or notes, for parts of buildings or whole buildings: performs basic tasks similar to those of Draughtsman, General (0-X1.10) but specialises in making drawings of buildings.
0-X1.20 Draughtsman (Structural). Prepares working plans and other technical drawings, from sketches or notes, for structural metal erections: performs basic tasks similar to those of Draughtsman, General (0-X1.10) but specialises in making drawings for structural metal erections, such as bridge and roof trusses, trestle bridges, and columns. Excluded is Draughtsman (Marine) (0-X1.25).

0-X1.25 Draughtsman (Marine). Prepares working plans and other technical drawings, from sketches or notes, for parts or for whole marine structures: performs basic tasks similar to those of Draughtsman, General (0-X1.10) but specialises in making drawings for structural features of ships, floating docks and other marine structures and equipment.

0-X1.28 Draughtsman (Aircraft). Prepares working plans and other technical drawings, from sketches or notes, for parts or for whole aircraft structures: performs basic tasks similar to those of Draughtsman, General (0-X1.10) but specialises in making drawings for structural features of airplanes, airships, rockets and other aircraft structures and equipment.

0-X1.30 Draughtsman (Electrical). Prepares working plans and other technical drawings, from sketches or notes, for electrical wiring and equipment: performs basic tasks similar to those of Draughtsman, General (0-X1.10) but specialises in making drawings for wiring diagrams for the erection, installation and wiring of electrical equipment.

0-X1.35 Draughtsman (Mechanical). Prepares working plans and other technical drawings, from sketches or notes, for machines, engines and other mechanical equipment: performs basic tasks similar to those of Draughtsman, General (0-X1.10) but specialises in making drawings for non-electrical machines and engines.

0-X1.40 Draughtsman (Geological). Prepares geological maps, diagrams, profiles and cross-sections from sketches or notes: performs basic tasks similar to those of Draughtsman, General (0-X1.10) but specialises in making drawings, diagrams, profiles and cross-sections to represent geological stratigraphy and indicate location of mineral deposits and workings.

0-X1.45 Cartographer. Prepares maps according to data supplied: performs basic tasks similar to those of Draughtsman, General (0-X1.10) but specialises in compiling, drawing and copying topographical, political, climatic, economic and other maps.

0-X1.90 Draughtsmen, Other. This group includes draughtsmen not elsewhere classified, for example, those preparing technical drawings for purposes such as heating and ventilating systems, plumbing systems and gas distribution.

0-X9 SCIENCE AND ENGINEERING TECHNICIANS NOT ELSEWHERE CLASSIFIED AND LABORATORY ASSISTANTS

Workers in this unit group perform technical tasks, usually under the direction and supervision of professionally qualified specialists, in engineering, surveying, chemistry, physics, biology, veterinary science, agronomy, silviculture, horticulture and similar scientific fields. Their functions include performing one or more technical tasks in a science research laboratory; performing one or more technical tasks in one of the branches of engineering; testing and analysing raw materials and products in an industrial laboratory; performing other technical functions related to the foregoing.

Those classified in this group have completed special school courses, usually supplemented by on-the-job training and practical work experience. They may hold certificates but do not possess qualifications equivalent to a university degree. Excluded are Medical Technicians (unit group 0-53).

0-X9.20 Technician (Engineering). Performs one or more technical tasks, usually under the direction and supervision of a professional engineer in civil, electrical, mechanical, chemical, mining or other branch of engineering: prepares sketches and plans relating to engineering work as directed, or gives technical guidance to draughtsmen; calculates gear ratios, pressures, temperatures and similar factors relating to project in hand; prepares estimates of materials and costs; assists professional engineer in planning and supervision of manufacturing processes, construction work and the preparation of work schedules; tests and examines engineering products, plant or structures; supervises engineering maintenance and repair work; performs other technical tasks in engineering. Usually specialises in a particular field of engineering.

0-X9.30 Technician (Research Laboratory). Performs one or more technical tasks, usually under the direction and supervision of a biologist, medical scientist, chemist, physicist, geologist or other professionally qualified science specialist, in a research laboratory: weighs, measures, mixes, filters and otherwise prepares materials required for research; prepares sections of human, animal or plant tissues for study under microscope; prepares scientific equipment for making tests and conducting experiments; carries out or assists in carrying out tests and experiments; makes calculations, keeps records, compiles reports and performs other technical tasks in laboratory. May work on own initiative and supervise helpers.

0-X9.40 Technician (Industrial Laboratory). Performs one or more technical tasks in testing and analysing raw materials or products before, during or after manufacture or use in an industrial laboratory, usually under the direction and supervision of a professionally qualified scientist or engineer: collects products or samples of products and prepares them for examination; sets up and operates scientific equipment required for testing or analysis; ascertains formation, conductivity, viscosity, melting point, tensile strength, durability and other properties of materials; makes calculations, records results, prepares reports and performs other technical tasks in laboratory work. May perform routine tests without supervision. May specialise in a particular type of testing or analysing.

49
workers performing routine phases of audit.

0-Y2 Social Workers

Workers in this unit group help individuals and families to solve their social and personal problems, and plan and conduct social services to meet the needs of persons in a community. Their functions include alleviating or preventing development of personal and social problems of individuals and groups by providing or helping to provide advisory services, recreational and avocational opportunities, and other welfare services, and by arranging for monetary grants and medical assistance; performing other functions related to the foregoing. Those classified in this group usually have obtained university diplomas, frequently supplemented by postgraduate training.

0-Y2.10 Social Worker, General. Alleviates or prevents development of social and personal problems of individuals and groups by providing or helping to provide advisory services, recreational and avocational opportunities and other welfare services and by arranging for monetary grants and medical assistance; ascertains origin and nature of problems by examining, through interviews, laboratories, in surveying, geophysics, geology, biology, veterinary science, agronomy, silviculture, horticulture, or other sciences; those performing technical tasks in laboratories used for educational purposes.
and other methods, the person's or group's characteristics and environment; helps individuals to understand their situations more clearly, and assists in arriving at solutions to these problems; encourages and promotes the healthy development of social attitudes and personal adjustments; determines individual's eligibility for financial, medical or other assistance and sees that these are provided; refers individuals to community resources, such as hospitals, clinics, churches, recreation centres and special schools; places children in institutions or foster homes; follows progress of cases after immediate problems have been solved; organises and directs recreational and avocational group activities such as games, sports, dances, handicrafts, and stage performances; keeps records and writes periodic reports.

0-Y2.20 Social Worker (Case Work). Helps individuals or families in distress or other difficulties by ascertaining cause of trouble and finding a satisfactory solution: performs basic tasks similar to those of Social Worker, General (0-Y2.10) but specialises in one or more types of case work, such as problems affecting the unity and welfare of families, placement of children in institutions and homes, child welfare, the welfare of mentally and physically ill or handicapped persons, the social rehabilitation of delinquents on parole and the assistance of travellers and migrants.

0-Y2.30 Social Worker (Group Work). Organises programmes of social, recreational and educational activities and directs and leads groups participating in such programmes, paying special attention to the development of desirable social attitudes and adjustments: performs basic tasks similar to those of Social Worker, General (0-Y2.10) but specialises in one or more types of group work such as the organisation, supervision and leadership of recreational and avocational activities in a community centre, vacation or work camp, or playground; or the promotion of group welfare activities in housing developments.

0-Y2.90 Social Workers, Other. This group includes social workers not elsewhere classified, for example, those organising, planning and co-ordinating the work of social service agencies within an area; doing research to facilitate prevention and treatment of social welfare problems; or conducting a specialised advisory service to assist social workers of agencies in solving difficult problems.

0-Y3 Librarians and Archivists

Workers in this unit group organise and maintain systematic collections of publications and other materials in libraries and archives. Their functions include organising and maintaining systematic collections of books, periodicals and other mimeographed, manuscript or printed matter, films and photostat copies of books, periodicals, etc., in libraries; caring for public records and historical documents in archives; performing various other functions of librarians or archivists. Those classified in this unit group have completed courses of professional training and usually hold certificates issued by a professional or governmental organisation. Excluded are Clerk (Library) (2-99.39), Clerk (Filing) (2-99.60), and workers selling books retail (3-31.30).

0-Y3.10 Librarian. Organises and maintains systematic collections of books, periodicals and other printed matter in a library: co-ordinates work of library departments and selects publications to be purchased; supervises the classification, cataloguing, shelving and circulation of books and periodicals and, in smaller libraries, participates in these activities; finds, or helps readers to find, information in catalogue and in reference section of library; decides which books are to be repaired or rebound; gives information from library sources on subjects of general or special interest to individuals or groups. May make abstracts and summaries of important articles from incoming periodicals. May determine library policy. May specialise in a particular type of library such as science or law, and be designated accordingly.

0-Y3.20 Archivist. Acts as custodian of public records and historical documents in archives: examines and appraises records and documents according to historical significance and enduring value, and recommends disposal of unimportant material; analyses and prepares brief descriptions of contents of records and documents; prepares indexes, guides, bibliographies and microfilm copies of documents as reference aids; safeguards and preserves historical records; acts as a consultant to government agencies or private individuals conducting research, making specific documents and information available and locating reference materials obtainable elsewhere.

0-Y3.90 Librarians and Archivists, Other. This group includes librarians and archivists not elsewhere classified, for example, those maintaining music libraries in radio broadcasting studios; or maintaining film libraries in motion-picture studios.

0-Y4 Economists, Actuaries and Statisticians

Workers in this unit group study and seek solutions to economic problems and are engaged in the related fields of actuarial science and statistics. Their functions include making studies, conducting research, preparing reports, and formulating plans designed to aid in the solution of economic problems arising from the production and distribution of goods and services; dealing with statistical, mathematical and financial calculations mainly involving the probability of future payments or contingencies in pension or insurance plans; developing and applying the most effective methods for collecting, tabulating and interpreting quantitative data in any of a wide variety of fields. Those classified in this unit group have completed appropriate university courses or the equivalent.

0-Y4.20 Economist. Makes studies, conducts research, prepares reports and formulates plans designed to aid in the solution of economic problems arising from the
production and distribution of goods and services: studies the whole process through which man makes a living and satisfies his wants for products, shelter, service, or amusement, and the conditions favouring or hampering economic development; devises methods for the collection and analysis of economic and statistical data and compiles and interprets such data; prepares reports and formulates plans based on studies in the economic field and the interpreted and analysed data; advises and consults private industrial concerns or government agencies on matters such as operating efficiency, marketing methods and fiscal problems. May specialise in a branch of economics, such as agricultural, financial or industrial economics, international trade, labour or prices, or in taxation or market research, and be designated accordingly.

0-Y4.30 Actuary. Deals with statistical, mathematical and financial calculations mainly involving the probability of future payments or contingencies in pension or insurance plans: evaluates risks, calculates premium rates and constructs tables of probability for contingencies such as mortality, disability, sickness and accidents; prepares contract provisions of insurance and pension plans; determines proper basis and methods for evaluating liabilities of insurance and pension organisations; determines equitable bases for distributing surplus earnings under profit-sharing insurance and annuity contracts; is concerned generally with maintaining permanent financial stability of insurance and pension plans.

0-Y4.40 Statistician. Develops and applies the most effective methods for collecting, tabulating and interpreting quantitative data in any of a wide variety of fields; determines the volume and type of information necessary for solution of a statistical problem, and obtains, or devises methods for obtaining the information; reduces or determines most effective techniques for reduction of data, according to nature of available information and type of problem under study; interprets and presents data in the form of charts, graphs, diagrams and written summaries. May write reports analysing and evaluating conclusions on the basis of variable conditions affecting the interpretation or validity of the conclusions. May specialise in a particular branch of statistics, such as financial or industrial statistics, or in statistical analyses in a specific scientific field, such as physics, chemistry or biology.

0-Y9 Professional, technical and related workers not elsewhere classified

Workers in this unit group perform miscellaneous professional and technical functions not carried out by those elsewhere classified. Their functions include investigating the origin, development, way of life and social relationships of groups of human beings; tracing the origin and evolution of human race by studying changing physical characteristics and cultural and social institutions; conducting research into past or current events, evaluating the data obtained and preparing chronological records dealing with phases of human activity; conducting research into the origin, development, operation and interrelationships of political institutions, studying various phenomena of political behaviour and developing political theory; studying characteristics and use of earth's surface and relating and interpreting interactions of physical and cultural phenomena; solving and directing the solution of complex mathematical problems incidental to scientific research and development and economic activities; collecting, interpreting, and applying scientific data relating to human behaviour and mental processes; performing functions in the recruitment, training, promotion, welfare, compensation, recreation, employment relationships and discharge of employees; rendering individual counselling and group guidance services in school to assist students in appraising their interests, aptitudes, abilities and personality characteristics and to make and carry out educational, vocational and personal plans; collecting, analysing and developing occupational data relative to job specifications and worker characteristics for purposes of vocational counselling, wage evaluation, utilisation of workers, and other personnel practices; studying the origin, nature, structure and relationships of ancient and modern languages and preparing language classification systems, dictionaries and related publications; converting written or printed words or spoken passages from one or more languages into one or more other languages; giving technical and legal advice and assistance on the granting of patents; creating designs for industrial and commercial products such as furniture, clothing, pottery, glassware, jewellery, textiles, and domestic appliances, combining both aesthetic and utilitarian features; preparing, stuffing and mounting skins of animals in life-like form; performing other professional and technical functions.

0-Y9.20 Sociologist. Investigates the origin, development, way of life and social relationships of groups of human beings: collects, organises, and interprets scientific data relating to community organisations, social customs, the family and other social phenomena, for use by administrators, lawmakers, educators, and other individuals and organisations engaged in the solution of social problems. May specialise in a branch of sociology, such as criminology, demography, penology, social ecology, social pathology, or in rural, urban or industrial sociology, and be designated accordingly.

0-Y9.23 Anthropologist. Traces origin and evolution of human race through study of changing physical characteristics and cultural and social institutions: compares physical characteristics of fossilised human remains with those of existing racial groups, making classifications according to period, origin, and degree of development; conducts research into cultural and social development, consulting sources of information such as records...
history, archaeological and ethnological studies, and findings in related sciences. May specialise in the study of primitive peoples, observing cultural manifestations, such as religious practices, literature, handicrafts, and social organisation.

0-Y9.26 Historian. Conducts research into past or current events, evaluates data obtained and prepares chronological records, dealing with phases of human activity: assembles historical data by consulting and searching through indexes and catalogues, archives, court records, diaries, news files and other published and unpublished materials; extracts pertinent information from original records and evaluates data for authenticity and relative significance; arranges and records data in systematic form relating them to time, place and the sequence of cause, event and effects; acts as adviser and consultant. Usually specialises in the history of a particular country or period of time or in the interpretation of history either in terms of individuals or social, ethnic, political or geographic groupings, or developments. Excluded is Archivist (0-Y3.20).

0-Y9.29 Political Scientist. Conducts research into the origin, development, operation and interrelationships of political institutions, studies various phenomena of political behaviour, and develops political theory: conducts research into political philosophy and systematic theory, governmental institutions, public laws and administration, political party systems, the creation of public opinion through media of communications, relations of government and business, international laws and relations and other aspects of politics; consults with government officials, civic bodies, research agencies and political parties; analyses, synthesises and interprets results of studies and recommends programmes and policies to institutions and organisations. May organise and conduct public opinion surveys and interpret results. May specialise in a particular field of political science and be designated accordingly.

0-Y9.32 Geographer. Studies characteristics and use of earth's surface, relating and interpreting interactions of physical and cultural phenomena; conducts research on physical and climatic aspects of an area or region, making direct observations and applying knowledge of related scientific fields, such as physics, geology, oceanography, meteorology and biology; studies human activities such as ethnic distribution, economic activity and political organisation; acts as adviser or consultant to governments, international organisations, or industrial concerns on such subjects as economic exploitation of a region, determination of ethnic and natural boundaries between nations, or potential markets and optimum trade routes. May specialise in various branches of the field of geography, such as the geographic phases of economic activities or the form, structure and distribution of land, and the features of the earth's surface or national and international problems and be designated as economic geographer, physical geographer or political geographer accordingly.

0-Y9.35 Mathematician. Solves and directs the solution of complex mathematical problems incidental to scientific research and development and economic activities: determines and applies the mathematical principles involved and the most efficient methods for solution of the problems; acts as the adviser or consultant on various applications of mathematical analysis. May carry out research to discover new or improved methods for the application of mathematical theory or analysis to existing or unexplored areas of scientific investigation or economic problems. May specialise in a particular branch of mathematics or in mathematical aspects of other branches of science or of economic activities.

0-Y9.38 Psychologist. Collects, interprets and applies scientific data relating to human behaviour and mental processes: plans and carries out experiments and observations on human beings and animals to measure mental and physical characteristics; applies the results and makes them available to persons engaged in predicting and controlling behaviour in society; analyses effect of heredity, environment, relationship to social groups, and other factors on individual thought and behaviour; studies psychological factors involved in diagnosis, treatment and prevention of mental illness and emotional and personality disorders; works with psychiatrists, social workers and other persons to help maladjusted individuals; conducts interviews to determine causes of maladjustment in individuals in school, industry, community life and mental institutions, and to prescribe corrective programmes; develops and administers psychological tests, rating scales and other objective tools for measuring psychological traits, such as capacities, abilities, attitudes and physiological reactions and interprets and evaluates resulting data, applying statistical techniques. May specialise in a branch of psychology, such as clinical, educational, experimental, industrial, or social.

0-Y9.41 Personnel Specialist, Industrial. Performs one or more functions in recruitment, training, promotion, welfare, compensation, recreation, employment relationships or discharge of employees: ascertains manpower requirements and administers standard selection devices, such as job analyses and personnel tests; endeavours to fill job vacancies through transfers and promotions within organisation or by outside recruitment; advertises job vacancies, interviews applicants, selects those best qualified for direct employment or referral to other officials; advises applicants and employees on terms of employment, methods and standards of remuneration, and working conditions and amenities; assists in establishing grievance procedures and deals with the settlement of disputes and complaints; assists in the organisation and administration of training schemes for employees; advises on and assists in the administration of employee services, such as canteens, first-aid rooms, pension schemes, and welfare and recreational facilities. May specialise in a particular function, such as employment and placement, training, welfare, or industrial relations, and be designated accordingly.

0-Y9.44 Student Personnel Counsellor. Renders individual counselling and group guidance services in schools to assist students in appraising their interests, aptitudes, abilities and personality characteristics and to make and carry out educational, vocational and personal plans: collects, organises, and analyses information about individuals through records, tests, interviews and related sources; assembles and provides educational, occupational and other information required for self-development and progress; assists individuals to understand and overcome social, educational, vocational and personal problems; engages in follow-up activities to evaluate counselling. May engage in research related to student personnel counselling. May provide a student career placement service. May specialise in one aspect of student counselling such as vocational guidance. May be designated according to area of activity.
0-Y9.47 Occupational Analyst. Collects, analyses and develops occupational data relative to job specifications and work characteristics for purposes of vocational counselling, wage evaluation, utilisation of workers and other personnel practices; studies jobs being performed in industrial, commercial or other organisations and writes descriptions of elements of jobs and physical and mental qualities needed by workers; analyses, classifies and correlates occupational data; develops counselling aids and prepares interviewing aids to facilitate placement of workers; utilises data to evolve wage-evaluation system and to recommend changes in pay-scale classifications of jobs. May prepare organisational and functional charts and develop testing devices for measuring occupational knowledge of workers.

0-Y9.50 Philologist. Studies origin, nature, structure and relationships of ancient and modern languages and prepares language classification systems, dictionaries and related publications; studies the structure and development of a language by applying the principles of phonetics, phonology, syntax and semantics in the identification and translation of languages; studies sources, derivations and modifications of single words and parts of words; makes studies of changes in the meaning of words and language forms; compiles dictionaries and similar works dealing with the meaning and usage of words and language. Usually specialises in a particular branch of language science, such as phonology, lexicology, etymology, semantics, morphology or syntax and is designated accordingly.

0-Y9.53 Translator. Converts written or printed words of one or more languages into one or more other languages: converts works of literature, scientific articles, newspaper and magazine articles, political and legal documents, correspondence and other written or printed matter from one language into one or more other languages, utilising thorough knowledge of mother-tongue and at least one foreign language and referring where necessary to dictionaries. Usually specialises in a particular language or subject-matter and is designated accordingly.

0-Y9.56 Interpreter. Converts spoken passages in one or more languages into one or more other languages: interprets speech directly or from played-back recordings, utilising thorough knowledge of mother-tongue and at least one foreign language. May use shorthand to facilitate interpretation of speeches. May make translations of articles and documents in writing. Usually specialises in a particular language or subject-matter and is designated accordingly.

0-Y9.59 Patent Agent. Gives technical and legal advice and assistance on the granting of patents: examines drawings, specifications and products to ascertain underlying principles involved; investigates patent rights of similar or related products; writes reports, giving reasons for or against the granting of patent rights; prepares technical drawings and specifications suitable for patent applications and prepares legal wording of rights applied for. May make decisions on applications for patents. May engage in legal proceedings relating to patent infringements. Workers concerned with the technical rather than the legal aspects of patent work are classified according to the technical field of specialisation in which they are engaged.

0-Y9.62 Designer (Industrial and Commercial Products). Creates designs of industrial or commercial products such as furniture, clothing, pottery, glassware, jewellery, textiles and domestic appliances, combining both aesthetic and utilitarian features: considers purpose, cost, technical specifications, methods of production and preferences of potential users of product; prepares sketches showing style, shape, size and similar characteristics of product; submits drawings to management or client for approval and makes alterations to design if necessary. May specialise in the design of a particular type of product and be designated accordingly. May make technical drawings, models, patterns of prototypes of products. Excluded are craftsmen and production-process workers who are not wholly or mainly employed in creative design (classified in major group 7/8) and Engineers (unit group 0-02), Draughtsmen (unit group 0-X1) and Painters, Sculptors and Related Creative Artists (unit group 0-91).

0-Y9.65 Taxidermist. Prepares, stuffs and mounts skins of animals in life-like form: removes skin from dead body, taking care to preserve hair or feathers and other outward features in natural state; rubs preservative solutions into skin; makes body foundation with wire, wood and papier-mâché to give natural attitude and to show form of specimen; covers foundation with skin, using special adhesive; fits teeth, claws, feathers, glass eyes and other parts. May mount specimen in case with representation of natural surroundings. May specialise in preparing, stuffing and mounting a particular type of animal.

0-Y9.90 Professional, Technical and Related Workers Not Elsewhere Classified. Other. This group includes professional, technical and related workers not elsewhere classified, for example those observing, recording and calculating the time taken by workers to perform industrial operations, studying and classifying coins, medals, postage stamps, books and objets d'art; conducting organised parties through an art gallery or museum and giving informal professional lectures on the exhibits; or estimating from plans and specifications prepared by architects and engineers the quantity of materials and labour required to complete any given construction project.
MAJOR GROUP 1

ADMINISTRATIVE, EXECUTIVE AND MANAGERIAL WORKERS

Workers in this major group, as elected or appointed members of national and provincial legislative bodies, decide or participate in formulating policy and, as administrative and executive officials of national, provincial or local governments, direct the application of legislation and public administrative rules and regulations; as directors and managers they direct and manage private or public organisations (or one or more of their departments) engaged in any form of economic activity.

1-0 Administrative and Executive Officials, Government

Workers in this minor group decide or participate in formulating government policy and direct the application of legislation and public administrative rules and regulations. Classified in this minor group are elected, appointed and other public officials of political units such as central, provincial, state, municipal or local governments and departments of such political units. Excluded are Professional, Technical and Related Workers (major group 0), Clerical Workers (major group 2) and persons employed in government-owned enterprises which have a principal product or function covered by a classification other than “Government Services” in the International Standard Industrial Classification of All Economic Activities, for example government-owned hospitals, farms, public utilities, mines, factories, and trading establishments.

1-01 Administrators and Executive Officials, Government

Workers in this unit group decide or participate in formulating government policy and direct the application of legislation and public administrative rules and regulations. Their functions include presiding over or otherwise leading a national, provincial or local government body or department, or taking part, as members, in activities of a governmental body; consulting with political heads of government and government departments in matters of policy requiring definition or decision, and making their own decisions where top policy so provides; putting into effect government policy as laid down or with provision for discretion.

1-01.20 Elected Official, Government. Presides over, or otherwise leads, a national, provincial or local government body or department, or takes part, as member, in the activities of a governmental body, performing functions such as appointing or nominating political heads of government departments; presiding over activities and meetings of political heads of national and provincial government departments and of urban and rural councils and committees; directing administrative heads of government departments in formulation and application of government policy; presenting and defining policy to governmental body; deputising for political head of department; representing government at intergovernmental meetings dealing with matters of policy; considering matters referred by other members of governmental body; representing interests of electors in governmental body; taking part in making, amending and repealing laws or by-laws; serving on government administrative boards, commissions and committees dealing with finance, health, defence, education and other matters. Is designated according to post held or function performed.

1-01.50 Administrator (Government). Consults with political heads of government and government departments in matters of policy requiring definition or decision, and makes own decisions where top policy so provides, performing functions such as advising political heads of governments and government departments on matters of policy and referring cases of major policy for decision;
organising and directing work of departments; representing State in embassies, legations or consulates or at intergovernmental organisations; directing intergovernmental organisations dealing with health, labour or similar subjects; directing administrative agencies or regional bureaux dealing with the implementation and interpretation of policy in defined area or subject matter; approving or commenting on proposals by subordinate governmental bodies; consulting with other administrators on matters referred or of mutual concern; reconciling parties in trade disputes at national or provincial level; directing public police and fire-fighting forces; directing postal services at national or provincial level; directing groups of schools on behalf of local education authority; supervising inspection of schools; ensuring that government policy is properly interpreted and applied by subordinates; considering officers for appointment to senior posts; deputising for or directly assisting officers in carrying out the foregoing functions. Is designated according to post held or function performed.

1-01.60 Executive Officer, Government. Puts into effect government policy as laid down or with provision for discretion, performing functions such as approving admission of aliens into country; approving applications for import and export licences; consulting administrators regarding clarification of policy; acting as deputy in charge of specialised branches of embassies, legations or consulates-general; directing local offices dealing with assessment or collection of taxes, award and payment of social insurance benefits, or employment matters; interpreting and ensuring compliance with customs, excise, and immigration regulations; inspecting safety, health and welfare arrangements in factories; supervising official services, for example: preparing registers of electors; supervising registration of births, deaths and marriages; undertaking executive secretarial duties for local government committees; considering officers for appointment to minor posts. May supervise other executive or subordinate officers. Is designated according to post held or function performed.

1-1 Directors, Managers and Working Proprietors

Workers in this minor group direct and manage private or public organisations (or one or more of their departments) engaged in mining, manufacturing and construction; electricity, gas, water and sanitary services; wholesale and retail trade; banking and other financial activities, insurance and real estate; transport, storage and communications; community, business, recreation and personal services; and other forms of economic or service activity. Excluded are Working Proprietors, Wholesale and Retail Trade (minor group 3-0; auctioneers classified in major group 3); Farmers and Farm Managers (minor group 4-1); and proprietors who are not primarily directing and managing enterprises or services but principally perform professional, technical, craft, service or other functions, such as architects, engineers, chemists and physicians (classified in major group 0); tailors, milliners, carpenters, plumbers, electricians (classified in major group 7/8); and barbers, launderers, photographers, undertakers (classified in major group 9).

1-11 Directors, Managers and Working Proprietors (Mining and Quarrying, Manufacturing, Construction, Electricity, Gas, Water and Sanitary Services)

Workers in this unit group plan, organise, direct and co-ordinate, on their own account or within powers delegated to them, activities of private and public organisations, or of one or more departments, concerned with operations such as extracting solids, liquids, semi-liquids and gases from the earth and treating them prior to direct use or further processing; transforming substances into new products or assembling component parts or repairing manufactured products; undertaking construction projects; providing electric light and power, steam heat and power, water, gas, and sanitary services. Their functions include determining the policy of the organisation; planning in broad outline the efficient use of manpower, equipment, materials, facilities and finances; controlling the activities of the organisation in accordance with formulated plans and policies and prescribed standards and regulations; establishing and maintaining an organisational structure through which undertakings can be effectively operated and controlled; developing financial policies and exercising general control over costs; controlling the activities of one or more departments of the organisation. Included are heads of branches and of departments, such as those dealing with purchasing, finance, sales, credit, receiving and delivery, maintenance, advertising, legal, personnel, prospecting, exploration, development and transport (as in mining); design, development and production (as in manufacturing); estimating, supply and progress (as in construction); generation, transmission, distribution and purification (as in electricity, gas, water and sanitary services).
1-11.20 Administrator (Mining and Quarrying). Directs and manages, in the manner described in the definition of unit group 1-11, the activities of a private or public organisation, or one or more of its departments, engaged in extracting solids, liquids, semi-liquids, and gases from the earth and treating them prior to direct use or further processing.

1-11.30 Administrator (Manufacturing). Directs and manages, in the manner described in the definition of unit group 1-11, the activities of a private or public organisation or of one or more of its departments, engaged in transforming substances into new products or assembling component parts or repairing manufactured products.

1-11.40 Administrator (Construction). Directs and manages, in the manner described in the definition of unit group 1-11, the activities of a private or public organisation, or of one or more of its departments, undertaking construction projects.

1-11.50 Administrator (Electricity, Gas, Water and Sanitary Services). Directs and manages, in the manner described in the definition of unit group 1-11, the activities of a private or public organisation, or of one of its departments, providing electric light and power, steam heat and power, water, gas, and sanitary services.

1-12 DIRECTORS AND MANAGERS (WHOLESALE AND RETAIL TRADE)

Workers in this unit group plan, organise, direct and co-ordinate, within powers delegated to them, activities of private or public organisations, or of one or more of their departments, engaged in buying and selling merchandise. Their functions include determining policy of organisation; planning in broad outline efficient use of manpower, supplies, facilities and finances; controlling activities of the organisation in accordance with formulated plans and policies; establishing and maintaining organisational structure through which undertakings can be effectively operated and controlled; developing financial policy and exercising general control over costs; controlling activities of one or more departments of the organisation. Included are heads of branches and of departments such as purchasing, finance, sales, credit, receiving and delivery, maintenance, advertising, legal, personnel, investment, foreign business, deposits (as in banks and other financial institutions), individual insurance, group insurance, investment, mortgage, overseas business, actuarial and claims (as in insurance), appraising and renting (as in real estate).

1-13 DIRECTORS, MANAGERS AND WORKING PROPRIETORS (BANKS AND OTHER FINANCIAL INSTITUTIONS, INSURANCE AND REAL ESTATE)

Workers in this unit group plan, organise, direct and co-ordinate, on their own account or within powers delegated to them, activities of private or public organisations, or of one or more departments of such organisations, engaged in finance, insurance and real-estate business. Their functions include determining policy of the organisation; planning in broad outline efficient use of assets, manpower, equipment, facilities and finances; controlling transactions and other activities of the organisation in accordance with formulated plans and policies; establishing and maintaining organisational structure through which the undertaking can be effectively operated and controlled; developing financial policy and exercising general control over costs; controlling activities of one or more departments of the organisation. Included are heads of branches and of departments such as purchasing, finance, sales, credit, receiving and delivery, maintenance, advertising, legal, personnel, investment, foreign business, deposits (as in banks and other financial institutions), individual insurance, group insurance, investment, mortgage, overseas business, actuarial and claims (as in insurance), appraising and renting (as in real estate).

1-13.20 Administrator (Banks and Other Financial Institutions). Directs and manages, in the manner described in the definition of unit group 1-13, the operation of a private or public organisation, or of one or more of its departments, engaged in banking and the execution of financial transactions.

1-13.30 Administrator (Insurance). Directs and manages in the manner described in the definition of unit group 1-13, the operation of a private or public organisation, or of one or more of its departments, underwriting life, accident, endowment, fire, marine and other types of insurance services.

1-13.40 Administrator (Real Estate). Directs and manages, in the manner described in the definition of unit group 1-13, the operation of a private or public organisation, or of one or more of its departments, engaged in real estate business.

1-14 DIRECTORS, MANAGERS AND WORKING PROPRIETORS (TRANSPORT, STORAGE AND COMMUNICATIONS)

Workers in this unit group plan, organise, direct and co-ordinate, on own account or within powers delegated to them, activities of private or public organisations, or of one or more of their departments, concerned with transport of
passengers and freight by land, air or sea, operation of storage facilities, of telephone, telegraph, radio and other communication services, and of services incidental to transport. Their functions include determining the policy of the organisation; planning in broad outline the efficient use of manpower, equipment, facilities and finances; controlling the activities of the organisation in accordance with formulated plans and policies; establishing and maintaining an organisational structure through which undertakings can be effectively operated and controlled; developing financial policies, and exercising general control over costs; controlling activities of one or more departments of the organisation. Included are heads of branches and of departments such as purchasing, finance, sales, credit, receiving and delivery, maintenance, advertising, legal, personnel.

1-14.20 Administrator (Transport). Directs and manages, in the manner described in the definition of unit group 1-14, the activities of a private or public organisation, or of one or more of its departments, concerned with the transport of passengers and freight by land, sea or air, and services incidental to transport. Excluded are Inspectors and Supervisors, Transport (unit group 6-61).

1-14.30 Administrator (Storage and Warehousing). Directs and manages, in the manner described in the definition of unit group 1-14, the activities of a private or public organisation, or of one or more of its departments, concerned with the storage of goods as an independent service.

1-14.40 Administrator (Communication). Directs and manages, in the manner described in the definition of unit group 1-14, the activities of a private or public organisation, or of one or more of its departments, concerned with the operation of communication services rendered to public by post, wire or radio. Excluded are those directing and managing the operation of radio and television broadcasting studios and stations (1-15.30) and those directing postal services at the national or provincial level (1-01.50).

1-15 DIRECTORS, MANAGERS AND WORKING PROPRIETORS (SERVICE INDUSTRIES)

Workers in this unit group plan, organise, direct and co-ordinate, on their own account or within powers delegated to them, activities of private or public organisations, or of one or more of their departments, furnishing services to the community and to business enterprises. The functions include determining policy of their organisation; planning in broad outline the efficient use of manpower, equipment, materials, facilities and finances; controlling activities of the organisation in accordance with formulated plans and policies and prescribed standards and regulations; establishing and maintaining organisational structure through which undertaking can be effectively operated and controlled; developing financial policies, and exercising general control over costs; controlling activities of one or more departments of the organisation. Included are heads of branches, and of departments such as purchasing, finance, sales, credit, receiving and delivery, maintenance, advertising, legal, personnel. Excluded are boarding-house and lodging-house managers (classified in minor group 9-1).

1-15.20 Administrator (Community and Business Services). Directs and manages, in the manner described in the definition of unit group 1-15, the activities of a private or public organisation, or of one or more of its departments, providing educational services, medical and other health services, organised religious services, welfare facilities, legal services and business services, promoting the interest of members of trade and labour organisations, and various forms of non-profit-making activities. Excluded are Clergy and Related Members of Religious Orders (minor group 0-7).

1-15.30 Administrator (Recreation Services). Directs and manages, in the manner described in the definition of unit group 1-15, the operation of a private or public organisation, or of one or more of its departments, concerned with the production and distribution of motion pictures, the operation of cinemas, theatres, and radio and television broadcasting studios and stations, the production of theatrical performances, or the provision of various other recreation and sport services.

1-15.40 Administrator (Personal Services). Directs and manages, in the manner described in the definition of unit group 1-15, the operation of a private or public organisation, or of one or more of its departments, concerned with the preparation (non-manufacturing) and serving of food and beverages, the provision of lodging and camping facilities, of laundering, cleaning, dyeing, and pressing services, of photography and film-processing services, barber, hairdressing and beauty services and other personal services.

1-19 DIRECTORS, MANAGERS AND WORKING PROPRIETORS NOT ELSEWHERE CLASSIFIED

Workers in this unit group plan, organise, direct and co-ordinate, on their own account or within powers delegated to them, activities of private or public organisations, or of one or more of their departments, not elsewhere classified. Their functions include determining policies of the organisation; planning in broad outline the efficient use of manpower, equipment, materials, facilities and finances; controlling
the activities of the organisation in accordance with formulated plans and policies and prescribed standards and regulations; establishing and maintaining an organisational structure through which the undertaking can be effectively operated and controlled; developing financial policies and exercising general control over costs; controlling the activities of one or more departments of the organisation. Included are heads of branches and of departments such as purchasing, finance, sales, credit, receiving and delivery, maintenance, advertising, legal, personnel.

1-19.20 Administrator (Forestry and Logging). Directs and manages, in the manner described in the definition of unit group 1-19, the activities of a private or public organisation, or of one or more of its departments, engaged in development and care of forests and the cutting and gathering of forest products.

1-19.30 Administrator (Fishing). Directs and manages, in the manner described in the definition of unit group 1-19, the activities of a private or public organisation, or of one or more of its departments, engaged in commercial fishing in sea and inland waters.

1-19.90 Directors, Managers and Working Proprietors Not Elsewhere Classified, Other. This group includes directors, managers and working proprietors not elsewhere classified, for example, those directing and managing private or public organisations engaged in such activities as the hunting and trapping of wild animals, the operation of game preserves or the provision of services to farmers (e.g., spraying of crops by airplane, shearing of sheep and renting of agricultural equipment). Those managing a farm on their own account or on behalf of an employer are classified in unit group 4-01.
MAJOR GROUP 2

CLERICAL WORKERS

Workers in this major group compile and maintain records of financial transactions and other business activities, handle cash on behalf of an organisation or its customers, record oral or written matter by shorthand writing and typing, operate various kinds of office machines and perform other clerical tasks.

2-0 Book-keepers and Cashiers

Workers in this minor group keep records of business transactions and handle cash on behalf of an organisation or its customers. Excluded are Accountants, Professional (unit group 0-Y1).

2-01 BOOK-KEEPERS AND CASHIERS

Workers in this unit group keep records of business transactions and handle cash on behalf of an organisation or its customers. Their functions include keeping a complete and systematic set of records of financial transactions of an organisation; maintaining records of one phase or section of an organisation's financial transactions; taking charge of cash and keeping records of cash transactions incident to the conduct of a business; receiving and paying out money in a bank and keeping records of transactions; receiving cash and giving change in retail stores, theatres and other establishments in payment for goods or services; performing other book-keeping and cash-handling tasks. Excluded are Accountants, Professional (unit group 0-Y1) and Office-Machine Operators (unit group 2-91).

2-01.10 Book-keeper, General. Keeps a complete and systematic set of records of financial transactions of an organisation; verifies accuracy of documents and clerical records relating to payments, receipts and other financial transactions and makes entries in ledgers; checks entries, makes necessary calculations and summarises totals; balances books at regular intervals to show receipts, expenditures, accounts payable and receivable, profit or loss and other financial information pertinent to the running of the business. May calculate and arrange payment of wages, prepare financial statements, prepare statements of accounts for customers and perform a variety of other tasks related to book-keeping. May maintain records by use of a book-keeping machine.

2-01.20 Book-keeping Clerk. Maintains records of one phase or section of an organisation's financial transactions, such as accounts receivable or accounts payable; verifies accuracy of documents relating to records maintained, and makes entries in ledger; checks entries, makes necessary calculations and summarises totals; balances books at regular intervals. May make physical check of stock, calculate commissions, discounts and interest charges, prepare simple statements of accounts and perform other related tasks. Usually works under supervision of Book-keeper, General (2-01.10). Excluded is Book-keeping-Machine Operator (2-91.20).

2-01.30 Cashier (Office). Takes charge of cash and keeps records of cash transactions incident to the conduct of a business: receives incoming cash, checks it against sales slips or cash receipts; makes change and cashes cheques; reads totals shown on cash registers and checks them with currency contained in registers; prepares money for deposit at bank and arranges withdrawals; makes up wage packets and wage sheets; periodically verifies cash held against records. May authorise certain items of expenditure, operate adding, calculating or cheque-writing machines and perform a variety of other tasks related to monetary transactions. May supervise assistants.

2-01.40 Teller, Bank. Receives and pays out money in a bank and keeps records of transactions: receives deposits and pays out cash, making necessary examination of signatures on cheques and of customers' accounts; makes or sees that appropriate entries are made in customers' personal account books; completes deposit and withdrawal slips and checks them against cash held at
end of day. May use adding machine. May supervise clerks who make records for distribution to other departments of bank or to other organisations. May specialise in foreign currencies or other type of transactions and be designated accordingly.

2-01.50 Cashier (Cash-Desk). Receives cash and gives change in retail store, theatre or other establishment in payment for goods or services: checks amount due, collects money, gives change and issues receipts or tickets as required; keeps simple records of amounts received and verifies them with cash held. May operate a cash register or an automatic ticket-issuing machine. May be designated according to nature of establishment or type of transactions carried out. Excluded is Conductor, Bus or Tram (6-91.10).

2-01.90 Book-keepers and Cashiers, Other. This group includes book-keepers and cashiers not elsewhere classified, for example, those changing currency units of large denominations into smaller units.

2-1 Stenographers and Typists

Workers in this minor group record oral, written or other matter by shorthand writing and typing.

2-11 STENOGRAPHERS AND TYPISTS

Workers in this unit group record oral, written or other matter by shorthand writing and typing. Their functions include recording various kinds of dictated or other matter in shorthand and transcribing it in typewritten form; recording various kinds of dictated or other matter in shorthand, transcribing it in typewritten form and performing general office duties to relieve superior of clerical work; recording in shorthand technical or other matter of which a specialised knowledge is required and transcribing it in typewritten form; making verbatim records of proceedings by shorthand writing or by use of a shorthand-writing machine; typewriting on paper or other material; performing other stenographic and typewriting functions.

2-11.10 Stenographer-Typist, General. Records various kinds of dictated or other matter in shorthand and transcribes it in typewritten form: records reports, dictated letters or other matter in shorthand; types matter from shorthand notes, written drafts or from recordings on dictating machine. May use shorthand-writing machine, cut stencils for duplicating matter and perform other clerical duties. Excluded are Secretary, Stenographic (2-11.20), and Verbatim Reporter (2-11.40).

2-11.20 Secretary, Stenographic. Records various kinds of dictated or other matter in shorthand, transcribes it in typewritten form, and performs general office tasks to relieve superior of clerical work: records dictated letters, reports or other matter in shorthand; types matter from shorthand notes or from recording on dictating machine; makes appointments for superior and reminds him when they are due; deals with inquiries and answers and makes telephone calls; passes personal and important mail to superior and writes routine correspondence on own initiative; takes charge of document files. May use a shorthand-writing machine. May supervise other clerical workers.

2-11.30 Stenographer-Typist, Specialised. Records in shorthand, technical or other matter, of which specialised knowledge is required, and transcribes it in typewritten form: makes shorthand records of specialised matter such as that which involves the use of technical terms or phraseology or a knowledge of foreign languages; types matter from shorthand notes or from recording on dictating machine. May use shorthand-writing machine. May be designated according to nature of work performed. Excluded is Verbatim Reporter (2-11.40).

2-11.40 Verbatim Reporter. Makes verbatim records of proceedings by shorthand writing or by use of a shorthand writing machine: attends meetings, lectures, courts of law and other proceedings and makes verbatim records in rapid shorthand; dictates shorthand notes to typist or into dictating machine, or passes notes to typist for transcription. May be designated according to type of proceedings attended. May perform typing duties.

2-11.50 Typist. Typewrites on paper or other material: typewrites letters, memoranda and similar matter according to written, dictated or other information; makes typewritten copies of existing records; types statistical information, using judgment on layout; types on forms, bills, invoices, insurance policies or other documents; checks typewritten work for correctness. May cut stencils for use in duplicating. May perform routine clerical duties.

2-11.90 Stenographers and Typists, Other. This group includes stenographers and typists not elsewhere classified, for example, those operating typewriters with removable type of various sizes and styles. Excluded is Teleprinter Operator (6-71.40).
Workers in this minor group operate various types of office machines and carry out miscellaneous clerical tasks not performed by those elsewhere classified.

2-91 Office-Machine Operators

Workers in this unit group operate various kinds of office machines. Their functions include operating a book-keeping machine to make records of business transactions; operating an electrical or manually actuated machine which makes arithmetical calculations; operating the keyboard of a machine to record data by punching a specified sequence of holes in special cards; operating a machine in which punched cards are sorted into specified groups; operating a machine which translates data on punched cards, makes calculations, and records the results in printed form; operating office duplicating, or other machines for reproducing of documents. Excluded are Book-keepers and Cashiers (unit group 2-01), Typist (2-11.50), and Teleprinter Operator (6-71.40).

2-91.20 Book-keeping-Machine Operator. Operates a book-keeping machine to make records of business transactions: selects required kind of book-keeping form and inserts it in machine; examines invoices, receipts and other documents for correctness; presses keys of machine keyboard and manipulates levers to record data on paper and to calculate and record totals, net amounts and other computations. May prepare bills and invoices by use of machine and perform a variety of clerical tasks related to book-keeping. May be designated according to type of book-keeping machine operated or to type of records maintained. Usually works under the supervision of a Book-keeper, General (2-01.10).

2-91.30 Calculating-Machine Operator. Operates an electrical or manually actuated machine which makes arithmetical calculations: examines material to ascertain nature of calculations to be made; presses keys of machine keyboard and manipulates levers to add, subtract, multiply or divide, according to type of machine operated and type of calculation made; records result of calculations; checks calculations on pay rolls, invoices, balance sheets, statistical summaries and other records. May operate machine to make complex calculations such as obtaining square roots or raising of numbers to powers. May be designated according to type of machine operated or type of calculations made.

2-91.40 Card-Punching-Machine Operator. Operates the keyboard of a machine to record data by punching a specified sequence of holes in a special card: places card in machine by hand or by operating automatic feed; positions carriage of machine for perforating; follows written information on records and depresses keys to obtain required perforations in card. May operate a machine that types identifying data on cards as holes are punched, or which verifies correctness of perforations made.

2-91.50 Punched-Card Sorting-Machine Operator. Operates a machine in which cards, punched with holes representing statistical or other data, are sorted into specified groups: sets controls of machine according to required sorting of cards; places cards in machine feeder and starts machine; observes operation of automatic selection device, ensures that sorting proceeds correctly and removes segregated cards from machine bins; alters sorting controls and refeds cards into machine as required.

2-91.60 Punched-Card Tabulating-Machine Operator. Operates a machine which translates data represented by perforations on cards, makes calculations, and records results in printed form: sets machine to perform the required calculations and to print the results on form sheets, cards, or accounting records; places previously punched cards in machine feeder and starts machine; observes flow of cards through machine, removes and replaces jammed cards and otherwise ensures that operation proceeds satisfactorily. May file punched cards after data has been tabulated.

2-91.90 Office-Machine Operators, Other. This group includes office-machine operators not elsewhere classified, for example, those operating a machine which verifies the accuracy of data recorded on punched cards; operating a machine which interprets punched data and prints information on cards; operating an office duplicating or other office machine for reproducing of documents; operating electronic typewriters which punch tape as well as record instructions in plain language.

2-99 Clerical Workers Not Elsewhere Classified

Workers in this unit group perform clerical tasks not carried out by those classified elsewhere. Their functions include performing miscellaneous clerical tasks, which vary according to size and nature of office; compiling statistical records based on routine or special sources of information; calculating wage, material, overhead and other operational costs from selected records; recording hours worked by individual employees and calculating wages due; composing and sending letters and otherwise dealing with business correspondence; keeping employment records of organisation's personnel; carrying out specialised clerical tasks incident to financial transactions of bank or other financial organisations, the transaction of insurance, or to legal activities; performing one or more clerical tasks related to the issuance and receipt of publications in a library and the maintenance of library records; controlling or
participating in the despatch or receipt of goods and keeping records of shipments made; arranging trips and making travel reservations for customers and their personal effects; preparing production schedules and maintaining production records for a manufacturing organisation; maintaining stock records and controlling the amount of stock held by an organisation; weighing goods issued, received, used or manufactured and maintaining relevant records; weighing goods issued, received, used or manufactured and maintaining relevant records; keeping correspondence, invoices, receipts and other records arranged systematically in files; comparing printers' proofs with original copies and marking errors for correction; performing other clerical functions.

2-99.10 Clerk, Office, General. Performs miscellaneous clerical tasks, which vary according to size and nature of office: sorts incoming mail and prepares outgoing correspondence; files correspondence and other documents; receives and interviews callers, arranges appointments and directs inquiries to appropriate person or department; makes telephone calls and records telephone messages; makes entries in books showing payments from petty cash, issues of stationery to staff, and other transactions; performs other clerical duties as required. May do typing and operate a duplicating machine or an office telephone switchboard.

2-99.15 Clerk (Statistical). Compiles statistical records based on routine or special sources of information: considers type of statistical information required and obtains information by calling for individual reports, by examining ledgers, records of materials used or rejected, order books and other documents; checks and collates the information obtained, calculates totals, averages, percentages and other details and presents them in form required. May prepare written observations on statistical reports. May use an adding or calculating machine.

2-99.18 Clerk (Cost Computing). Calculates wage, material, overhead and other operational costs from selected records: selects records such as time sheets, pay rolls, production sheets, material accounts and operating charts; extracts data required for calculations; calculates costs of different aspects of the business or organisation concerned and presents the information obtained in form required. May prepare a composite report showing total costs, selling prices and profit. May use an adding or calculating machine.

2-99.21 Clerk (Payroll and Time-keeping). Records hours worked by individual employees and calculates wages due: maintains records of times of arrival and departure of employees; computes hours worked by each employee; calculates payments due on basis of hours worked, units produced, bonuses earned and other factors; enters amounts on pay sheet together with workers' names, rates of pay and other information. May make out pay cheques and prepare and distribute wage packets. May use calculating machine or computation tables.

2-99.24 Clerk (Correspondence). Composes and sends letters and takes other action necessary to deal with business correspondence: reads incoming mail and, where appropriate, links it with previous correspondence on the same subject; examines documents or makes inquiries to obtain information necessary for replies; initiates correspondence as required; writes, drafts or dictates letters for typing; notes dates on which reminders or delayed replies are to be sent. May maintain correspondence files. May supervise clerical staff. May be designated according to the type of correspondence handled.

2-99.27 Clerk (Personnel). Keeps employment records of organisation's personnel: prepares documents for new employees showing name, address, qualifications, rates of pay and other details; amends documents as necessary to show sickness record, leave absences, bonuses earned, alterations of rates of pay and other matters; files supervisors' reports on employee's working ability; deals with inquiries and correspondence relating to records of personnel. May obtain testimonials in respect of new workers or provide them for workers who leave.

2-99.30 Clerk (Finance). Carries out specialised clerical tasks incident to financial transactions of a bank, investment house or other financial organisation: interviews clients, prepares financial documents, handles collateral and completes transactions for clients desiring loans on securities; maintains records of stocks, shares, or other securities bought or sold on behalf of clients or employer; calculates interest or brokerage charges and stamp duties; performs other clerical tasks directly related to financial transactions. May be designated according to types of transactions performed or type of organisation in which employed.

2-99.33 Clerk (Insurance). Carries out specialised clerical tasks incident to the transaction of life, fire, marine, automobile or other type of insurance: issues, receives and checks forms of application for insurance; arranges medical examinations of applicants and surveys of premises as necessary; issues temporary cover notes on behalf of insurers; drafts insurance policies or gives instructions regarding preparation; calculates premiums, surrender or loan values of policies, and commissions payable, and makes formal requests for outstanding premiums; alters insurance coverage in accordance with requests from the insured; attends to clerical matters concerning claims and performs other clerical tasks related to the insurance business.

2-99.36 Clerk (Legal). Carries out specialised clerical tasks in connection with legal matters: makes search of legal records to prepare data relevant to case under consideration; examines or makes arrangements for examination of documents representing title to property or rights under wills; files pleadings with clerks of courts and serves copies of pleadings on opposing counsel; prepares affidavits of documents; takes charge of documents and correspondence of assigned cases. May specialise and be designated according to nature of legal duties performed.

2-99.39 Clerk (Library). Performs one or more clerical tasks related to the issuance and receipt of publications in a library and the maintenance of library records: issues books on loan and marks them with date of issue or return; examines records to see which books
are due for return and sends out reminder notices; checks incoming books and makes additional charges for books overdue; keeps library catalogues and index cards up to date and in good order; arranges and replaces books in correct order on shelves. May advise borrowers on selection of books. May be designated according to type of publications in library.

2-99.42 Clerk (Shipping and Receiving). Controls or participates in the despatch or receipt of goods and keeps records of shipments made: examines particulars of goods to be despatched; studies schedules and cost tables and decides upon the best method of transportation; arranges assembly of goods and ensures that they are correctly addressed and otherwise ready for despatch; makes out despatch notes and attends to such matters as insurance, customs clearance, collection, routing and delivery; checks incoming goods against bills of lading, vouchers and other documents, notes damages or deficiencies and arranges delivery to appropriate persons. May wrap articles to prepare them for despatch. May supervise helpers. May specialise and be designated according to type of goods handled, nature of clerical duties performed or to type of transport employed.

2-99.45 Clerk (Transportation Booking). Arranges trips and makes travel reservations for customers and their personal effects: ascertains requirements of customer; examines schedules of air, sea or land transport facilities and advises customer on best method of travel; makes reservations in accordance with customer's requirements. May make arrangements for special travel facilities, issue travel tickets and reserve hotel accommodation. A booking clerk who is mainly employed in the routine issuing of travel tickets for cash is classified as Cashier (Cash-Desk) (2-01.50).

2-99.48 Clerk (Production Planning). Keeps records of goods produced and draws up production schedules from sales orders: compiles and collates production records; examines orders for goods and prepares schedules showing number and type of units to be produced. May estimate rate of production and notify customer and workshop of date on which order is to be completed. May keep records of materials used.

2-99.51 Clerk (Stock Records). Maintains stock records and controls the amount of stock held by an organisation: examines delivery and issue vouchers and makes necessary entries in records; calculates stocks held in various departments, examines production, sales or other records and estimates future needs; makes requisitions to obtain required stock. May periodically check records against stocks held and check inventories kept by other workers. May be in charge of stock. Excluded is Clerk (Storeroom) (2-99.54).

2-99.54 Clerk (Storeroom). Receives, stores and issues tools, merchandise, equipment or other goods and maintains relevant records: checks incoming goods against demand notes, vouchers or other documents and notes damages or deficiencies; enters details of goods received in storeroom ledgers or on record cards; ensures that goods are placed in correct position in store, marking them with identifying data as required; issues stock and makes requisitions for replacements according to instructions or on own initiative; periodically checks stock against stock records and submits reports. May be designated according to type of goods in store. Excluded is Clerk (Stock Records) (2-99.51).

2-99.57 Clerk (Weighing). Weighs goods issued, received, used or manufactured, and maintains relevant clerical records: places or directs the placing of goods on weighbridge, or other weighing device; reads scale of weighing machine, makes allowance for weight of container or carrier and enters details in record book; collates details of goods weighed and submits returns and reports as necessary. May examine and classify goods weighed. May be designated according to materials weighed.

2-99.60 Clerk (Filing). Keeps correspondence, invoices, receipts and other records arranged systematically in files: examines material for filing, sorts it, and places it in filing cabinet; removes material on request and keeps record of its location; makes additions and alterations to data in files; maintains indices to files. May be designated according to type of filing system maintained or to type of material filed.

2-99.63 Proof-Reader, Printing. Compares printers' proofs with original copies, and marks errors for correction: reads proof against copy, marking errors in proof by means of a standardised code; returns marked proof to composing room for correction of type; may correct proof while assistant reads aloud from original copy or may read proof aloud to assistant.

2-99.90 Clerical Workers Not Elsewhere Classified, Other. This group includes clerical workers not elsewhere classified, for example, those performing simple routine checks of completed forms; addressing envelopes and circulars; carrying out receptionist duties and giving information in offices, hotels, hospitals, in offices of dentists and physicians or in other establishments; collecting rents or hire-purchase payments; paying out wages.
MAJOR GROUP 3

SALES WORKERS

Workers in this major group are engaged in or directly associated with selling goods and services of all kinds and in conducting wholesale and retail businesses on their own behalf.

3-0 Working Proprietors, Wholesale and Retail Trade

Workers in this minor group conduct businesses in wholesale and retail trade on their own behalf and are engaged in buying and selling merchandise.

3-01 Working Proprietors, Wholesale Trade

Workers in this unit group conduct businesses in wholesale trade on their own behalf and are engaged in buying merchandise and selling it to retailers and to industrial, commercial and other large consumers.

3-01.20 Working Proprietor, Wholesale Trade. Conducts a business in wholesale trade on own behalf and engages in buying merchandise and selling it to retailers and to industrial, commercial and other large consumers: estimates needs of the business and purchases or authorises purchasing of stocks; supervises personnel engaged in buying and selling of merchandise; gives customers advice concerning supply and demand of goods, and extends credit to purchasers. May grade merchandise. May be designated according to type of product sold.

3-02 Working Proprietors, Retail Trade

Workers in this unit group conduct businesses in retail trade on their own behalf and are engaged in buying merchandise and selling it for individual or household consumption or utilisation.

3-02.20 Working Proprietor, Retail Trade. Conducts a business in retail trade on own behalf and engages in buying merchandise and selling it for personal or household consumption or utilisation: hires and supervises employees, if any; takes inventories; estimates demand for products; decides types and quantities of goods to be purchased and places orders; counts and deposits money received; ensures that premises are neat and clean and that goods are well displayed and advertised; sells merchandise to customers for cash or credit; performs most or all of the tasks of Shop Assistant, Retail (3-31.40) in small establishments. May undertake own book-keeping and correspondence. May be designated according to type of product sold.

3-1 Insurance and Real-Estate Salesmen, Salesmen of Securities and Services and Auctioneers

Workers in this minor group sell insurance, real estate, securities and business services by solicitation, and property and commodities by auction, or perform duties directly related to these selling activities.

3-11 Insurance and Real-Estate Salesmen, Salesmen of Securities and Services and Auctioneers

Workers in this unit group sell insurance, real estate, securities and business services by solicitation, or property or commodities by auction, or are associated with these activities. Their functions include selling life, accident, endowment, fire, marine, and other types of insurance; selling and leasing property, such as building lots, houses, apartments and estates, on a com-

65
mission basis; purchasing or selling stocks and bonds of public or private organisations for customers on a commission basis; selling business services, such as credit information, advertising, printing, detective, watchman, armoured-car and cleaning services and bookings for performers, theatrical companies, or film showings; selling by auction various kinds of property such as real estate, livestock, farm products and art objects; determining monetary worth of real property, merchandise, business assets and various kinds of goods, such as art objects, gems, automobiles and personal and household effects by examining them for condition and authenticity; performing various other tasks directly related to the foregoing.

3-11.20 Salesman (Insurance). Sells life, accident, endowment, fire, marine and other types of insurance: compiles list of prospective customers through business and social contacts and by checking business and professional directories; interviews prospective customers and determines their insurance needs and interests; plans and attempts to sell policies, explaining features, premium rates, cash and loan values and other benefits; initiates arrangements for medical examination, property inspection or other policy stipulations; endeavours to sell a revised policy if original application has not been written by company; informs company of client’s requests for payments of damages. May collect premiums on behalf of company and keep required records. May assist in investigating claims for settlement by interviewing witnesses and collecting data needed in determining justification of claims. May sell surety bonds which protect holder against loss resulting from failure to fulfil a contract or other obligation and fidelity bonds which guarantee against loss resulting from dishonesty of employees.

3-11.30 Salesman (Real Estate). Sells and leases property, such as building lots, houses, apartments and estates, on a commission basis: contacts holders of property available for sale or lease; estimates value of property, advises owners and ascertains lowest acceptable bargaining price; advertises property for sale or rent; prepares list of prospective purchasers, indicating type, location and price of property desired, and lists of properties answering client’s requirements; conducts client to site or property, or arranges visit; attempts to sell or lease property by pointing out merits; assists client to compute total cost of purchase, including items such as taxes, initial and subsequent payments, mortgages, interest and legal fees. May draw up and submit contract for approval of purchaser and seller. May arrange for search of title. May solicit loan on behalf of purchaser. May act as agent for owner, collecting rents, arranging for maintenance of property and when necessary compelling compliance with provisions of lease by court action.

3-11.40 Salesman (Securities). Buys or sells stocks and bonds of public or private organisations for customers on a commission basis: gives information to customer regarding stocks, bonds, market conditions and history and prospects of organisation in which investment is contemplated; makes transaction in accordance with customer’s request. May advise regarding investment holdings.

3-11.50 Salesman (Business Services). Sells services such as credit information, advertising, printing, detective, watchman, armoured-car and cleaning services and bookings for performers, theatrical companies or film showings: compiles and maintains list of prospects through business and social contacts and by checking business and professional directories; interviews prospective buyers and explains features and benefits of service; quotes prices and credit terms; prepares contract forms. May receive deposits.

3-11.60 Auctioneer. Sells by auction various kinds of property, such as real estate, livestock, farm products and art objects: arranges order of sale of items to be sold; begins auction by indicating value of item and asking for starting bid or setting starting price; requests bids and, observing buyers’ signals closely, talks continuously and rapidly to stimulate competitive bidding and repeats bids offered; closes sale of item and declares it sold to bidder offering best price. May conduct auctions with aid of mechanical and electrical equipment. May make inventories of goods for sale and issue catalogues. May specialise in selling a particular kind of property, and be designated accordingly.

3-11.70 Appraiser. Determines monetary worth of real property, merchandise, business assets and various kinds of goods, such as art objects, gems, automobiles and personal and household effects, by examining them for condition and authenticity: inspects and examines articles in question, using knowledge and experience, scientific tests and original values, to arrive at a final estimate; submits estimates to buyers, auctioneers, creditors, courts, attorneys or insurance companies. May specialise in appraising a particular type of article and be designated accordingly.

3-11.90 Insurance and Real-Estate Salesmen, Salesmen of Securities and Services and Auctioneers, Other. This group includes insurance and real-estate salesmen, salesmen of securities and services and auctioneers not elsewhere classified, for example, those helping clients to select from a choice of policies those which best meet their needs.
3-2 Commercial Travellers and Manufacturers’ Agents

Workers in this minor group sell commodities on a wholesale basis in an allotted geographic area.

3-21 Commercial Travellers and Manufacturers’ Agents

Workers in this unit group sell merchandise on a wholesale basis in an allotted geographic area. Their functions include soliciting orders and selling merchandise to retailers, industrial consumers, institutional and professional establishments or wholesale organisations; selling products of one or more home or foreign manufacturers to wholesale and retail establishments.

3-21.20 Commercial Traveller. Solicits orders and sells merchandise to retailers, industrial consumers, institutional and professional establishments or wholesale organisations, travelling in an allotted geographical area: attempts to interest prospective buyers by showing sample articles or indicating products in catalogue and pointing out merits of products; quotes prices and credit terms and, if necessary, offers reductions and gives information concerning contemplated price rises; forwards orders to home office and makes reports of business transactions; studies trade periodicals and keeps himself informed of price changes and other marketing conditions. May arrange window displays or advertising signs and collect payments for products sold. May be designated according to product sold.

3-21.30 Manufacturers’ Agent. Sells products of one or more home or foreign manufacturers to wholesale and retail establishments on a commission basis, in an allotted geographic area: performs essentially the same duties as described under Commercial Traveller (3-21.20) but usually represents manufacturers of related products, for example, various items of hardware. May display samples of goods in showroom and conduct business from there. May be designated according to products sold. May supervise the staff of the agency.

3-3 Salesmen, Shop Assistants and Related Workers

Workers in this minor group sell goods on a wholesale and retail basis. Their functions include selling goods in wholesale and retail establishments; selling goods and soliciting orders, on streets and from door to door; carrying out a variety of selling tasks.

3-31 Salesmen and Shop Assistants

Workers in this unit group sell goods in wholesale and retail establishments. Their functions include selling goods in a wholesale establishment to retailers or directly to large-quantity consumers; selling goods of which a special knowledge is required to customers in a retail establishment; selling merchandise, usually across counter, to customers of a retail establishment; performing other tasks in selling goods in wholesale and retail establishments. Excluded are Commercial Travellers and Manufacturers’ Agents (minor group 3-2) and Salesmen, Shop Assistants and Related Workers Not Elsewhere Classified (unit group 3-39).

3-31.20 Salesman (Wholesale). Sells goods in a wholesale establishment to retailers or directly to large-quantity consumers: talks to customer on sales floor, ascertaining nature of product desired; assists customer in choice by demonstrating article, if possible, or by pointing out its salable features and merits; quotes prices and credit terms; tries to complete sale with hesitant purchaser by offering price reductions; takes orders, makes out order forms and forwards them for execution. May receive payment for products sold. May be designated according to product sold.

3-31.30 Salesman (Retail). Sells goods of which a special knowledge is required in a retail establishment: talks to customer on sales floor, ascertaining nature of product desired and approximate price customer is willing to pay; assists customer in choice by demonstrating product, if possible, and discussing its qualities; receives payment or secures customer’s signature on contract form; arranges for delivery of product or sees that it is packed or wrapped for customer; keeps merchandise attractively displayed. May supervise shop assistants. May take periodic inventories of stock, appraise used model or article traded in by customer, quoting price allowable, and write out sales slip or sales contract. May visit customers and demonstrate articles. May be designated according to type of product sold.

3-31.40 Shop Assistant, Retail. Sells merchandise, usually across counter, to customers of a retail establishment: ascertains nature and quality of product desired; assists customer in choice of product; receives payment or secures credit authorisation; packs or wraps up product for customer or arranges delivery; keeps merchandise replenished and attractively displayed. May take periodic inventories of stock. May write out sales slip. May be designated according to product sold.

3-31.90 Salesmen and Shop Assistants, Other. This group includes salesmen and shop assistants not elsewhere classified, for example, those replenishing stocks and assisting customers in a self-service store; selecting merchandise for customers according to written or telephoned requests; conducting and assisting customers in a department store.
3-32 STREET VENDORS, CANVASSERS AND NEWSVENDORS

Workers in this unit group sell products or solicit orders on streets or from door to door. Their functions include selling merchandise, such as fruit, vegetables, ice-cream, coal and wood; soliciting business for an establishment; selling newspapers on streets and distributing them to regular subscribers; performing other similar selling tasks.

3-32.20 Street Vendor. Sells merchandise, such as fruit, vegetables, ice-cream, coal, or wood, on street or from door to door: loads push-cart, tricycle, horse-drawn wagon or motor vehicle with merchandise or carries merchandise; rings hand bell or calls out information about merchandise for sale; sells merchandise and receives payment. May sell articles from a street stand. May operate means of conveyance.

3-32.30 Canvasser. Solicits business for an establishment by going from door to door: explains purpose of call and gives details of what establishment can supply, quoting prices and terms; notes orders received and forwards them to office of establishment; distributes advertising literature or leaves samples. May give demonstrations and collect payment of instalments. Excluded are Insurance and Real Estate Salesmen, Salesmen of Securities and Services and Auctioneers (unit group 3-11).

3-32.40 Newsvendor. Sells newspapers on streets, or distributes them to regular subscribers: obtains specified number of newspapers from publishing company or agent; sells or delivers newspapers and collects money; returns unsold or undelivered newspapers to supplier. May sell newspapers from street stand.

3-32.90 Street Vendors, Canvassers and Newsvendors, Other. This group includes street vendors, canvassers and newvendors not elsewhere classified, for example, those heating and selling foodstuffs, such as chestnuts, shellfish and frankfurters, from stands on streets; going from house to house selling notions and other inexpensive merchandise.

3-39 SALESemen, SHOP ASSISTANTS AND RELATED WORKERS NOT ELSEWHERE CLASSIFIED

Workers in this unit group carry out a variety of selling tasks and are not classified elsewhere. Their functions include selling petrol and oil to customers of a petrol-service station; giving demonstrations of articles for sale in wholesale, retail and industrial establishments, at exhibitions or in private houses; performing various other selling tasks.

3-39.20 Petrol-Service-Station Attendant. Sells petrol and oil to customers of a petrol service station: ascertains customer's requirements and supplies petrol, oil, air or water; receives payment by cash or voucher or records credit granted. May sell and install windscreen wipers, rear-view mirrors, sparking-plugs and similar accessories, change oil and lubricate vehicles, change and repair tyres and wash vehicles.

3-39.30 Demonstrator. Gives demonstrations of articles for sale, in wholesale, retail and industrial establishments, at exhibitions, or in private houses: explains merits of article and shows how it works, attempting to stimulate buying interest. May sell articles.

3-39.90 Salesmen, Shop Assistants and Related Workers Not Elsewhere Classified, Other. This group includes salesmen, shop assistants and related workers not elsewhere classified, for example, those selling refreshments and programmes in places of entertainment.
MAJOR GROUP 4

FARMERS, FISHERMEN, HUNTERS, LOGGERS AND RELATED WORKERS

Workers in this major group work directly on or assist in agricultural, forestry, fishing or related activities to raise and harvest crops, to breed, care for, hunt or trap animals, to cultivate and preserve forests and gather forest products, and to catch, gather and breed fish or other forms of aquatic life.

4-0 Farmers and Farm Managers

Workers in this minor group manage farms and nurseries on their own account, or on behalf of employers, and plan, organise and supervise the laying out and cultivation of public and private gardens.

4-01 Farmers and Farm Managers

Workers in this unit group manage farms and nurseries on own account or on behalf of employers and plan, organise and supervise the laying out and cultivation of public and private gardens. Their functions include managing a farm to grow crops and to breed and raise livestock; managing a farm to grow various crops by regular farming methods, dry farming, irrigation farming or other special techniques; managing a farm devoted to the primary production of a single type of crop or of related products such as grain and feed grasses, rice, flax, vegetables, fruit and nut trees, grapes and wine, tobacco, cotton, tea, coffee and rubber; managing a farm to breed and raise various kinds of livestock or a single type of livestock, such as beef or dairy cattle, poultry, sheep, pigs, goats, horses, or to obtain derived products; managing a poultry hatchery; managing a nursery to grow trees, shrubs, flowers, other plants, seeds, or bulbs in open air or in greenhouses for sale to farmers, other growers, commercial establishments or individual customers; planning, organising and supervising the cultivation of flowers, trees, shrubs and other plants in parks or in public or private gardens; organising and supervising the execution of plans to beautify public or private grounds by laying out and modifying landscapes; managing other types of farms for growing crops or for breeding and raising animals.

4-01.10 Farmer, General. Manages a farm on own account, or on behalf of employer, to grow crops and to breed and raise livestock: determines kinds and amounts of crops to be grown or kinds and numbers of animals to be raised, according to environment and market conditions; selects and purchases seed, fertiliser, animals, feed, farm machinery and other items; ploughs, fertilises and otherwise prepares land and plants seeds; hoes, prunes, sprays insecticides, reaps, threshes and performs other tasks to cultivate and harvest crops; breeds, raises and cares for animals, such as cattle, pigs, sheep and horses; breeds poultry for eggs and table use; markets animals and farm produce; keeps buildings, fences and farm equipment in good repair; hires, supervises and discharges helpers as required; keeps cost, production and other records.

4-01.12 Farmer (Crops), General. Manages a farm on own account, or on behalf of employer, to grow various crops by regular farming methods, dry farming, irrigation farming or by other special techniques; determines amounts and types of crop to be grown and areas to be planted according to soil, weather, market conditions and other factors; selects and purchases seeds, fertiliser, work animals, farm machinery and other items; ploughs, fertilises and otherwise prepares land and plants seeds; hoes, prunes, sprays insecticides, reaps, threshes and performs other tasks to cultivate and
harvest crops; markets farm produce; keeps buildings, fences and equipment in good repair; hires, supervises and discharges helpers as required; keeps cost, production and other records. May partially process crop prior to marketing.

4-01.14 Farmer (Grains and Feed Grasses Other than Rice). Manages a farm on own account, or on behalf of employer, to grow grains and feed grasses: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing wheat, barley, rye, oats, timothy or other grains and feed grasses.

4-01.16 Farmer (Rice). Manages a farm on own account, or on behalf of employer, to grow rice: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing rice; sows seeds by scattering or transplants seedlings in regular pattern; grows lowland rice by flooding fields and cultivating crop in submerged land; grows upland rice in manner of growing grain.

4-01.18 Farmer (Flax). Manages a farm on own account, or on behalf of employer, to grow flax: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing flax. May ret flax prior to marketing.

4-01.20 Farmer (Vegetable). Manages a farm on own account, or on behalf of employer, to grow a variety of vegetables: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing peas, beans, onions and potatoes and other vegetables.

Market Gardener. Grows variety of vegetables, frequently out of season, by intensive farming techniques including the use of greenhouses and hot-houses. May grow fruit and flowers.

4-01.22 Farmer (Fruit and Nut Trees). Manages a farm on own account, or on behalf of employer, to grow fruit or nut trees: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing fruit and nut trees such as apple, pear, banana, walnut, pecan nut and coconut; plants and ploughs cover crops around trees to conserve moisture and maintain soil fertility; develops different varieties of trees by grafting, budding or other methods. May make derived products, such as cider or vinegar. May specialise in growing one kind of fruit or nut tree, and be designated accordingly.

4-01.24 Farmer-Winemaker. Manages a vineyard on own account, or on behalf of employer, to grow grapes and make wine: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing grapes and making wine; collects grapes and extracts juice by crushing; drains juice into fermenting vats and controls fermentation; drains wine into casks for aging and clarification; transfers wine periodically into smaller casks; bottles and labels wine prior to marketing. May blend wines.

4-01.26 Farmer (Tobacco). Manages a farm on own account, or on behalf of employer, to grow and cure tobacco: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing and curing tobacco; cures tobacco plants or leaves by hanging them on laths, suspending them in curing barns and drying them over controlled fires. May cure tobacco plants or leaves by exposing them to sun and air. May strip and grade tobacco leaves and pack them for marketing. May cover fields with muslin supported by wires or posts to grow cigar wrapping leaves under artificial shade and humid conditions.

4-01.28 Farmer (Cotton). Manages a farm on own account, or on behalf of employer, to grow cotton: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing cotton.

4-01.30 Farmer (Tea). Manages a farm on own account, or on behalf of employer, to grow tea: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing tea; withers, rolls, cuts, dries, sifts, sorts and packs tea prior to marketing. May treat tea leaves by fermentation process.

4-01.32 Farmer (Coffee). Manages a farm on own account, or on behalf of employer, to grow coffee: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing coffee; cures coffee beans and otherwise processes them prior to marketing.

4-01.34 Farmer (Rubber). Manages a farm on own account, or on behalf of employer, to grow rubber trees: performs basic tasks similar to those of Farmer (Crops), General (4-01.12) but specialises in growing rubber trees; supervises the tapping of trees, the coagulation of latex and the rolling of latex into sheets prior to transport or marketing.

4-01.36 Farmer (Livestock), General. Manages a farm on own account, or on behalf of employer, to breed and raise various kinds of livestock: selects and buys animals, equipment and supplies; allows livestock to feed on available pastures or grounds; determines amount of basic or supplementary feed required, prepares feed and gives it to animals; selects and pairs animals for breeding or breeds by artificial insemination; tends animals during birth of young; treats animals for minor injuries and infections; keeps animals in healthy condition and ensures adherence to public health and other regulations; selects animals for sale and markets milk, eggs or other animal products; keeps buildings, fences and farm equipment in good repair; hires, supervises and discharges helpers as required; keeps cost, production and breeding records. May grow feed for own animals. May brand animals with identifying marks. May raise and exhibit show animals. May slaughter animals for sale or own consumption.

4-01.38 Farmer (Beef Cattle). Manages a farm on own account, or on behalf of employer, to breed and fatten beef cattle: performs basic tasks similar to those of Farmer (Livestock), General (4-01.36) but specialises in breeding, raising and fattening beef cattle.

4-01.40 Farmer (Poultry). Manages a farm on own account, or on behalf of employer, to raise poultry for eggs or table use: performs basic tasks similar to those of Farmer (Livestock), General (4-01.36) but specialises in breeding, raising and fattening beef cattle.
4-01.42 Poultry-Hatchery Operator. Manages and operates a hatchery on own account or on behalf of employer; buys eggs or receives eggs from farmers and places them in incubators; selects, grades and prepares chicks for shipment; keeps and interprets breeding records and advises farmers on feeding, artificial illumination for stock, brooding young poultry and prevention and treatment of diseases; determines territory to be served by hatchery, the varieties of poultry to hatch and the selling prices; hires, supervises and discharges helpers as required. May raise select poultry and sell quality eggs. May select and cull breeding stock and administer blood tests for farmers to determine presence of disease. May keep business records and plan advertising programme.

4-01.45 Farmer (Dairy). Manages a farm on own account, or on behalf of employer, primarily for production of cows’ milk: performs basic tasks similar to those of Farmer (Livestock), General (4-01.36) but specialises in production of cows’ milk; milks cows by hand or machine; strains, cools, stores and transports milk to dairies for processing. May separate cream, pasteurise and bottle milk and make butter and cheese.

4-01.48 Farmer (Sheep). Manages a farm on own account, or on behalf of employer, to breed and raise sheep for wool, meat and other purposes: performs basic tasks similar to those of Farmer (Livestock), General (4-01.36) but specialises in breeding and raising sheep; arranges for and directs docking, shearing and clipping.

4-01.51 Farmer (Goat). Manages a farm on own account, or on behalf of employer, to breed and raise goats for milk, hair and other purposes: performs basic tasks similar to those of Farmer (Livestock), General (4-01.36) but specialises in breeding and raising goats; milks goats and clips goats’ hair for manufacture of mohair.

4-01.54 Farmer (Pig). Manages a farm on own account, or on behalf of employer, to breed and raise pigs: performs basic tasks similar to those of Farmer (Livestock), General (4-01.36) but specialises in breeding and raising pigs. May cure meat of slaughtered animals.

4-01.57 Farmer (Horse, Mule and Donkey). Manages a farm on own account, or on behalf of employer, to breed and raise horses, mules, or donkeys: performs basic tasks similar to those of Farmer (Livestock), General (4-01.36) but specialises in breeding and raising horses, mules and donkeys; brushes, curries, washes and exercises animals and trims manes and tails. May break and train animals. May specialise in raising one type of animal and be designated accordingly.

4-01.60 Farmer (Fur-Bearing Animals). Manages a farm on own account, or on behalf of employer, to breed and raise, in captivity, foxes, mink, otter, marten or other fur-bearing animals for their pelts: selects and buys animals, equipment and supplies; confines animals under conditions simulating natural habitat and provides suitable food; selects and pairs animals for breeding; keeps animals in healthy condition and treats them for minor injuries and infections; kills and skins animals when fur is in best condition; treats, preserves, packs and ships hides and skins; keeps buildings, fences and equipment in good repair; hires, supervises and discharges helpers as required; keeps cost, production and breeding records. May trap animals. May sell animals to other farmers for breeding purposes. May specialise in breeding and raising one kind of animal and be designated accordingly.

4-01.63 Beekeeper. Manages a bee farm on own account, or on behalf of employer, for production of honey and pollination of crops: selects and buys colonies of bees, hives and other equipment and supplies; directs and participates in the preparation of hives for bees and formation of honey; arranges placing of hives to obtain maximum production of honey and to enable bees to pollinate crops; destroys moths and other parasites in hives as well as surplus queen bees; removes honey in excess of that required to sustain bee colony; prepares honey for sale and markets it; keeps hives and other equipment in good repair; hires, supervises and discharges helpers as required; keeps records of cost, production and sales. May feed bees with sugar solution. May plant and cultivate plants providing high grade nectar for bees. May breed bees.

4-01.66 Silkworm Raiser. Manages a silkworm farm on own account, or on behalf of employer, for the production of silk or silkworm eggs: selects and buys stock and equipment; ensures that adequate supplies of mulberry leaves are available for worms; ensures that eggs, free of disease, are selected for hatching; allows eggs to hatch naturally if climatic conditions are favourable or hatches them in incubators; feeds growing worms with mulberry leaves and ensures that proper conditions are maintained in rearing houses; collects cocoons formed by silkworms; selects cocoons required for silk production, kills chrysalises, dries, grades and otherwise prepares cocoons for marketing; allows cocoons required for breeding to develop into moths; selects healthy eggs deposited by moths and stores them for hatching or sale; keeps incubators and other equipment in good repair; hires, supervises and discharges helpers as required; keeps records of production and sales.

4-01.69 Nurseryman, General. Manages a nursery on own account, or on behalf of employer, to grow trees, shrubs, flowers or other plants, seeds or bulbs in open air or in greenhouses for sale to farmers, other growers or commercial establishments or to individual customers: determines kinds and amounts of plants to be grown and methods of planting, cultivating and treatment; selects and purchases seeds, fertilisers, insecticides, equipment and other items; prepares plant beds, fertilises soil and sows seeds, plants seedlings or propagates plants by grafting, budding or other methods; protects plants and encourages growth by use of greenhouses, or other means; waters growing plants, sprays them with insecticides and performs other tasks such as weeding, pruning and thinning; gathers and preserves seeds for sale or replanting; cuts or otherwise removes plants, prepares them for shipment and markets them; experiments to develop new varieties of plants; keeps equipment and buildings in good repair; hires, trains, supervises and discharges helpers as required. May make and execute plans for landscape plantings or follow blueprints of Landscape Planner (0-23.60).

4-01.72 Flower Grower. Manages a nursery on own account, or on behalf of employer, to grow flowers: performs basic tasks similar to those of Nurseryman, General (4-01.69) but specialises in growing flowers. May specialise in growing certain kinds of flower.
4-01.75 Seed Grower. Manages a nursery on own account, or on behalf of employer, to grow seeds: performs basic tasks similar to those of Nurseryman, General (4-01.69) but specialises in growing seeds; gathers seeds in field or threshes plants; sorts and stores seeds according to variety and quality; removes dust from seeds and packs them in sacks or other containers for marketing.

4-01.78 Bulb Grower. Manages a nursery on own account, or on behalf of employer, to grow bulbs: performs basic tasks similar to those of Nurseryman, General (4-01.69) but specialises in growing bulbs of tulips, lilies, daffodils, hyacinths or other bulbous flowers.

4-01.81 Master Gardener. Plans, organises and supervises the cultivation of flowers, trees, shrubs and other plants in parks or in public or private gardens: directs workers in preparing the soil, planting, transplanting, spraying of insecticides, pruning, weeding and otherwise caring for plant life; selects and purchases seeds, plants, fertilisers, equipment and other items; hires, trains, supervises and discharges helpers as required; keeps necessary records.

4-01.84 Landscape Gardener. Organises and supervises the execution of plans to beautify public or private grounds: studies plans and directs grading of terrain, conditioning of soil, planting or transplanting of trees, shrubs, flowers and sod and construction of pergolas, rockeries, ponds and paths; selects and purchases equipment and supplies; hires, trains, supervises and discharges helpers as required; keeps necessary records. May participate in landscaping operations. May prepare plans for laying out or altering landscapes. May follow blueprints of Landscape Planner (0-23.60).

4-01.90 Farmers and Farm Managers, Other. This group includes farmers and farm managers not elsewhere classified, for example, those growing sisal, sugar-cane, mushrooms, berries, reeds or other specialised crops; breeding and raising alligators for their hides, dogs, cats and rabbits for pets or other purposes, game birds for restocking estates, frogs for use as food or bait; snakes for their meat, venom and skins, guinea-pigs and rats for biological research, ostriches for their feathers, or worms for bait, biological research and soil conditioning.

4-1 Farm Workers Not Elsewhere Classified

Workers in this minor group assist in growing, harvesting and processing crops, in breeding, training and caring for animals, and in tending nurseries and gardens. Included are members of farmers' families (unpaid family workers) performing work described in this group.

4-11 Farm Workers Not Elsewhere Classified

Workers in this unit group assist in growing, harvesting and processing crops, in breeding, raising, training and caring for animals and in tending gardens and nurseries. Their functions include working on a general farm and performing tasks requiring knowledge of growing of crops and breeding and raising of livestock; working on a farm devoted to growing one or more types of crop and performing tasks requiring knowledge of growing of crops, such as grains, vegetables, grapes, fruit and nut trees, tobacco, cotton and tea; working on a farm devoted to breeding and raising one or more types of livestock and performing tasks requiring knowledge of breeding and raising livestock, such as cattle, poultry, horses, sheep, goats and hogs for meat, hair, milk or other purposes; working in a hatchery and performing tasks requiring knowledge of hatching of eggs for commercial purposes; working on a fur, bee or silkworm farm, and performing tasks requiring knowledge of breeding and raising of fur-bearing animals, bees or silkworms; operating and servicing one or more motorised or animal-powered farm machines for ploughing, planting, harvesting, binding, baling, reaping, threshing, winnowing, milking or other purposes; cultivating trees, shrubs, flowers and other plants in a nursery, in parks or in public or private gardens; propagating trees, shrubs, flowers and other plants from seeds or cuttings or by grafting and budding in a nursery; maintaining recreation or sports grounds, such as golf courses, tennis courts, race tracks, cricket, baseball and football fields; working on a farm, nursery or other agricultural establishment, performing a variety of simple, usually manual, tasks which require little training and experience; performing other functions related to the foregoing.

4-11.10 Farm Hand, General. Works on a general farm, performing tasks requiring knowledge of the growing of crops and breeding and raising of livestock: prepares soil for planting by ploughing, harrowing, and fertilising, and plants seeds; cultivates and harvests crops, using a variety of animal-powered and motor-driven equipment; plants, sprays and prunes fruit trees; processes and stores crops; prepares feed and gives it to animals; inspects and treats animals for minor injuries and infections; maintains and repairs buildings, fences and farm equipment. May supervise seasonal helpers during planting and harvesting seasons.

4-11.15 Farm Hand (Crops). Works on a farm, performing various tasks requiring knowledge of raising of crops such as grains, vegetables, grapes, fruit and nut trees, tobacco, cotton and tea: prepares soil, plants seeds,
fertilizes soil, cultivates, harvests and stores crops, using animal or tractor-drawn equipment or self-propelled mechanical equipment; performs a variety of other tasks, such as digging and shellfarming, handling grain, tapping trees, picking produce, curing tobacco leaves, spraying insecticides, pruning trees, transplanting seedlings, irrigating fields; prevents damage to crops during cold weather by lighting smudge pots, by operating motors that drive fans or propellers to circulate air, or by other methods; maintains and repairs farm buildings and equipment and irrigation systems. May drive trucks to transport workers, supplies, equipment and products. May plan and schedule ploughing, cultivating and harvesting operations. May weigh picked products and keep time, production or other records. May process crops prior to sale or shipment. May instruct and supervise labourers. May be designated according to type of crop raised.

4-11.20 Farm Hand (Livestock). Works on a farm, performing various tasks requiring knowledge of breeding and raising livestock, such as cattle, poultry, horses, sheep, goats and hogs, for meat, hair, milk or other purposes: feeds, cleans, treats animals for minor diseases and injuries and otherwise cares for them; tends herds, preventing animals from wandering and becoming lost and from eating poisonous plants or drinking polluted water, guarding against predatory animals and moving animals to fresh pastures; mates animals and tends them during birth of young, protects and cares for young animals and performs other duties, such as milking, gelding, branding, hatching eggs, killing and preparing animals for market and assisting in shearing and docking; maintains and repairs farm buildings, fences and equipment. May care for and travel with show animals, providing special feeds. May plant, cultivate and harvest feed crops, using various types of animal-driven or motor-driven equipment. May be designated according to type of animal bred and raised. May keep records of feed consumed, milk produced or other data.

4-11.25 Poultry Hatchery Worker. Works in a hatchery, performing various tasks requiring knowledge of hatching of eggs for commercial purposes: examines eggs for fertility; weighs them and classifies them according to size, colour and shell texture; disinfects incubator trays filled with selected eggs; adjusts temperature and humidity controls of incubator and loads it with filled trays; periodically adjusts controls to maintain specified conditions, and inverts trays by hand or mechanically to turn eggs; removes chicks from hatching trays and places them in properly heated brooders; examines chicks for size, vitality, breed and defects, and places selected chicks in boxes for shipment; cleans and otherwise prepares incubator and trays for re-use; maintains and repairs hatchery equipment; keeps records of eggs graded and incubated and other data. May examine poultry supplying eggs to hatchery to ensure absence of disease.

4-11.30 Farm Hand (Fur-Bearing Animals). Works on a farm, performing various tasks requiring knowledge of breeding and raising animals for their pelts: feeds, waters and otherwise cares for animals; cleans and keeps living quarters and runs in repair; tends furnaces, stoves and other equipment to maintain proper temperature and humidity of living quarters; mates animals and tends them through birth of young; kills and skims selected animals when fur is in best condition; tends hives to prevent division of colony at inopportune times; removes honey in excess of that required to sustain bee colony; prepares honey for sale in combs, or extracts honey from combs with press or centrifugal machine; moves hives to orchards or other sites for pollination of fruit trees or other crops; keeps hives and other equipment in good repair. May feed bees with sugar solution.

4-11.35 Farm Hand (Bees). Works on a bee farm, performing various tasks requiring knowledge of beekeeping: affixes waxed paper to wooden frames on which honeycombs will be formed; induces swarming bees into hives to start new colonies; admits smoke into hives to stupefy bees and gain access to colony; kills moths and other parasites in hives; destroys superfluous queen bees to prevent division of colony at inopportune times; removes honey in excess of that required to sustain bee colony; prepares honey for sale in combs, or extracts honey from combs with press or centrifugal machine; moves hives to orchards or other sites for pollination of fruit trees or other crops; keeps hives and other equipment in good repair. May feed bees with sugar solution.

4-11.40 Farm Hand (Silkworms). Works on a silkworm farm, performing various tasks requiring knowledge of breeding and raising silkworms: selects silkworms free of disease for hatching; allows eggs to hatch naturally when climatic conditions are favourable or hatches them in incubators; feeds growing worms; sorts cocoons preparatory to sale; hangs cocoons required for breeding in separate room to develop into moths; collects eggs deposited by moths, examines them for disease and retains healthy ones; cleans healthy eggs and stores them at proper temperature.

4-11.45 Operator, Farm Equipment (Motor-Driven). Operates and services one or more power-driven farm machines such as tractors, with or without farming implements attached, stationary machines, and other special-purpose equipment for ploughing, planting, harvesting, binding, baling, reaping, threshing, winnowing, milking or other purposes: adjusts self-propelled machinery or attaches and adjusts special purpose equipment to tractor; drives self-propelled movable machine or tractor through fields, and controls machine and attachments; sets up and adjusts stationary machine for operation; starts and stops machinery; operates tools and controls action; tows wagons laden with crops and materials, or uses tractor to pull out stumps or other objects from ground; cleans and lubricates machines, refills fuel, oil and water tanks and makes minor repairs. May supervise helpers such as those feeding machines and filling containers with crops. May be designated according to machine or implement operated.

4-11.50 Operator, Farm Equipment (Animal-Drawn). Operates and services one or more types of farm equipment drawn or powered by animals, such as ploughs, harrows, drills, planters, cultivators and reapers: harnesses animals to machine or implement and adjusts it; drives animals through fields and controls equipment; drives animals pulling wagons or other objects; waters, feeds, cleans and attends to ailments and other needs of animals; cleans, lubricates and repairs farm implements and machines. May supervise helpers such as those feeding machines and filling containers with harvested crop. May be designated according to machine or implement used.

4-11.55 Nursery Worker. Cultivates trees, shrubs, flowers and other plants in a nursery: mixes soil, moss and other ingredients for plant beds; places seeds and regulates temperature and humidity of greenhouses;
sprays or dusts plants with insecticides; prunes plants and stimulates growth with plant hormones; transplants bulbs and seedlings to outdoor, glassed and heated beds and tends growing plants; propagates plants from seeds or cuttings or by grafting, budding or other methods; cuts and removes plants and grades them prior to sale or marketing; transfers plants to allow room for growth or places them in containers for sale; packs cut flowers or potted plants for sale or shipment. May lay sod and transplant trees and shrubbery according to pattern desired.

4-11.60 Propagator. Works in a nursery to propagate trees, shrubs, flowers and other plants from seeds or cuttings or by grafting and budding: when propagating from seeds, prepares plant bed in box by screening soil and mixing it with moss, fertiliser or other ingredients; plants seeds, waters soil, transfer box to wooden frame covered with glass, and transplants seedlings; when propagating from cuttings, ascertains most suitable portion of plant, covers off a cutting, plants cutting in sand box to grow roots, and transplants rooted cutting to other receptacle; when grafting and budding, cuts bark of tree seedling, inserts bud from another tree, binds cut bark with twine, cuts away twine after specified time, cuts off original stalk above bud the following spring; sprays or dusts seedlings, cuttings and grafted trees with insecticides and stimulates their growth with hormones; regulates temperature and humidity of greenhouse. Excluded is Afforestation Worker (4-41.75).

4-11.65 Gardener. Cultivates flowers, trees, shrubs and other plants in parks or in public or private gardens: prepares soil, plants, transplants, sprays insecticides, prunes, weeds and otherwise tends plant life in open air or in greenhouses; mows lawns and takes care of paths. May cultivate vegetables and fruit trees for home use. May take care of tennis courts and swimming pools.

4-11.70 Grounds Keeper. Maintains recreation or sports grounds, such as golf courses, tennis courts, race tracks, cricket, baseball and football fields: rolls, mows and waters turf; seeds or returfs pitches, greens or other grassy areas; repairs fences and stands, marks playing fields, makes changes in golf courses and performs other tasks to keep fields in good condition; trims hedges and grass along edges of driveways and walks, and removes litter from grounds. May select, plant and care for bushes and flowers and perform landscaping tasks. May supervise helpers.

4-11.75 Farm Labourer. Works on a farm, nursery or other agricultural location, performing a variety of simple, usually manual, tasks requiring little training and experience: spreads and levels topsoil, spreads fertilisers, hoes, and digs holes for tree plantings; waters plants and soil; digs, cleans and tends ditches and other irrigation devices; picks fruit, berries, vegetables, tobacco, cotton or other products and performs other simple tasks in gathering crops; sorts, cleans, and packs products at farm; assembles and prepares nursery products for shipment; shovels earth for landscaping purposes; feeds, waters and tends livestock and other animals; cleans stables, pens, barns and similar places; helps to build fences.

4-11.90 Farm Workers Not Elsewhere Classified, Other. This group includes farm workers not elsewhere classified, for example, those controlling the flow of water into irrigation canals by operating gates and other devices; pruning trees; spraying crops or animals with insecticides; making blood tests of poultry to ascertain whether they are free from disease; castrating cockerels; sexing chicks; examining bone structures of chicks to determine laying capacity; removing horns from cattle to make them less dangerous; breeding cattle by artificial insemination; shearing sheep; caring for work animals or pets at industrial sites or in livery stables, stud farms or kennels; caring for animals in zoos or menageries; breaking horses to saddle or for draft work; training bird dogs, police dogs and other special types for purposes other than entertainment; caring for animals and crops required by research workers for experimental purposes.

4-2 Hunters and Related Workers

Workers in this minor group hunt and trap wild animals, wild fowl and other game for food and skins, extermination or sale.

4-21 Hunters and Related Workers

Workers in this unit group hunt, and trap wild animals, wild fowl and other game for food, skins, extermination or sale to zoological gardens and the like. Their functions include hunting and killing game by means of firearms, bows and arrows, blowpipes and similar hunting weapons; catching game by means of steel traps, improvised snares and other traps; guiding parties of hunters or fishermen; performing various other tasks related to the foregoing. Excluded are Tanners, Fellmongers, Pelt Dressers and Related Workers (unit group 8-54).

4-21.20 Hunter. Hunts wild animals, wild fowl and other game for skins, meat or extermination, and kills them by means of firearms, bows and arrows, blowpipes or other weapons: looks for game, following tracks and listening for noises indicating presence of game, or takes position where game may pass; places bait and camouflage position according to habits of game being hunted; kills and skins game, exercising care not to damage pelts; treats pelts for preservation and shipment to market; keeps hunting equipment in good condition. May market the catch. May specialise in catching a particular kind of game and be designated accordingly.

4-21.30 Trapper. Catches wild animals, wild fowl and other game, for skins, meat or sale alive, by means of improvised snares, and steel or other traps: chooses proper location for traps; baits and camouflages traps according to habits of game; inspects traps periodically
4-21.40 Guide, Hunting and Fishing. Guides parties of hunters or fishermen: assists in planning trip, using knowledge of country in selecting best areas for hunting or fishing; gives advice on game laws, hunting methods, suitable equipment, and safety precautions; performs heavy work around camp and helps to carry equipment.

4-21.90 Hunters and Related Workers, Other. This group includes hunters and related workers not elsewhere classified, for example, those assisting hunters by transporting heavy hunting or trapping equipment, building and camouflaging traps and beating bush to flush game; caring for wild animals in game preserves and wild-life sanctuaries.

4-3 Fishermen and Related Workers

Workers in this minor group catch fish, whales, seals and other fresh and salt water animals, gather shellfish, sponges and other forms of aquatic life, and engage in fish culture. Excluded are Hunters and Related Workers (minor group 4-2).

4-31 Fishermen and Related Workers

Workers in this unit group catch fish, whales, seals and other fresh and salt water animals, gather shellfish, sponges and other forms of aquatic life, and engage in fish culture. Their functions include working as member of crew on fishing vessel and catching deep-sea fish; catching fish in inland and coastal waters; gathering clams, oysters, crabs, lobsters and other molluscs and crustaceans; diving to floor of ocean, equipped with goggles or helmet, to gather sponges and to harvest pearl oysters; working as member of crew on sea-going whaling vessel, hunting whales and killing them by means of harpoon gun; working as member of crew that captures and kills seals for pelts; operating and maintaining fish hatcheries; cultivating oysters in specially prepared sea-water beds; performing various other functions related to the foregoing.

4-31.15 Fisherman (Deep-Sea). Works as member of crew on fishing vessel and catches deep-sea fish: baits hooks, lays nets, or otherwise prepares gear for fishing; catches fish by using hand line cast from dory, towing nets through water or using seine nets and other kinds of deep-sea fishing gear; loads catch into boat, and cleans, salts, or otherwise processes catch aboard ship; maintains and repairs fishing gear; usually performs tasks associated with the operation of vessel. May be designated according to fish caught or gear used.

4-31.20 Fisherman (Inland and Coastal Waters). Catches fish in inland or coastal waters: baits hooks, lays nets, or otherwise prepares gear for fishing; catches fish by laying and anchoring lines equipped with hooks or by drawing them through water; laying net in water parallel to shore and pulling it to land, standing on bank, rocks or platforms and spearing or hooking fish with gaff; uses other equipment and devices, such as weirs, traps, bows and arrows, harpoons or fish wheels; lands catch or loads it on boat; maintains and prepares fishing gear and equipment. May be designated according to fish caught or gear used.

4-31.30 Shellfish Gatherer. Gathers clams, oysters, crabs, lobsters, or other molluscs and crustaceans: baits and lays traps, or otherwise prepares equipment for operation; catches shellfish by means of nets and by digging, trapping, or operating special tonging or dredging devices; lands or boats the catch; maintains and repairs equipment. May be designated according to shellfish gathered or equipment used.

4-31.40 Diver (Sponge and Pearl). Dives to floor of ocean, equipped with goggles or helmet, to gather sponges or to harvest pearl oysters: dons goggles or helmet; dives into water and tears sponges loose from attachments or gathers oysters believed to contain pearls; deposits items gathered in net bag and returns to surface.

4-31.50 Harpooner, Whale. Works as member of crew on a seagoing whaling vessel, hunts whales and kills them by means of harpoon gun: prepares harpoon gun for operation and shoots whale; reloads gun in readiness for next attack; maintains and repairs harpoon gun.

4-31.60 Fisherman (Seal). Works as member of crew that captures and kills seals for pelts: drives herd of seals from rookery to killing grounds; kills seals with rifle, harpoon gun or by other means; removes skin from seals by cutting around head and flippers and down belly and pulling skin off from head to tail; treats pelts for preservation and shipment to market. May specialise in driving, killing, or skinning seals and be designated accordingly.

4-31.70 Fish Hatcher. Operates and maintains a fish hatchery: observes activity of fish to determine habits, growth, food, enemies, and places of breeding and spawning, and ensures that conditions of artificial environment closely approximate those of natural habitat; collects fish eggs and devises methods of fertilisation and incubation; regulates temperature, depth, and other conditions in hatching reservoirs or provides fish with kind of food required; collects and sorts fish and distributes them in streams, ponds and lakes, or markets fish.
May catch and prepare fish food. May construct reservoirs, ponds, dams or flumes and make hatchery equipment.

4-31.80 Oyster Culturist. Cultivates oysters in specially prepared sea-water beds; selects area suitable for cultivation of oyster; marks out oyster beds by placing stakes in bottom of bed according to pattern; eradicates oyster enemies such as starfish; plants seed oysters by scattering them over bed inside staked enclosure and provides broken oyster shells, rock or other materials to which oyster spawn can attach itself; harvests oysters and markets them.

4-31.90 Fishermen and Related Workers, Other. This group includes fishermen and related workers not elsewhere classified, for example, those gathering sea weeds and mosses; stripping blubber from whales.

4-4 Loggers and Other Forestry Workers

Workers in this minor group fell trees in forests, cut them into logs, prepare them for shipment, transport logs down waterways, gather wild or semi-cultivated forest products, process forest products near gathering site and preserve and extend forests.

4-41 Loggers and Other Forestry Workers

Workers in this unit group fell trees in forests, cut them into logs, prepare them for shipment, transport logs down waterways, gather wild or semi-cultivated forest products, process forest products near gathering site and preserve and extend forests. Their functions include performing various tasks concerned with logging operations; estimating the volume of standing timber on a tract of land by walking over and examining and measuring samples of trees; cutting limbs and tops from trees selected for use as anchors in log-hauling operations; cutting down trees, with axe or saw; sawing felled trees into logs of desired lengths; measuring logs and determining the volume of timber in each log; assembling logs into rafts and booms for towing and driving down waterways; working as member of team that launches and guides logs downstream to mill; making cuts in trunks of certain trees and gathering exuded gums, resins, latex or other saps; operating a kiln to convert wood into charcoal by slow-burning process; operating a digester to obtain crude turpentine from wood chips by steam distillation; operating a still to refine crude wood turpentine; operating a kettle still to distill resin into gum turpentine and rosin; performing one or more tasks in preserving and extending forests; patrolling forest areas and keeping lookout from a station for fires, and fighting fires; performing other functions related to the foregoing. Excluded are Drivers, Road Transport (minor group 6-4), Sawyers and Woodworking-Machine Setters and Operators (unit group 7-73) and Woodworkers Not Elsewhere Classified (unit group 7-79).

4-41.10 Logger, General. Cuts down trees, saws them into logs and performs other tasks concerned with logging operations: cuts down trees, using axe and powered or hand saw; saws felled trees into logs of desired lengths; fastens noose about logs preparatory to skidding. May drive tractor to skid logs to point of transportation and assist in topping trees.

4-41.15 Cruiser, Timber. Estimates the volume of standing timber on a tract of land by walking over tract and examining and measuring samples of trees: measures diameter and height of trees, using caliper, tape, hand level and hypsometer; records measurements and calculates volume of measured trees from prepared tables and by using own judgment; calculates total volume in tract from volume of sample trees. May supervise assistants.

4-41.20 High Climber, Logging. Cuts limbs and tops from trees selected for use as anchors in log hauling operations: climbs trees using spurs and safety belt; cuts limbs and tops from trees, using hand saw and axe. May attach hauling tackle to trees.

4-41.25 Feller, Logging. Cuts down trees, using axe and manual or powered saw: observes tree and determines direction in which it should fall; cuts undercut from around butt of tree and prepares bed for tree if necessary; fastens working platform to tree if terrain or tree imperfections prevent operation from ground level; makes V-shaped cut (undercut) in tree on side to which it should fall; makes saw cut (back cut) on opposite side to meet undercut; inserts pair of plates in cut behind saw and drives wedge between plates to tip tree in desired direction. May sharpen axes and saws, trim limbs from felled trees and saw felled trees into log lengths.

4-41.30 Bucker, Logging. Saws felled trees into logs of desired lengths using hand or powered saw: trims branches from felled tree; places wooden supports under tree to prevent it from splitting during sawing; marks off log lengths on tree; saws tree at marks and drives wedges in saw cut to prevent binding of saw blade. May sharpen saw blades.

4-41.35 Scaler, Logging. Measures logs and determines the volume of timber in each log: measures length and diameter of log, records measurements in book, and also marks them on end of log; calculates amount of marketable timber in defective logs; rejects...
logs that contain an excess of unsound timber. May measure logs on trucks to determine conformity with highway load limits.

4-41.40 Log-Raft Maker. Assembles logs into rafts or booms for towing and driving down waterways: walks on floating logs or booms or works from boat; assembles logs with use of pike and cant hook; cuts oval-shaped faces on tree with broadaxe preparatory to tapping; cuts narrow V-shaped opening in tree trunk with axe or special tool to permit flow of sap; fastens cups on trees to catch sap; frequently checks tapped trees, empties full cups into bucket, and scrapes coagulated sap from scars on trees. Workers tapping trees in farm operations are classified with Farm Hand (Crops) (4-11.15).

4-41.50 Tree Tapper. Makes cuts in trunks of certain kinds of trees and gathers exuded gums, resins, latex or other saps: cuts oval-shaped faces on tree with broadaxe preparatory to tapping; cuts narrow V-shaped opening in tree trunk with axe or special tool to permit flow of sap; fastens cups on trees to catch sap; frequently checks tapped trees, empties full cups into bucket, and scrapes coagulated sap from scars on trees. Workers tapping trees in farm operations are classified with Farm Hand (Crops) (4-11.15).

4-41.60 Extractor Operator, Wood Distillation, Forest. Operates a digester at wood-felling site to obtain crude turpentine from wood chips by steam distillation: seals opening at bottom of digester; fills digester with wood chips; seals and bolts charging hole; regulates valves to control passage of steam through digester and extraction of turpentine from wood; stops flow of steam after prescribed period; removes spent wood from digester at end of extraction process.

4-41.65 Distiller, Wood Turpentine, Forest. Operates still at wood-felling site to refine crude wood turpentine: manipulates valves to regulate flow of turpentine to still and of steam used to heat still; observes distillation process and manipulates valves to divert different products, such as wood turpentine, pine oils and resin oils, into proper tanks.

4-41.70 Distiller, Gum Turpentine, Forest. Operates a kettle still at wood-felling site to distill resin into gum turpentine and rosin: orders charging of kettle still with resin; lights and maintains wood fire under still; regulates intensity of fire during process as determined by inspection of distillate, or by observation of thermometer; admits water to still at proper times; examines distillate to determine completion of process; discharges residual resin into strainers; quenches fire at end of process.

4-41.75 Afforestation Worker. Performs one or more tasks in preserving, and extending forests: collects, prepares and stores tree seeds; cleans, ploughs, drains or irrigates, fertilises and otherwise prepares seed beds and afforestation area; sows seeds and raises seedlings; transplants seedlings in afforestation area; builds fences, sprays insecticides and performs other tasks to protect trees against insects, diseases and predatory animals; thins tree stands, prunes trees and removes damaged timber and excessive undergrowth; cuts and maintains fire lanes.

4-41.80 Fire Fighter (Forest). Patrols forest areas or keeps lookout from a station for fires, and fights fires: informs central station of location of fire by telephone or other means and indicates whether assistance is needed to fight fire; attempts to suppress fire by clearing areas and digging trenches, using shovel, pick, axe, saw and plough, and by spraying water or chemicals. May visit camping sites to insure that campers are complying with fire and other regulations. May live alone for long periods of time.

4-41.90 Loggers and Other Forestry Workers Not Elsewhere Classified. This group includes forestry workers not elsewhere classified, for example, those marking location of chutes used to slide logs from forest to point of transport; loading logs into chutes and stacking logs preparatory to transport; hauling or snagging logs in forest to truck loading platform; shaping rough wooden products from logs, such as railway ties and telephone poles, near felling site; examining logs and grading them according to quality; selecting and gathering herbs, roots and other medicinally or commercially valuable plants; gathering bark from cork trees and other trees; removing unwanted bark from cut trees or logs; growing or gathering osier and reeds in forests; operating evaporator in forest to separate turpentine oils from resin.
MAJOR GROUP 5

MINERS, QUARRYMEN AND RELATED WORKERS

Workers in this major group are engaged in the extraction of solids, semi-liquids, liquids and gases from the earth, and their treatment prior to direct use or further processing.

5-0 Miners and Quarrymen

Workers in this minor group extract solid minerals by both underground and surface excavations.

5-01 Miners and Quarrymen

Workers in this unit group extract solid minerals by both underground and surface excavations. Their functions include extracting, underground or on the surface, coal, ore, rock and other solid minerals; extracting various kinds of stone from quarries or open pits; setting and operating cutting and drilling machines; blasting coal, ore or rock loose from solid masses by charging and setting off explosives in drilled holes; fitting and installing wood or steel props, pillars and arches to support walls and roofs of mines and other underground openings; performing various other tasks in the extraction of solid minerals from the earth, such as: sinking shafts, driving tunnels, removing supports from disused workings. Excluded are those operating earth-moving equipment in quarries and open cast mining (unit group 8-74).

5-01.10 Miner, General. Extracts, underground or on the surface, coal, ore, rock and other solid minerals: hews minerals, using a hand or pneumatic pick; drills holes in working face, using hand or machine drill; inserts explosives in drilled holes; shovels dislodged mineral into mine cars or on conveyor after blasting; pushes cars to haulageways; installs chutes or staging and wood or steel props, pillars and arches to support walls and roofs; extends car rails to working face. May perform additional tasks, such as exploding charges in drilled holes and sinking shafts. May be designated according to mineral mined.

5-01.20 Quarryman, General. Extracts various kinds of stone from quarries or open pits: drills holes in quarry face, using hand or machine drill; inserts, tampers and sets off explosives in drilled holes; breaks up large blocks into smaller pieces if necessary; attaches hoisting cable-hooks or slings to blocks for removing them from quarry.

5-01.30 Cutting-Machine Operator, Mine. Sets and operates a machine which cuts a channel into and along the bottom or side of a working face in a mine: sets machine in position to make cut; manipulates lever to start motion of cutting tools and advances cutter bar of machine across or down side of working face; repeats operations for subsequent cuts; lubricates and makes minor repairs to machine. May lay rails on which machine travels.

5-01.40 Drilling-Machine Operator, Quarry and Mine. Sets and operates a machine which drills holes into working faces of quarries or mines so that the mass may be broken up by blasting: places machine at predetermined point in front of working face and inserts drill; connects machine with water and with power supplies, such as compressed air or electricity; operates controls to start rotation of drill and flow of water; advances drill into working face by exerting pressure on machine or applying pressure to drill; changes drills or cutting bits as they become blunt and as depth of hole increases; moves machine to other points and repeats drilling operations; lubricates and makes minor repairs to machine. May operate a percussion-type drill and insert and set off explosives in holes. May be designated according to type of drill or mounting used.

5-01.50 Shot Firer. Blasts coal, ore or rock loose from solid masses by charging and setting off explosives in drilled holes: estimates quantity of explosive to be used; inserts cartridges of explosive in hole; attaches fuse or wires to detonator and inserts it in hole; tampes hole with clay, rock dust, sand or other materials; signals other workers to go to places of safety; splits ends of fuses with knife or connects wire to exploder; lights fuse or depresses handle of exploder to fire explosive. If
working underground, may test atmosphere for inflammable gas, test roof supports and ensure that surrounding workings have been covered with stone dust.

5-01.60 Timberman, Underground. Fits and installs wood or steel props, pillars and arches to support walls and roofs of mines and other underground openings: cuts timbers to size and to shape, if necessary, and places them in position; nails, bolts, blocks and wedges timbers to secure them in place; fits and installs ladders, chutes, cubs and other framework; installs steel props, arches and girders; repairs and resets defective supports.

5-01.90 Miners and Quarrymen, Other. This group includes miners and quarrymen not elsewhere classified, for example, those removing wood and steel supports from disused workings; directing high-pressure stream of water against gold-bearing gravel bank to force gravel into sluice from which gold particles are recovered; cutting stone from quarry face with power-driven saws.

5-1 Well Drillers and Related Workers

Workers in this minor group sink and operate wells to recover liquids, semi-liquids or gases from the earth and sink bores to examine the earth's strata.

5-11 Well Drillers and Related Workers

Workers in this unit group sink and operate wells to recover liquids and semi-liquids or gases from the earth and sink bores to examine the earth's strata. Their functions include operating rotary and cable (percussion) type drilling plant in the sinking of petroleum and gas wells; performing various drilling and rigging tasks in the sinking of petroleum and gas wells; cementing annular spaces between casings and sides of petroleum and gas wells; removing, repairing and replacing rods, casings and tubings of petroleum and gas wells and cleaning and servicing wells; treating petroleum and gas wells with acid to increase their production; setting up and operating drilling plant in the sinking of wells and bores (except petroleum and gas); performing other tasks related to the sinking of wells and bores and the operation of wells. Excluded are Well Digger (7-99.75) and Rigger (Petroleum-Well Drilling) (8-73.60).

5-11.10 Derrickman, Petroleum and Gas Wells. Performs various drilling and rigging tasks in the sinking of petroleum and gas wells: sets up pulley supports connecting derrick posts at top; strings up cables through pulleys and blocks to provide means of raising and lowering drill pipes and cables; assists in setting-up tasks and in dismantling equipment; guides and attaches or detaches lifting equipment to or from upper ends of sections of drill pipe entering or leaving bore hole; weighs clay and mixes drilling mud to proper consistency; controls flow from well by capsing or detaching lifting equipment to or from upper ends of sections of drill pipe entering or leaving bore hole; selects drill bits according to nature of strata encountered and changes them when blunt or when strata change; uses special tools to retrieve broken or lost equipment from bore hole; inspects cores or cuttings to determine nature of strata being encountered; manipulates levers, pedals and brakes to control machinery which supplies power for lowering or raising drill pipe and casing; checks operation of slush pumps to ensure that fluid which cools bit, removes cuttings and seals wall of hole with clay is circulating properly and is of proper consistency; controls flow from well by capping or by regulating valves; supervises assistants; keeps various records. May set up the plant.

5-11.30 Cable Driller, Petroleum and Gas Wells. Operates cable (percussion) type of drilling plant in the sinking of petroleum and gas wells: regulates stroke of beam which raises and lowers cable with attached drill bit to shatter rock at bottom of bore hole; adjusts screw which controls force with which bit strikes bottom, frequently testing impact by grasping cable; selects and changes bits and assembles string of drilling tools on end of cable; examines drillings to determine nature of strata encountered; connects sections of casing or tubing and manipulates controls to lower these into bore hole; uses special tools to retrieve equipment broken or lost in bore hole; controls flow from well by capping or by regulating valves; supervises assistants; keeps various records. May set up the plant.

5-11.40 Cementer, Petroleum and Gas Wells. Cements annular spaces between casings and sides of petroleum and gas wells: studies formations and conditions in well and recommends methods of cementing; calculates quantity and quality of cement required; supervises mixing of cement and pumping of it to specific point in well; determines and specifies time to be allowed for setting of cement; tests completed job by emptying gauge; connects and disconnects sections of drill pipe as they are run into or out of well; selects drill bits according to nature of strata encountered and changes them when blunt or when strata change; uses special tools to retrieve broken or lost equipment from bore hole; inspects cores or cuttings to determine nature of strata being encountered; manipulates levers, pedals and brakes to control machinery which supplies power for lowering or raising drill pipe and casing; checks operation of slush pumps to ensure that fluid which cools bit, removes cuttings and seals wall of hole with clay is circulating properly and is of proper consistency; controls flow from well by capping or by regulating valves; supervises assistants; keeps various records. May set up the plant.

5-11.50 Well Puller, Petroleum and Gas Wells. Removes, repairs and replaces rods, casings and tubings of producing petroleum and gas wells and cleans and
services wells: attaches cable to top of pump rod or casing and pulls out sections by operating winch, or sets up and operates hydraulic jack to raise rod or casing; disconnects sections of rod or casing as it is raised; cleans, straightens and repairs rods and casings, and replaces plungers or valves at end of pumping rod; puts plug device into well to control flow from it; lowers special tools into well to remove mud, water and slush; puts pressure-recording devices into well and roughly interprets charts; uses special tools to retrieve broken rods and tubing and to clean perforations in casing or tubing. May supervise assistants. May recover tubing and rods from abandoned well and plug it with cement.

5-11.60 Acidiser, Petroleum and Gas Wells. Treats petroleum and gas wells with acid to increase their production: studies formations and conditions in wells, determines quantity and quality of acid required, duration of treatment and point of application, and recommends methods of acidising; sets up equipment on site; supervises and assists in the blending of acids in mixing device; pumps acid through tubing to bottom of well and into specific formations; flushes out excess acid on completion of treatment.

5-11.80 Well Driller (except Petroleum and Gas Wells). Sets up and operates drilling plant for the sinking of wells or bores (other than those for petroleum or gas): erects derrick on site to be drilled; connects shafting from power drive or stationary engine to derrick; selects drill bits and fixes them to rods or cables; lengthens rods as required by bolting or screwing additional sections to them; controls levers of mechanical drilling apparatus; uses mechanical or hand-operated devices for hauling up or lowering rods and drills; inserts steel tubes in drilled hole and fixes sections of these together, if necessary; operates pumps or other equipment to remove sludge or debris from bore hole; supervises assistants.

5-11.90 Well Drillers and Related Workers, Other. This group includes well drillers and related workers not elsewhere classified, for example, those operating plant to mix clay, sand and water, make mud of specified viscosity, and pump mixture to drill holes; devising and applying methods for extracting lost equipment from well and removing obstructions which hinder flow or drilling; using special testing equipment to determine productivity of strata; starting or renewing flow of oil from wells by use of explosives.

5-2 Mineral Treaters

Workers in this minor group perform various tasks in preparing minerals, at mine site, for direct use or for further processing. Excluded are Furnacemen, Metal (unit group 7-31); Potters, Kilnmen, Glass and Clay Formers and Related Workers (minor group 8-1); Chemical and Related Process Workers (minor group 8-3); Stone Cutters and Carvers (unit group 8-57).

5-21 MINERAL TREATERS

Workers in this unit group prepare minerals for direct use or for further processing. Their functions include drilling holes in stone and driving wedges into them to break or split stone into slabs or blocks; operating a machine in which lumps of mineral are crushed and broken to desired sizes; operating a battery of jigs which separate minerals from gangue by gravity; operating flotation machine which separates valuable minerals from gangue by causing mineral to float in liquid while gangue remains submerged; operating equipment in which finely ground gold or silver is treated with cyanide solution as part of a process of separating gold or silver from gangue; tending zinc boxes in which gold or silver that has been dissolved in cyanide solution is precipitated; performing various other tasks related to the preparation of minerals for direct use or for further processing.

5-21.20 Stone Splitter. Drills holes in stone and drives wedges into them to break or split stone into slabs or blocks: marks off stone according to grain and required size; connects compressed-air line to percussion-type drill and inserts bit in chuck; stands drill upright and presses trigger to start it; bears down on handles until hole of desired depth has been drilled; drills sufficient number of holes for block to be broken off evenly; places two strips of shaped steel in each hole, and metal or wooden wedges between strips; drives in wedges evenly with hand hammer until block cracks off; repeats drilling and wedging operation to break block into smaller pieces if necessary. May make holes by hammering. May split stone by using special hammer and without drilling or making holes.

5-21.30 Crusher Operator (Minerals). Operates a machine in which lumps of minerals are crushed and broken to reduce them to desired sizes: regulates flow of mineral into crusher from conveyors, chutes or bins, or shovels or throws material into hopper of machine;.prods large lumps with bar to force them between crusher jaws; breaks oversize lumps with sledge hammer; maintains uniform flow of crushed mineral to screens for sizing or to rolls for further crushing; cleans, lubricates and makes minor repairs to machine. May be designated according to type of mineral crushed. Excluded are Grinder (Rock and Clay) (8-19.30) and Crusher Operator (Chemical and Related Processes) (8-33.20).

5-21.40 Jig Tender. Operates a battery of jigs used to separate minerals from gangue by gravity: regulates pulsating flow of water through screens in bottom of jigs or regulates speed of reciprocal motion of screens; regulates flow of mined material and water into jigs so that they do not become overloaded; observes operation and makes adjustments and minor repairs to jigs to obtain a clean separation.
5-21.50 Flotation Man. Operates flotation machine which separates minerals from gangue by causing mineral to float in liquid while gangue remains submerged; starts machine and regulates speed of agitators in cells of machine; regulates flow of mixed material, water and flotation reagents into cells; observes operation of flotation cells and makes necessary adjustments and minor repairs to machine to obtain a clean separation.

5-21.60 Cyanide Man, Ore Treating. Operates equipment in which finely ground gold or silver ore is treated with cyanide solution as part of the process of separating gold or silver from gangue: operates agitators in which ground ore is mixed with cyanide solution, or percolates cyanide solution through ground ore in large vats; decants cyanide solution after dissolving of gold or silver.

5-21.70 Precipitator. Tends zinc boxes in which gold or silver that has been dissolved in cyanide solution is precipitated: packs compartments of zinc boxes with zinc shavings; regulates flow of solution through boxes where gold or silver precipitates on zinc; shuts off flow of solution and turns on water until boxes are filled; agitates shavings to remove precipitate; pulls plugs and draws off slime (precipitate and water) from the boxes; treats slime with sulphuric acid; turns slime solution into filter press and operates press; washes precipitate residue with water under pressure and dries it with compressed air. May tend mixing cones containing zinc dust instead of zinc boxes packed with zinc shavings.

5-21.90 Mineral Treaters, Other. This group includes mineral treaters not elsewhere classified, for example, those removing impurities from minerals by means of running water; operating vibrating and oscillating screens or tables over which mineral is run to size it; operating pulverising plant; roughly cutting, shaping, dressing or squaring up stone blocks; operating machines used for magnetic separation of minerals, metals and other materials.

5-9 Miners, Quarrymen and Related Workers Not Elsewhere Classified

Workers in this minor group perform tasks including those of a simple and routine nature, related to the extraction of solids, semi-liquids, liquids and gases from the earth and to their treatment and are not classified elsewhere.

5-99 Miners, Quarrymen and Related Workers Not Elsewhere Classified

Workers in this unit group perform tasks including those of a simple and routine nature, related to the extraction of solids, semi-liquids, liquids and gases from the earth and to their treatment and are not elsewhere classified. Their functions include operating a locomotive powered by diesel engine, electricity or compressed air to haul cars underground and on surface of mine or in a quarry; operating electrically powered truck (shuttle-car) to transport minerals from excavation point to conveyor belt; driving animals to haul vehicles underground or on surface of mine or in a quarry; assisting in making up trains of cars hauled by locomotive or by hoist cable or chain, and in their transport along haulage ways in mine or quarry; giving signals for movement of cages used to raise and lower men, cars and supplies between various levels and surface of mine; loading and unloading materials; selecting small amounts of coal or ore from different sections of mine, cars, conveyors, chutes or other sources to obtain representative samples; treating crude oil at wells in chemical, electrical or centrifugal units to remove sediment and water; performing various other tasks related to the extraction and treatment of solids, semi-liquids, liquids and gases, including tasks of a simple and routine nature.

5-99.20 Engine Driver, Mine and Quarry. Operates a locomotive driven by diesel engine, electricity or compressed air to haul cars underground and on surface of mine, or in a quarry: manipulates control levers and pedals to start, stop and operate engine of locomotive; lubricates and makes minor repairs to locomotive. May operate track switches and couple and uncouple locomotive and cars. May make connections between batteries and charging equipment. May be designated according to type of locomotive driven. Excluded are railway engine drivers (classified in unit group 6-31).

5-99.30 Shuttle-Car Operator, Mine. Operates electrically powered truck (shuttle-car) to transport minerals from excavation point to conveyor belt: manipulates control levers, pedals and steering wheel to position car under boom of loading machine; manoeuvres car back and forth under boom until it is filled with minerals; drives car to loading point of conveyor belt and loads minerals on conveyor; lubricates and makes minor repairs to truck.

5-99.40 Driver, Animal-Drawn Vehicle (Mine and Quarry). Drives animals to haul vehicles underground or on surface of mine or in a quarry: drives animals to haul wagons or cars along tracks to and from loading point; directs animals by voice or with reins. May groom, feed and water animals, harness and unharness them and assist in loading and unloading vehicle. May shoe animals. Excluded is Driver, Animal-Drawn Vehicle (Freight) (6-42.20).

5-99.50 Brakeman (Mine and Quarry). Assists in making up trains of cars hauled by locomotive or by hoist cable or chain and in their transport along haulage-
ways in mine or quarry: couples and uncouples cars, or attaches and detaches cars to and from cable; operates track switches; directs movement of train by signalling Engine Driver, Mine and Quarry (5-99.20) to start or stop. May open and close ventilation doors to allow train to pass through. May dump contents of cars.

5-99.60 Cageman, Mine. Gives signals for movement of cages used to raise and lower men, cars and supplies between various levels and surface of mine and loads and unloads materials; directs movement of cage by signalling to Hoist Operator, Mine (8-72.70) by means of electric bell or buzzer system; runs loaded cars into position near shaft and pushes them on to cage; pulls empty cars from cage and runs them on to station sidings for distribution in mine. May pull loaded cars off cage and replace them with empties.

5-99.70 Sampler, Mine. Selects small amounts of coal or ore from different sections of mine, cars, conveyors, chutes or other sources to obtain representative samples: places sample in bag, which he marks with record of source; forwards sample to laboratory for analysis. May shovel samples of coal from containers into pulverising machine before bagging them. May plot location of samples on a mine map.

5-99.80 Crude-Oil Treater. Treats crude oil at wells in chemical, electrical or centrifugal units to remove sediment and water: tests oil for content of sediment and water, using a gravity-separation machine, and, according to result of test, switches oil through treating units, to and from storage tanks or into pipe lines; adds chemicals to chemical treating unit or routes oil through electrical or centrifugal units to break up oil and water emulsions and drain off water; precipitates sediment in settling tanks; gauges tanks to determine quantity of oil treated and delivered to pipe lines; operates and maintains water and oil pumps of treating unit; cleans and makes repairs to units; records production, results of tests and other data. May operate oil heaters to raise oil to desired temperature for treating. May pump wells.

5-99.90 Miners, Quarrymen and Related Workers Not Elsewhere Classified, Other. This group includes miners, quarrymen and related workers not elsewhere classified, for example, those laying and repairing sleepers and rails; loading cars with loose material and pushing them along haulageways; keeping workers supplied with tools and other equipment; checking mine cars sent to surface; charging, issuing and receiving mine lamps; checking water-pumping and ventilation operations; greasing rods used in pumping oil from well.
MAJOR GROUP 6

WORKERS IN TRANSPORT AND COMMUNICATION OCCUPATIONS

Workers in this major group are directly concerned with the movement and control of the means of transporting passengers and freight and with the transmission of communications.

6-0 Deck Officers, Engineer Officers and Pilots, Ship

Workers in this minor group perform supervisory deck, bridge and engineer duties in the operation and maintenance of vessels afloat. Their functions include planning, directing and executing deck and bridge activities in the operation of vessels at sea, and in coastal, harbour and inland waterways; planning and supervising engineering activities and operating, maintaining and repairing all types of mechanical and electrical equipment on vessels afloat. Excluded are Fishermen and Related Workers (minor group 4-3).

6-01 Deck Officers and Pilots, Ship

Workers in this unit group plan, direct and execute deck and bridge duties in the operation of vessels at sea and in coastal, harbour and inland waters. Their functions include taking complete charge of a seagoing vessel, or of a vessel confined to inland waterways, estuaries and ports, and safeguarding passengers, crew, ship and cargo; planning and taking charge of deck and bridge activities on seagoing vessels or on vessels confined to inland waterways, estuaries and ports; steering and controlling the speed of ships entering or leaving waters of which a specialised knowledge is required; performing other duties related to the foregoing.

6-01.15 Ship’s Captain (Sea). Takes complete charge of a seagoing vessel, safeguarding passengers, crew, ship and cargo; controls the speed and directs the course of vessel by use of radar, compasses, charts and other navigational aids; organises and supervises work of crew and ensures maintenance and cleanliness of vessel; directs subordinate officers in the performance of their duties; maintains a daily record of events during a voyage; directs tugboat operations in the salvaging of his vessel if disabled.

6-01.20 Ship’s Captain (Inland Waterways, Estuaries and Ports). Takes complete charge of a vessel confined to inland waterways, estuaries and ports and safeguards passengers, crew, ship and cargo; controls the speed and directs the course of vessel by use of radar, compasses, charts and other navigational aids; organises and supervises work of crew and ensures the maintenance and cleanliness of vessel; maintains a daily record of events during a voyage; directs subordinate officers in the performance of their duties; directs tugboat operations in the salvaging of his vessel if disabled.

6-01.30 Navigating Officer (Sea). Plans and takes charge of deck and bridge activities on seagoing vessels; organises and supervises deck crew, including those maintaining and cleaning ship and deck equipment; navigates ship in accordance with instructions by use of radar, compasses, charts and other navigational aids; keeps watch; takes depth soundings. May organise the loading and unloading of cargo. Frequently designated according to seniority, for example “first mate”, “second mate”, or “third mate”. A “first mate” is next in command to the ship’s captain and may take charge in an emergency.

6-01.40 Navigating Officer (Inland Waterways, Estuaries and Ports). Plans and takes charge of deck and bridge activities on vessels confined to inland waterways, estuaries and ports; organises and supervises deck crew, including workers maintaining and cleaning ship and deck equipment; navigates ship in accordance with instructions by use of radar, compasses, charts and other navigational aids; keeps watch; takes depth soundings. May organise and direct the loading and unloading of
cargo. Frequently designated according to seniority, for example "first mate", "second mate" or "third mate". A "first mate" is next in command to the ship's captain and may take charge in an emergency.

6-01.50 Pilot (Ship). Steers and controls the speed of ships entering or leaving waters of which a specialised knowledge is required: navigates vessels, varying in size and type, in estuaries, straits, harbours, inland waterways and areas hazardous to shipping.

6-01.90 Deck Officers and Pilots (Ship), Other. This group includes deck officers and pilots (ship) not elsewhere classified.

6-02 ENGINEER OFFICERS, SHIP

Workers in this unit group plan and supervise engineering activities and operate, maintain and repair all types of mechanical and electrical equipment on vessels afloat. Their functions include planning and supervising the work of engineers aboard ship; operating, maintaining and repairing engines, motors, pumps, condensers and other mechanical and electrical equipment under general direction; directing the maintenance, repair and replacement of mechanical equipment so as to keep it in safe and efficient operating condition.

6-02.15 Chief Engineer, Ship. Plans and supervises the work of engineers aboard ship: has complete charge of the operation and maintenance of engines, motors, boilers, electrical equipment, air conditioning and refrigerating equipment, sanitary equipment, and all machinery aboard ship. May perform some of the duties of engineers.

6-02.20 Marine Engineer, Ship. Operates, maintains and repairs engines, motors, pumps, condensers and other mechanical and electrical equipment under the general direction of Chief Engineer, Ship (6-02.15): tends mechanical equipment and controls speed of ship in response to signals from the bridge; ensures on steam-propelled ships that water supply and steam pressure are maintained at required levels; stands watch in engine-room and supervises other workers there and in stokehold; keeps log of performance of machinery; repairs machinery where necessary by using tools and machinery-shop equipment. May specialise in serving aboard steam ships or motor ships. Engineer officers are usually designated "second engineer", "third engineer", and so on.

6-02.30 Marine Engineer, Superintendent. Directs the maintenance, repair and replacement of mechanical equipment: inspects mechanical equipment of ships arriving at port; determines the nature and extent of repairs or alterations needed; formulates specifications for the work and supervises drafting of the plans; inspects and approves materials to be used in the work; directs workers who perform the work or supervises contractors who undertake it; keeps records of the mechanical performance of the ships; advises shipping company on engineering matters pertaining to its ships. May supervise all engineers on the company's ships and consult with makers of engines, machinery and other mechanical equipment about possible improvements.

6-1 Deck and Engine-Room Ratings (Ship), Barge Crews and Boatmen

Workers in this minor group perform deck, bridge and engine-room duties on craft or vessels afloat, usually under supervision of deck and engineer officers. Their functions include performing deck and bridge duties on craft afloat under the supervision of deck officers; operating, maintaining and repairing boilers, engines, and other machinery and mechanical equipment on vessels afloat, usually under the supervision of engineer officers. Excluded are Fishermen and Related Workers (minor group 4-3).

6-11 DECK RATINGS (SHIP), BARGE CREWS AND BOATMEN

Workers in this unit group carry out deck and bridge duties on craft afloat under supervision of deck officers. Their functions include taking charge of deck crews and performing other duties in accordance with the instructions of officers; taking charge of ship's steering apparatus under instructions from officer on bridge; performing most regular and emergency tasks required of ratings aboard ship; keeping deck and deck equipment of vessel in clean and orderly condition and performing maintenance and minor repair tasks; performing similar work on rafts and pontoons.

6-11.15 Boatswain. Takes charge of deck crews and performs other duties in accordance with the instructions of officers: supervises Able Seaman (6-11.30) and Ordinary Seaman, Deckhand (Ship, Barge, Boat) (6-11.40) in cleaning decks and equipment, chipping, scraping and painting iron and Woodward, standing watch and performing other regular and emergency duties; inspects and arranges for overhaul of boats, sails, rigging ropes and other deck gear.

6-11.20 Quartermaster, Ship. Takes charge of ship's steering apparatus under instructions from officer on bridge: operates ship's helm to keep vessel on course, guided by ship's compass; verifies course when ship
is automatically steered by gyro compass; keeps watch in port; keeps bridge in clean and orderly condition.

6-11.30 Able Seaman. Performs most regular and emergency tasks required of ratings aboard ship: keeps watch; takes depth soundings; steers vessel as directed; takes charge of and steers small boats; breaks out rigging; overhauls and stows cargo-handling and running gear; overhauls lifeboats and lifeboat gear; lowers and raises lifeboats; makes minor repairs to deck and deck equipment; splices wire and cables; stows and removes cargo from the hold; chips paint and paints wood and metal fixtures; washes decks and maintains cleanliness of vessel.

6-11.40 Ordinary Seaman, Deckhand (Ship, Barge, Boat). Keeps deck and deck equipment of a vessel in a clean and orderly condition and performs maintenance and minor repair tasks: swabs decks; chips paint and repaints wood and ironwork; coils and splices rope; stores and shifts cargo; keeps lookout; assists in general repairs of ship's gear; may assist with steering.

6-11.90 Deck Ratings (Ship), Barge Crews and Boatmen, Other. This group includes deck ratings (ship), barge crews and boatmen not elsewhere classified, for example, those working on rafts and pontoons.

6-12 ENGINE-ROOM RATINGS, FIREMEN AND OILERS (SHIP)

Workers in this unit group operate, maintain and repair boilers, engines, and other machinery and mechanical equipment on vessels afloat, usually under supervision of engineer officers. Their functions include maintaining and repairing engines and other mechanical equipment in collaboration with engineer officers on vessels afloat; tending one or more coal- or oil-fired boilers producing steam for ship's main and auxiliary engines; lubricating the wearing surfaces and moving parts of engines and other mechanical and electrical equipment on vessels afloat; performing other tasks related to the foregoing.

6-12.15 Engine Mechanic (Ship). Maintains and repairs engines and other mechanical equipment in collaboration with engineering officers on vessel afloat: dismantles machinery and replaces broken or worn parts. May do similar duties on small craft without technical supervision. A worker repairing marine engines in a workshop or while the ship is in port is classified as Mechanic-Repairman (Marine Engines) (7-53.55).

6-12.20 Fireman (Coal) Ship. Tends one or more coal-fired boilers producing steam for ship's main and auxiliary engines: maintains water supply and steam pressure at required levels; shovels coal into firebox and pokes it to obtain maximum heating value, or shovels pulverised coal into mechanical stoker and regulates its feeding speeds. May level and break coal in the coal bunker, remove ashes from firebox and clean boilers and flues.

6-12.30 Fireman (Oil) Ship. Tends one or more oil-fired boilers producing steam for ship's main and auxiliary engines: maintains water supply and steam pressure at required levels; controls flow of oil and air blast into burner; cleans oil jets through which oil flows into burner.

6-12.40 Oiler and Greaser (Ship). Lubricates the wearing surfaces and moving parts of engines and other mechanical and electrical equipment on vessel afloat: tests and adjusts pressure and flow of lubricants to working parts of machinery; fills oil cans, grease guns or other lubricant containers; forces grease into bearings; pours oil on to wearing surfaces or moving parts; fills and renews oil in sumps or wells; assists engineers in overhauling and repairing machinery.

6-12.90 Engine-Room Ratings, Firemen and Oilers (Ship), Other. This group includes engine-room ratings, firemen and oilers (ship) not elsewhere classified.

6-2 Aircraft Pilots, Navigators and Flight Engineers

Workers in this minor group fly and navigate aircraft and service and repair them during flight.

6-21 AIRCRAFT PILOTS, NAVIGATORS AND FLIGHT ENGINEERS

Workers in this unit group fly and navigate aircraft and service and repair them during flight. Their functions include flying aircraft used in transport of passengers, mail or freight; testing aircraft, delivering aircraft, spraying insecticides and fungicides for pest control, conducting aerial surveys, taking aerial photographs and instructing students in flying; directing course of aircraft; servicing and repairing aircraft in flight and advising pilot on engineering matters.

6-21.10 Pilot (Aircraft), General. Flies aircraft used in transport of passengers, mail or freight: operates controls of aircraft on scheduled routes or on chartered flights; observes gauges, meters and other cockpit instruments to control aircraft and detect engine irregularities; uses navigational aids to direct the course of aircraft in flight. May be “captain”; and take complete charge of crew of aircraft, or “first officer”, and operate aircraft under the authority of a “captain”.

6-21.20 Pilot (Aircraft), Specialised. Flies aircraft for specialised purposes such as testing aircraft, delivering aircraft, spraying insecticides and fungicides for pest
control, conducting aerial surveys, taking aerial photographs and instructing students in flying: operates controls of aircraft on scheduled routes or on chartered flights; observes gauges, meters and other cockpit instruments to control aircraft and detect engine irregularities; uses navigational aids to direct the course of aircraft in flight. May be "captain" and take complete charge of crew of aircraft, or "first officer" and operate aircraft under the authority of a "captain".

6-21.30 Flight Navigator. Directs course of aircraft in flight: locates position and directs flight by use of radar, radio beams, charts, celestial observations, dead reckoning or other navigational aids; directs deviations from course required by weather conditions; keeps log of flight. May act as relief pilot.

6-21.40 Flight Engineer. Services and repairs' aircraft in flight and advises pilot on engineering matters: observes gauges, meters and other aircraft instruments to detect technical irregularities; diagnoses engine troubles and makes emergency and minor repairs and informs pilot of defects; keeps record of engine and plane performance, defects occurring and repairs made during flight. May make pre-flight inspection of engines and of other parts of plane and equipment and act as relief pilot.

6-3 Drivers and Firemen, Railway Engine

Workers in this minor group drive and perform other duties in the operation of steam, electric, diesel-electric and other railway engines used for the transport of passengers and freight. Excluded is Engine Driver, Mine and Quarry (5-99.20).

6-31 Drivers and Firemen, Railway Engine

Workers in this unit group drive and perform other duties in the operation of steam, electric or diesel-electric and other railway engines used for the transport of passengers and freight. Their functions include driving a steam locomotive; firing and operating boiler of a steam locomotive; driving, or assisting in driving of, an electrically propelled or diesel-electric railway engine; driving, or assisting in driving of, a locomotive propelled by a diesel or other internal combustion engine; driving an underground or elevated railway train; performing other tasks related to the foregoing. Excluded is Engine Driver, Mine and Quarry (5-99.20).

6-31.15 Driver, Railway Engine (Steam). Drives a steam locomotive for the transport of passengers or freight: supervises engine crew; controls movement of train in accordance with train orders, train schedules, signals by other members of crew and block or semaphore signals along route; inspects locomotive at beginning and end of each run; lubricates the mechanism; makes minor repairs and adjustments during journey; drives locomotive for shunting trucks and carriages.

6-31.20 Fireman, Railway Engine (Steam). Fires and operates boiler of a steam locomotive for the transport of passengers or freight: stokes coal into firebox with hand shovel or mechanical stoker or manipulates valves to control flow of fuel oil to burner; maintains water and steam pressure at required levels; assists engine driver in observing signals and in following train orders.

6-31.30 Driver, Railway Engine (Electric or Diesel-Electric). Drives an electrically propelled railway engine (including diesel-electric) for the transport of passengers or freight: supervises engine crew; controls movement of train in accordance with train orders, train schedules, signals by other member of crew and block or semaphore signals along route; inspects engine at beginning and end of each run; makes minor repairs and adjustments during journey; drives engine for shunting trucks and carriages.


6-31.70 Driver, Underground or Elevated Train. Drives an underground or elevated railway train for the transport of passengers: controls movement of train in accordance with train orders, train schedules, signals by guard or conductor and block or semaphore signals along route. Excluded is Engine Driver, Mine and Quarry (5-99.20).

6-31.90 Drivers and Firemen, Railway Engine, Other. This group includes drivers and firemen (railway engine) not elsewhere classified.
6-4 Drivers, Road Transport

Workers in this minor group drive vehicles and animals for the transport of passengers and freight by road. Their functions include driving street railway cars and motor vehicles, animals and animal-drawn vehicles, and pedalled and hand-propelled vehicles. Included are drivers who may incidentally sell goods from vehicles but whose principal function is delivery, for example those delivering milk, bread and the like to households or delivering supplies to hotels, restaurants and similar establishments.

6-41 Drivers of Motorised Vehicles

Workers in this unit group drive street railway cars and motor vehicles for the transport of passengers and freight by road. Their functions include driving a street railway car, motor car or motor bus; driving a motor vehicle, such as lorry or van, and attending to or assisting in loading or unloading of freight and goods; driving a motor cycle equipped to transport passengers or goods; performing other tasks related to the foregoing.

6-41.15 Tram Driver. Drives street railway car for the transport of passengers: controls movement of tram in response to signals, with regard for traffic and in accordance with time schedules; on one-man trams also collects fares, issues tickets, keeps simple records and assists passengers.

6-41.20 Motor-Car Driver. Drives motor car for the transport of passengers: controls movement of car in response to signals and with regard for traffic; assists passengers boarding or leaving the car and handles their luggage. May collect fares, keep car clean, polished and in good running order, and make minor repairs.

6-41.30 Motor-Bus Driver. Drives motor bus for the transport of passengers either locally or long distance: controls movement of bus in response to signals, with regard for traffic and in accordance with time schedules. May make minor repairs and keep bus clean and in good running order. On one-man bus also collects fares, issues tickets, keeps simple records and assists passengers.

6-41.40 Lorry and Van Driver (Heavy). Drives heavy motor vehicle such as lorry or van for the transport of freight and attends to or assists with loading or unloading: controls movement of vehicle in response to signals, with regard for traffic and in accordance with time schedules. May make minor repairs and keep vehicle clean and in good running order.

6-41.50 Lorry and Van Driver (Light). Drives a light lorry or delivery van for the transport of goods and loads or unloads products: controls movement of vehicle in response to signals, with regard for traffic and in accordance with time schedules. May make minor repairs and keep vehicle clean and in good running order.

6-41.60 Motor-Cyclist. Drives motor cycle equipped to transport passengers or goods: controls movement of vehicle in response to signals and with regard for traffic; assists passengers in getting on and off the vehicle; loads and unloads goods; makes minor repairs and keeps motor cycle clean and in good running order. May collect fares.

6-41.90 Drivers of Motorised Vehicles, Other. This group includes drivers of motorised vehicles not elsewhere classified.

6-42 Drivers of Animals and Animal-Drawn Vehicles

Workers in this unit group drive animals and animal-drawn vehicles for the transport of passengers and freight by road.

6-42.15 Driver, Animal-Drawn Vehicle (Passenger). Drives one or more animals pulling a vehicle for the transport of passengers by road: harnesses and hitchs animal to vehicle; assists persons to enter and alight and arranges driving robes; directs animals by voice or with reins; controls movement of vehicle in response to signals and with regard for traffic; keeps vehicle clean, polished and in usable condition. May collect fares, and groom, feed and water animals and clean stables.

6-42.20 Driver, Animal-Drawn Vehicle (Freight). Drives one or more animals, pulling a wagon, cart, or other vehicle for the transport of freight by road: harnesses and hitches animal to vehicle; directs them by voice or with reins; controls movement of vehicle in response to signals and with regard for traffic; keeps vehicle clean and in usable condition. May groom, feed and water animals, clean stables and assist in loading and unloading vehicle. Excluded is Driver, Animal-Drawn Vehicle (Mine and Quarry) (5-99.40).

6-42.90 Drivers of Animals and Animal-Drawn Vehicles, Other. This group includes drivers of animals and animal-drawn vehicles not elsewhere classified, for example, those driving animals carrying passengers or freight.

6-43 Drivers Propelling Their Vehicles

Workers in this unit group drive pedalled or hand-propelled vehicles for the transport of passengers or goods. Their functions include propelling cycle vehicle equipped to transport passengers or goods; pulling or pushing vehicle equipped to transport passengers or goods; performing other tasks related to the foregoing.
6-43.15 Driver, Pedalled Vehicle. Propels cycle vehicle equipped to transport passengers or goods: assists passengers in getting on and off the vehicle or loads and unloads goods; controls movement of vehicle in response to signals and with regard for traffic; makes minor repairs and keeps vehicle clean and in good running order. May collect fares.

6-43.20 Driver, Hand-Propelled Vehicle. Pulls or pushes vehicle equipped to transport passengers or goods.

6-45 Conductors and Brakemen, Railway

Workers in this minor group take charge of and safeguard railway passenger and freight trains immediately before and during trip and deal with passengers.

6-51 Conductors and Brakemen, Railway

Workers in this unit group take charge of and safeguard railway passenger and freight trains immediately before and during trip and deal with passengers. Their functions include taking charge of train, or supervising sleeping-car and parlour-car section of it; assisting in preparing train for run and safeguarding it, switching cars, and helping in handling freight.

6-51.15 Conductor, Railway. Takes charge of train during trip: directs activities of the crew; signals engine driver to stop or proceed, taking precaution for safety of passengers; keeps records of freight loaded and unloaded; supervises the switching of cars and the loading and unloading of freight at intermediate stations; takes appropriate action in case of accidents or emergencies; gives information concerning train rules, stations and time-tables to passengers; submits report at termination of each run or shift. May collect tickets, passes or fares from passengers.

6-51.20 Brakeman (Railway). Assists in preparing train for run, safeguards train during trip, switches cars and helps in handling freight and dealing with passengers: checks car mechanisms such as couplings, air-brake lines and hand brakes before train departure; examines signalling equipment such as lamps, flags, torpedoes and fuses; checks supplies of water, ice, fuel and lantern oil; controls heating, lighting and ventilation of passenger cars; observes train operation to detect overheated journal boxes, loose couplings or other defects; throws track switches and couples or uncouples cars by hand and signals engine-driver to stop or proceed; sets hand brakes on cars detached from locomotive; assists in loading and unloading passengers and freight; places flags and flares in front of or behind train in cases of emergency; may give information concerning train rules, stations and time-tables to passengers. Excluded is Brakeman (Mine and Quarry) (5-99.50).

6-6 Inspectors, Supervisors, Traffic Controllers and Dispatchers, Transport

Workers in this minor group supervise transport services. Their functions include inspecting and supervising transport services to ensure operational efficiency; supervising and directly controlling the flow of land, air and waterborne traffic.

6-61 Inspectors and Supervisors, Transport

Workers in this unit group inspect and supervise transport services to ensure operational efficiency. Their functions include field inspection and supervision of work done by staff engaged in transport operational duties. Excluded are those supervising freight, baggage and parcel handling and inspecting clerical work.

6-61.15 Transport Service Inspector (Railway). Supervises railway services by field inspection: rides passenger and freight trains to determine cause of non-conformance with schedules; makes investigations, such as the checking of running times between stations, the time taken to load and unload passengers or freight, and the volume of traffic at different stations; examines schedules and records at stations; checks the efficiency and deportment of train crews; recommends changes to railway management for the improvement of operating efficiency.

6-61.20 Transport Service Inspector (Road). Supervises road passenger operations by field inspection: rides trams and buses to determine cause of non-con-
formance with schedules; makes investigations, such as the checking of running time between points, the time taken to load and unload passengers and baggage, and the volume of traffic at different points and at different times of the day; checks the efficiency and department of vehicle crews; recommends changes to management for the improvement of operating efficiency. May re-route trams or buses in cases of serious traffic congestion.

6-61.30 Station Master, Railway. Supervises passenger service at a railway station: has charge of all employees in station; supervises the operation of all trains within his station limits, the collection, delivery, loading, unloading of baggage and parcels, and the sale and collection of tickets. May be required to develop passenger and parcel traffic and also perform the duties of Goods Agent, Railway (6-61.40).

6-61.40 Goods Agent, Railway. Supervises freight service at a railway yard: has charge of all employees in yard and goods office; supervises shunting operations and the collection, delivery, loading and unloading of goods. May be required to develop goods traffic in the area served by his yard.

6-61.90 Inspectors and Supervisors, Transport, Other. This group includes inspectors and supervisors (transport) not elsewhere classified, for example, those inspecting and supervising in air and water transport.

6-62 TRAFFIC CONTROLLERS AND DISPATCHERS, TRANSPORT

Workers in this unit group supervise and directly control the flow of land, air and waterborne traffic. Their functions include controlling aircraft flights within specified areas; authorising route and take-off schedules for aircraft on the basis of passenger and freight data, weather conditions and operational suitability of aircraft; directing the movement of trains over a railway within a division; controlling the flow of railway traffic over a section of line by operating signals and switches from a control tower or signal box; controlling the switching of rolling stock in railway yards and sidings in accordance with orders concerning the loading, unloading and make-up of trains; preparing departure and delivery schedules and assigning drivers and vehicles for road transport; performing similar tasks in waterborne traffic.

6-62.15 Aircraft Traffic Controller. Controls aircraft flights within specified areas: establishes radio contact with aircraft in vicinity of airport and issues instructions on take-off and landing and on the altitude of flight; controls take-off and landing of aircraft at airport by radio, lights and flags; contacts aircraft in airways between airports and gives instructions, advice and information; issues information concerning weather conditions at field; keeps record of messages received from aircraft.

6-62.20 Aircraft Dispatcher. Authorises route and take-off schedules for aircraft on the basis of passenger and freight data, weather conditions and operating condition of aircraft; studies radio reports from aircraft and weather reports to determine any necessary changes in course; prepares instructions to be sent to aircraft by radio operator. May, in emergencies, personally send instructions to aircraft. May also perform clerical duties connected with the operation of aircraft at an airport.

6-62.30 Railway Dispatcher. Directs the movement of trains over a railway within a division: issues instructions to signalmen, engine drivers, train conductors and brakemen; keeps record of train movements; re-routes or re-schedules trains during an emergency; reports schedule deviations and accidents to train or damage to railroad; communicates with other train dispatchers. May select types of engine to meet the need of runs, assign engines to drivers and crews; keep records of engines available and in use.

6-62.40 Railway Signalman. Controls the flow of railway traffic over a section of line by operating signals and switches from a control tower or signal box; controls traffic in accordance with train schedules, special orders and safety regulations; receives and sends train orders by telephone or telegram. May control the opening and closing of level crossing gates.

6-62.50 Railway Shunter. Controls the switching of rolling stock in railway yards and sidings in accordance with orders concerning the loading, unloading and make-up of trains: operates or directs the operation of switch controls; exchanges signals with brakeman and locomotive driver and accompanies driver on locomotive if necessary; couples and uncouples railway cars; sets brakes by hand on rolling stock not coupled to locomotive.

6-62.60 Dispatcher, Road Transport. Prepares departure and delivery schedules and assigns drivers and vehicles for road transport: keeps records of orders, deliveries, mileage travelled, vehicles assigned and other transport activities. May supervise drivers and the loading and unloading of vehicles.

6-62.90 Traffic Controllers and Dispatchers, Transport, Other. This group includes traffic controllers and dispatchers (transport) not elsewhere classified, for example those controlling and dispatching waterborne traffic.
6-7 Telephone, Telegraph and Related Telecommunication Operators

Workers in this minor group operate telecommunication equipment on land, sea and in the air for the transmission and reception of communications. Their functions include operating line telephone and telegraph equipment; operating radio and television equipment.

6-71 Telephone and Telegraph Operators

Workers in this unit group operate line telephone and telegraph equipment. Their functions include operating public service and private telephone switchboards; operating telegraphic equipment for transmitting and receiving messages; sending and receiving typescript messages by means of a teleprinter; performing other tasks related to the foregoing.

6-71.15 Telephone Switchboard Operator (Public Service). Operates section of public telephone exchange switchboard dealing with local or long-distance calls: makes switchboard connections as required; deals with telephonic inquiries from the public. May make record of calls.

6-71.20 Telephone Switchboard Operator (Private Exchange). Operates telephone switchboard in industrial, commercial or other establishments: relays incoming and sometimes inter-office calls to internal telephones; makes connections for outgoing calls; deals with telephonic inquiries. May have additional duties of a clerical nature.

6-71.30 Telegrapher. Operates telegraphic equipment for transmitting and receiving messages: sends messages in code by operating a telegraphic key and interprets messages received. May operate electrically controlled keyboard to transmit messages in typescript and receive incoming messages.

6-71.40 Teleprinter Operator. Sends and receives typescript messages by means of a teleprinter: establishes electrical connection with another teleprinter; sends messages by pressing keys of teleprinter; receives messages and detaches them from machine; reports faults to telephone exchange.

6-71.90 Telephone and Telegraph Operators, Other. This group includes telephone and telegraph operators not elsewhere classified, for example, those transmitting messages by telephone.

6-72 Radio-Communication Operators

Workers in this unit group operate radio and television equipment. Their functions include operating and adjusting equipment associated with the transmitter of a radio or television broadcasting station; operating radio equipment on board ship or aboard aircraft in flight; performing other tasks related to the foregoing. Excluded are Sound-Recording-Equipment Operator (7-69.40) and Camera Operator (Television) (9-71.60).

6-72.15 Radio Broadcasting Station Operator. Operates and adjusts equipment associated with the transmitter of a radio broadcasting station: switches transmitter on and off; listens to programmes through loudspeaker or headphone, observes indicators and adjusts tone and volume; makes minor repairs and replaces parts.

6-72.20 Television Broadcasting Station Operator. Operates and adjusts equipment associated with transmitter of a television broadcasting station: switches transmitter on and off; views programmes through television monitor and adjusts picture for quality; listens to programmes through loudspeaker or headphone, observes indicators and adjusts tone and volume; makes minor repairs and replaces parts.

6-72.30 Radio Operator (Ship). Operates radio equipment on board a ship: tunes set to desired frequency and volume; transmits messages by radiotelephone or radiotelegraph, frequently using a code; receives messages, decodes them if necessary, and types them on special forms; keeps log of messages sent and received; makes minor repairs and replaces parts. May maintain radar equipment.

6-72.40 Radio Operator (Aircraft). Operates radio equipment aboard aircraft in flight: maintains contact with ground stations, exchanges messages, and reports to pilot; inspects equipment including radar equipment before flights; does maintenance work and minor repairs. May operate direction-finding equipment and report readings to pilot.

6-72.90 Radio Communication Operators, Other. This group includes radio communication operators not elsewhere classified.
6-8 Postmen and Messengers

Workers in this minor group deliver mail, messages, packages, documents, records, memoranda and other items to offices, departments or private homes either along regular routes or to specially designated addresses. Excluded are Drivers, Road Transport (minor group 6-4).

6-81 Postmen

Workers in this unit group deliver mail along a regular route to private homes and business establishments after sorting it according to streets and street numbers. They collect money for cash-on-delivery packages and keep records of deliveries of registered mail. May collect mail from mail-boxes and assist in sorting it for despatch to other post offices.

6-81.10 Postman. Delivers mail along a regular route to private homes and business establishments after sorting it according to streets and street numbers: collects money for cash-on-delivery packages; records deliveries of registered mail. May collect mail from mail-boxes and assist in sorting it for despatch to other post offices.

6-82 Messengers

Workers in this unit group sort and deliver letters, messages, packages, documents, records, memoranda and other items to offices or departments within an establishment, to other business concerns or to private homes. They make delivery trips by walking or riding. May keep simple records and obtain receipts for articles delivered.

6-82.10 Messenger. Sorts and delivers letters, messages, packages, documents, records, memoranda and other items to offices or departments within an establishment, to other business concerns or to private homes: makes delivery trips by walking or riding. May keep simple records and obtain receipts for articles delivered.

6-9 Workers in Transport and Communication Occupations Not Elsewhere Classified

Workers in this minor group perform miscellaneous operational duties in transport and communication which are not performed by workers classified elsewhere. Their functions include dealing with passengers on buses and trams; operating canal and port locks and lighthouses and performing other duties related to the operation of transport systems; inspecting and supervising communication services to ensure operational efficiency, and directly controlling the routing and transmission of radio, telephone and telegraph communications; sending and receiving messages by means of electric lamps, heliographs, flags and similar equipment and performing other duties related to communication operations.

6-91 Conductors, Road Transport

Workers in this unit group deal with passengers on buses and trams and signal driver to stop or proceed.

6-91.10 Conductor (Bus or Tram). Deals with passengers on local or long-distance runs and signals to driver to stop or proceed: collects fares and issues tickets and transfer slips; co-operates with driver in maintaining time schedule; ensures vehicle is not overloaded; announces stops and opens and closes doors; assists passengers and preserves order; keeps simple records.

6-92 Workers in Transport Occupations Not Elsewhere Classified

Workers in this unit group perform operational duties in transport which are not performed by those classified elsewhere. Their functions include operating mechanical and electrical machinery used in opening and closing locks on canals and in ports; operating lights and signal warning apparatus of a lighthouse or on lightship; performing other duties pertinent to the operation of transport systems. Excluded from this unit group are workers performing such functions as freight, baggage and goods handling at terminals, points of call or in yards; catering, domestic and other personal services; clerical services; construction, maintenance and repair of railway tracks, signals and the like, and of transport equipment; operating material-handling equipment; ticket selling and collecting when not done on vehicles; collecting toll on bridges and roads; general direction and administration of transport services.

6-92.20 Lock Operator, Canal and Port Locks. Opens and closes gates of locks on canals or in ports to permit the passage of waterborne craft: operates mechanical and electrical machinery used in opening and closing locks on canals or in ports; operates navi-
Lighthouse Operator. Operates light and signal warning apparatus of a lighthouse or lightship; sets illuminating apparatus into operation at sunset and extinguishes it at sunrise; cleans lighting mechanism and lenses; maintains equipment in operating condition and makes minor repairs. May operate fog and other warning signals.

6-92.90 Workers in Transport Occupations Not Elsewhere Classified, Other. This group includes workers in transport occupations not elsewhere classified, for example, those attending to gates, sluices and pumping machinery in connection with the docking of vessels; selling tickets on means of transportation other than bus or tram.

6-93 INSPECTORS, TRAFFIC CONTROLLERS AND DISPATCHERS, COMMUNICATION

Workers in this unit group inspect and supervise communication services. Their functions include controlling the routing and transmission of radio, telephone and telegraph communications to ensure smooth flow of messages and operational efficiency; performing other tasks related to the foregoing.

6-93.10 Dispatcher, Communication, Traffic. Controls the routing and transmission of radio, telephone and telegraph communications to ensure smooth flow of messages; receives reports of unsatisfactory transmission of messages and issues orders to improve service.

6-93.90 Inspectors, Traffic Controllers and Dispatchers, Communication, Other. This group includes inspectors, traffic controllers and dispatchers (communication) not elsewhere classified.

6-94 WORKERS IN COMMUNICATION OCCUPATIONS NOT ELSEWHERE CLASSIFIED

Workers in this unit group perform miscellaneous communication operations which are not performed by those classified elsewhere. Their functions include sending and receiving messages by means of electric lamps, heliographs, flags and similar equipment.

6-94.90 Workers in Communication Occupations Not Elsewhere Classified, Other. This group includes workers in communication occupations not elsewhere classified, for example, those sending and receiving messages by means of electric lamps, heliographs, flags and similar equipment.
MAJOR GROUP 7/8

CRAFTSMEN, PRODUCTION PROCESS WORKERS, AND LABOURERS NOT ELSEWHERE CLASSIFIED

This major group includes workers engaged in or directly associated with manufacturing processes and the construction, maintenance and repair of various types of highways, structures, machines and other products, and labourers not elsewhere classified. It includes workers performing functions such as making textile fabrics from fibres; making garments, gloves and other products in textile, fur and kindred materials, and garments and gloves of leather; making and repairing footwear, harness, and a variety of other products consisting mainly of leather; melting, melting, converting and refining metals and treating them by heating, and shaping them by moulding, hammering, rolling and similar processes; making and repairing watches, clocks, precision instruments, medical appliances and articles of jewellery and precious metal; manufacturing, constructing, assembling, installing, erecting, maintaining and repairing other metal products and structures; installing, maintaining, controlling, operating, fitting and repairing various kinds of electrical and electronic equipment; making, erecting, fitting and repairing objects and structures of wood, and setting and operating woodworking machines; applying paint, paper and other materials to surfaces for protective or decorative purposes, and painting signs; laying bricks and stone, applying plaster and insulating materials, installing glass and working on construction tasks not performed by workers elsewhere classified; printing on paper, textile, metal or other materials; binding books and performing related tasks; producing glass and making glass, clay and abrasive products; preparing foodstuffs and beverages on an industrial basis; performing a variety of tasks in chemical and related processes; processing tobacco leaves and making cigarettes, cigars and other tobacco products; and performing a variety of other tasks in production processes. Also included are workers packing, wrapping and securing materials and products for transportation or storage; operating various types of stationary engines and excavating, lifting and moving equipment; installing wire- and rope-cable systems and performing related tasks; loading and unloading freight carried by ships and by conveyances on land and in the air, and stored in warehouses and other establishments; and workers not elsewhere classified performing labouring tasks requiring primarily physical effort.

7-0 Spinners, Weavers, Knitters, Dyers and Related Workers

Workers in this minor group make textile fabrics from fibres. Their functions include preparing wool, cotton, flax, jute, hemp and other fibres for spinning and weaving; operating spinning, doubling, twisting and winding machines in the manufacture of yarn and thread; weaving various kinds of materials, preparing looms for operation and keeping them in good running order; knitting fabrics, preparing knitting machines for operation and keeping them in good running order; preparing
Workers in this unit group prepare wool, cotton, flax, jute, hemp and other fibres for spinning and winding. Their functions include grading, classifying, mixing and blending fibres by different methods; picking and combing fibres to produce a loosely matted layer (lap); carding and combing laps to make a rope-like untwisted strand (sliver); transforming sliver into stronger and more uniform strands (roving); washing wool fibres to prepare them for further processing; softening and beating flax, jute and hemp fibres; performing various other tasks related to the preparation of fibres.

7-01.15 Grader and Classer, Fibre. Grades and classifies wool, cotton, flax, hemp and other fibres: runs fibres through fingers to examine texture; notes colour of fibres; estimates length of fibres; evaluates the raw material and designates it according to grade.

Wool Sorter. In addition to grading and classifying also removes foreign material and places fibres into containers according to quality.

7-01.20 Mixer and Blender, Fibre. Mixes and blends raw fibres in preparation for spinning, to get desired quality or colour, or mixes raw fibres with reclaimed waste: spreads material on floor and gives it initial mixing; puts it into layers and sprays each layer with oil; feeds material into a machine for further mixing and blending.

7-01.25 Picker, Fibre. Operates picker machines that clean and fluff textile fibres: feeds fibres into machines, from which they emerge arranged in sheets or laps; removes rolls of lap and cleans and oils machines.

7-01.30 Carder, Fibre. Tends carding machine that cleans fibres, arranges fibres in parallel and transforms them from a layer of loosely matted fibre (lap) into a rope-like untwisted strand (sliver): feeds lap through rollers of machine; mats ends of new roll of lap on to end of exhausted one by pinching together with fingers; starts machine and replaces cans full of sliver with empty ones; cleans and oils machine.

7-01.35 Comber, Fibre. Operates a comber machine that combs out short fibres, removes dirt and delivers long fibres in a sliver preparatory to the first drawing (twisting) process: passes ribbon laps through machine guides; starts machine and maintains supply of lap; pinches together ends of full roll or broken ends of lap; replaces cans full of sliver with empty ones; cleans and oils machine.

7-01.40 Lapper, Fibre. Operates a machine that combines slivers into one sliver lap, or a machine that combines sliver laps into one ribbon lap, for use on the comber: passes end of each sliver through machine guides; starts machine and maintains supply of sliver; pinches together broken ends of slivers; removes rolls of lap when complete; cleans and oils machine.

7-01.45 Drawer, Fibre. Operates a drawing frame machine that combines several strands of sliver into one attenuated strand of regular quality and weight: passes sliver through machine guides; starts machine and maintains supply of sliver; twists broken ends together by hand; replaces cans full of sliver with empty ones; cleans and oils machine.

7-01.50 Rover, Fibre. Operates a roving frame machine that transforms sliver into roving: passes sliver through machine guides; starts machine and maintains supply of sliver; twists broken ends together by hand; removes full bobbins of twisted roving from machine spindles; cleans and oils machine.

7-01.55 Scourer, Wool Fibre. Washes wool fibres to prepare them for further processing: adds proper quantities of soap, soda and other scouring agents to bowls of machine; starts machine and feeds or supervises the feeding of raw, greasy wool into the series of bowls containing cleaning solution and rinsing water; keeps machine clean. May supervise operation of drier to ensure proper drying of cleaned wool.

7-01.90 Fibre Preparers, Other. This group includes fibre preparers not elsewhere classified, for example, those operating machines and equipment for softening and beating flax, jute and hemp fibres; washing raw stock fibres (other than wool fibres).

7-02 SPINNERS AND WINDERS, TEXTILE

Workers in this unit group operate spinning, doubling, twisting and winding machines in the manufacture of yarn and thread. Their functions include spinning thread and yarn out of roving; winding two single threads together on to a bobbin without twisting threads; twisting two or more strands of yarn or thread together into one strand to make it heavier and stronger; winding yarn or thread from one package to another to facilitate further processing or conveyance; performing auxiliary operations in the spinning and winding processes. Excluded is Spinner (Rayon and Similar Products) (8-39.45).

7-02.20 Spinner (Thread and Yarn). Operates machines for spinning thread and yarn out of roving: sets up and starts machine; detects and repairs broken strands of roving or yarn; notes when bobbins of roving are running out and replaces them with full ones while machine is still running; cleans and oils machine. Excluded is Spinner (Rayon and Similar Products) (8-39.45).

7-02.30 Doubler, Thread and Yarn. Operates machine that winds two or more single threads together on to a bobbin without twisting threads: inserts spindles
on core of each spool; draws ends of two or more threads through a guide simultaneously and winds them together on a bobbin; starts machine, watches the operation, mends broken ends by knotting and replaces full bobbins with empty ones; oils and cleans machine.

7-02.40  **Twister, Thread and Yarn.** Operates machine which twists two or more strands of yarn or thread together into one strand to make it heavier and stronger: places tubes of yarn or thread on rack; pulls ends of yarn or thread together and through the machine and fastens them around empty bobbins; starts machine, watches the operation, mends broken strands, replaces tubes when empty and bobbins when full; oils and cleans machine.

7-02.50  **Winder, Thread and Yarn.** Operates machine that winds yarn or thread from one package to another to facilitate further processing or conveyance: places packages such as cones, reels, bobbins or tubes on spindles of machine; pulls ends of yarn or thread through machine guides and attaches them to packages; starts machine, watches the operation, mends broken strands and replaces full packages with empty ones; oils and cleans machine.

7-02.90  **Spinners and Winders, Textile, Other.** This group includes spinners and winders not elsewhere classified, for example, those performing auxiliary operations in the spinning and winding processes.

7-03  **W e a v e r s, L o o m F i x e r s a n d L o o m P r e p a r e r s**

Workers in this unit group weave various kinds of materials, prepare looms for operation and keep them in good running order. Their functions include operating machine that winds yarn or thread from a number of bobbins either directly on to a weaver's beam or first on to a cylinder or reel and then on to a weaver's beam; drawing warp threads, by hand or machine, into loom in preparation for weaving; operating one or more looms to weave products such as plain or figured cloth, lace, carpet and net; setting and inspecting looms of various kinds and making minor repairs; performing auxiliary operations in weaving processes.

7-03.15  **Beam Warper.** Operates machine that winds yarn or thread from bobbins, either directly on to a weaver's beam or first on to a cylinder or reel and then on to the beam: gathers ends of yarn or thread from bobbins; guides them through a reed or comb in order required for width and design of fabric to be woven; fastens them to beam, cylinder or reel; starts machine and watches to ensure even tension of threads; repairs broken threads; cuts threads when beam is full or when required length has been wound on to it.

7-03.20  **Loom Threader, Hand.** Draws warp thread or yarn into loom by hand in preparation for weaving of fabric: pulls each thread or end of yarn on weaver's beam through separate eye of heddle by means of a hook; draws all ends, either singly or several at a time, through spaces between reed wires; knots ends in bunches ready for weaving; uses, if not assisted by another worker, a reaching machine which selects threads from beam in rotation and places them in position for drawing through eyes of heddle.

7-03.25  **Loom Threader, Machine.** Operates machine that draws warp threads into loom in preparation for weaving: lays warp in sheet on machine; manipulates levers, causing machine to pick out threads and draw them through the heddle, reed and drop wires.

7-03.30  **Weaver (Cloth), Hand Loom.** Weaves fabric on hand-operated loom: opens warp by depressing foot treadsles; throws weft shuttle across warp by hand or propels it by jerking a wooden handle; presses cross-thread (weft) into place with reed; mends broken threads by hand. May also prepare own loom (warping and drawing-in) and use hand-operated Jacquard figuring mechanism.

7-03.35  **Tapestry Maker, Hand.** Makes tapestry on hand-operated loom: passes weft by hand over and under the warps alternately and then, in reverse direction, passes weft under where before it was over and vice versa to create or reproduce designs of various colours; presses weft tightly together with a comb or with the point of the bobbin to cover the warps completely. May prepare own loom (warping and drawing-in) and undertake repair work.

7-03.40  **Weaver (Cloth), Machine Looms (except Jacquard Loom).** Operates a battery of looms to produce cloth: starts looms, sees that weaving is proceeding correctly, mends broken threads by hand and removes faulty pieces; keeps weft shuttles supplied with yarn; reports mechanical faults to Loom Fixer (7-03.70).

7-03.45  **Weaver, Jacquard Loom.** Operates Jacquard loom to weave cloth of intricate designs: starts loom, sees that weaving is proceeding correctly, mends broken threads by hand and removes faulty pieces; keeps weft shuttles supplied with yarn; reports mechanical faults to Loom Fixer (7-03.70). May pass threads through machine guides in preparation for weaving, and make minor adjustments.

7-03.50  **Weaver (Lace), Machine.** Operates lace-making machine: starts machine, sees that weaving is proceeding correctly: mends broken threads by hand and removes faulty pieces; keeps machine supplied with yarn; reports mechanical faults to Loom Fixer (7-03.70). May set up loom and see that pattern-cards and reports them to Loom Fixer (7-03.70).

7-03.55  **Weaver (Carpet), Hand Loom.** Weaves carpet on hand-operated loom: stretches foundation material over frame; weaves yarn of various colours through this cotton or jute backing according to the design; uses hand shuttle and presses weft into position with hand beater (prong); keeps weft shuttles supplied with yarn; mends broken threads by hand.

7-03.60  **Weaver (Carpet), Machine Loom.** Operates loom on which carpets or rugs are woven: furnishes loom with spools, bobbins, or other packages in arrangement required by design; starts loom, sees that weaving is proceeding correctly, mends broken threads by hand and removes or marks faulty pieces; keeps shuttles or needles supplied with weft; reports mechanical faults to Loom Fixer (7-03.70). May set up loom and see that pattern-cards are in position, if on pattern work.
7-03.65 Weaver (Net), Machine Loom. Tends loom on which yarn or twine is intersected and knotted at regular intervals to form a mesh: starts machine, sees that weaving is proceeding correctly; mends broken threads by hand and replaces faulty pieces; replaces empty bobbins with full ones; joins yarn from bobbins on to yarn ends of completed run of net still threaded in loom; reports mechanical faults to Loom Fixer (7-03.70). May fill spare shuttles with yarn on a winding attachment near loom.

7-03.70 Loom Fixer. Sets, inspects and repairs looms of various kinds; prepares looms for weaving a new pattern or different quality of product, for example, by setting harness, reed and drop-wires into position and tying warp ends on to cloth beam; inspects looms periodically and keeps them in good working order; makes repairs such as putting in new harness straps and replacing worn out shuttles; replaces empty warp beams with full ones.

Loom Fixer, Jacquard Loom, also places chain of pattern cards in position.

7-03.90 Weavers, Loom Fixers and Loom Preparers, Other. This group includes weavers, loom fixers and loom preparers not elsewhere classified, for example, those performing auxiliary operations in weaving processes.

7-04 Knitters and Knitting-Machine Setters

Workers in this unit group knit fabrics by hand and by machine, prepare knitting machines for operation and keep them in good running order. Their functions include operating one or more machines that knit fabrics, garments and other articles from yarn; knitting sweaters, dresses, socks and other articles by hand from yarn; setting, adjusting and making minor repairs to knitting machines; performing auxiliary operations in knitting processes.

7-04.10 Knitter, Power-Driven Machine. Tends one or more standard or specialised power-driven machines that knit fabrics, garments and other articles from yarn: places bobbins of yarn of proper colour on frame of machine; passes end of yarn through machine guides into knitting needle or yarn carrier, or ties it to end of yarn in machine; starts machine and sees that knitting is proceeding correctly; adjusts tension of springs so that knit will not be too tight or too loose; inspects knitted material for flaws and determines cause of defects; mends broken threads by hand; separates knitted material or garment from machine with scissors; reports mechanical faults to Knitting-Machine Setter (7-04.40). May set needles of machine for width and pattern of cloth and replace broken needles.

Knitter, Power-Driven Machine, Hosiery. Tends a specialised power-driven machine for the production of fully fashioned, seamless and other types of hosiery.

7-04.20 Knitter, Hand-Operated Machine. Knits fabrics, garments and other articles from yarn on a hand-operated machine: places cone of yarn on spindle and passes end of yarn through guides into knitting needles or yarn carrier; arranges needles to operate in proper sequences to knit according to desired pattern; separates needle plates of machine by operating lever; sets comb between needle plate or hangs the stitches of a strip of knitted material on needles of machine; moves carriage of machine back and forth by hand to knit fabric or garment.

7-04.30 Knitter, Hand. Knits sweaters, dresses, socks and other articles by hand from yarn according to specifications: uses needles of various sizes according to desired effect. May finish articles by sewing parts together and pressing.

7-04.40 Knitting-Machine Setter. Sets, adjusts and makes minor repairs to various types of knitting machines: sets machines according to design, shape and size of desired product; examines products and decides whether adjustments or repairs of machines are necessary; makes adjustments and partly dismantles machines to repair or replace broken or worn-out parts. May set up metal chains that control the operation of a Jacquard knitting machine, and arrange them in the machine.

7-04.50 Knitters and Knitting-Machine Setters, Other. This group includes knitters and knitting-machine seters not elsewhere classified, for example, those performing auxiliary operations in knitting processes.

7-05 Pattern-Card Preparers

Workers in this unit group prepare pattern-cards for use on Jacquard looms. Their functions include reproducing designer's sketches in diagram form on squared paper; operating machine that punches holes in Jacquard cards; performing various other tasks related to the preparation of pattern-cards.

7-05.20 Copyist, Design, Jacquard Card. Reproduces designer's sketches in diagram form on squared paper for the guidance of Card Cutter, Jacquard (7-05.30) and Weaver, Jacquard Loom (7-03.45): indicates on paper where warp is to be raised over weft; makes copies of previously prepared diagrams.

7-05.30 Card Cutter, Jacquard. Operates machine that punches holes in Jacquard cards: places plain cards in a cutting machine equipped with a keyboard; depresses keys to punch holes into card according to pattern indicated on diagrams prepared by Copyist, Design, Jacquard Card (7-05.20).

7-05.90 Pattern-Card Preparers, Other. This group includes pattern-card preparers not elsewhere classified, for example, those checking and correcting punched holes in pattern-cards; operating machines which produce working copies of pattern-cards from a master set; laying pattern-cards together in proper sequence by hand or machine.

7-06 Bleachers, Dyers and Finishers of Textiles

Workers in this unit group bleach, dye and otherwise treat fibres, yarn, cloth or other textile goods. Their functions include washing yarn and cloth to remove natural oil and gum.
or impurities; making materials lighter in colour
or giving them colour; giving them an ordinary
or special finish; shrinking or stretching textile
goods; strengthening weaves of cloth by inter-
locking of fibres; removing fibre protrusions
from cloth; giving silk weight or body; perform-
ing other tasks in the treatment of materials.
It excludes printing on textiles (unit group 8-02),
preparing the chemicals used in treatment
(minor group 8-3), waterproofing of textiles with
rubber (unit group 8-33) or oil (8-59.90), launder-
dering and cleaning used goods (unit group 9-51).

7-06.15 Bleacher, Textile. Treats fibres, yarn, cloth
or other textile goods to make them lighter in colour:
fills container with water and adds chemicals; immerses
material in solution; controls temperature of solution,
movement of material through it and period of immer-
sion; drains off solution and rinses material; removes
material and passes it on for drying or further treatment.
May bleach by means of light and air and specialise in
type of material treated.

7-06.20 Dyer (Yarn). Treats yarn with dyes to give it
required colour: fills container with water and adds dyes;
controls temperature of solution; puts yarn in or on to a
holding device and immerses it in solution;agitates yarn
or solution; withdraws sample of yarn after prescribed
period for colour testing; stops, continues or adjusts
process until required effect is obtained; cleans equipment.

7-06.25 Dyer (Fabric). Treats textile fabric with dyes
to give it required colour: fills container with water and
adds dyes; controls temperature of solution; sews ends of
fabric together, if necessary; puts fabric in or on a holding
device and immerses it in solution; agitates fabric or
solution; cuts off sample of fabric after prescribed period
for colour testing; stops, continues or adjusts treatment
according to result of test; withdraws fabric and
passes it on for rinsing and drying; drains and cleans
container. May do rinsing and drying.

7-06.30 Dyer (Garment). Re-dyes garment to give it
colour desired by customer: fills container with water and
adds dyes; controls temperature of solution; sews ends of
fabric together, if necessary; puts fabric in or on a holding
device and immerses it in solution; agitates fabric or
solution; cuts off sample of fabric after prescribed period
for colour testing; stops, continues or adjusts treatment
according to result of test; withdraws fabric and
passes it on for rinsing and drying; drains and cleans
container. May do rinsing and drying.

7-06.35 Washer, Textile. Treats yarn, cloth or
finished goods to remove impurities or excess chemicals:
fills container with water; raises water to required tem-
perature; adds soap or other cleansing agent; immerses
material in, or feeds it through, container; controls
temperature of solution and period of immersion or
speed of feeding; passes material on for rinsing and
drying or other treatment; drains and cleans container.
May do rinsing and drying of material.

7-06.40 De-gummer, Silk. Treats silk yarn, cloth or
piece goods to remove natural gum: fills container with
water; raises water to required temperature; adds soap
or other cleansing agent; controls temperature of solu-
tion; places skeins of yarn in boiling solution or on
removing arms of container; attaches cloth or piece
goods to suspended rods, canes or metal frames and
moves these through solution; rinses material in hot
water; drains and cleans container. May do drying.

7-06.45 Carboniser, Textile. Treats wool, woollen
rags or cloth to remove vegetable matter: feeds material
into a bath containing a weak solution of acid, such as
sulphuric acid, to carbonise matter; allows material to
soak; passes it through rollers to remove solution;
transfers it to bath containing alkaline solution to neu-
tralise acidity; dries it and feeds it through rollers to
pulverise matter; shakes out matter by hand or machine.

7-06.50 Shrinker, Textile. Tends equipment to
shrink woven material to required length and width:
fills tank with water; raises the water to required tempera-
ture and adds shrinking agent; feeds lengths of material
through rollers and sews ends of material together; con-
trols temperature of solution; passes material through
solution and rollers until the desired effect is obtained;
cleans equipment. May use equipment to cause fibres of
material to felt or interlock, use other equipment for
pummelling, pressing and steam heating the material, and
do rinsing and drying.

7-06.55 Fuller, Textile. Tends equipment to cause
fibres of wool to interlock and strengthen the cloth for
further processing: fills tank with water and raises it to
required temperature; adds soap to water; feeds lengths
of material through rollers and sews ends together; con-
trols temperature of solution; passes material through
solution and rollers until desired effect is obtained;
cleans equipment. May combine a dyeing process with
the waterproofing and may also dry the material. Excluded are persons treating with rubber
(unit group 8-33) or oil (8-59.90).

7-06.60 Waterproofer, Textile. Treats textiles with
chemicals to make them water-resistant: fills container
with chemical solution; controls temperature of solu-
tion; feeds lengths of material into rollers and joins ends
together; passes material through rollers into solution
until it is impregnated; watches for and removes folds and
creases; cleans equipment. May combine a dyeing
process with the waterproofing and may also dry the
material. Excluded are persons treating with rubber
(unit group 8-33) or oil (8-59.90).

7-06.65 Weighter, Silk. Treats silk with solutions of
tin and phosphates to give it weight or body: wraps silk
in blanket or coarse canvas; places it in container of cen-
trifugal machine; pumps solution of tin from a mixing vat
into the machine which is run for a period with
material immersed in solution; draws off solution;
transfers material to spray-washing machine; returns
material to centrifugal machine containing phosphates
and runs it to fix tin to the silk; repeats process, as
necessary, to obtain desired weight.

7-06.90 Bleachers, Dyers and Finishers of Textiles.
Other. This group includes bleachers, dyers and
finishers of textiles not elsewhere classified, for example,
those dyeing unspun fibres, hosiery or knit goods;
disentangling skeins of yarn after washing, bleaching,
dyeing or other treatment; cleaning materials at any stage
of treatment; removing fibre protrusions; stretching
textile goods; pressing made-up goods; re-waterproofing
used goods; sizing the warp; performing other tasks in
the treatment of materials.
Workers in this minor group make garments, gloves and other products in textile, fur and kindred materials and garments and gloves of leather. Their functions include making tailored clothing, dresses, shirts, lingerie and similar garments completely or performing the more difficult tasks in their manufacture, alteration and repair; making garments and other articles of fur completely or performing the more difficult tasks in their manufacture, alteration, repair or renovation; making hats completely; performing all or several tasks in upholstery, mattress making and kindred occupations; making patterns and marking and cutting materials in the manufacture of garments, gloves and miscellaneous products of textile and kindred materials; sewing and embroidering garments and gloves by hand or machine; performing other functions related to the foregoing.
MAJOR GROUP 7/8

7-11 TAILORS, DRESSMAKERS AND GARMENT MAKERS

Workers in this unit group make tailored clothing, dresses, skirts, lingerie and similar garments completely or perform the more difficult tasks in their manufacture, alteration and repair. Their functions include making overcoats, suits, skirts and similar garments to individual requirements; performing one or more of the difficult hand- or machine-sewing operations in the manufacture of such garments made ready to wear; making dresses completely or from material prepared by cutter and fitter; making shirts, blouses, lingerie, corsetry and other garments completely; altering, renovating and repairing garments. Sewers performing repetitive or other less difficult tasks not requiring the degree of knowledge and skills associated with tailoring and dressmaking are classified in unit group 7-16.

7-11.10 Tailor (Made-to-Measure Garments). Performs the more difficult hand or machine-sewing tasks in the manufacture of ready-to-wear overcoats, suits, skirts and similar clothing: fits coat, trouser, skirt and waistcoat manufacture. May supervise other tailors or specialise in making one type or part of garment or in altering and repairing worn clothing.

7-11.20 Tailor (Ready-to-Wear Garments). Performs the more difficult hand or machine-sewing tasks in the manufacture of ready-to-wear overcoats, suits, skirts and similar clothing: fits coat collar facings to under-collar and sews them together; bastes collar to coat and stitches them permanently together; fits basted garment on customer and marks parts requiring alteration; makes necessary alterations, sews parts permanently together by hand and machine and finishes garment. May supervise other tailors or specialise in making one type or part of garment or in altering and repairing worn clothing.

7-11.30 Dressmaker. Makes dresses completely or from material prepared by cutter and fitter: cuts out material in accordance with customer's measurements and designer's sketches; bastes garment parts together and fits them on customer or on dressmaker's model and makes necessary alterations; sews parts permanently together by hand and machine and finishes garment. May alter and repair garments in accordance with individual requirements.

7-11.90 Tailors, Dressmakers and Garment Makers, Other. This group includes tailors, dressmakers and garment makers not elsewhere classified, for example, those making shirts, blouses, lingerie and corsetry completely; altering garments in retail establishments, and altering, renovating and repairing garments in establishments undertaking such work either as a speciality or as a secondary service.

7-12 FUR TAILORS AND RELATED WORKERS

Workers in this unit group make garments and other articles of fur completely or perform the more difficult tasks in their manufacture, alteration, repair or renovation. Their functions include performing all or several tasks in making, altering, renovating or repairing fur articles; examining and sorting furs prior to cutting and use for fur articles; cutting, nailing and stretching, and trimming furs according to pattern outlines. Excluded are those treating pelts classified under Tanners, Fellmongers, Pelt Dressers and Related Workers (unit group 8-54); cleaners of fur (classified in unit group 9-51: Launderers, Dry Cleaners and Pressers); also sewers, who are classified in unit group 7-16: Sewers and Embroiderers (Textile and Fur Products, Leather Garments and Gloves).

7-12.10 Tailor (Fur). Performs all or several of the more difficult tasks in the manufacture, alteration, renovation and repair of garments and other articles of fur: prepares patterns for cutting out and finishing fur articles; grades, matches, sorts and prepares furs to be used; cuts furs according to pattern; sews pieces together, usually by machine; stretches and trims sewn parts to conform to pattern; finishes article by machine and hand sewing; presses, repairs, alters and renovates fur articles; estimates cost of new articles and of alteration, renovation and repair of used articles.

7-12.20 Patternmaker (Fur). Prepares patterns and full-size canvas models of garments and other articles of fur to guide cutters and finishers: draws patterns on paper in accordance with garment design or customer's measurements; makes canvas model of garment according to patterns; checks patterns and model for accuracy and makes necessary alterations; passes them to garment cutters or finishers; examines completed garment for defects; cuts patterns for fur trimmings, accessories and other fur articles and for alterations of fur articles.

7-12.30 Grader and Matcher, Fur. Examines furs and sorts them prior to cutting and making up into garments or other articles; compares furs visually and sorts them according to quality; selects furs that match in colour, thickness and length of hair and makes them into bundles ready for cutter. May specialise in one or more types of fur. A worker grading pelts before or immediately after they have been dressed is classified as Pelt Grader (8-54.65).

7-12.40 Cutter (Fur). Cuts fur according to pattern for making or repairing garments or other articles: selects required number of furs; arranges furs on pattern outlines, ensuring that parts to be joined together match in quality and colour; cuts furs to required size and shape with hand knife. May also perform some or all the duties of Grader and Matcher, Fur (7-12.30) and Nailer, Fur (7-12.50).
7-12.50 Nailer, Fur. Stretches and trims dressed furs to conform to pattern outline of garment or other article: chalks outline of pattern on worktable; dampens skin side of fur with water; places fur, skin side up, on table, stretches it to cover outline and nails it in position; allows fur to dry in stretched position and removes nails; chalks outline of paper pattern on skin side of fur and trims fur along outline with knife.

7-12.90 Fur Tailors and Related Workers, Other. This group includes fur tailors and related workers not elsewhere classified, for example, those beating, dyeing and trimming hair or fur; assisting in cutting furs for garment manufacture.

7-13 MILLINERS AND HATMAKERS

Workers in this unit group make hats completely. Their functions include making women's and children's hats completely out of a variety of materials such as felt, silk, velvet and straw; making other types of hats completely. Those performing specialised tasks in hatmaking are classified elsewhere in minor group 7-1 according to nature of work performed.

7-13.10 Milliner. Makes women's and children's hats completely out of a variety of materials such as felt, silk, velvet and straw; prepares own designs or copies and adapts existing designs; marks and cuts material according to pattern or own judgment; smooths, wires and shapes hat parts and sews them together; adds trimmings and decorates hat as required. May make and alter hats to individual requirements.

7-13.90 Hatmakers, Other. This group includes hatmakers, other than milliners, making hats and caps completely, for example those making men's hats.

7-14 UPHOLSTERERS AND RELATED WORKERS

Workers in this unit group perform all or several tasks in upholstering, mattress making and similar occupations. Their functions include upholstering furniture; installing covering and cushioning for seats and for other furnishings on vehicles; making mattresses and other bedding completely; fitting and installing soft furnishings of textile, leather and similar materials. Those performing specialised tasks in upholstering or mattress making, such as cutters, patternmakers and sewers, are classified elsewhere in minor groups 7-1 or 7-2 according to the nature of the work they perform.

7-14.20 Upholsterer (Furniture). Installs, arranges and secures springs, padding and covering material to frames of furniture: makes base for seats with bands of canvas or burlap; secures metal springs, sponge rubber, animal hair, cotton felt or other padding to seat, back, arms and other parts of furniture; takes measurements and cuts out covering material to required shapes; aligns material, stretches it over parts to be covered and nails, sews or cements it into position; repairs upholstered parts of worn furniture. May make loose cushions for furniture.

7-14.30 Upholsterer (Vehicle). Installs covering and cushioning for seats and for other furnishings on vehicles, such as motor cars, railway coaches and aircraft; takes measurements for furnishings or works from drawings; cuts out materials; makes and fits springs, padding and covering to seats; fits lining to roof, doors and other parts; cuts out and fixes materials for excluding sounds and draughts. May lay floor covering and make and fit vehicle blinds and fabric roofs.

7-14.40 Mattress Maker. Makes mattresses completely by hand or machine; arranges and fits springs, sponge rubber, animal hair, flock or other filling material inside mattress cover; closes cover by sewing; evens out filling material by beating and hand smoothing; marks points for tufting buttons on both sides of mattress cover and joins opposite buttons with sewing cord to give shape to mattress; sews through sides and ends of mattress so as to hold filling in position; gathers and stitches edges of mattress into a roll to preserve shape of mattress. May make mattress covers and repair and rebuild mattresses.

7-14.90 Upholsterers and Related Workers, Other. This group includes upholsterers and related workers not elsewhere classified, for example, those cutting out, or making completely curtains, pelmets, wall and furniture covers, quilts and other soft furnishings.

7-15 PATTERNMAKERS, MARKERS AND CUTTERS, TEXTILE PRODUCTS, LEATHER GARMENTS AND GLOVES

Workers in this unit group make patterns and mark and cut materials in the manufacture of garments, gloves and miscellaneous products of textile and kindred materials and leather. Their functions include drawing and cutting out patterns of parts of suits, shirts, dresses, blouses and other garments; drawing and cutting out patterns of parts of hats and caps; making outlines of patterns on cloth, light leather or similar materials to guide cutter of materials for garment making; cutting materials (except leather), usually several layers at a time, in the manufacture of ready-to-wear clothing; cutting leather in the manufacture of garments or gloves; cutting material other than leather in the manufacture of gloves; performing similar tasks in the manufacture of other products.

7-15.20 Patternmaker (Garments). Draws and cuts out patterns of parts of suits, shirts, dresses, blouses, lingerie and other garments, excluding fur garments, to guide in the manufacture of completed articles: studies sketches, models and measurements of required garments; draws shapes of required parts on paper, canvas, or similar materials; annotates drawings with code numbers, code letters and markings to guide cutters and sewers; cuts out the shapes or perforates their outlines with a tracing wheel to form the required patterns; cuts out each garment part, using pattern as guide, and directs the
making up of sample garment; checks sample garment and makes any necessary alterations to patterns. May advise on possible production economies in connection with patterns, alter old patterns in accordance with revised designs, and design new styles of garment. If employed mainly on designing of new styles of garment, is classified in unit group 0-91.

7-15.30 Patternmaker (Hats and Caps). Draws and cuts out patterns of parts of hats and caps, excluding fur hats and caps, to guide in the manufacture of completed articles: studies sketches, models and measurements of required headwear; draws shapes of required parts on paper, canvas, or similar material; annotates drawings with code numbers, code letters and markings to guide cutters and sewers; cuts out shapes or perforates their outlines with a tracing wheel to form the required patterns. May make up sample headwear to test patterns. May also design headwear. If employed mainly or wholly on creating original designs is classified in unit group 0-91.

7-15.40 Marker (Garments). Marks outlines of patterns on cloth, light leathers, or similar materials to guide cutter of materials for garment making: arranges patterns on material in such a way as to minimise waste when material is cut and to ensure matching of parts of assembled garments; traces outlines of patterns on material with chalk, crayon or soap; writes the design number and size within the outlines. May also make a guide for the cutter by arranging and drawing outlines of patterns on paper of the same size as the material to be cut.

7-15.50 Cutter, Ready-to-Wear Garments (except Leather). Cuts material other than leather, usually several layers at a time, in the manufacture of ready-to-wear clothing: checks layers of material to ensure that all ends and edges are even and that it lies flat and smooth; cuts through layers of material with power-driven knife, following pattern markings on top layer; keeps cutting machine adjusted. May also make up layers of material in readiness for cutting, mark pattern outlines on material and cut small quantities of material by shears, scissors, hand knife, hand-operated guillotine, power-driven oscillating knives or by a machine which presses shaped knives through leather; trims edges of finished gloves. May specialise in one or more types of cutting and be designated accordingly.

7-15.60 Cutter, Garments (Leather). Cuts leather in the manufacture of garments: examines leather to ensure that it is cut in the most suitable and economical way; cuts leather according to patterns of garment parts by shears, scissors, hand knife, hand-operated guillotine, power-driven oscillating knives or by a machine which presses shaped knives through leather. May specialise in one or more types of cutting and be designated accordingly.

7-15.70 Cutter, Gloves (Other than Leather). Cuts out material other than leather, in the manufacture of gloves: cuts material, usually several layers at a time, by shears, scissors, hand-operated guillotine, power-driven oscillating knives or by machine which presses shaped knives through material; trims finished gloves. May specialise in one or more types of cutting and be designated accordingly.

7-15.80 Cutter, Gloves (Leather). Cuts leather in the manufacture of gloves: dampens and stretches leather to ascertain flexibility, the location of flaws and the most suitable and economical way of cutting; cuts leather according to pattern of glove parts by shears, scissors, hand knife, hand-operated guillotine, power-driven oscillating knives or by a machine which presses shaped knives through leather; trims edges of finished gloves. May specialise in one or more types of cutting and be designated accordingly.

7-15.90 Patternmakers, Markers and Cutters (Textile Products, Leather Garments and Gloves), Other. This group includes patternmakers, markers and cutters of textile products, leather garments and gloves not elsewhere classified, for example, those marking and cutting materials for the manufacture of household linen, upholstery, mattresses, sails, awnings, tents and umbrellas.

7-16 Sewers and Embroiderers, Textile and Fur Products, Leather Garments and Gloves

Workers in this unit group sew and embroider garments, gloves and miscellaneous products of fur, textile and kindred materials. Their functions include performing by hand one or more sewing tasks in the making, alteration, renovation and repair of garments or other articles of fur; performing by hand one or more sewing tasks in the making, alteration, renovation and repair of garments, except those of leather or fur; sewing leather parts by hand in the manufacture or repair of garments or gloves; embroidering garment parts or other materials by hand stitching; performing various hand- and machine-sewing tasks; operating a standard or specialised, single- or multiple-needle sewing machine; embroidering garment parts or other materials by use of a standard sewing or specialised machine; performing other sewing and embroidering tasks.

7-16.20 Sewer, Hand (Fur). Performs by hand one or more sewing tasks in the making, alteration, renovation and repair of garments or other articles of fur: sews furs together and bindings to garment edges; sews into position the padding for cuffs and collars, linings and interlinings of garments; sews on the buttons, hooks and other fastenings.

7-16.30 Sewer, Hand (Garments) (except Leather and Fur). Performs by hand one or more sewing tasks in the making or repair of garments except those of leather or fur: sews visible stitching on high-grade garments; bases parts together; stitches linings into position; sews on buttons and trimmings; ornaments garments with decorative stitching other than embroidery. May specialise in a particular task and be designated accordingly. Excluded are hand sewers (classified in unit group 7-11).

7-16.40 Sewer, Hand (Leather Garments or Gloves). Sews by hand leather parts in the manufacture or repair of garments or gloves: sews leather parts together or to fabric parts, leather binding on edges of garments, and linings and buttons to leather parts. May specialise in one or more sewing tasks and do decorative stitching.
7-16.50 Embroiderer, Hand. Works decorative designs on garment parts or other materials by hand stitching; fastens embroiderer's hoop around area to be worked on to keep it taut; sews according to pattern or to own design, changing needles, threads and type of stitch as required. May mark outline of design on material before commencing embroidery, specialise in one or more types of embroidery, use beads or similar decorative materials instead of threads.

7-16.60 Sewer, Hand and Machine, General. Performs various hand- and machine-sewing tasks in the making, altering and repairing of articles of textile and kindred materials; works in such places as shops, factories, hotels and other establishments and applies skill as required in the making, finishing, remodelling or mending of articles.

7-16.70 Sewing-Machine Operator (Textile and Fur Products, Leather Garments or Gloves). Operates a standard or specialised single- or multiple-needle sewing machine in the manufacture, repair and renovation of garments, gloves and miscellaneous products in textiles and kindred materials; places bobbins of thread on machine; passes ends of thread through machine guides and the eye(s) of machine needle(s); makes necessary adjustments to machine; guides material under needle(s) and removes it when sewing is completed; replaces empty bobbins and damaged needles; varies tasks as required by work performed. May be designated according to kind of sewing being done or to type of machine used. A worker embroidering by standard sewing or specialised machine is classified as Embroiderer, Machine (7-16.80).

7-16.80 Embroiderer, Machine. Produces ornamental designs on garment parts or other materials by use of standard sewing or specialised machine: places bobbins of selected threads on machine; passes ends of thread through machine guides and the eye(s) of machine needle(s); adjusts machine for thread tension and type of stitch; arranges material in position for stitching; guides material or sewing arm of machine in accordance with design or guides point of pantograph on enlarged design; changes threads as required; replaces empty bobbins and damaged needles; removes article when embroidering is completed. May mark outlines of design on material before embroidery is started, operate machine which embroiders several articles or designs at the same time. An embroiderer using a crocheting machine is classified as Crocheting-Machine Operator (7-09.40).

7-16.90 Sewers and Embroiderers (Textile and Fur Products, Leather Garments and Gloves), Other. This group includes sewers and embroiderers of textile and fur products, leather garments and gloves not elsewhere classified, for example, those hand-sewing household linen, hats, caps, upholstery, mattresses, sails, awnings, tents and umbrellas.

7-19 Apparel and Related Product Makers Not Elsewhere Classified

Workers in this unit group perform various tasks in the manufacture of apparel and related products, not performed by those classified elsewhere. Their functions include making sails, tents, awnings and umbrellas completely, and performing a variety of other tasks related to the foregoing. Excluded are Presser, Machine (9-51.60) and Presser, Hand (9-51.70).

7-19.10 Sail, Tent and Awning Maker, General. Makes completely or performs the more difficult tasks in the making of sails, tents, awnings and similar products, by hand or machine; examines drawings and specifications of required products; selects and lays out material for cutting; cuts material to required shapes by hand shears, metal punches or cutting machine; sews sections of material together and attaches rope and metal fittings, such as eyelets. May take measurements and prepare drawings and specifications, splice wire and rope, dress material with protective substances, assemble and mount awning parts on frame for erection.

7-19.20 Umbrella Maker. Assembles and covers umbrellas; cuts covering material with shears according to patterns; sews sections together on sewing machine; attaches covering to collapsible frame, using thread and needle; fastens handle to frame and presses metal tip on end of umbrella. May assemble and rivet parts of frame together and repair umbrellas.

7-19.90 Apparel and Related Product Makers Not Elsewhere Classified, Other. This group includes apparel and related product makers not elsewhere classified, for example, those shaping hats by hand or machine; making artificial flowers; making decorative trimmings with feathers; making hand-knotted carpets; making footwear mainly of rope or canvas. Excluded are Presser, Machine (9-51.60) and Presser, Hand (9-51.70).

7-2 Leather Cutters, Lasters and Sewers (except Gloves and Garments) and Related Workers

Workers in this minor group make and repair footwear, harness for use on horses and other animals and a variety of other products consisting mainly of leather.

7-21 Shoemakers and Shoe Repairers

Workers in this unit group make complete footwear and repair footwear, mainly of leather. Their functions include making standard or orthopaedic footwear according to individual requirements of customers; repairing footwear; specialising in making a particular kind of footwear. Those classified in this unit group are primarily all-round craftsmen and general repairmen. Excluded are those specialising in any of the shoemaking or repairing processes...
7-21.00 Footwear Maker, General. Makes complete standard footwear, mainly of leather, for individual customers: takes measurements of feet and selects and adapts last; makes patterns and selects materials; cuts out various parts by hand, using patterns; thins edges of various parts of uppers by cutting or shaving; presses and bends parts into shape; glues lining to leather parts and sews them together; punches eyelet holes and inserts eyelets; tacks insole to last; cuts upper on to last to give it required shape; checks alignment of toe and heel of upper; folds bottom of upper over edge of insole and tacks or sticks them together; cuts a stitching channel around edges of sole; fixes sole to upper; builds up and fixes heels; trims and smooths footwear and applies inked wax, stain or paint where required; does ornamental nicking; gives final polish; inserts thin inner sole.

7-21.10 Footwear Maker, Orthopaedic. Makes complete footwear, mainly of leather, for customers with foot or leg deformities: studies drawings or other specifications; selects or makes special last; prepares patterns; chooses materials; cuts out parts by hand, using patterns; thins edges of parts of upper by cutting or shaving; presses and bends parts into shape; glues lining to leather parts and sews them together; punches eyelet holes and inserts eyelets; tacks insole to last; pulls upper on to last to give it required shape; checks alignment of toe and heel of upper; builds up sole where required; folds bottom of upper over edge of insole and tacks or sticks them together; cuts a stitching channel around edges of sole; fixes sole to upper; builds up and fixes heel; trims and smooths footwear and applies inked wax, stain or paint where required; does ornamental nicking; gives final polish; inserts thin inner sole.

7-21.20 Footwear Maker, Orthopaedic. Makes complete footwear, mainly of leather, or in preparation of dies: follows drawings or other specifications or fits pieces of paper over last to obtain contour; cuts out by hand, from sheet wood or millboard, master patterns of parts of footwear according to drawings, specifications or contour; inserts master patterns in a machine and operates it to produce working patterns; binds edges of working patterns with metal. May cut working patterns by hand. May specialise in pattern cutting and be designated accordingly.

7-21.30 Footwear Repairman. Repairs footwear, mainly of canvas (unit group 7-19), plastics (unit group 8-53), raffia (8-59.90), rope (7-19.90), rubber (unit group 8-52) and wood (minor group 7-7).

7-22 Cutters, Lasters, Sewers (Footwear) and Related Workers

Workers in this unit group make parts of footwear and perform specialised tasks in the manufacture and repair of footwear, mainly of leather. Their functions include preparing pat-
7-23.50 Laster. Joins upper parts of footwear (mainly of leather) to insole to make them ready for sewing together: places and tacks insole on last; fixes last in a holding jig; pulls upper on to last by machine to give it required shape; checks alignment of toe and heel of upper; fixes bottom of upper in pincers of a machine which holds it evenly and closely over edge of insole; fixes folded part of upper to insole by operating a tacking device or by spreading an adhesive solution along edge of inner sole. May specialise in one or more tasks and be designated accordingly.

7-23.55 Taker-Off, Boot and Shoe Finishing. Examines and finishes new and repaired footwear, mainly of leather: trims edges of soles and heels and smooths their surfaces; irons-in edges of soles, heels and uppers where required; does ornamental nicking; applies inked leather: trims edges of soles and heels and smooths their surfaces; irons-in edges of soles, heels and uppers where required; does ornamental nicking; applies inked wax, stain or paint to sole and heel and polishes them. May specialise in one or more of the operations (for example, trimming or ironing) and be designated accordingly.

7-23.90 Cutters, Lasters, Sewers (Footwear) and Related Workers, Other. This group includes footwear cutters, lasters, sewers and related workers who are not elsewhere classified, for example, those shaping some parts of footwear, mainly of leather: selects leather and cuts out parts by hand, using a pattern and a knife or shears; or lays it on table of guillotine or cutting press and cuts by operating guillotine or press after fitting appropriate die. May specialise in cutting by hand or machine and be designated accordingly.

7-29 Leather-Product Makers Not Elsewhere Classified

Workers in this unit group make and repair products, consisting wholly or mainly of leather, and are not elsewhere classified. Their functions include making and repairing products such as belts, footballs, handbags, wallets, luggage, brief cases and leather novelties.

7-29.10 Leather-Product Maker, General. Makes, by hand and machine, a variety of products consisting mainly of leather, such as belts, footballs, handbags, wallets, luggage and brief cases, and leather novelties: selects and cuts materials; thins edges of leather and shapes parts; bores and punches holes; glues and sews parts together; rivets, trims and smooths where necessary; stains and polishes or otherwise treats leather; attaches metal parts and fittings. May prepare patterns and own designs and use clamps, forms and equipment for embossing designs. May also do repairs.

7-29.20 Leather Cutter (except Footwear, Gloves and Garments). Cuts out leather parts for making a variety of products: selects leather; lays it on a bench and cuts out parts by hand, using a sharp, toothed wheel; makes holes by punching or boring or by needle when sewing; pulls thread through holes with needles or hooked instruments or pushes it through with a pointed piece of wood or metal; repeats process in opposite direction with another thread or carries out process simultaneously; draws threads tight; repeats both processes until work is completed. May do repairs, treat thread with wax or other material, and sew with one thread.

7-29.40 Leather Sewer, Machine (except Footwear, Gloves and Garments). Sews together by hand the leather parts used in making a variety of products: marks off holes by measuring and pricking or by using a sharp, toothed wheel; makes holes by punching or boring or by needle when sewing; pulls thread through holes with needles or hooked instrument or pushes it through with a pointed piece of wood or metal; repeats process in opposite direction with another thread or carries out process simultaneously; draws threads tight; repeats both processes until work is completed. May do repairs, treat thread with wax or other material, and sew with one thread.

7-29.90 Leather-Product Makers Not Elsewhere Classified, Other. This group includes makers of leather products not elsewhere classified in minor group 7-2.
7-3 Furnacemen, Rollers, Drawers, Moulders and Related Metal Making and Treating Workers

Workers in this minor group produce metals by smelting, melting, converting and refining, treat them by heating, and shape them by moulding, hammering, rolling and similar processes. Their functions include operating furnaces in the smelting, melting, converting, refining and heating of metal; altering the physical properties of metal objects by heating, cooling and chemical treatment; operating rolling mills in which hot or cold metal is rolled into semi-finished and finished products; making and shaping articles and parts from heated metal by hammering or pressing; making moulds and their cores for use in casting molten metal, and casting the metal; drawing and extruding metals through dies in the production of wire, pipe, tube, and similar products; performing other miscellaneous tasks in the making and treating of metal.

7-31 Furnacemen, Metal

Workers in this unit group operate furnaces in the smelting, melting, converting, refining and heating of metal. Their functions include supervising the operation of a furnace and performing one or more of the more difficult tasks; smelting ore to produce metal; converting pig-iron into steel; refining ferrous and non-ferrous metals; melting ferrous and non-ferrous metals for castings; heating metal objects for forging, pressing and rolling operations; performing various other tasks related to the foregoing.

7-31.15 Blast Furnaceman, Ore Smelting. Operates a blast furnace in which ores are smelted to produce ferrous or non-ferrous metal; orders furnace to be charged with coke, flux and ore in alternate layers; lights furnace; ascertains approximate temperature in furnace by observing colour of molten metal and reading thermometers; controls air-blast pressure and raises or lowers internal temperature by adjusting valve; taps furnace by breaking clay plug in taphole to allow molten metal to run into ladle; supervises replacing of new plug. May operate lever to tilt converter. May supervise helpers performing the more routine activities in the tending of the furnace.

7-31.20 Open-Hearth (Martin) Furnaceman, Steel. Operates an open-hearth furnace in which scrap metal, pig-iron and fluxes are melted and purified to produce steel: orders furnace to be charged with materials; builds up temperature in furnace; regulates temperature and purification process by controlling supply of fuel and air; tests metal for carbon content; adds iron ore if carbon content is low or continues purifying process; ascertains temperature of metal, by use of pyrometer, to determine readiness for tapping; taps furnace by breaking clay plug in taphole to allow molten metal to run off into a ladle; skims slag from surface of molten metal with skimming rod; records total amounts of materials used in charge, time of tapping, and steel produced. May supervise helpers performing the more routine activities in the tending of the furnace.

7-31.25 Bessemer or Thomas Furnaceman, Steel Converting. Operates a steel converter in which molten pig-iron is converted into steel: preheats converter and orders it to be charged with molten pig-iron; controls blower which forces blast of air or oxygen through molten metal; regulates temperature of metal by admitting steam and adding cold pig-iron or scrap steel; ascertains rate of oxidation of elements and composition of steel by observing flame issuing from converter mouth; adds specific percentages of alloys of carbon, manganese and silicon to obtain desired quality of steel; orders pouring of molten steel into ladles; periodically directs refining of converter. May operate levers to tilt converter. May supervise helpers performing the more routine activities in the tending of the furnace.

7-31.30 Electric-Arc Furnaceman, Steel Refining. Operates an electric-arc furnace in which high-quality steel is produced by melting and refining: orders furnace to be charged with steel; switches on current and moves electrodes to form arc between electrodes and charge; sets device which automatically maintains determined length of arc during melting process; sets rheostat to control current and voltage; observes meters and rise and fall of electrodes to see that charge is melting properly; skims slag from surface of molten metal with a skimming bar; ascertains composition of metal by taking sample of molten metal and examining fracture of a cooled piece; ascertains fluidity of metal by observing and timing cooling of sample of molten metal; switches off current and pours molten metal into ladle by tilting furnace. May supervise helpers performing the more routine activities in the tending of the furnace.

7-31.35 Furnaceman, Non-Ferrous Metal Converting and Refining. Operates a furnace (such as electric, open hearth, reverberatory, or crucible) for converting or refining non-ferrous metals: charges furnace; fires or starts furnace; observes melting process, stirs molten metal, and skims slag from surface of metal; regulates furnace heat; ascertains pouring temperature by use of pyrometer; taps furnace or pours molten metal into ladle. May specialise in the operation of one type of furnace and be designated accordingly.

7-31.40 Furnaceman, Metal Melting (Cupola). Operates a cupola furnace in which metal (ferrous or non-ferrous) is melted for castings: lines bottom and lower parts of furnace with sand; prepares and lights initial charge (coke and kindling wood) on bottom of furnace; orders furnace to be charged with metal, coke and flux in alternate layers; starts blower supplying air blast; observes molten metal dripping into base of furnace; withdraws clay plug from taphole, when required level has been reached, to allow molten metal to run into a ladle; blocks taphole with clay plug to stop flow when
ludle is full; after the melting process, opens bottom doors of furnace, allowing remaining slag, metal and coke to drop on to floor; when furnace has cooled, chips off cinders and slag from its walls and repairs burned parts of wall lining with a mixture of fireclay and water. May supervise helpers performing the more routine activities in the tending of the furnace.

7-31.45 Furnaceman, Metal Melting (Open-Hearth). Operates an open-hearth furnace in which metal (ferrous or non-ferrous) is melted for casting: orders furnace to be charged with metal; builds up and regulates temperature in furnace by controlling supply of fuel and air; ascertains temperature of metal by use of pyrometer; taps furnace by breaking clay plug in taphole to allow molten metal to run into a ladle. May supervise helpers performing the more routine activities in the tending of the furnace. A furnaceman producing steel by the open-hearth process is classified as Open-Hearth (Martin) Furnaceman, Steel (7-31.20).

7-31.50 Furnaceman, Metal Melting (Electric-Arc). Operates an electric-arc furnace in which metal (ferrous or non-ferrous) is melted for casting: orders furnace to be charged; switches on current and moves electrodes to form arc between electrodes and charge; uses device which automatically maintains determined length of arc during melting process; sets rheostat to control current and voltage; observes meters and rise and fall of electrodes to see that charge is melting properly; switches off current when metal is melted and at right temperature and pours metal into ladle by tilting furnace. May supervise helpers performing the more routine activities in the tending of the furnace. A furnaceman refining steel by electric-arc process is classified as Electric-Arc Furnaceman, Steel Refining (7-31.30).

7-31.55 Furnaceman, Metal Melting (Cruible). Operates a crucible furnace (gas-, oil-, coke- or coal-fired) in which small quantities of metal (ferrous or non-ferrous) are melted for casting: fires furnace; charges crucible with metal; adjusts heat as required; determines when metal is at proper temperature for pouring by observing colour of molten metal or by use of a pyrometer; removes crucible from furnace. May assist in conveying and pouring molten metal and may inspect and repair furnace.

7-31.60 Furnaceman, Metal Melting (Reverberatory). Operates a reverberatory furnace in which metal (ferrous or non-ferrous) is melted for casting: charges, or orders the charging of, furnace with metal; lights burner and regulates air and gas, oil or pulverised-coal valves to produce required furnace heat; determines whether metal is of proper composition for pouring by taking sample of molten metal and examining fracture of cooled piece; observes colour of molten metal or uses pyrometer to decide whether metal has reached proper fluidity for pouring; releases plug in spout to allow metal to run into a ladle. May supervise helpers performing the more routine activities in the tending of the furnace.

7-31.65 Furnaceman, Metal Heating. Operates a furnace in which bars, plates and other metal objects are heated prior to such treatment as forging, power-pressing or rolling; fires and feeds furnace with coal, gas or oil to maintain a specified temperature; charges furnace with metal to be heated; observes heating progress and ascertains temperature by noting colour of metal and using a pyrometer; turns metal about with tongs and bars to obtain uniform and thorough heating; withdraws heated metal from furnace and moves it to designated working area. May supervise helpers assisting in the tending of the furnace.

7-31.90 Furnacemen, Metal, Other. This group includes furnacemen (metal) not elsewhere classified, for example those who operate electric retort, electrolyte or revolving furnaces or make malleable iron in a puddling furnace, and those who produce ferrous or non-ferrous alloys by melting and mixing metals in prescribed percentages. It also includes those who perform one or more specialised tasks in the operations of a furnace, such as charging, operating blast- and heat-regulating systems, tapping, and pouring molten metal into ladles or ingot moulds.

7-32 ANNEALERS, TEMPERERS AND RELATED HEAT TREATERS

Workers in this unit group alter the physical properties of metal objects and colour them by heating and cooling and by chemical treatment. Their functions include heating metal objects to a prescribed temperature and cooling them at a controlled rate to relieve internal stresses and strengthen them through softening (annealing); heating steel objects to a prescribed temperature and quenching them to make them hard throughout (hardening); imparting a hard "skin" to steel objects without affecting the toughness of the interior by heating, treating with chemicals and cooling (case hardening); reheating and cooling hardened steel objects to make them harder, softer, tougher or more ductile (tempering); imparting a blue finish to metal objects to make them rust-resistant and to improve their appearance (blueing); performing various other tasks related to the foregoing.

7-32.20 Annealer. Heats metal objects in a furnace and cools them at a suitable rate to relieve internal stresses and strengthen them through softening: places objects in furnace; adjusts fuel-feed and air-blast valves to raise furnace gradually to desired temperature at which it is held for the proper length of time; ascertains temperature by means of pyrometer; removes objects from furnace when they have attained required heat and allows them to cool slowly, or leaves them in furnace and gradually reduces furnace temperature.

Normaliser. Anneals metal objects in which internal stresses have been caused by welding, bending or cold-working operations.

7-32.30 Hardener, Metal. Hardens steel objects by heating them in a furnace and quenching them: places objects in furnace; regulates heat to bring metal to desired temperature; ascertains temperature by means of pyrometer; removes objects from furnace after prescribed period; quenches them in water, oil or brine. May test hardness of steel objects by means of special instruments. May supervise workers who assist in loading furnace and quenching metal.
7-32.40 Case Hardener, Metal. Imparts a hard skin to steel objects without affecting the toughness of the interior by heating, treating with chemicals and cooling.

Case Hardener (Carbonising). Packs objects in carbonaceous material in metal box; places box in oven-type furnace; heats objects to prescribed temperature and maintains heat for specified period of time; allows objects to cool gradually and removes them from packing; reheats and quenches objects, to complete process.

Case Hardener (Cyaniding). Prepares bath of potassium or sodium cyanide in pot furnace; regulates heat to bring bath to prescribed temperature; places steel objects in wire basket and immerses them in hot bath; removes objects from bath after prescribed period; quenches them in oil or water.

Case Hardener (Nitriding). Places objects in basket and lowers them into retort; raises heat in retort to prescribed temperature; regulates flow of ammonia gas into retort; cools objects after prescribed period by turning off heat and reducing flow of ammonia gas; removes cooled objects from retort.

May utilise other case-hardening processes.

7-32.50 Temperer, Metal. Reheats hardened steel objects in furnace and cools them to make the metal harder, softer, tougher or more ductile: places metal objects in the furnace or in a bath of lead or tempering oil; regulates heat to bring metal objects to desired temperature; ascertains temperature by means of pyrometer; removes metal objects from furnace or bath after prescribed period; quenches them in water, oil or brine, or allows them to cool slowly; removes metal objects from quenching medium when cooled. May supervise workers who assist in the loading of furnace and the quenching of metal.

7-32.60 Bluer, Metal. Imparts a blue finish to metal objects to make them rust-resistant and to improve their appearance; packs metal objects in bone or chemicals; places them in furnace; regulates heat to bring furnace to desired temperature; ascertains temperature by means of pyrometer; removes metal objects from furnace when they have attained the required heat; places them in vats of prepared chemical solution; removes metal objects from chemical bath when blueing is completed and washes them in oil.

7-32.90 Annealers, Temperers and Related Heat Treaters, Other. This group includes annealers, temperers and related heat treaters not elsewhere classified, for example, those assisting heat treaters by loading furnaces, packing metal objects in chemicals, preparing quenching media, and quenching metal objects.

7-33 ROLLING-MILL OPERATORS, METAL

Workers in this group operate rolling mills in which hot metal ingots are reduced to manageable sizes and shaped into blooms, slabs, billets or sheet bars for further processing; operating a rolling mill in which heated semi-finished metal pieces are reduced in size and given final shapes such as bars, angles, ties, rails and sheets; operating a continuous mill in which hot slabs are passed through a series of rolling mills (stands) to produce finished plates and sheets in one continuous operation; operating cold-rolling mill to shape metal products or to level, polish and remove blemishes from metal plates and sheets; operating rollers to form seamless pipes and tubes from billets; manipulating the controls of a rolling mill; performing various other tasks related to the foregoing.

7-33.20 Rolling-Mill Operator, Metal (Semi-finished Products). Operates rolling mill in which hot metal ingots are reduced to manageable sizes and shaped into blooms, slabs, billets or sheet bars for further processing: interprets written or verbal instructions, and determines procedure of work; gives instructions for adjustment of rolls preparatory to rolling operations; observes operation of mill and inspects products during rolling process; gives further instructions for the adjustment of roll screws, regulation of water sprays and control of mill and conveyor speeds; supervises workers who assist in the operation and mechanical control of rolling mill. May specialise in operating one type of rolling mill (such as cogging mill, bar mill, or blooming mill) and be designated accordingly.

7-33.30 Rolling-Mill Operator, Metal (Finished Products). Operates rolling mill in which heated semi-finished metal pieces are reduced in size and given final shapes such as bars, angles, ties, rails and sheets: examines drawings and other specifications, and determines procedure of work; gives instructions for the preparation of mill for rolling operations including selection, installation and adjustment of rolls; observes operation of the mill, inspects metal for curling, buckling and splitting as it is being rolled and measures products for sizes; gives further instructions for adjustment of space between rollers and speeds of mill and conveyor; supervises workers who assist in the operation and mechanical control of rolling mill.

7-33.40 Rolling-Mill Operator, Metal (Continuous Mill). Operates continuous mill in which hot slabs are passed through a series of rolling mills (stands) to produce finished plates or sheets in one continuous operation: interprets written and verbal instructions and determines procedure of work; gives instructions for adjustment of roll preparatory to rolling operations; observes metal as it passes through series of stands (roughing and finishing stands) to prevent interruptions or delays; gives further instructions for the adjustment of roll screws, and control of mill and conveyor speeds; supervises workers who operate rolling stands and those who assist in the operation and mechanical control of rolling mills. May specialise in plate or sheet production or in type of stands operated in a continuous mill and be designated accordingly.

7-33.50 Cold-Rolling-Mill Operator, Metal. Operates cold-rolling mill to shape metal products or to level, polish and remove blemishes from metal plates and sheets: gives instructions for selection, installation and adjustment of rolls; moves metal back and forth between rollers, adjusting rollers, until desired shape, gauge and condition are obtained; examines and measures products to ensure conformity with specifications; removes metal
particles or other foreign matter adhering to mill rollers during rolling process. May specialise in type of product or type of process and be designated accordingly.

7-33.60 Seamless Pipe and Tube Roller. Operates rolls to form seamless pipes and tubes from billets which have been pierced longitudinally: examines drawings and specifications; selects and installs rolls which mould outside of billet; selects and screws to a power-driven rod a plug that rotates inside the billet and forces it to expand to the proper inside diameter; runs billet through successive sets of rolls until dimensions of tubing meet specifications; examines and measures tubing for defects and for conformity to specifications.

7-33.70 Manipulator, Rolling-Mill, Metal. Manipulates controls of a rolling mill according to signals or personal observation: watches rolling process closely to obtain smooth mill operations; starts and stops various motors that drive rollers between which metal is passed for shaping and move tables which raise, lower, or turn metal; sets guides that direct metal into the proper niches between rolls; watches constantly for signals from rolling-mill operators (7-33.20, 7-33.30, 7-33.40).

7-33.90 Rolling-Mill Operators, Metal, Other. This group includes rolling-mill operators (metal) not elsewhere classified, for example, those operating a strip mill in which round steel wire is rolled into steel strips; assisting rolling-mill operators in rolling operations such as passing metal shapes through rolls, catching metal shapes with hand tongs as they come from rolls and guiding them back between rolls.

7-34 Blacksmiths, Hammersmiths and Forgemen

Workers in this unit group perform blacksmithing, hammersmithing and power-press forging operations on heated bars, rods, ingots and plates of iron, steel and other metals to make tools, agricultural implements, angles, rivets, bolts and other articles or equipment, and repair metal articles such as hand tools, agricultural implements and other equipment. Their functions include heating metal rods, bars or plates in a small furnace and fabricating or repairing articles by cutting, hammering metal on an anvil, punching, joining and hardening or tempering; making ornamental iron work and link chains; preparing metal shoes for fitting on animals' hooves; repairing edged tools, mining tools, agricultural implements and other equipment (blacksmithing); shaping articles from heated metal using a power hammer equipped with dies in the anvil and ram of the hammer (hammersmithing); shaping articles from heated metal, using a power-press machine equipped with upper and lower dies (forging by power press).

7-34.20 Blacksmith. Makes and repairs articles of iron and steel, using hand or power tools: selects metal and heats it in a small furnace; places metal on anvil and shapes it by hammering, cutting and punching; reheat parts and joins them by heating, adding flux and hammering; hardens and tempers metal; makes repairs. May work from drawings or other specifications, use light power hammer and do welding. May specialise in type of work done, for example, making and repairing agricultural implements, ornamental ironwork and edged tools such as chisels, plane irons, axes, hoes, picks and scythes; repairing mine and quarry equipment and tools; making and fitting metal shoes to animals; or making link chains.

7-34.30 Hammersmith. Shapes metal articles, using a power hammer equipped with dies: takes heated metal and positions it on die fixed on anvil of hammer; starts and stops ram of hammer, containing another die, and manoeuvres metal on anvil die until required shape is obtained; cleans die with compressed air and sprays die and metal with oil during processing. May signal other worker to start and stop hammer. May specialise in making edged tools, such as chisels, plane irons, axes, hoes, picks, scythes, or by using hammer of particular weight.

7-34.40Forging-Press Operator. Operates a power-press machine equipped with double dies to shape metal articles: takes heated metal and places it on a die fixed in stationary part of machine; starts machine which presses metal between the die in stationary part and a die in movable part to produce required shape. May specialise in type of press and product made, for example, angle press, rivets, unthreaded bolts.

7-34.90 Blacksmiths, Hammersmiths and Forgemen, Other. This group includes blacksmiths, hammersmiths and forgemen not elsewhere classified, for example, those hammering, cutting, shaping and punching tools held in place by blacksmith; starting and stopping power hammers on instructions of blacksmith or hammersmith; controlling pressure of forging press on instructions of forging-press operator.

7-35 Moulders and Coremakers

Workers in this unit group make moulds and their cores for use in casting molten metal and cast the metal. Their functions include making small or medium moulds on a bench or large moulds on the foundry floor, and making moulds for large (and usually circular) castings in a pit or brick casing in or on the foundry floor, using hand tools, sand, loam and loam bricks and working with or without patterns; making moulds with the assistance of machines; making by hand, on bench or foundry floor, cores for placing in moulds so as to leave holes or hollow surfaces in castings; making cores using a machine; performing other tasks such as setting up and taking down metal dies in which metal is cast, pouring molten metal into moulds, and baking or drying moulds and cores in ovens or heated chambers.

7-35.20 Moulder (Bench), Metal Foundry. Makes, on a bench, moulds for use in forming molten metal into medium or small castings, using patterns, hand
tools and sand or loam: lays metal plate on bench and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; 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places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams material with a plate having sides and cross-bars but no top or bottom; lifts a frame having sides and cross-bars but no top or bottom; lays metal plate on floor and fixes to it a frame having sides and cross-bars but no top or bottom; places lower half of a pattern in frame; packs fine sand or loam around pattern; fills frame with coarser material from a chute or by shovelling; rams materia
7-35.90 Moulders and Coremakers, Other. This group includes moulders and coremakers not elsewhere classified, for example, those assisting in the operation of a hydraulic extrusion press by feeding billets to press and placing upsetting device and cut-off device in position.

7-36 METAL DRAWERS AND EXTRUDERS

Workers in this unit group draw and extrude metals through dies in the production of wire, pipe, tube, and similar products. Their functions include drawing wire or rod of metal, either hot or cold, through a series of dies to reduce its diameter; drawing tubing of specified internal and external diameter by machine; setting up and operating a hydraulic extrusion press to shape seamless tubing and rods of round, flat or irregular cross-sections from hot billets; performing various other tasks related to the foregoing.

7-36.20 Wire Drawer. Draws wire or rod of metal, either hot or cold, through a series of dies, to reduce its diameter: sets up dies or plates; hammers or files end of wire or rod to a point; pulls it through dies of decreasing diameter until required diameter is obtained; lubricates metal to facilitate drawing. May be designated according to type of wire drawn.

Wire Drawer, Hand. Makes wire on a draw bench, pulling wire through dies by means of pincers.

Wire Drawer, Machine. Makes wire on a draw block or by operating a continuous drawing machine in which wire is pulled through dies by means of an automatic winding drum.

7-36.30 Seamless Pipe and Tube Drawer. Draws ferrous and non-ferrous tubing of specified internal and external diameter by machine: places rough tube in position on draw bench; sets die (tapered plug) in centre of hole in die block; pushes or pulls end of rough tube through die block and secures it with tongs to travelling chain or movable carriage; sets chain or carriage in motion, pulling the tube over the plug that determines the internal diameter and the space between plug and die block that determines the external diameter; stops chain or carriage when length is drawn and removes tongs from tube; repeats operation until specified diameter is obtained. May be designated according to type of tube drawn or metal used.

7-36.40 Extruder Operator, Metal. Sets up and operates a hydraulic extrusion press to shape seamless tubing and rods of round, flat, or irregular cross-sections from hot billets: examines drawings and other specifications; selects dies, billet container and mandrel and fixes them in press; orders removal of hot billet from heating furnace and the dropping of it into billet container; orders positioning of upsetting device above billet container and lowers ram of press to upsetting device, thus spreading billet until it fits snugly into container; moves hand and foot levers to cause ram to descend, thus pressing billet through dies, and to regulate speed of extrusion for the prevention of tears in metal and adherence of metal to container walls; raises ram to top of stroke and lowers a cut-off device to shear off residue and free the extruded tube or section from die; keeps record of number of tubes, each size formed, and kind of metal extruded.

7-36.90 Metal Drawers and Extruders, Other. This group includes metal drawers and extruders not elsewhere classified, for example, those assisting in the operation of a hydraulic extrusion press by feeding billets to press and placing upsetting device and cut-off device in position.

7-39 METAL MAKING AND TREATING WORKERS NOT ELSEWHERE CLASSIFIED

Workers in this unit group carry out miscellaneous metal making and treating operations and are not elsewhere classified. Their functions include cleaning, smoothing and semi-finishing the surfaces of cast, forged, stamped or pressed metal parts or objects by the use of sandblasting equipment, hand and pneumatic tools and abrasive wheels; casting lead shot; casting type for bulk supply to printing establishments.

7-39.20 Sandblaster (Metal). Cleans and smooths the surfaces of cast, forged, stamped or pressed metal parts or articles by means of sandblasting equipment: positions object on bench, floor or holding apparatus; directs from the nozzle of a machine a stream of sand, stone or steel grit, and compressed air against surfaces of object; or directs object in a cabinet and directs from a series of nozzles inside cabinet similar streams against surfaces; or places objects in a machine which simultaneously subjects them to similar streams and tumbles them together. May specialise in task performed, material used and objects treated and be designated accordingly. May perform duties of Metal Dresser (7-39.30).

7-39.30 Metal Dresser. Semi-finishes the surfaces of cast, forged, stamped or pressed metal parts and objects, using hand and pneumatic tools and abrasive wheels: cuts off unnecessary projections with hammer and chisel or with pneumatic chisel; removes sand from castings and partly smooths surfaces by holding them against an abrasive wheel or guiding wheel over them; smooths rough edges by filing. May specialise in one of these tasks and be designated accordingly. May perform duties of Sandblaster (Metal) (7-39.20).

7-39.90 Metal Making and Treating Workers Not Elsewhere Classified, Other. This group includes metal making and treating workers not elsewhere classified, for example, those casting lead shot; casting type for bulk supply to printing establishments.
7-4 Precision-Instrument Makers, Watchmakers, Jewellers and Related Workers

Workers in this minor group make and repair watches, clocks, precision instruments, medical appliances and articles of jewellery and precious metal. Their functions include making, altering and repairing watches, clocks, precision instruments and medical appliances; making and repairing articles of jewellery and precious metal, and shaping gems and precious metals; cutting letters and ornamental designs on precious metal ware and articles of jewellery.

7-41 Precision-Instrument Makers, Watch and Clock Makers, and Repairmen

Workers in this unit group make, alter and repair watches, clocks, precision instruments and medical appliances. Their functions include making, repairing, cleaning and adjusting watches and clocks; making, altering and repairing mechanical instruments or the mechanical portions of electrical and optical instruments, including cameras and office machines; assembling, adjusting and repairing optical elements; preparing eyeglass lenses from lens blanks to prescription and assembling them in spectacle frames; making and repairing precision medical and orthopaedic appliances and dental aids; fitting and assembling finished parts of mechanical instruments or the mechanical portions of electrical and optical instruments; servicing precision instruments.

7-41.15 Watch and Clock Maker. Fits and assembles parts of watches and clocks; polishes parts and 'checks them for accuracy of fit; makes minor alterations if necessary; assembles parts of movement, using tweezers, screwdrivers, pliers and other hand tools; regulates clock or watch movement, testing it in different positions; mounts it in a case. May specialise in unit of movement and type of clock or watch and be designated accordingly. Excluded is Electrical Fitter (Instruments) (7-62.35) specialising in electric clocks.

7-41.20 Watch and Clock Repairer. Repairs, cleans and adjusts watches and clocks; examines timepiece or parts, usually through magnifying lenses, to discover defects; removes balances, springs and other parts with the aid of pliers, screwdrivers, tweezers and other tools; repairs or replaces damaged parts; cleans parts with benzine or other cleaning solution; reassembles and adjusts timepiece; lubricates moving parts with small quantities of special oil. May test timepieces for magnetism and demagnetise them. May make parts with aid of watchmaker's lathe.

7-41.25 Maker and Repairman, Precision Instruments. Makes, alters, assembles and repairs mechanical instruments or mechanical portions of electrical and optical instruments; studies drawings and specifications; selects material, such as metal, plastic or glass, and marks it off; uses measuring instruments and hand and machine tools to cut, grind, smooth and otherwise shape material to precise dimensions; brazes, solders, hardens, anneals and tempers metal parts as necessary; assembles parts and ensures that completed instrument works satisfactorily; works in metal, bone, plastic, glass or other material; paints, lacquers, enamels, engravés or otherwise finishes instruments and case. May specialise in particular types of instruments, for example, air, hydraulic or mechanical meters and indicators.

7-41.30 Maker and Repairman, Optical Instruments. Assembles, adjusts and repairs optical elements, such as precision lenses, prisms, and mirrors, in the mechanical portion of optical instruments: selects and assembles optical elements for instruments and fits them in position, scraping, filing and polishing the mount to align the elements correctly; focuses instrument on standard targets and adjusts and calibrates as necessary; repairs, readjusts or replaces optical elements.

7-41.35 Optician. Prepares eyeglass lenses from lens blanks to prescription and assembles them in spectacle frames; selects standard-strength lens with focus nearest to that specified on prescription; grinds and polishes surfaces of lens to specifications; cuts and grinds edges of lens and mounts it in frame; makes replacement lenses of same strength, using original lens as guide. Excluded are Optometrists (unit group 0-52) and Grinder, Precision (Optical Elements) (8-11.60).

7-41.40 Maker and Repairman, Orthopaedic Appliances. Makes and repairs orthopaedic appliances, such as artificial limbs and body supports: forms plaster cast of limb or body deformity and takes necessary measurements; makes drawings and patterns of parts to be made; cuts parts from metal, wood, plastics, cork, leather and other materials, using hand and power tools; heats metal parts in forge or furnace and hammers them into shape; covers metal and wooden parts with leather or plastics; assembles parts and pads them with leather, felt and cork; polishes completed appliance on buffing wheels; adjusts nuts and screws at joints of artificial limbs to ensure proper bending radius. Makes alterations where necessary for comfort of wearer. Repairs worn-out or damaged appliances.

7-41.45 Maker and Repairman, Dental Prosthesis. Makes and repairs dentures and other dental aids: makes plaster casts of upper and lower jaws from wax impressions taken by dentist to provide patterns for work to be done; shapes metal, vulcanite or plastic plates for dentures; mounts artificial porcelain teeth in plates; finishes set on grinding or buffing wheel; constructs metal clamps, inlays, bridgework and other aids according to specifications and plaster casts; forms and bakes porcelain teeth and crowns; repairs dental aids.

7-41.50 Fitter-Assembler, Precision Instruments. Fits and assembles parts of mechanical instruments or the mechanical portions of electrical and optical instruments: checks parts for accuracy of fit; does supplementary tooling where necessary; assembles parts, using screw-
drivers, pliers and other hand tools, and tests completed instrument. May do soldering or spot-welding. May specialise in particular types of instruments such as cameras or office machines and be designated accordingly.

**7-41.55 Assembler, Precision Instruments.** Assembles finished parts of mechanical instruments or the mechanical portions of electrical and optical instruments: fixes finished parts in position, using screwdrivers, pliers and other hand tools. May also do soldering or spot-welding. May specialise in particular type of instruments, such as weighing machines, cameras, or barometers and be designated accordingly.

**7-41.60 Serviceman, Precision Instruments.** Inspects mechanical instruments or the mechanical portions of electrical and optical instruments and keeps them in good working order; visits premises where instruments are used and examines them for correct operation; adjusts instruments if necessary by tightening, loosening or resetting gears, guides, pinions and other parts; cleans and oils instruments. May do minor repairs and replace broken or defective parts. May specialise in servicing instruments such as clocks, typewriters, or calculating machines and be designated accordingly.

**7-41.90 Precision-Instrument Makers, Watch and Clock Makers and Repairmen, Other.** This group includes precision-instrument makers, watch and clock makers and repairmen not elsewhere classified.

**7-42 JEWELLERS, GOLDSMITHS AND SILVERSMITHS**

Workers in this unit group make and repair jewellery and precious metal ware, and shape gems and precious metals. Their functions include performing all or several of the tasks involved in making and repairing articles of jewellery; cutting gems and making facets on them; setting gems; making and repairing precious metal ware; rolling and beating precious metals; selecting gems; decorating jewellery by colouring and enamelling; making and repairing imitation jewellery. Excluded are **Annealer** (7-32.20), **Jewellery Engraver** (7-43.10) and those moulding precious metals, who are classified in unit group 7-35.

**7-42.10 Jeweller, General.** Performs all or several of the tasks involved in making articles of jewellery such as rings, pins and lockets: melts platinum, gold, silver and their alloys and pours molten metal into mould; shapes moulded pieces by operations such as cutting, beating, turning and bending according to drawings or other specifications; engravés lettering and ornamental designs and forms prongs for stone settings; cuts, shapes and engravés gems and secures them in settings; assembles finished parts of articles and attaches clasps or decorations by soldering or linking; smooths and polishes the surfaces of articles. May enamel, paint or ink jewellery according to specifications, make designs of article to be made, repair articles of jewellery.

**7-42.20 Jewellery Repairman.** Repairs articles of jewellery, such as rings, pins and lockets: enlarges or reduces the size of rings by sawing through band and soldering the ends after insertion or removal of piece; repairs broken clasps, pins and other jewellery by soldering the broken parts or by replacing them; reshapes jewellery according to designs or instructions; smooths soldered joints and rough spots. May make articles of jewellery.

**7-42.30 Gem Cutter and Polisher.** Cuts, shapes and polishes precious or semi-precious stones by hand and machine: cuts stone to rough shape by sawing or cleaving; rounds off the stone by holding it against another stone revolving in a lathe chuck; makes facets by pressing stone on a horizontal revolving disc charged with diamond dust and oil; finishes stone by applying it against a revolving wheel coated with abrasive. May mount stone in holding agent for processing. May specialise in tasks performed and type of stone cut and be designated accordingly.

**7-42.40 Gem Setter.** Sets precious or semi-precious stones in articles of jewellery: makes or alters settings on mount by cutting, filing and drilling, according to drawings or other specifications; places stone in setting; secures stone by pressing holding prongs or by raising a small ridge of metal around it. May apply adhesive to setting to assist in securing stone. May specialise in type of setting used or stone set and be designated accordingly.

**7-42.50 Goldsmith and Silversmith.** Makes and repairs articles, such as tableware, of gold, silver or other precious metals, using hand or power tools: studies drawings or other specifications; selects metal of proper thickness and size; shapes articles by operations such as beating, bending or cutting; makes handles and spouts by beating metal into shape and soldering seams; pierces holes or carves designs into surface of article; assembles and solders parts; polishes articles by buffing or rubbing; repairs articles by beating out deformations or by filing cracks and holes. May prepare own designs or models and also work metals such as pewter and Britannia. May specialise in a particular type of metal or product and be designated accordingly.

**7-42.60 Precious-Metal Roller.** Operates a machine that decreases thickness of ingots of gold or other precious metals: passes bar through rollers of machine, adjusting them until desired thickness is obtained. May anneal metals. May specialise in metal worked and be designated accordingly.

**7-42.70 Precious-Metal Leaf Maker.** Beats gold or other precious-metal sheets to form thin leaves: cuts metal strips to required shape; places cut metal between sheets of skin or parchment to form a "book"; lays book on anvil and hammers it to reduce thickness of metal; removes metal sheets from book and cuts them into smaller pieces; interleaves sheets as before and hammers book again; repeats process until metal is reduced to leaf of extreme thinness.

**7-42.90 Jewellers, Goldsmiths and Silversmiths, Other.** This group includes jewellers, goldsmiths and silversmiths not elsewhere classified, for example, those selecting gems; decorating jewellery by colouring or enamelling; making or repairing imitation jewellery.
7-50 FITTER-MACHINISTS, TOOLMAKERS AND MACHINE-TOOL SETTERS

Workers in this unit group make machines, machine parts, tools and other metal products and set up and operate machines for cutting and grinding metal to close tolerances. Their functions include cutting and shaping metal to close tolerances in the manufacture or repair of machines and other products, using hand and machine tools; making, maintaining and repairing cutting and press tools, gauges, jigs and other fixtures; making and repairing metal dies and patterns; marking metal to guide workers in cutting and shaping it by machine; setting up various types of machine tools for machine operators; setting up and operating a particular type of machine tool, such as milling, drilling, planing, shaping, boring, precision grinding or honing machine, engine or turret lathe.

7-50.10 Fitter-Machinist. Cuts and shapes metal to close tolerances, and fits and assembles parts, in the manufacture or repair of machines and other metal products, using hand and machine tools: studies drawings and other specifications of article to be made and makes necessary calculations; selects metal to be used and marks it off; cuts, grinds, smooths and otherwise shapes metal to prescribed dimensions, using measuring instruments as guides; assembles parts making alterations as necessary to ensure accurate fit and tests completed article; repairs, replaces and alters tools, machines and equipment. May plan layout of machine shops and make special tools. May weld, braze, anneal, temper and harden metal parts. May specialise in a particular type of machine or product and be designated accordingly.

7-50.15 Toolmaker. Makes, maintains and repairs cutting and press tools, gauges, jigs and other fixtures, mainly for use in machines: studies drawings, models and other specifications of article to be made; selects metal to be used and marks it off; cuts, grinds, smooths and otherwise shapes metal to prescribed dimensions, using measuring instruments as guides; assembles parts and makes alterations if necessary; calibrates and adjusts gauges and machine tools and maintains them in good working order. May design tools, jigs and fixtures and braze and weld metal parts. May specialise in a particular type of article and be designated accordingly.

7-50.20 Die Maker. Makes and repairs metal dies for forging, punching or stamping materials to required shapes: studies drawings, models and other specifications of dies to be made; takes metal, cast roughly to shape, or selects metal from stock and marks it off; cuts, grinds, smooths and otherwise shapes dies to prescribed dimensions, using measuring instruments as guides; fixes dies in machine, tests them for accuracy in operation and makes alterations if necessary; fills worn sections of used dies with molten metal and reshapess them to original dimensions; tempers and hardens dies.

7-50.25 Patternmaker (Metal), Foundry. Makes and repairs metal patterns to be used in the preparation of moulds in a foundry: studies drawings and other specifications of pattern to be made; takes metal, cast roughly to shape or selects metal from stock and marks it off; grinds, smooths and otherwise shapes metal to required dimensions, using measuring instruments as guides; assembles pattern parts by screwing, soldering or otherwise fixing them together; checks completed pattern for accuracy by use of gauges, micrometers and other instruments and makes alterations if necessary; repairs broken or damaged patterns.

7-50.30 Marker (Metal), Machine Shop. Marks metal with lines and reference points to guide workers cutting, grinding and otherwise shaping it by machine: studies drawings and other specifications; uses gauges, rules, dividers, micrometers and other instruments to locate positions for marks; scratches lines on surface of metal with scriber and indents reference points by means
of hammer and centre punch. May coat surface of metal with chalk, paint or similar material prior to marking. Excluded are Marker (Sheet Metal) (7-54.20), and Marker (Structural Metal) (7-57.05).

7-50.35 Machine-Tool Setter, Metal Working. Sets up various types of precision metal cutting or grinding machines for machine operators: examines drawings and other specifications of parts to be made; fastens metal and cutting tool(s) accurately in position on machine, using chucks, jigs and other fixtures as required; adjusts machine table, guides, stops and other controls to ensure that tool(s) will cut or grind metal according to specifications; selects speeds for movement or rotation of metal or cutting tool(s); starts and operates machine to cut or grind sample product; checks progress of cutting or grinding with measuring instruments and makes necessary adjustments to ensure accuracy of final product; hands machine over to operator when it is set; changes tools and resets machine as necessary.

7-50.40 Engine-Lathe Setter-Operator, Metal Working. Sets up and operates a power-driven lathe, other than a turret lathe, for cutting metal: examines drawings and other specifications of parts to be made; selects cutting tool; fastens metal and tool accurately in position in lathe, using chuck, jigs and other fixtures as required; adjusts guides and stops to limit or control movement of tools; selects rotation speed of metal and starts machine; manipulates hand wheels or sets and starts automatic controls to guide tool into metal; controls flow of cutting lubricant on edge of tool; changes tool position and tool of metal as required; checks progress of cutting with measuring instruments and makes necessary adjustments to ensure accuracy. May set lathe for machine operator. May mark off metal prior to cutting and shape and sharpen lathe tools. May specialise in a particular type of lathe or operation and be designated accordingly.

7-50.45 Turret-Lathe Setter-Operator, Metal Working. Sets up and operates a power-driven lathe in which a number of metal-cutting tools are fixed in a turret on the machine: examines drawings and other specifications of part to be made; selects and fastens tools in appropriate part of turret; fastens metal accurately in position on lathe, using chuck, jigs and other fixtures as required; adjusts guides and stops to limit or control movement of tools; selects rotation speed of metal and starts machine; manipulates hand wheels, or sets and starts automatic controls, to guide each cutting tool into metal; controls flow of cutting lubricant on edge of tool; changes tool position and tool of metal as required; checks progress of cutting with measuring instruments and makes necessary adjustments to ensure accuracy. May set lathe for machine operator. May shape and sharpen lathe tools. May specialise in a particular type of turret lathe and be designated accordingly.

7-50.50 Milling-Machine Setter-Operator, Metal Working. Sets up and operates a power-driven machine which cuts metal with a multi-toothed rotary cutter: examines drawings and other specifications of part to be made; fastens metal accurately in position on machine table with bolts, clamps or other fixtures; selects and fits rotary cutter to machine; selects rotation speed of cutter and starts machine; manipulates handwheels, or sets and starts automatic controls, to feed cutter to metal or metal to cutter; controls flow of cutting lubricant on cutter; changes cutter and position of metal as required; checks progress of cutting with measuring instruments and makes necessary adjustments to ensure accuracy. May set machine for machine operator. May mark off metal prior to cutting and shape and sharpen machine tools. May specialise in a particular type of milling machine (such as profiling machine) and be designated accordingly.

7-50.55 Drilling-Machine Setter-Operator, Metal Working. Sets up and operates a power-driven machine which drills and reams holes in metal: examines drawings and other specifications; selects drill or reamer and fixes it in machine chuck; fastens metal accurately in position on machine table, using jigs and other fixtures as required; adjusts guides and stops to limit or control movement of tool; selects rotation speed of tool and starts machine; exerts suitable pressure on hand lever or sets and starts automatic controls to guide tool into metal; controls flow of cutting lubricant on edge of tool; changes drill or reamer and position of metal as required; checks progress of cutting and makes necessary adjustments to ensure accuracy. May set machine for machine operator. May use measuring instruments. May sharpen tools. May specialise in a particular type of drilling machine, such as multi-spindle or radial drilling machine, and be designated accordingly.

7-50.60 Planing-Machine Setter-Operator, Metal Working. Sets up and operates a power-driven planing machine in which a cutting tool is guided into metal fastened to a reciprocating table: examines drawings and other specifications of part to be made; fastens metal accurately in position on machine table with bolts, clamps or other fixtures; selects cutting tool and fixes it to machine; adjusts guides, stops and other controls to determine the speed and limits of table movement; starts machine to cause table to reciprocate; manipulates handwheels, or sets and starts automatic controls, to guide tool into and across metal; changes tool and position of metal as required; checks progress of cutting with measuring instruments and makes necessary adjustments to ensure accuracy. May set machine for machine operator. May mark off metal prior to cutting and sharpen machine tools. May specialise in a particular type of planing and be designated accordingly.

7-50.65 Shaping-Machine Setter-Operator, Metal Working. Sets up and operates a power-driven machine in which metal is shaped by a reciprocating cutting tool: examines drawings and other specifications of part to be made; fastens metal accurately in position on machine table with bolts, clamps or other fixtures; selects cutting tool and fixes it to machine; adjusts guides, stops and other controls to determine the speed and limits of tool movement; adjusts position of machine table; changes tool to cause tool to reciprocate; manipulates handwheels, or sets and starts automatic controls to feed metal into and across tool; changes cutting tool and position of metal as required; checks progress of cutting with measuring instruments and makes necessary adjustments to ensure accuracy. May set machine for machine operator. May mark off metal prior to cutting and sharpen machine tools. May specialise in a particular type of shaping and be designated accordingly.

7-50.70 Boring-Machine Setter-Operator, Metal Working. Sets up and operates a power-driven machine in which cylindrical holes in metal objects are aligned and enlarged evenly to proper size by a rotating cutting tool: examines drawings and other specifications of part to be made; fastens metal accurately in position on machine table, using jigs and fixtures as required;
selects cutting tool and fixes it in machine spindle; adjusts machine table, guides, stops and other controls to limit or control direction of movement of tool; selects rotation speed of tool and starts machine; manipulates hand-wheels or sets and starts automatic controls to feed tool into metal; controls flow of lubricant to tool; checks progress of cutting with measuring instruments and makes necessary adjustments to ensure accuracy. May set machine for machine operator. May specialise in a particular type of precision grinding machine and be designated accordingly.

7-50.75 Precision-Grinding-Machine Setter-Operator, Metal Working. Sets up and operates a machine which grinds and smooths metal surfaces to close tolerances with a rotating grinding wheel: examines drawings and specifications of part to be made; fastens metal accurately in position on machine using chucks, clamps, jigs, fixtures or magnetised table as necessary; selects grinding wheel and fixes it to machine; adjusts machine table, guides, stops and other controls to determine the direction and limit of metal and grinding wheel movements; selects rotation speed of wheel and starts machine; trues cutting surface of grinding wheel by feeding it against a diamond-studded block fixed to machine; manipulates hand wheels, or sets and starts automatic controls, to grind metal; changes grinding wheel and position of metal as required; checks progress of grinding with measuring instruments and makes necessary adjustments to ensure accuracy. May set machine for machine operator. May specialise in a particular type of precision grinding machine and be designated accordingly.

7-50.80 Honing-Machine Setter-Operator, Metal Working. Sets up and operates a machine which grinds the internal surfaces of cylinders to very close tolerances and gives them a mirror-like finish by means of an expansible, rotating abrasive tool: fastens cylinder accurately in position on machine, using clamps, jigs or other fixtures; selects tool and fastens it in machine spindle; regulates controls so that tool will be rotated and fed at appropriate speeds; expands tool to required diameter; starts machine to rotate tool; manipulates handwheel to feed tool into cylinder; engages automatic feed to cause tool to reciprocate within cylinder; checks progress of honing with measuring instruments and makes necessary adjustments to ensure accuracy. May set machine for machine operator.

7-51 Machine-Tool Operators

Workers in this unit group operate metal cutting and grinding machines which have been set up for repetitive work to close tolerances. Their functions include operating various types of machine tools or operating a particular type of machine tool, such as a milling, drilling, planing, shaping, boring, precision grinding or honing machine or lathe.

7-51.10 Machine-Tool Operator, Metal Working, General. Operates various types of precision metal cutting or grinding machines which have been set up for repetitive work: fastens metal in chuck, jig or other fixture; starts machine to cause metal or tool to revolve or reciprocate; manipulates handwheels or starts automatic controls to feed tool to metal or metal to tool; observes cutting or grinding of metal and removes part when machining is completed; checks part with measuring instruments and reports inaccuracies; repeats or varies operations, as required, on same or other machine. May assist in setting up machine, change tools, make simple adjustments, clean and oil machine.

7-51.15 Lathe Operator, Metal Working. Operates a metal-cutting power-driven lathe which has been set up for repetitive work: fastens metal in machine chuck, jig or other fixture; starts machine to rotate metal; manipulates hand wheels or starts automatic controls to guide cutting tool into or along metal; controls flow of cutting lubricant on edge(s) of tool(s); observes progress of cutting; stops machine and removes metal part when cutting is completed; checks part with measuring instruments and reports inaccuracies; repeats operations, as required, on other metal parts. May make simple adjustments to machine, change cutting tools, clean and oil machine. May be designated according to type of product made or type of lathe operated.

7-51.20 Milling-Machine Operator, Metal Working. Operates a power-driven machine which cuts metal with multi-toothed, rotary cutter and has been set up for repetitive work: fastens metal in fixture on machine table; starts machine to rotate cutter; manipulates hand wheels or starts automatic controls to feed cutter to metal or metal to cutter; controls flow of cutting lubricant on edge of tool and observes progress of cutting; stops machine and removes metal part when cutting is completed; checks part with measuring instruments and reports inaccuracies; repeats operations, as required, on other metal parts. May make simple adjustments to machine, change cutting tools, clean and oil machine. May operate a profiling or other special type of milling machine and be designated accordingly.

7-51.25 Drilling-Machine Operator, Metal Working. Operates a power-driven machine which drills or reams holes in metal and has been set up for repetitive work: fastens metal in fixture on machine table; starts machine to rotate cutting tool; exerts suitable pressure on hand lever or starts automatic controls to guide tool(s) into metal; controls flow of cutting lubricant on edge(s) of tool(s); observes progress of cutting; stops machine and removes metal part when drilling or reaming is completed; checks part and reports inaccuracies; repeats operations, as required, on other metal parts. May make simple adjustments to machine, change drills or reamers, clean and oil machine. May be designated according to type of drilling machine operated.

7-51.30 Planing-Machine Operator, Metal Working. Operates a power-driven machine which planes metal parts fastened to a reciprocating table and has been set up for repetitive work: fastens metal in fixture on machine table; starts machine to cause table to reciprocate; manipulates hand wheels and starts automatic controls to guide tool(s) into and across metal; observes progress of cutting and removes metal parts when cutting is completed; checks parts with measuring instruments and reports inaccuracies; repeats operations, as required,
on other metal parts. May make simple adjustments to machine, change cutting tools, clean and oil machine. May be designated according to type of planing machine operated.

7-51.35 Shaping-Machine Operator, Metal Working. Operates a power-driven machine which shapes metal parts by means of a reciprocating cutting tool, and which has been set up for repetitive work: fastens metal in fixture on machine table; starts machine to cause tool to reciprocate; manipulates hand wheels and starts automatic controls to feed metal into and across tool; observes progress of cutting; stops machine and removes metal part from machine when cutting is completed; checks parts with measuring instruments and reports inaccuracies; repeats operations, as required, on other metal parts. May make simple adjustments to machine, change cutting tools, clean and oil machine. May be designated according to type of shaping machine operated.

7-51.40 Boring-Machine Operator, Metal Working. Operates a power-driven machine in which cylindrical holes in metal parts are aligned and enlarged evenly to proper size by a rotating cutting tool and which has been set up for repetitive work: fastens metal part in fixture on machine table; starts machine to rotate cutting tool; manipulates hand wheels and starts automatic controls to feed tool into metal; controls flow of cutting lubricant on edge of tool; observes progress of cutting; stops machine and removes metal part when cutting is completed; checks part with measuring instruments and reports inaccuracies; repeats operations, as required, on other metal parts. May make simple adjustments to machine, change cutting tools, clean and oil machine.

7-51.45 Precision-Grinding-Machine Operator, Metal Working. Operates a machine which grinds and smooths metal surfaces to close tolerances, and which has been set up for repetitive work: fastens metal in fixture on machine or on magnetised table of machine; starts machine to rotate grinding wheel; manipulates handwheels and starts automatic controls to feed grinding wheel to metal; observes progress of grinding; stops machine and removes metal part when grinding is completed; checks part with measuring instruments and reports inaccuracies; repeats operations, as required, on other metal parts. May make simple adjustments to machine, change grinding wheels, clean and oil machine. May be designated according to type of precision-grinding machine operated. Excluded is Honing-Machine Operator, Metal Working (7-51.50).

7-51.50 Honing-Machine Operator, Metal Working. Operates a machine which grinds the internal surfaces of cylinders to very close tolerances and gives them a mirror-like finish and which has been set up for repetitive work: fastens cylinder in fixture on machine; starts machine to rotate honing tool and manipulates hand wheel to feed it into cylinder; engages automatic feed to cause tool to reciprocate within cylinder; observes progress of honing; stops machine when honing is completed; checks cylinder with measuring instruments and reports inaccuracies; repeats operation as required on other cylinders. May clean and oil machine.

7-51.90 Machine-Tool Operators, Other. This group includes machine-tool operators not elsewhere classified, for example, those operating machines which hone and lap flat surfaces or gear wheels and precision machine tools which perform more than one type of metal cutting.

7-52 Fitter-Assemblers and Machine Erectors (except Electrical and Precision-Instrument Fitter-Assemblers)

Workers in this unit group fit and assemble, erect and install machinery, engines and other metal products other than precision instruments and electrical equipment. Their functions include fitting and assembling parts in the manufacture of various types of machinery, engines or other metal products; fitting and assembling parts in the manufacture of a particular type of machinery, engine or turbine; erecting and installing machines and other mechanical equipment in place of use; fitting together and building up the structural members of fuselage, tail, wings, undercarriage or other structural parts of aircraft; performing other fitting and assembly and erection tasks in the manufacture and erection of metal products. Excluded is Assembler, Metal Products (7-59.25).

7-52.10 Fitter-Assembler, Metal Products, General. Fits and assembles parts in the manufacture of various types of machinery, engines or other metal products other than precision instruments and electrical equipment: examines drawings and other specifications; checks parts for flaws and accuracy of fit, using gauges, micrometers and other measuring instruments; chisels, files, scrapes and does other supplementary tooling to correct inaccuracy; assembles parts, using screwdrivers, pliers and other tools; tests completed product and makes necessary adjustments. May mark off metal and drill holes to facilitate assembly. May weld, braze and solder parts and install equipment. A fitter-assembler specialising in a particular type of equipment or in erecting or installing machinery or engines is classified elsewhere in unit group 7-52.

7-52.15 Fitter-Assembler (Metal-Working Machine Tools). Fits and assembles parts in the manufacture of machine tools which cut or grind metal to close tolerances: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on metal-working machine tools, such as drilling, boring, milling, precision grinding, planing or shaping machines or lathes, of which special knowledge is required.

7-52.20 Fitter-Assembler (Agricultural Machinery). Fits and assembles parts in the manufacture of agricultural machinery: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on agricultural machines, such as reaping, threshing or milking machines, of which special knowledge is required.

7-52.25 Fitter-Assembler (Mining Machinery). Fits and assembles parts in the manufacture of mining machinery: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on drilling, scraping, cutting, hauling or other machines used in mining, of which special knowledge is required.
7-52.30 Fitter-Assembler (Printing Machinery). Fits and assembles parts in the manufacture of printing machinery: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on printing machines, such as linotype, monotype, letterpress or lithographic machines, of which special knowledge is required.

7-52.35 Fitter-Assembler (Textile Machinery). Fits and assembles parts in the manufacture of textile machinery: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on textile machines, such as spinning machines, looms, lace-making or hosiery machines, of which special knowledge is required.

7-52.40 Fitter-Assembler (Woodworking Machines). Fits and assembles parts in the manufacture of machines which cut or shape wood: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on woodworking machines, such as drilling, sawing, planing and shaping machines, of which special knowledge is required.

7-52.45 Fitter-Assembler (Aircraft Engines). Fits and assembles parts in the manufacture of aircraft engines: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on jet, piston, gas-turbine or other types of aircraft engines of which special knowledge is required.

7-52.50 Fitter-Assembler (Internal-Combustion Engines) (except Marine and Aircraft Engines). Fits and assembles parts in the manufacture of internal-combustion engines, other than those used for ship or aircraft propulsion: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on petrol, diesel or other internal-combustion engines of which special knowledge is required.

7-52.55 Fitter-Assembler (Marine Engines). Fits and assembles parts in the manufacture of marine engines: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on steam, petrol, diesel or other types of marine engines of which special knowledge is required.

7-52.60 Fitter-Assembler (Reciprocating Steam Engines) (except Marine Engines). Fits and assembles parts in the manufacture of reciprocating steam engines, other than those used for ship propulsion: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on reciprocating steam engines of which special knowledge is required.

7-52.65 Fitter-Assembler (Turbines) (except Aircraft and Marine Turbines). Fits and assembles parts in the manufacture of turbines, excluding those used on ships or aircraft: performs basic tasks similar to those of Fitter-Assembler, Metal Products, General (7-52.10) but works on turbines, of which special knowledge is required.

7-52.70 Erector and Installer, Machinery. Erects and installs, or directs the erection and installation of, machines and other mechanical equipment, usually of a heavy type, in place of use: prepares foundations for machines, using various measuring instruments to ensure accuracy in installation; moves machine or machine parts by means of hoists, rollers, trucks and other aids; places parts in position and builds up machine; aligns with the machine the shafting or other systems of power transmission; checks machine and makes necessary adjustments to ensure efficient operation; changes layout of machines and replaces machines as required. May service and repair machinery and equipment to keep it in good working order.

7-52.75 Erector, Airframes, Metal. Fits together and builds up the structural members of the fuselage, tail, wings, undercarriage or other structural parts of aircraft: examines blueprints and specifications; assembles members of airframe in a jig, doing supplementary tooling where necessary to improve fit; temporarily secures members with fasteners, screws or by tack welding; marks location for rivet holes; drills, reams and countersinks holes in members for subsequent riveting. May rivet parts together.

7-52.90 Fitter-Assemblers and Machine Erectors (except Electrical and Precision-Instrument Fitter-Assemblers), Other. This group includes fitter-assemblers and machine erectors (other than electrical and precision-instrument fitter-assemblers) not elsewhere classified, for example, those erecting or fitting and assembling particular types of machinery and equipment not specifically mentioned elsewhere in the unit group.

7-53 MECHANICS-REPAIRMEN (EXCEPT ELECTRICAL AND PRECISION-INSTRUMENT REPAIRMEN)

Workers in this unit group repair, or service and repair, machinery, engines and other metal products, except precision instruments and electrical equipment. Their functions include repairing, or servicing and repairing, various types of metal products; repairing, or servicing and repairing, a particular type of metal product, such as machine tools, agricultural, mining, printing, textile or woodworking machinery, aircraft, internal-combustion, marine or reciprocating steam engines, motor cycles, motor vehicles or pedal cycles; repairing, or servicing and repairing, other types of machinery, engines or metal products (except precision instruments and electrical equipment).

7-53.10 Mechanic-Repairman, Metal Products, General. Repairs, or services and repairs, various types of machinery, engines or other metal products other than precision instruments and electrical equipment: examines faulty equipment to ascertain the nature and location of defects; dismantles or partly dismantles equipment to remove damaged or worn parts; repairs parts or obtains replacements; assembles parts, doing supplementary tooling as necessary to ensure accuracy of fit; tests reassembled equipment and makes necessary adjustments; checks, adjusts and lubricates equipment periodically, or directs helpers to do so, and performs other tasks to keep it in good working order. May keep record of parts examined and equipment performance. May weld, braze, or solder parts. May erect and install equipment. A mechanic-repairman specialising in a particular type of machinery, engine or other equipment is classified elsewhere in unit group 7-53.
7-53.15 Mechanic-Repairman (Metal-Working Machine Tools). Repairs, or services and repairs, machine tools which cut or grind metal to close tolerances: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on metal-working machine tools, such as drilling, boring, milling, precision-grinding, planing or shaping machines or lathes, of which special knowledge is required.

7-53.20 Mechanic-Repairman (Agricultural Machinery). Repairs, or services and repairs, agricultural machinery: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on agricultural machines, such as reaping, threshing or milking machines, of which special knowledge is required.

7-53.25 Mechanic-Repairman (Mining Machinery). Repairs, or services and repairs, mining machinery: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on drilling, scraping, cutting, hauling or other machines used in mining of which special knowledge is required.

7-53.30 Mechanic-Repairman (Printing Machinery). Repairs, or services and repairs, printing machinery: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on printing machines, such as linotype, monotype, letterpress, or lithographic machines, of which special knowledge is required.

7-53.35 Mechanic-Repairman (Textile Machinery). Repairs, or services and repairs, textile machinery: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on textile machines, such as spinning machines, looms, lace-making or hosiery machines, of which special knowledge is required.

7-53.40 Mechanic-Repairman (Woodworking Machines). Repairs, or services and repairs, machines which cut or shape wood: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on woodworking machines, such as drilling, sawing, planing and shaping machines, of which special knowledge is required.

7-53.45 Mechanic-Repairman (Aircraft Engines). Repairs, or services and repairs, aircraft engines: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on jet, piston, gas-turbine or other types of aircraft engines of which special knowledge is required.

7-53.50 Mechanic-Repairman (Internal-Combustion Engines) (except Marine and Aircraft Engines). Repairs, or services and repairs, internal-combustion engines other than those used for ship propulsion: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on internal-combustion engines of which special knowledge is required.

7-53.55 Mechanic-Repairman (Marine Engines). Repairs marine engines in workshop or aboard ship in port: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on steam, petrol, diesel or other types of marine engines of which special knowledge is required. Excluded is Engine Mechanic, Ship (6-12.15).

7-53.60 Mechanic-Repairman (Reciprocating Steam Engines) (except Marine Engines). Repairs, or services and repairs, reciprocating steam engines, other than those used for ship propulsion: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on reciprocating steam engines of which special knowledge is required.

7-53.65 Mechanic-Repairman (Turbines) (except Aircraft and Marine Turbines). Repairs, or services and repairs, turbines excluding those used on ships or aircraft: performs basic tasks similar to those of Mechanic-Repairman, Metal Products, General (7-53.10) but works on turbines of which special knowledge is required.

7-53.70 Mechanic-Repairman (Motor Cycles and Motorised Pedal Cycles). Repairs, or services and repairs, motor cycles or motorised pedal cycles: checks mechanical condition of cycles and lubricates and makes adjustments to improve running order; examines defective cycles to ascertain nature and location of defects; dismantles parts such as engine, ignition system, chain drive and gearbox; replaces damaged parts; grinds valves, relines brakes, aligns wheels and cycle frame, mends tyres and performs other tasks to effect repairs; lubricates cycles, tightens loose parts, makes adjustments and performs other tasks to keep cycles in good condition. May weld, braze and solder.

7-53.75 Mechanic-Repairman (Motor Vehicles). Repairs, or services and repairs, passenger and delivery cars, trucks and other motor vehicles: examines defective vehicles to ascertain nature and location of defects; dismantles parts such as engine ignition system, generator, steering gear, gearbox and brakes, replaces damaged parts, grinds valves, relines brakes, rebushes steering mechanism and performs other tasks to effect repairs; changes oil in engines and transmission systems, lubricates joints, tightens loose parts, makes adjustments and performs other tasks to keep vehicles in good condition. May weld, braze and solder. A repairman specialising in engines is classified as Mechanic-Repairman (Internal-Combustion Engines) (except Marine and Aircraft Engines) (7-53.50).

7-53.80 Mechanic-Repairman (Pedal Cycles). Repairs, or services and repairs, pedal cycles: examines defective cycles to ascertain nature and location of defects; dismantles parts such as steering gear, pedals, wheelhubs and speed gears; replaces damaged parts, aligns wheels and frames, relines brakes, mends tyres and performs other tasks to effect repairs; lubricates parts, adjusts steering gear, chain drive, speed gear and lights and does other tasks to keep cycles in good condition. May braze, solder, paint and enamel parts. A repairman of motorised pedal cycles is classified as Mechanic-Repairman (Motor Cycles and Motorised Pedal Cycles) (7-53.70).

7-53.90 Mechanics-Repairmen (except Electrical and Precision-Instrument Repairmen), Other. This group includes mechanics-repairmen (other than electrical and precision-instrument repairmen) not elsewhere classified, for example, those repairing, or servicing and repairing, particular types of machinery and equipment such as aircraft airframes not specifically mentioned elsewhere in the unit group.
7-54 SHEET-METAL WORKERS

Workers in this unit group make and repair articles and parts of articles and shape and install, in buildings, vehicles and elsewhere, flat sections and other objects of cold sheet metal such as aluminium, brass, copper, tin, zinc and galvanised iron. Their functions include marking sheet metal for cutting and shaping; making and repairing articles such as containers, ducts and ornaments; covering roofs; making, repairing and installing sheet-metal sections of aircraft, automobiles and other vehicles. Excluded are Power-Press Operator, Metal Working (7-59.35), Makers of Musical Instruments and Related Workers (unit group 8-56) and Metal Spinner (7-59.30).

7-54.10 Sheet-Metal Worker. Makes and repairs a variety of articles of sheet metal by hand or machine; selects metal and marks it out, according to drawings or other specifications; cuts metal, using pattern or template as guide; shapes metal by operations such as forming, bending or beating; punches or drills holes for rivets, bolts and screws; assembles parts and joints them by welding, soldering, brazing, bolting, riveting, screwing or other methods; smooths surfaces; installs articles, does repairs. May heat parts before shaping.

Coppersmith. Works mainly with copper in making and repairing articles such as containers, ducts and pipes in copper sheet; also uses drawn copper pipes. May tin articles and also work aluminium, stainless metals and various alloys. May specialise in article made and be designated accordingly.

Tinsmith. Makes and repairs articles, such as utensils, pots and boxes in tinplate. May work zinc and various alloys. May specialise in article made and be designated accordingly.

Roofer (Metal). Covers roofs with metal. May specialise in material used and be designated accordingly.

Sheet-Metal Worker (Aircraft). Makes, installs and repairs parts of aircraft. May specialise in particular parts and be designated accordingly.

Sheet-Metal Worker (Vehicles). Makes, installs and repairs parts of automobiles and other vehicles. May specialise in parts worked and be designated accordingly.

Sheet-Metal Worker (Ornamental). Makes and repairs ornamental articles such as household and shop fittings. May specialise in article made and be designated accordingly.

7-54.20 Marker (Sheet Metal). Marks out sheet metal for cutting and shaping; studies drawings or other specifications; selects metal and marks it with guide lines and reference points. May specialise in marking particular kinds of material and be designated accordingly.

7-54.90 Sheet-Metal Workers, Other. This group includes sheet-metal workers not elsewhere classified, for example, those performing specialised tasks in making (except marking out), assembling and repairing articles in sheet metal.

7-55 PLUMBERS AND PIPE FITTERS

Workers in this unit group assemble, fit, install and repair plumbing fixtures, pipes and pipeline systems and lead fixtures and equipment. Their functions include cutting, threading, bending, jointing, assembling, installing and maintaining pipes, fittings and fixtures of drainage, heating and sanitary systems; assembling, installing and maintaining pipeline systems in buildings, industrial plants, ships and aircraft for supplying air, or liquid materials; installing and repairing lead tanks, tank linings, pipes, floors and other fixtures and equipment of lead; performing miscellaneous plumbing, pipe-fitting and lead-burning functions.

7-55.10 Plumber, General. Assembles, installs and maintains pipes, fittings and fixtures of drainage, heating and sanitary systems at various locations: examines drawings or other specifications; cuts passage holes for pipes in walls or floors; cuts, reams, threads and bends pipes; joins pipes by use of screws, bolts, fittings or solder; cauls joints and tests them for leaks with air or water pressure gauges; installs assemblies and fixtures; does repair and maintenance work, such as replacing washers on leaky faucets, mending burst pipes and opening clogged drains. May weld pipes.

7-55.40 Pipe Fitter. Assembles, installs and maintains high-pressure or low-pressure pipeline systems for supplying air, gas, steam and water, or for other purposes: examines drawings or other specifications; cuts passage holes for pipes in walls and floors; cuts, reams, threads and bends pipes; assembles pipe sections with couplings, bolts and screws; cauls joints and tests them for leaks with air-pressure or water-pressure gauges; secures assemblies to structure with clamps, brackets and hangers; connects equipment and appliances, such as refrigeration, heating or air-conditioning units, to pipe systems. May join pipe sections and fittings by welding. May design pipe assemblies. Excluded is Pipe and Tube Fitter (Aircraft) (7-55.70).

Pipe Fitter (Gas Main). Constructs and repairs gas mains and pipes leading from mains to consumers: checks and adjusts gradient of pipe in ground using levelling instrument and blocks; installs traps for catching condensed gasoline, tar or water, and other attachments. May install gas meters.

Pipe Fitter (Marine). Lays out, fabricates and installs piping systems on ships under construction or repair: cuts section of template wire and bends it by hand or by dies to shape of pipe assembly that is to be installed; prepares pipes and assembles them according to template; installs piping and attaches pipe fittings to pipe assemblies, tanks, boilers, pumps and other equipment; tests assemblies prior to installation and also the completed systems.

Pipe Fitter (Steam). Installs and repairs pipes conveying high or low pressure steam for machinery, heating and ventilating units, and other equipment. May install equipment such as steam boilers and radiators. May be designated according to working location or type of equipment installed.
7-55.70 — 7-56.60

7-55.70 Pipe and Tube Fitter, Aircraft. Assembles, installs and repairs, fuel and oil pipelines, instrument tubing, electrical conduits and other piping and tubing in aircraft: examines drawings or other specifications; marks locations of clamps, brackets or other supports; drills holes and bolts or rivets support to structure; selects tubing according to dimensions, shape, colour and other identifying characteristics: bends tubing to airplane's structure by hand, in dies or by machine; cuts tubing and shapes ends to facilitate making connection with other tubing or fittings; makes connections to such equipment as tanks and valves but not to instruments, electrical equipment or motor or other actuating equipment; repairs defective installations, replacing worn tubing and fittings. May specialise in specific systems, such as heating, hydraulic-fuel or wing systems.

7-55.80 Lead Burner. Installs and repairs lead tanks, tank linings, pipes, floors and other fixtures and equipment of lead using blowlamp and hand tools: cuts sheet lead or pipe to size; scrapes and levels edges of sections to be joined; fits sections into place; fuses sections together by moving flame of lamp along joints or by heating joints with flame and adding lead from rod or ladle; makes lead fittings and pipes by cutting, shaping and joining. May melt lead scrap and cast it into bars.

7-55.90 Plumbers and Pipe Fitters, Other. This group includes plumbers and pipe fitters not elsewhere classified, for example, those installing and repairing pipes and tubes for scientific equipment; installing hangers and brackets for supporting pipelines, or building up sections of steel pipe to be ready for pipe fitters.

7-56 WELDERS AND FLAME CUTTERS

Workers in this unit group join and cut metal parts and spray and spread molten metal on objects, using flame, electric arc and other sources of heat. Their functions include welding metal parts by heating them with gas flame, electric arc, and other methods, and applying molten metal; welding metal parts by use of thermite compound; cutting metals by means of gas flame or electric arc; brazing parts together; spraying and spreading molten metal to provide a protective or decorative coat or to build up worn or damaged surfaces; operating spot, flash, butt and other resistance welding machines.

7-56.10 Welder, Gas and Electric. Welds metal parts by means of oxyacetylene or other gas flame or by electric arc; performs, as necessary, the tasks of Welder, Gas (7-56.15) and Welder, Electric-Arc, Hand (7-56.25).

7-56.15 Welder, Gas. Welds metal parts by means of oxyacetylene or other gas flame: places and clamps parts in position; connects welding torch to gas containers and opens valves; lights torch and adjusts flame by regulating flow of gases; heats parts until they begin to melt and fuses them by applying molten metal from a welding rod; uses flux as necessary; cleans and smooths welded parts. May mark parts before welding and use welding equipment to cut metal. May specialise in type of metal welded or gas used and be designated accordingly.

7-56.20 Welder, Electric-Arc, Hand. Welds metal parts by means of hand-operated equipment in which heat is obtained from an electric arc: places and clamps parts in position; selects electrode and inserts it in holder; connects wires from generator or transformer to electrode and workpiece; switches on power supply; touches workpiece with electrode and withdraws it a short distance to form electric arc; guides electrode along line of weld to fuse parts together and regulates supply of electricity as required; cleans and smooths welded parts. May mark parts before welding and work according to drawing and other specifications. May operate atomic-hydrogen or inert-gas welding equipment in which a gas is directed over workpiece during welding. May specialise in type of metal welded and be designated accordingly.

7-56.25 Welder, Electric-Arc, Hand. Welds metal parts by means of hand-operated equipment in which heat is obtained from an electric arc: places and clamps parts in position; selects electrode and inserts it in holder; connects wires from generator or transformer to electrode and workpiece; switches on power supply; touches workpiece with electrode and withdraws it a short distance to form electric arc; guides electrode along line of weld to fuse parts together and regulates supply of electricity as required; cleans and smooths welded parts. May mark parts before welding and work according to drawing and other specifications. May operate atomic-hydrogen or inert-gas welding equipment in which a gas is directed over workpiece during welding. May specialise in type of metal welded and be designated accordingly.

7-56.30 Welder, Electric-Arc, Machine. Sets and operates stationary or mobile machine which Welds metal parts by means of an electric arc: sets machine or workpiece in position; selects electrode and fixes it in machine; switches on power supply; brings electrode into contact with workpiece and withdraws it a short distance to form electric arc; operates controls to move electrode over workpiece or workpiece under electrode and fuses parts together; observes progress of welding and adjusts current supply and speed of welding as necessary. May mark parts before welding and work according to drawings and other specifications. May set and operate atomic-hydrogen or inert-gas welding machine in which a gas is directed over workpiece during welding. May specialise in type of metal welded, and be designated accordingly.

7-56.40 Welder, Thermit. Welds metal parts by means of a thermite compound: cleans parts to be welded and places them in position; builds clay mould around parts; pours thermite compound into mould; ignites compound to heat parts and cause the iron in compound to melt and flow in mould, thus joining parts together; cleans and smooths welded parts.

7-56.45 Flame Cutter, Hand. Cuts metal by means of oxyacetylene or other gas flame: connects torch with gas containers; fixes appropriate tip into torch nozzle; lights torch and adjusts flame by regulating flow of gases; guides torch along cutting line. May work according to drawings or other specifications and mark out cutting lines. May operate flame-cutting machine and do welding. May specialise in a particular type of cutting operation, such as cutting scrap metal, and be designated accordingly.

7-56.50 Flame Cutter, Machine. Operates a machine which cuts steel plates into various shapes by means of oxyacetylene or other gas flame: sets up template in machine to guide cutting; lights torch and adjusts flame by regulating flow of gases; moves torch over cutting lines by hand or sets and starts controls which move flame automatically over lines at required speed. May specialise in type of machine used and be designated accordingly.

7-56.60 Brazer, Hand. Joins metal parts by heating them and applying hard solder in a molten state: cleans parts to be joined; heats parts by means of oxyacetylene flame torch, electric arc, or other heating device; coats parts with flux and melts hard solder into joints; cleans
and smooths brazed joints. May prepare own flux. May specialise in type of metal brazed and be designated accordingly.

7-56.65 Metal Sprayer. Sprays molten metal to provide objects with a protective or decorative coat or to build up worn or damaged surfaces: selects nozzle and fixes it to sprayer; inserts wire of required type of metal into sprayer; adjusts flow of oxygen and acetylene or other gases through sprayer and ignites them to melt wire; admits compressed air to force molten wire against surface; directs spray of metal on object until coat of proper thickness has been applied. May prepare surfaces prior to spraying. May use sprayer in which wire is melted by means of electric arc.

7-56.90 Welders and Flame Cutters, Other. This group includes welders and flame cutters not elsewhere classified, for example, those cutting metal by means of electric arc; fusing lead and lead-alloy connections in the making of storage batteries; spreading tin on metal surfaces by melting it and spreading it with a pad; operating spot, flash, butt and other resistance welding machines; brazing by machine.

7-57 Metal-Plate and Structural-Metal Workers

Workers in this unit group shape, assemble, erect and repair heavy metal members such as girders, plates and columns to form structures or their framework. Their functions include marking metal members to guide in cutting, drilling and shaping them for use in buildings, ships, boilers and other structures; drilling, cutting and shaping structural steel in a workshop; performing various tasks on site relating to the erection of steel members for buildings, bridges, and other constructions; assembling and erecting framework and other metal parts of ships' structures; shaping and fitting structural steel plates of ships under construction or repair; bending steel plates to desired curvature by means of a bending machine; making and repairing boilers, tanks, vats and other containers made of heavy steel plates; cutting and bending metal rods and fixing them in concrete forms (shuttering) to reinforce the concrete; riveting structural metal members by hand or pneumatic hammer or by machine; erecting and flanging metal gratings, stairways, door and window frames and ornamental metalwork. Excluded are: Blacksmiths, Hammersmiths and Forgemen (unit group 7-34), Fitter-Assembler and Machine Erectors (except Electrical and Precision-Instrument Fitter-Assemblers) (unit group 7-52), Mechanics-Repairmen (except Electrical and Precision-Instrument Repairmen) (unit group 7-53), and Welders and Flame Cutters (unit group 7-56).

7-57.05 Marker (Structural Metal). Marks metal members to guide workers cutting, drilling and shaping them for use in buildings, ships, boilers and other structures: examines drawings and other specifications or lays template on metal sections; uses measuring instruments to locate positions for marks; marks location of holes, cuts and lines. May make templates for use in marking.

7-57.10 Structural-Steel Worker, Workshop. Drills, cuts and shapes steel in workshop for buildings, ships, boilers and other structures: examines drawings and other specifications; cuts steel plates and angle iron, using power shears or flame-cutting equipment; drills holes for bolts and rivets. May bend and otherwise shape plates and assemble structural members by riveting and bolting.

7-57.20 Constructional-Steel Erector. Performs various tasks in the erection of steel members for buildings, bridges, structures for oil-well drilling and similar constructions: examines drawings and other specifications; sets up hoisting equipment for raising and placing members; erects scaffolding; aligns and bolts members in position for riveting; drills or enlarges holes and smooths rough surfaces using pneumatic or electric tools. May rivet or weld members together.

7-57.25 Shipwright, Metal. Assembles and erects framework and other metal parts of ships' structures: marks structural members according to drawings and other specifications to guide in assembly and erection; directs hoisting of members in position ensuring accurate alignment; bolts members in position for welding or riveting; installs deck plates, hatches, doors, engine and boiler foundations and other metal parts. May prepare templates for parts whose exact shape cannot be predetermined.

Ship Beam and Frame Erector. Fixes metal beams and frames in position for final riveting or welding within hull of ship.

7-57.30 Ship Plate. Shapes and fits structural steel plates of ships under construction or repair: examines drawings and other specifications; marks steel plates to guide shaping and fitting; cuts and bends plates and drills or punches holes in them, by hand or machine, guided by markings or template; squares, bevels or scarf edges of plates; fits plates in readiness for welding and riveting. May heat plates before shaping.

7-57.35 Plate Bender, Steel. Bends steel plates to desired curvature by means of a bending machine: examines drawings or other specifications; marks guide lines on plates; hoists plate to level of machine rollers and inserts one edge between top roller and two lower rollers; manipulates hand wheel or moves lever to lower top roller of machine on to plate; starts machine to cause the plate to be drawn between rollers, thus shaping it into an arc; checks curvature of plate, using templates; repeats bending, adjusting rollers as required, until desired curvature of plate is obtained. May flange the edges of plates and straighten distorted plates. May bend plates in a press.

7-57.40 Boilermaker. Makes and repairs boilers, tanks, vats and other containers made of heavy steel plates: selects metal and marks it according to drawings and other specifications; cuts Plate to desired size and shape, using power shears or flame-cutting equipment; drills or punches holes for rivets or bolts, cutting threads
where required; shapes plate by bending it in power press; assembles parts by bolting, riveting or welding; caulks seams and rivet heads; chips burrs from plate edges; fixes tubes, valves, taps and other fittings in position; repairs damaged boilers and other containers. May erect prefabricated boiler parts and fittings.

7-57.50 Riveter, Hand, Structural Metal Work. Rivets metal members such as plates, girders and columns, using hand hammer: aligns parts if required; inserts rivets in pre-drilled holes or directs helper to do so; strikes shank or rivet held in position by helper, using a heavy metal tool, with hand hammer to spread out rivet end; removes loose rivets by cutting off rivet heads. May drill and ream holes and caulk plates.

7-57.55 Riveter, Machine, Structural Metal Plate. Operates hydraulic machine or press that rivets steel plates: selects riveting dies and inserts them in machine; hoists plate into position and aligns dies and rivet holes; inserts rivets in holes or directs helper to do so; regulates pressure of dies according to size of rivets; applies hydraulic pressure that forces die to spread out rivet end.

7-57.60 Riveter, Pneumatic Hammer, Structural Metal Work. Rivets metal members such as plates, girders and columns, using pneumatically operated hand hammer: selects riveting die and inserts it in hammer; aligns parts if required; inserts rivets in holes or directs helper to do so; holds hammer against rivet held in position by helper using a heavy metal tool; presses trigger of hammer to cause die to pound and spread out rivet end; removes loose rivets by cutting off rivet heads. May drill and ream holes and caulk plates.

7-57.80 Reinforcing-Iron Worker, Construction. Cuts and bends metal rods and fixes them in concrete forms (shuttering) to reinforce the concrete: examines drawings and other specifications; selects rods and cuts them to required length; bends rods, using hand tools or bending machine; joins rods together with wires or fasteners or by welding; places rods in forms and fixes them in position. May reinforce concrete with wire mesh.

7-57.90 Metal-Plate and Structural-Metal Workers, Other. This group includes metal-plate and structural metal workers not elsewhere classified, for example, those erecting gratings, stairways, door and window frames, and ornamental metalwork.

7-58 Electro-Platers, Dip Platers and Related Workers

Workers in this unit group plate or treat the surfaces of metal articles by electrolysis, dipping in molten metal or chemical baths or by other processes. Their functions include coating metal articles with nickel, chromium, gold or other non-ferrous metal by electrolysis to provide protective or decorative surfaces or to build up worn surfaces; cleans article by hand or mechanical scouring, by immersing it in chemical and water baths, or electrolytically; immerses article in solution of plating metal in electroplating tank, suspending it from cathode (negative terminal), and also immerses piece of plating metal, suspending it from anode (positive terminal); estimates amount of electric current needed and time required to plate article by considering its size, kind of plating solution and thickness of deposit required; switches on current which flows from anode to cathode, causing plating solution and piece of metal at anode to be decomposed, and the freed metal to be deposited on article attached to cathode; examines article at intervals to see that it is being plated properly; maintains required flow of electricity through solution by observing instrument readings and making adjustments; removes article when sufficient thickness of metal has been deposited on it, determining thickness by observation or with micrometer and calipers; rinses plated article in water and dries it with cloth, compressed air, in mechanically rotated barrel containing sawdust or in centrifugal drier. May mix plating solution and test its strength during processing by colour or specific-gravity tests. May plate small objects, such as nuts or bolts, in motor-driven plating barrel. May recover residues of precious metals from baths or vats with special apparatus. May supervise workers performing a variety of duties, such as placing articles in plating tank and removing them after plating, cleaning equipment, and cleaning articles after plating.

7-58.20 Plater, Hot Dip, Hand. Coats metal articles by dipping them in molten tin or other non-ferrous metal to protect them against corrosion, to provide good electrical contact or for other purposes: fills pots with plating metal and heats them by electricity, gas, steam or other means; hooks or places article or conveyor that carries it through molten metal or dips article in molten metal using hook or tongs; maintains correct temperature of molten metal by observing instruments and adjusting controls; feeds fresh plating metal into pots. May clean articles in chemical and water baths or with sandpaper and brush and straighten them with hammer before coating. May be designated according to article coated.

Galvanizer. Applies coating of zinc to iron or steel objects to make them rust-resistant.

7-58.30 Plater, Sheet, Hot Dip, Machine. Coats iron and steel sheets with tin in automatic machine: fills pots with flux, palm oil and molten tin; feeds sheets downward into rolls that pass them through flux and oil into molten tin; adjusts rolls so that tin is distributed evenly over sheets and surplus tin is removed as sheets emerge from bath.
7-58.40 Plater, Wire, Hot Dip, Machine. Coats wire with non-ferrous metal by automatic machine: mounts coil of wire on machine, threads end of it through cleaning, flux and molten-metal baths and fastens it to rewinding spindle; adjusts wipers located after each bath and starts machine; regulates speed of wire through machine and temperature of bath. May test acid cleaning bath with hydrometer.

7-58.90 Electro-Platers, Dip Platers and Related Workers, Other. This group includes electro-platers, dip platers and related workers not elsewhere classified, for example, those coating, colouring or oxidising surfaces of articles by dipping them in acid, gilding, staining or hot chemical solutions; treating objects of aluminium or aluminium alloys electrically to produce an oxidised finish (anodising); coating iron or steel objects with zinc by heating them in closed boxes containing a powdered zinc compound (sherardising).

7-59 Metal Workers Not Elsewhere Classified

Workers in this unit group carry out miscellaneous metal working operations which are not performed by those classified elsewhere. Their functions include fitting and assembling, and repairing sports guns and other small arms; fitting and assembling and repairing locks; assembling prepared parts that do not require further tooling, in the manufacture of metal products; operating a lathe in which sheet metal is rotated and pressed into shape; operating metal pressing, sawing, buffing and polishing machines; grinding tools, cutlery and other cutting implements; repairing, setting and sharpening saws; sharpening the fine wire teeth of textile-carding-machine cylinders; making articles by shaping wire; joining metal parts with soft solder by means of a soldering iron; placing metal on stationary die or on machine bed; feeds metal against machine stops and guides to align it with machine tool; moves lever to cause tool to be pressed against metal; releases pressure and removes metal. May make minor adjustments and clean and oil machine. May specialise in a particular type of power press and be designated accordingly.

7-59.25 Assembler, Metal Products. Assembles prepared parts that do not require further tooling, in the manufacture of metal products; takes parts of machine, engine or other metal product and places them in relationship with each other; fixes parts together with bolts, clips, screws or rivets, by soldering or by other methods; reports defects of parts. May work according to drawings. Usually assembles a few specific parts and passes work on to other assemblers. Workers fitting as well as assembling parts are classified in unit group 7-52.

7-59.30 Metal Spinner. Operates a lathe in which sheet metal is rotated and pressed into shape: fixes to lathe spindle the chuck, or the mould of part to be made; selects sheet-metal disc and clamps it to chuck; starts machine to rotate disc and coats disc with wax; selects tool against disc by hand to force it to shape; smooths and trims spun piece with hand tools; removes completed part from machine. May measure, mark and cut out discs from sheet-metal stock and drill holes in discs prior to fitting in lathe.

7-59.35 Power-Press Operator, Metal Working. Operates a machine, other than a forging or steel-plate-bending machine, in which dies, shears, punchers or other tools are pressed on metal by power to cut, bend, trim, or otherwise fashion it: places metal on stationary die or on machine bed; feeds metal against machine stops and guides to align it with machine tool; moves lever to cause tool to be pressed against metal; releases pressure and removes metal. May make minor adjustments and clean and oil machine. May specialise in a particular type of machine, such as band, rotary or reciprocating sawing machine, and be designated accordingly. Excluded is Milling-Machine Operator, Metal Working (7-51.20).

7-59.40 Metal-Sawing-Machine Operator. Operates a machine in which metal is trimmed or cut to size by means of a power saw: measures metal and marks line of cut with chalk or scriber; places metal on machine table, aligns it with saw and clamps it in position; sets appropriate speed of saw; starts machine and feeds metal to saw or saw to metal; observes progress of cutting and removes metal when cutting is completed; replaces broken or worn saw blades. May specialise in a particular type of machine, such as band, rotary or reciprocating sawing machine, and be designated accordingly. Excluded is Milling-Machine Operator, Metal Working (7-51.20).

7-59.45 Buffing and Polishing Machine Operator, Metal Working. Operates a fixed or portable machine for buffing and polishing metal: selects appropriate buffing or polishing wheel and fixes it to machine; applies wax or other dressing to wheel if required; starts machine and holds metal at various angles against rotating wheel to remove surface blemishes and obtain even finish; changes wheels as necessary. May finish, by hand buffing or polishing, those parts which cannot be reached by machine wheel. May clean objects in chemical bath before polishing. Excluded is Honing-Machine Operator, Metal Working (7-51.50).

7-59.50 Tool Grinder, Machine Tools. Sharpens cutting tools used in metalworking, woodworking and other machines, by means of a power operated grinding wheel: mounts cutting tool in fixture on grinding machine; sets fixture so that cutting edge of tool will be ground at adjustments or inserting new tumblers; makes new or duplicate keys. Opens jammed locks. May install locks, May make parts of locks.
correct bevel; starts grinding wheel; brings grinding wheel and edge of tool into contact and sees that grinding is proceeding correctly; stops machine and removes tool when grinding is completed; changes grinding wheels and position of tool as required. May give final finish to cutting edge by hand. May work to close tolerances and use precision-measuring instruments. May specialise in grinding a particular type of tool and be designated accordingly. Excluded is Precision Grinding Machine Operator, Metal Working (7-51.45).

7-59.55 Cutlery and Tool Grinder (except Machine Tools). Sharpens knives, scissors, hair clippers, surgical instruments, hand shears, axes or other cutting tools, except machine tools, by means of grinding wheel: selects grinding wheel and fixes it in position; starts grinding wheel and holds edge of tool against it; observes and checks grinding, moving tool as necessary to obtain required cutting edge; removes burrs from ground edge with whetstone. May temper sharpened tools. May specialise in grinding a particular type of cutlery or tool and be designated accordingly.

7-59.60 Saw Repairman and Sharpener. Repairs, sets and sharpens hand, circular, band or other types of saws: inspects damaged saws; cuts broken teeth from band saws by shearing out section of blade; joints ends of band saws by bevelling ends and welding or brazing them together; brazes or welds cracks in saw blades; removes dents, twists and kinks in blades by hammering; sets teeth of saws at correct angle for cutting, using hammer and swage or special pliers; clamps saw blade in sharpening machine; sets and starts machine so that each saw tooth is ground in turn; removes sharpened blade and gives final finish with hand tools. May trim circumference from damaged circular saws and cut new teeth. May sharpen saws by hand. May specialise in a particular type of saw and be designated accordingly.

7-59.65 Card Grinder, Textile. Sharpens the fine wire teeth of textile-carding-machine cylinders: attaches emery covered rollers to carding machine; starts rollers and grinds the wire teeth; or removes cylinders from carding machine and grinds teeth on a separate machine; removes waste, lint and dust from teeth.

7-59.70 Solderer, Hand.Joins metal parts with soft solder by means of a soldering iron: cleans parts and coats them with flux; heats soldering iron in flame or uses electrically heated iron; coats tip of iron with solder; applies hot iron to joint and simultaneously feeds solder against it; cleans soldered joint. May heat parts before soldering. May specialise in soldering a particular type of metal or product and be designated accordingly.

7-59.90 Metal Workers Not Elsewhere Classified, Other. This group includes metal workers not elsewhere classified, for example, those making objects by shaping metal or product and be designated accordingly.

7-6 Electricians and Related Electrical and Electronics Workers

Workers in this minor group install, maintain, control, operate, fit, assemble and repair various kinds of electrical and electronic equipment. Their functions include installing, maintaining, controlling, fitting, assembling and repairing electrical machinery and equipment, and fitting, assembling, repairing and operating electronic equipment; installing and repairing electrical lines, and jointing cables. Excluded are Telephone, Telegraph and Related Telecommunication Operators (minor group 6-7), Assembler, Metal Products and Solderer, Hand (classified in unit group 7-59) and coil winders (classified in unit group 8-59).

7-61 Electricians, Electrical Repairmen and Related Electrical Workers

Workers in this unit group install, maintain and repair electrical wiring systems, repair simple machinery and equipment, and control electrical equipment in power stations. Their functions include installing and repairing electrical wiring, fixtures and small equipment in homes, business establishments or workshops; installing electrical wiring and equipment in buildings and ships; installing and servicing electrical wiring and equipment in aircraft and vehicles; installing, servicing and operating electrical equipment in studios and on stages; keeping electrical wiring and equipment of a factory in good repair and operational condition; repairing simple electrical machinery and equip-

ment, mainly of a domestic kind, such as electric irons, toasters, vacuum cleaners and kitchen mixers, in workshop or at place of use; controlling the supply of electricity from power stations and its distribution to ensure that demands are met; controlling the amount of electricity generated in a power station; performing various other tasks related to the foregoing.

7-61.10 Electrician, General. Installs and repairs electrical wiring, fixtures and small equipment in homes, business establishments or workshops: studies drawings or other specifications; positions and fixes items such as distribution boards, fuse boxes, switches and light and power points (outlets); cuts, bends, threads and installs conduit, and draws wires through it, or installs sheathed cable; connects wiring to lighting fixtures and power equipment; tests for defects and makes adjustments and repairs. May specialise in high-tension or low-tension
wiring. An electrician specialising in a particular type of wiring is classified elsewhere in unit group 7-61.

7-61.15 Electrician (Buildings). Installs electrical wiring and equipment in buildings: performs basic tasks similar to those of Electrician, General (7-61.10), but works on building wiring and electrical equipment, of which special knowledge is required.

7-61.20 Electrician (Ships). Installs electrical wiring and equipment in ships: performs basic tasks similar to those of Electrician, General (7-61.10), but works on ship wiring and electrical equipment, such as sheathed cable installation, fire-alarm boxes, intercommunication systems and motors, and assists in radio, generator and steering-gear installation, of which special knowledge is required.

7-61.25 Electrician (Aircraft). Installs and services electrical wiring and equipment in aircraft: performs basic tasks similar to those of Electrician, General (7-61.10) but works on aircraft wiring and electrical equipment, such as internal and external lighting, control instruments, generators, motors and intercommunication systems, of which special knowledge is required.

7-61.30 Electrician (Vehicles). Installs, services and repairs electrical wiring and equipment in vehicles: performs basic tasks similar to those of Electrician, General (7-61.10) but works on vehicle wiring and electrical equipment, such as starters, coils, panel instruments and ignition systems, of which special knowledge is required. May specialise in a particular type of vehicle and be designated accordingly.

7-61.35 Electrician (Stage and Studio). Installs, services and operates electrical equipment in stages and studios: performs basic tasks similar to those of Electrician, General (7-61.10) but works on electrical equipment, such as spot, flood and floor lights, of which special knowledge is required.

7-61.40 Electrician (Maintenance). Keeps electrical wiring and equipment of a factory in good repair and operational condition: examines periodically wiring and equipment such as motors, switches, switchboards and electrical mechanisms; locates faults; replaces items such as defective wiring, burnt-out fuses and small parts on motors; repairs electrical fixtures; makes connections to new electrical installations; cleans and oils motors. May make new installations of fixtures, motors and other electrical equipment, and rewind, overhaul and make other major repairs to motors.

7-61.45 Electrical Repairman. Repairs simple electrical machinery and equipment, mainly of a domestic kind, such as electric irons, toasters, vacuum cleaners and kitchen mixers, in workshop or at place of use: diagnoses fault of machinery or equipment with the aid of electrical testing equipment; dismantles or partly dismantles equipment if necessary, replaces broken or burnt-out parts, reconnects loose wires, using soldering iron, if required; reassembles and tests equipment.

7-61.50 Electrical Load Despatcher, Power Station. Controls the supply and distribution of electricity from power stations to ensure that demands are met; diagnoses faults with the aid of electrical testing equipment; dismantles equipment if required and repairs or replaces broken or worn wiring or parts. An electrical fitter specialising in a particular type of equipment is classified elsewhere in unit group 7-62.

7-61.55 Electrical Switchboard Operator, Power Station. Regulates the amount of electricity generated in a power station to ensure that demands are met: determines number of generator units needed in operation by observing load indicators or by interpreting electrical load despatcher's orders, and notifies generating room of pending load changes; adjusts controls to synchronise newly started generating units with units in operation; observes indicating instruments to determine when generator is synchronised and pulls switch to connect generator output to busbar receiving electricity from other generators; disconnects generator from busbar to decrease power output or to cut out malfunctioning unit, and equalises load among remaining operating generators; keeps records of switching operations and regular readings of output of generators.

7-61.90 Electricians, Electrical Repairmen and Related Electrical Workers, Other. This group includes electricians, electrical repairmen and related electrical workers not elsewhere classified, for example, those installing series of accumulators for lighting and power; installing neon lighting; laying conduits and pulling wires in buildings.

7-62 ELECTRICAL AND ELECTRONICS FITTERS

Workers in this unit group fit, assemble and repair electrical machinery and equipment and electronic equipment in factory, workshop or place of use. Their functions include fitting, assembling and repairing various kinds of electrical machinery and equipment, or electronic equipment; or a particular type of electrical machinery or equipment; or electrical parts of machinery or equipment, such as motors, dynamos, transformers, switchboards, switch-gear and control apparatus, instruments, office machinery, signalling systems, elevators and related equipment, motor vehicles, and refrigeration and air-conditioning systems; or a particular type of electronic equipment, such as radio and television transmitters and radar, medical and industrial equipment.

7-62.10 Electrical Fitter, General. Fits, assembles and repairs various kinds of electrical machinery and equipment in factory or workshop or at place of use: examines drawings and wiring diagrams; checks parts for accuracy of fit; chisels, files, scraps and does other supplementary tooling where necessary; assembles parts, using screwdrivers, pliers and other tools; installs and connects wiring, soldering joints where necessary; diagnoses faults with the aid of electrical testing equipment; dismantles equipment if required and repairs or replaces broken or worn wiring or parts. An electrical fitter specialising in a particular type of equipment is classified elsewhere in unit group 7-62.
7-62.15 Electrical Fitter (Motors and Dynamos). Fits, assembles and repairs electric motors and dynamos in factory, workshop or at place of use: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electric motors and dynamos, of which special knowledge is required.

7-62.20 Electrical Fitter (Transformers). Fits, assembles and repairs electric transformers in factory, workshop or at place of use: performs basic tasks similar to those of Electrical Fitter, General (7-62.10), but works on transformers, of which special knowledge is required.

7-62.25 Electrical Fitter (Switchboards). Fits, assembles and repairs electric switchboards in factory or workshop or at place of use: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electric switchboards, of which special knowledge is required.

7-62.30 Electrical Fitter (Switchgear and Control Apparatus). Fits, assembles and repairs electric switchgear and control apparatus in factory or workshop or at place of use: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electric switchgear and control apparatus, of which special knowledge is required.

7-62.35 Electrical Fitter (Instruments). Fits, assembles and repairs electric instruments, or the electrical parts of mechanical instruments in factory or workshop or at place of use: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electrical instruments, of which special knowledge is required.

7-62.40 Electrical Fitter (Office Machinery). Fits, assembles and repairs electrical parts of office machinery in factory or workshop or at place of use: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electrical parts of office machinery, of which special knowledge is required.

7-62.45 Electrical Fitter (Signalling Systems). Fits, assembles and repairs electric signalling systems in factory or workshop or at place of use: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electric signalling systems, of which special knowledge is required.

7-62.50 Electrical Fitter (Elevators and Related Equipment). Fits, assembles and repairs electrical parts of elevators and related equipment in factory or workshop or at place of use: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electrical parts of elevators and related equipment, such as escalators and conveyor belts, of which special knowledge is required.

7-62.55 Electrical Fitter (Motor Vehicles). Fits, assembles and repairs electric parts of motor vehicles in factory: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electrical parts of motor vehicles, of which special knowledge is required.

7-62.60 Electrical Fitter (Refrigeration and Air-Conditioning Equipment). Fits, assembles and repairs electrical equipment of refrigeration and air-conditioning systems in factory, workshop or at place of use: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electrical equipment of refrigeration and air-conditioning systems, of which special knowledge is required.

7-62.65 Electrical Fitter (Domestic Appliances). Fits, assembles and repairs electrical domestic appliances in factory: performs basic tasks similar to those of Electrical Fitter, General (7-62.10) but works on electrical domestic appliances, such as electric fans, vacuum cleaners and irons, of which special knowledge is required.

7-62.70 Electronics Fitter, General. Fits, assembles and repairs various kinds of electronic equipment in factory or workshop or at place of use: examines drawings and wiring diagrams; checks parts for accuracy of fit and makes minor adjustments; assembles parts or mounts them on chassis or panels with aid of hand tools; installs and connects wiring, soldering joints where necessary; tests, calibrates and adjusts equipment; diagnoses faults with the aid of electronic testing equipment; dismantles equipment if required and replaces faulty parts or wiring. An electronics fitter specialising in a particular type of equipment is classified elsewhere in unit group 7-62.

7-62.75 Electronics Fitter (Radio and Television Transmitters and Radar Equipment). Fits, assembles and repairs radio or television transmitters or radar equipment in factory, workshop or at place of use: performs basic tasks similar to Electronics Fitter, General (7-62.70) but works on radio or television transmitters or radar equipment, of which special knowledge is required.

7-62.80 Electronics Fitter (Medical Equipment). Fits, assembles and repairs electronic medical equipment in factory, workshop or place of use: performs basic tasks similar to those of Electronics Fitter, General (7-62.70) but works on electronic medical equipment, such as X-ray machines and cardiographs, of which special knowledge is required.

7-62.85 Electronics Fitter (Industrial Equipment). Fits, assembles and repairs electronic industrial equipment in factory, workshop or place of use: performs basic tasks similar to those of Electronics Fitter, General (7-62.70) but works on electronic industrial equipment, such as computers, testing equipment and weighing apparatus, of which a special knowledge is required.

7-62.90 Electrical and Electronics Fitters, Other. This group includes electrical and electronics fitters not elsewhere classified, for example those fitting, assembling and repairing particular types of electrical and electronic equipment not specifically mentioned elsewhere in the unit group.

7-63 MECHANICS-REPAIRMEN, RADIO AND TELEVISION

Workers in this unit group repair radio and television receivers, sound amplifiers and related equipment in workshop or at place of use and perform related tasks such as installing and repairing radio and television aerials.

7-63.10 Mechanic-Repairman, Radio and Television. Repairs radio or television receivers in workshop or at place of use: examines drawings and wiring diagrams; diagnoses faults with the aid of electronic testing equip-
ment; repairs or replaces faulty parts; reinstalls and reconnects wiring, soldering joints where necessary; tests and tunes receiver. May install or repair radio or television aerials.

7-63.90 Mechanics-Repairmen, Radio and Television. Other. This group includes mechanics-repairmen (radio and television) not elsewhere classified, for example, those installing and repairing radio and television aerials.

7-64 INSTALLERS AND REPAIRMEN, TELEPHONE AND TELEGRAPH

Workers in this unit group install, repair, or service and repair manually operated or automatic telephone or telegraph equipment.

7-64.20 Installer, Telephone and Telegraph. Installs manually operated or automatic telephone or telegraph equipment: examines drawings and wiring diagrams; fixes telephone switchboards, relay racks, dial-switching equipment, receiving sets, telegraphic typewriters and other equipment in position; interconnects various parts of the equipment by wiring, soldering and clamping; connects outgoing and incoming cables, adjusts relays and other electrical devices to maximum operating efficiency. May specialise in installing either telephone or telegraph equipment and be designated accordingly.

7-64.30 Repairman, Telephone and Telegraph. Repairs, or services and repairs, manually operated or automatic telephone or telegraph equipment: examines drawings and wiring diagrams; diagnoses faults in equipment and circuits with the aid of electrical testing equipment; dismantles, or partly dismantles equipment to remove faulty parts; repairs parts or obtains replacements; assembles parts, reconnects wiring and soldering and clamps joints; tests and readjusts equipment to ensure maximum operating efficiency; checks equipment periodically and keeps it in good working order. May specialise in repairing either telephone or telegraph equipment and be designated accordingly.

7-65 LINEMEN AND CABLE JOINTERS

Workers in this unit group construct, install and repair electrical lines and joint cables. Their functions include constructing, installing and repairing electrical power lines, overhead wires for electric traction and telephone and telegraph lines; making joints in surface and underground cables.

7-65.20 Lineman (Electric Power). Constructs and repairs overhead power lines to conduct electricity from power plant to place of use: erects poles and small towers with assistance of other workers; climbs poles and towers and fixes insulators, lightning arresters and other auxiliary equipment; strings cables between towers, poles and buildings, exercising great care that proper sag is left in cable to avoid breakages under changing atmospheric conditions; joints cables by various methods; repairs defective lines, poles, towers and auxiliary equipment.

7-65.30 Lineman (Electric Traction). Installs and repairs overhead wires to carry electricity for railways, trams or trolley buses: erects masts with assistance of other workers; installs supporting crosswires and insulators between opposite masts, working on an elevated platform; attaches conductor wires to insulated parts of crosswires; joins and solderers wires; adjusts sag of conductor wires; repairs defective wires and auxiliary equipment. May specialise in a particular type of overhead system and be designated accordingly.

7-65.40 Lineman (Telephone and Telegraph). Installs and repairs telephone and telegraph lines for communication purposes: climbs poles and fixes insulators, lightning arresters and other auxiliary equipment; hangs and fixes wires from pole to pole or to buildings, exercising great care that proper sag is left in cable to avoid breakages under changing atmospheric conditions; joins wires by various methods; repairs defective wires and auxiliary equipment. May lay and repair underground telephone and telegraph cables. May also erect poles.

7-65.50 Jointer, Electrical Cables. Makes joints in surface and underground cables: separates conductor wires and removes insulation from ends; joins and solders corresponding conductor wires at junction of cables; dries out moisture and wraps joints with insulating material; covers insulated joints with lead sleeves and connects these to cable sheathing; places and fixes jointed cables in junction boxes and pours pitch or other compound into boxes; tests conductor wires for defects. May specialise in type of cable jointed, such as power, telephone or telegraph, and be designated accordingly.

7-65.90 Linemen and Cable Jointers, Other. This group includes linemen and cable jointers not elsewhere classified, for example, those specialising in laying cables in trenches.

7-69 ELECTRICAL AND ELECTRONICS WORKERS NOT ELSEWHERE CLASSIFIED

Workers in this unit group carry out electrical, electronic and related work and are not elsewhere classified. Their functions include assembling finished parts of electrical machinery and equipment; assembling finished parts of electronic equipment; operating sound-recording equipment; installing and operating public-address equipment; operating motion-picture projector and its sound-reproducing equipment.

7-69.20 Assembler (Electrical Equipment). Assembles finished parts of electrical machinery or equipment: fixes finished parts in position using screwdrivers, pliers and other hand tools; installs and connects wiring by clamping or soldering. May work from diagrams. May specialise in a particular type of machinery and equipment, such as electric fans, toasters, irons and clocks and be designated accordingly.
7-69.30 Assembler (Electronic Equipment). Assembles finished parts of electronic equipment; assembles parts or mounts them on chassis with the aid of hand tools; installs and connects wiring, mainly by soldering. May rivet parts together. May work according to wiring diagram. May specialise in a particular type of equipment, such as radio and television receivers, and be designated accordingly.

7-69.40 Sound-Recording-Equipment Operator. Operates electronic equipment which records sound impulses on composition discs or on reels of tape, wire or film for such uses as film and gramophone-record production and radio broadcasting: places microphones in position and connects them to recording equipment; places blank discs or reels of tape, wire or film in machine; sets volume and tone controls and makes other adjustments as necessary; starts machine, watches its operation closely and listens, by means of headphones or loudspeaker, to sound being recorded; manipulates adjustments as necessary; starts machine, watches its operation closely and listens, by means of headphones or loudspeaker, to sound being recorded; manipulates equipment which records sound impulses; places loudspeakers in position and connects loudspeaker wires to amplifier(s); places microphone(s) near speaker, orchestra or other source of sound; connects microphone wires to amplifier(s); tests installation by switching it on and listening from various points while someone talks into microphone; adjusts position of microphones and loudspeakers, if necessary, and regulates volume and tone during operation of equipment. May operate tape recorder or record player. May repair sound-amplifying equipment.

7-69.50 Public-Address-Equipment Operator. Installs and operates sound-amplifying equipment used at public functions: places loudspeakers in position and connects loudspeaker wires to amplifier(s); places microphone(s) near speaker, orchestra or other source of sound; connects microphone wires to amplifier(s); tests installation by switching it on and listening from various points while someone talks into microphone; adjusts position of microphones and loudspeakers, if necessary, and regulates volume and tone during operation of equipment. May operate tape recorder or record player. May repair sound-amplifying equipment.

7-69.60 Cinema Projectionist. Operates a motion-picture projector and its sound-reproducing equipment: places reel of film on projector and threads end of film through projector guides; starts projector and adjusts it for sound and vision; watches operations and, in event of film breakage, threads broken end through projector guides with a minimum loss of time; rewinds projected film in readiness for another showing and repairs faulty sections; periodically cleans lenses, oils equipment and makes minor repairs.

7-69.90 Electrical and Electronics Workers Not Elsewhere Classified, Other. This group includes electrical and electronics workers not elsewhere classified.

7-7 Carpenters, Joiners, Cabinetmakers, Coopers and Related Workers

Workers in this minor group make, erect, fit and repair objects and structures of wood and set and operate woodworking machines.

7-71 CARPENTERS AND JOINERS

Workers in this unit group cut, shape, assemble, erect and maintain various types of wooden structures and fittings, using hand or power tools. Their functions include making, altering and repairing structural woodwork and objects, at bench or on location, by performing general carpentry operations such as sawing, planing, fitting, nailing and gluing; constructing, erecting and installing wooden structures and fittings at building site; making, erecting, altering and repairing scenic equipment and fixtures for theatrical performances and motion-picture productions; erecting temporary structures to support ship under construction or repair, and performing other carpentry tasks in making and repairing wooden ships; constructing and repairing small wooden craft, such as sail-boats, motor-boats, floats and pontoons; altering, repairing and maintaining the structural woodwork and wooden gear on board ship; constructing, assembling and installing wooden fittings in ships under construction or repair; constructing, assembling and repairing wooden parts of aircraft; cutting, shaping, fitting and assembling wooden parts, mainly at bench; covering roofs and walls with wooden shingles; performing various other tasks related to the foregoing. Excluded are woodworkers classified in unit group 7-79 and Timberman, Underground (5-01.60).

7-71.10 Carpenter, General. Makes, alters and repairs structural woodwork and objects, at bench or on location: works according to blueprints, sketches or instructions; cuts, shapes and assembles wooden parts, using hand or power tools; installs and repairs wooden fixtures such as doors and windows; builds, repairs and replaces wooden equipment in establishments. May sharpen tools.

7-71.15 Carpenter (Construction). Constructs, erects and installs wooden structures and fittings at building site, performing, by hand or power tools, such operations, as sawing, planing, nailing and gluing: lays out, cuts, fits and joins lumber to construct framework for structures; builds, assembles, places and dismantles rough wooden structures such as concrete forms (shuttering) and pouring chutes; cuts, fits and installs doors, doorframes, window frames, staircases and interior and exterior trim; lays hardwood covering on floors; applies shock-absorbing, sound-deadening and decorative covering and panelling to floors, ceilings and walls. May scrape and sand wooden floors, install metal fixtures, erect wooden scaffolds, cover roofs and walls with shingles. May build and repair wooden bridges. May sharpen tools. May specialise in tasks performed and be designated accordingly.

7-71.20 Carpenter (Stage and Studio). Makes, erects, alters and repairs scenic equipment and fixtures for theatrical performances and motion-picture productions
by operations such as sawing, planing, fitting, nailing, gluing: makes wooden framework for theatrical or film-production scenery according to blueprints, sketches or instructions, using hand or power tools; covers framework with materials such as canvas, paper and plywood; repairs and alters sets. May supervise the arranging and shifting of scenery on stage, in studio or on location. May sharpen tools.

7-71.25 Shipwright, Wood. Erects temporary structures to support ship under construction or repair, checks fairing, makes and fits wooden parts of framework, lays deck, places metal and wood fittings, erects launching ways and handles launching: saws keel blocks to size and aligns and fixes them; builds a cradle to support bottom shell of ship; erects shores and staging; checks that the hull, frame and fittings of ship are properly aligned (fairing); makes and fits backing strips and other wooden framing to which finished work is attached; makes and fits masts, cargo batters and structural bulkhead sheathings; cuts, fixes and caulks deck boards; directs placing of metal fittings and fixes or marks them for fixing; constructs, installs and greases the launching ways; removes temporary structures and prepares ship for launching. May erect beam and frame sections of the skeleton of the ship. May sharpen tools. May specialise in particular tasks and be designated accordingly.

7-71.30 Boatbuilder, Wood. Constructs and repairs small wooden craft, such as sail-boats, motor-boats, floats, and pontoons: cuts and shapes, and bends in steam press or in clamps, keel and main timbers of boat; constructs framework and fixes strips of wood to it; caulks seams of deck and hull; constructs and installs rudder, seats, stretchers and other wooden fittings. May install engine and metal and electrical fittings on boat. May sharpen tools. May specialise in type of craft made and be designated accordingly.

7-71.35 Ship’s Carpenter. Alters, repairs and maintains the structural woodworking and wooden gear on board ship, as member of crew, by performing operations such as sawing, planing, fitting, nailing and gluing: makes use of hand or power tools; maintains wooden decks; effects all kinds of repairs not made by engineering department; opens and fastens hatches and cargo ports; tests bilge and storage tanks at regular intervals; keeps anchors and cables, wooden masts and cargo booms in good working order; sees that storm oil tanks are ready for use in an emergency. May oil and inspect rod and chain steering gear and manipulate winches. May sharpen tools.

7-71.40 Joiner (Ship). Constructs, assembles and installs wooden fittings such as deckhouses, bridge shelters, steering wheel, skylights, guard rails, cabinets and berths in ships under construction or repair by sawing, planing, fitting, nailing, gluing and other operations: works according to blueprints, sketches or instructions; cuts, shapes and assembles wooden parts, using hand or power tools; lays out and cuts partitions and panelling from wood or composition material; installs light metal fittings, cutting and grinding them to size; lays wooden decking and linoleum. May caulk seams of wooden decks and do cold-storage insulation work. May sharpen tools.

7-71.45 Joiner (Aircraft). Constructs, assembles and repairs wooden parts of aircraft: studies blueprints and sketches; selects lumber or plywood stock of specified type and dimension; lays out woodworking operations and cuts, shapes and bends parts for assembly and installation; places prefabricated wooden structural parts in jig and checks assembly with measuring instruments; glues, nails and strengthens joints; smooths structural parts of units and attaches fittings; glues and nails wooden skin to framework; removes nails and smooths skin when glue is dry; repairs wooden parts and trimmings of aircraft. May sharpen tools. May specialise in parts made or assembled and be designated accordingly.

7-71.50 Carpenter, Bench. Cuts, shapes, fits and assembles wooden parts, mainly at bench, by operations such as sawing, planing, nailing and gluing: selects materials and uses hand and power tools; works according to blueprints, sketches or instructions; fits together wooden parts by dovetailing, morticing and other operations to make doors and frames, paneling, fixtures and other objects; fits and assembles prefabricated sections. May sharpen tools. May specialise in products made and be designated accordingly.

7-71.55 Roofer (Wooden Shingles). Covers roofs and walls with wooden shingles: erects scaffolding; covers wooden sheathing of roofs and walls with roofing felt or building paper; drives nails along seams; measures and marks location for each row of shingles; nails shingles to the roof sheathing in overlapping courses; saws or cuts shingles to fit at edges and corners.

7-71.90 Carpenters and Joiners, Other. This group includes carpenters and joiners not elsewhere classified, for example, those performing carpentry work underground and at surface of mines.

7-72 CABINETMAKERS

Workers in this unit group perform the more skilled tasks involved in making and repairing wooden furniture, highly finished wooden fittings and similar objects. Excluded are Wicker-Furniture Maker (8-51.30), Marquetry Inlayer (7-79.79), Veneer Applier (7-79.82), Carver, Wood (7-79.85), Furniture Finisher, Wood (7-79.88).

7-72.10 Cabinetmaker. Makes and repairs high-grade wooden articles of furniture, using hand or power tools: studies drawings of articles to be made and marks off outline of parts on material; shapes parts from stock by operations such as cutting, planing and turning; trims joints to make them fit together snugly; glues joints; fits parts together and clamps them until glue is dry; drives nails, dowels or screws through joints to reinforce them; fits subassemblies and other parts together to form completed unit; finishes articles, attaching trim, applying veneer, stain or polish and installing hardware such as hinges and drawer pulls; repairs and refashions high-grade articles of furniture. May make sketches or drawings of work to be done and sharpen tools. May specialise in making a particular type of product and be designated accordingly.

7-72.90 Cabinetmakers, Other. This group includes cabinetmakers not elsewhere classified, for example, those making billiard tables.
7-73 SAWYERS AND WOODWORKING-MACHINE SETTERS AND OPERATORS

Workers in this unit group set and operate saws and other woodworking machines. Their functions include sawing and otherwise cutting wood, and planing, shaping, and carving wood by machine.

7-73.15 Sawyer, Wood, Precision. Sets and operates a sawing machine which cuts stock lumber to standard or desired shape: marks outline of article to be made on surface of wood; sets saw and adjusts or inserts end stops and gauges on table to desired length and width; passes wood into machine, regulating direction and speed of saw along outline; removes cut wood from table. May sharpen saws and clean and oil machine. May specialise in type of saw used and be designated accordingly.

7-73.20 Sawyer, General, Sawmill. Sets and operates any or all of the sawing machines in a mill: saws logs into planks, and planks into boards of lesser thickness, or cuts a squared log into several boards; cuts straight and square the edges and uneven ends of boards; cuts planks and boards to standard lengths. May sharpen saws and clean and oil machine.

7-73.25 Head Sawyer, Sawmill. Supervises activities of sawmill crew and controls operation of saws which cut logs into beams, planks or boards: adjusts tension on saw blade; operates mechanism that places log on carriage or signals other workers to roll log on to it; advances carriage against saw blade to make first cuts and returns it to starting position; examines exposed face of log to determine its grade and signals other workers to turn log over on carriage for sawing on other side; supervises further reduction of lumber to beams, planks and boards; changes or directs the change of saws. May specialise in type of saw used and be designated accordingly.

7-73.30 Edger Sawyer, Sawmill. Sets and operates a multiple-blade sawing machine which cuts the uneven edges of rough boards straight and square: lays board on edger table and spaces saw blades so that a board of highest possible quality will be cut; adjusts power feeding mechanism to thickness of board; pushes board into feed rollers that carry it forward between saws. May replace broken or dull saw blades. May specialise in type of saw used or product made and be designated accordingly.

7-73.35 Veneer Cutter. Sets and operates woodworking machines such as rotary lathes, circular saws and slicers to cut veneer from logs: supervises workers in fastening log in machine; examines surface of piece and cuts any undesired sections from wood; sets cutting mechanism according to desired thickness; removes material likely to damage cutting tool and pieces which are too small to be cut efficiently. May operate a power shear to cut veneer into sheets of specified size and to cut out inferior sections. May replace broken or dull cutting tools and clean and oil machine. May specialise in type of machine used and be designated accordingly.

7-73.40 Woodworking-Machine Setter, General. Mounts cutting tools in woodworking machines and prepares them for operation: studies drawing or sample of product desired; selects appropriate tools and mounts them on cutter head; fixes cutter head in machine and adjusts guides; operates machine to produce a specimen of finished product; checks the specimen with drawing or sample; makes necessary readjustments to the position of tools or to machine set-up. May make and grind tools.

7-73.45 Woodworking-Machine Setter-Operator, General. Sets and operates any or all of the machines used to work wood: sets and adjusts guides and cutting tools according to requirements of job to be done; operates woodworking machines to produce desired products. May make and grind cutters and clean and oil machines.

7-73.50 Planing-Machine Setter-Operator, Woodworking. Sets and operates single or multiple cutting machine which planes surfaces and reduces thickness of wooden stock: selects knives and fits them into cutter head; turns handwheel to adjust table for depth of cut and to thickness of unplaned stock; adjusts pressure bar to hold stock firmly against knives; inserts one end of stock between feed rolls and guides it through machine; measures planed stock and makes necessary adjustments; resets machine, turns stock over and repeats process if necessary; replaces dull or broken blades. May clean and oil machine. May specialise in type of machine used and be designated accordingly.

7-73.55 Shaping-Machine Setter-Operator, Woodworking. Sets and operates a machine which cuts designs of irregular shape in the surface of straight, curved or irregular pieces of wood: selects cutting tools and fixes them in place; clamps a straight or curved guide to machine table; picks up stock and feeds it to rotating cutters, pressing it firmly against guide; removes completed work from machine. May shape stock, without using a guide, by manipulating it against cutters or by passing stock between sets of cutters. May grind cutters and clean and oil machine.

7-73.60 Routing-Machine Setter-Operator, Woodworking. Sets and operates a machine which cuts depressions or designs of various shapes on wood: clamps and tightens selected bit in chuck of machine; inserts guide pin in table and places jig in position; adjusts table for depth of cut and sets table stops; clamps stock in place on jig or fastens part securely to movable table; moves table horizontally or vertically and feeds stock into rotating bit or moves jig in horizontal position around pin and under bit to cut design. May work from drawings or sketches, operate machine equipped with automatic device for varying depth of cut, make jigs for repetitive production and clean and oil machine.

7-73.65 Lathe Setter-Operator, Woodworking. Sets and operates automatic lathe which turns wooden articles from stock: studies drawing; selects and fixes appropriate cutters and guides in machine and aligns them to approximate position; places stock in position between centres or in chuck; sees that shaping proceeds correctly; checks first piece by comparing it with drawing; readjusts cutters as necessary and continues shaping; removes turned piece from machine. May clean and oil machine. May specialise in type of machine used and be designated accordingly.

7-73.70 Spindle-Carving Machine Setter-Operator, Woodworking. Sets and operates a machine which carves artistic and decorative designs on the surface of pieces of wood: studies drawing; selects appropriate cutter and attaches it to spindle; holds and manipulates
piece against cutter to produce desired design. May draw or trace outline of design on wood and clean and oil machine.

7-73.75 Woodworking-Machine Operator, General. Operates any machine used to work wood: starts machine after it has been prepared by setter; feeds in wood or carries out operations on it; sees that machine is working correctly. May remove worked wood and clean and oil machine.

7-73.90 Sawyers and Woodworking-Machine Setters and Operators, Other. This group includes sawyers and woodwork machine setters and operators not elsewhere classified, for example, those setting and/or operating such woodwork machines as boring, mortising, universal and sanding machines.

7-79 Woodworkers Not Elsewhere Classified

Workers in this unit group carry out miscellaneous woodworking operations which are not performed by those elsewhere classified. Their functions include making and repairing wooden vehicles and their parts; grading, bending and treating wood; making articles of wood such as patterns, casks, smoking pipes, sporting equipment, shoes and buttons; preparing and fabricating cork; decorating furniture and fixtures by inlaying wood, applying veneer and carving designs; finishing wooden articles of furniture; performing other tasks related to the foregoing.

7-79.15 Coach-Body Builder, Wood. Constructs and repairs wooden bodies of vehicles, using hand or power tools: cuts and shapes wood for body; builds framework, lining, floors, ceiling and other wooden parts according to drawing or other specifications; fits and assembles various parts of vehicle on chassis, repairs decayed or damaged wooden parts of vehicle body. May attach interior fittings and do glazing and repair or replace fabric tops. May specialise in type of coach made, such as railway coaches, trams and motor-car bodies.

7-79.20 Cartwright, Wood. Constructs and repairs wooden carts and wagons, using hand or power tools: cuts and shapes wood for body according to drawing or other specifications; bolts, screws and nails wooden parts together; reinforces cart and wagon body with braces and brackets; shapes axles and fixes them to body; mounts wheels; repairs decayed or damaged parts. May make and repair wooden wheels and do painting.

7-79.25 Wheelwright, Wood. Constructs and repairs wooden wheels for carts and wagons, using hand or power tools: cuts and shapes wood to form hubs, spokes and rims according to drawing or other specifications; assembles parts and shrinks iron tire into rim or fits rubber tyre; replaces worn or broken parts. May repair broken steel wheels.

7-79.30 Grader, Wood. Examines and sorts dressed or rough-sawn wood according to quality and size: examines wood for defects such as knots, faulty edges, stains and unsatisfactory machine work; routes faulty pieces to other workers for remachining; marks satisfactory pieces according to classes. May keep record of defective wood.

7-79.35 Bender, Wood. Bends wooden parts in steam by hand or machine: steams parts to make them soft and pliable; bends steamed parts gradually by hand into shape or places them in a press to obtain desired curvature while steam continues to be applied; fastens parts into place and leaves them to dry and set in permanent shape.

7-79.40 Seasoner, Wood. Operates a steam-heated kiln to season wood: supervises loading and placing of kiln cars in kiln; opens and closes valves to regulate flow of steam into kiln and steam pipes heating kiln; reads thermometer and hygrometer to determine temperature and humidity of kiln, and regulates them by adjusting valves, or by setting automatic controls as wood dries out; directs removal of cars from kiln when wood has been dried; records amount of wood dried and conditions under which it was dried. May test a sample piece of wood for moisture content to determine treatment to be given in kiln.

7-79.45 Impregnator, Wood. Treats wood with chemical to protect it against decay or parasites: heats chemicals to proper temperature; forces creosote into wood or dips wood into a chemical solution; controls temperature of solution and period of immersion; calculates amount of impregnation. May brush or inject chemicals into wood or treat it with gas. May season wood before impregnating.

7-79.50 Patternmaker, Wood. Builds and repairs wooden patterns, using hand or power tools: studies drawings or other specifications; marks off wood stock and shapes it by operations such as sawing, planing, chiselling and turning; checks results with calipers, rules and other measuring instruments; fits and fastens parts together, using glue, nails and screws; trims and smooths patterns; repairs broken or damaged patterns. May paint patterns.

7-79.55 Turner, Wood. Shapes pieces of wood rotating in a lathe, using hand tools: marks centre points on ends and parts to be cut; fixes wooden piece in lathe and selects cutting tools; presses appropriate hand tools against the surface of rotating piece and shapes it according to drawings, specifications or own design; smooths piece with abrasives; checks shape with measuring instruments and removes piece from lathe.

7-79.58 Marker, Woodworking. Marks wood to indicate where it must be cut or shaped: studies drawings or other specifications; selects wood; marks it with guide lines and reference points for cutting or shaping; passes wood on for machining.

7-79.61 Wooden-Model Maker. Constructs to scale wooden reproductions of objects such as buildings, ships, aircraft and machinery, using hand or power tools: studies drawings or other specifications; selects and marks off materials; shapes parts by operations such as cutting, planing and turning; assembles and fastens parts by gluing, nailing and screwing; checks measurements with calipers, rules and other instruments. May carve model.

7-79.67 Smoking-Pipe Maker. Makes smoking pipes and cigar and cigarette holders in wood and kindred materials, using hand or power tools: selects materials
7-79.75 Cooper. Makes or repairs, by hand or using power tools, wooden tanks for holding wet or dry goods: prepares staves from logs by operations such as sawing, bending, jointing and planing; assembles staves into form of desired shape, draws them together and levels them; places and tightens temporary hoops on partly assembled tank to make wood pliable; bores, reams and countersinks a bunghole in a stave; cuts, grooves and trims ends of staves for insertion of heads in croze; makes heads by operations such as sawing, rounding, trimming and assembling blanks; fits heads into croze and presses them around; bends and shapes metal or wood strips into hoops, rivets ends and expands riveted hoops to precise fit; removes temporary hoops from tank and replaces them by forcing permanent ones on it; smooths and finishes surfaces of cask; repairs defective casks by replacing broken staves, heads and hoops and by closing leaking joints. May coat interior of cask to prevent leakage and paint or similar materials, and paint signs. May make stave and mouthpiece in one piece, carve bowl, or repair pipes or holders by replacing burnt or cracked bowl or fitting new mouthpiece.

7-79.76 Wooden-Tank Maker. Makes, by using hand or power tools, wooden tanks for storing liquids: cuts and shapes wood by sawing, bending, jointing and planing, to form tank parts according to drawings or other specifications; assembles boards and staves in place and fixes metal strips around them; tests tank for tightness of joints; puts identification marks on staves and boards and takes tank to pieces in preparation for transportation. May erect tank in position and do repairs.

7-79.79 Marquetry Inlay. Prepares and inlays wood to form decorative designs in furniture: traces on wood, from prepared designs, outlines of shapes to be inlaid; cuts shapes with hand saw or knife; cuts surrounds to receive inlays; inserts shapes with glue or other adhesives into sinkings and smooths them when set. May use materials other than wood, work on articles other than furniture, and sharpen tools.

7-79.82 Veneer Applier. Faces parts of wooden furniture with veneer: selects veneer, matching the grain of its surface; cuts it to required shape and dimensions by hand or power tools; glues veneer on surface of parts; places the whole under pressure and removes it when glue has set. May sharpen tools.

7-79.87 Furniture Finisher, Wood. Finishes or re-finishes surface of furniture: prepares surface by filling cracks and nicks and smoothing it; applies coats of stain, sealer, filler, lacquer, varnish or other finishing materials to surface of wooden furniture; smooths surface between coats and rubs down final coat to desired finish; repairs defects in the finish of completed furniture; removes old finish before refinishing furniture. May apply decorative designs to furniture and mix finishing materials to get desired effect.

7-79.90 Woodworkers Not Elsewhere Classified, Other. This group includes other woodworkers not elsewhere classified, for example, those making wooden shoes or boxes (other than crates or ordinary packing cases).

7-8 Painters and Paperhangers

Workers in this minor group prepare surfaces of structures and objects for decorative or protective coatings and apply the coatings, prepare and apply wallpaper or other materials to ceilings and interior walls of buildings, and paint signs.

7-81 Painters and Paperhangers, Construction and Maintenance

Workers in this unit group prepare structural surfaces for decorative or protective coats of paint or wallpaper and apply the paint, wallpaper or similar materials, and paint signs. Their functions include applying coats of paint, varnish, shellac and similar materials to exterior and interior surfaces, trimmings and fixtures of buildings; covering ceilings and interior walls of buildings with wallpaper; brushing paint, red lead, bituminous paint or other protective materials on bridges, ships' hulls, steel frame-
works of buildings and other steel structures; planning, laying out and painting letters and simple designs to make signs.

7-81.20 Painter (Buildings). Applies coats of paint, varnish, shellac and similar material to protect or decorate exterior and interior surfaces, trimmings and fixtures of buildings; mixes paint and matches colours by stirring together proper proportions of pigment, oil and thinning and drying substances; erects scaffolding or positions ladder; cleans surfaces with brush, cloth or abrasive material and patches cracks and holes with putty, plastic wood or other filler; removes old paint with scraper, wire brush, blowlamp or liquid paint remover; brushes or sprays one or more coats of paint on surfaces. May finish and decorate surfaces with stippled, wood-grain, marble or brick and tile effects or by gilding, silvering or painting over stencils. May paint pieces of furniture belonging to the house or other building. May hang paper.

7-81.30 Painter (Structural Steel and Ships' Hulls). Brushes paint, red lead, bituminous paint or other protective materials on bridges, ships' hulls, steel framework of buildings and other steel structures: rigs up scaffolding, cradles, ladders and other equipment; scrappes dirt, rust or scale from surface to be painted; brushes paint or other materials on surface. May mix paint and linseed oil, colouring matter or other substances to obtain proper consistency and colouring. May burn off old paint with blowlamp and sandpaper surfaces before painting.

7-81.40 Painter (Sign). Plans, lays out and paints letters and simple designs to make signs: prepares layout for sign; marks outlines of letters and designs directly on surface to be painted or on paper; transfers outline from paper to surface by perforating outlines, placing paper on object and dusting perforations with bag of charcoal or other powder; mixes paints and pigments to get desired colours and paints letters and designs, using brushes of various sizes. May make signs by cutting out and sticking gold-leaf lettering to surfaces. May paint signs by brushing or spraying paint over stencils. May make signs of metal or wood.

7-81.50 Paperhanger. Covers ceilings and interior walls of buildings with wallpaper: cleans surface and fills cracks and holes with plaster; brushes sizing on surfaces; measures walls and ceiling areas and cuts paper from rolled strips accordingly; mixes paste to desired consistency and brushes it on paper; places strips of paper on walls or ceilings, matching adjacent edges and smoothing paper in place with dry brush and felt-covered roller; trims off ends of paper extending over ceiling and baseboard lines, doors and windows. May remove old paper, using scrapers, water and chemical removers. May apply fabric or similar materials.

7-81.90 Painters and Paperhangers, Construction and Maintenance, Other. This group includes painters and paperhangers (construction and maintenance) not elsewhere classified, for example, those painting parts of stage settings; specialising in a particular type of finish such as graining or marbling; painting ships' interiors and fittings; repainting signs or signals along a railroad right of way.

7-82 Painters (except Construction and Maintenance)

Workers in this unit group apply decorative or protective coatings to objects by a variety of methods. Their functions include applying decorative or protective substances, such as paint, enamel or lacquer, on objects of metal, wood or other material, using brush or spraying mechanism; immersing objects in paint, enamel, stain, varnish, lacquer or similar liquids to provide them with protective or decorative coating; and performing other functions, including that of painting objects, using an automatic sprayer or roller type of painting machine. Excluded are Decorators, Glass and Ceramics (unit group 8-14).

7-82.20 Painter (Brush). Applies decorative or protective materials, such as paint, enamel or lacquer, on articles of wood, metal or other material, using a brush: selects and mixes paints to produce desired colour; brushes prime and finish coats on surfaces; rubs coats with abrasive to obtain even surface. May prepare surfaces for painting, using scrapers, abrasives, chemical removers, fillers, or other means. May be designated according to object painted or material used.

7-82.30 Painter (Spray). Applies decorative or protective materials, such as paint, enamel or lacquer, on articles of metal, wood or other material, using spraying mechanism: selects and mixes paints to produce desired colour; pours coating material into tank of spraying mechanism; connects sprayer to air hose and adjusts air-pressure valves and nozzle; presses trigger and directs spray over surfaces, applying prime and finish coats; covers with tape areas not to be painted. May prepare surfaces for painting, using scrapers, abrasives, chemical removers, or other means. May be designated according to object coated or material used.

7-82.40 Dipper, Hand. Immerses articles in paint, enamel stain, varnish, lacquer or similar liquids to provide them with protective or decorative coating: adds ingredients to vat according to specifications; places articles in wire basket and immerses in liquid, by hand or by use of a hoist, or dips articles directly in liquid by hand; withdraws articles from vat and removes excess coating. May clean articles before dipping. May bake coated articles in oven. May be designated according to article dipped or type of coating applied.

7-82.90 Painters (except Construction and Maintenance), Other. This group includes painters (except construction and maintenance) not elsewhere classified, for example, those touching up articles; painting papier-mâché models; painting stripes and decorative edges on articles; painting objects by using an automatic spraying machine or roller-type painting machine.

133
Workers in this minor group lay bricks and stone, apply plaster and insulating materials, and work on construction tasks not performed by workers elsewhere classified. Their functions include laying brick, hollow tile and similar building blocks in the erection and repair of brick and brick-faced structures; setting blocks of stone in the erection and repair of stone structures and in building construction; fitting and setting tiles on walls, ceilings and floors of buildings; applying lath and plaster in various types of buildings; finishing and repairing cement surfaces, and laying terrazzo floors; applying insulating materials to buildings, boilers and pipes and to refrigeration and air-conditioning equipment; cutting, fitting and setting glass in buildings and vehicles; performing other construction and maintenance tasks.

**7-91 Bricklayers, Stonemasons and Tile Setters**

Workers in this unit group build and repair structures and veneers of bricks, stone and similar materials and decorate walls, ceilings and floors of buildings with tiles and mosaic panels. Their functions include laying brick, hollow tile, and similar building blocks to construct walls, partitions, arches, fireplaces, and other structures; laying brick or tile to construct tapering smoke stacks or chimneys of great height; laying firebrick or refractory blocks and tiles to build and repair various types of high-temperature structures such as furnaces, kilns, ovens and retorts; building stone structures such as walls, piers or abutments, or laying walks, kerb stones, or other types of stone-masonry; cutting, tooling and setting marble slabs or blocks to produce ornamental surfaces on floors and walls; grading and paving surfaces of earthen slopes or drainage channels with rock or stone to prevent soil erosion; setting tile to surface walls and floors according to specified designs; constructing and laying mosaic panels to decorate floors, walls, and other surfaces; finishing and repairing mortar joints between bricks and stones of masonry walls; performing various other tasks related to the foregoing.

**7-91.15 Bricklayer (Construction).** Lays brick, hollow tiles and similar building blocks (except stone) to construct walls, partitions, arches, fireplaces, smokestacks and other structures; examines drawings and other specifications of structure to be erected; spreads mortar with trowel and lays building blocks in horizontal rows or in designs and shapes; taps blocks with trowel to embed them firmly in mortar; checks vertical and horizontal alignment of structures, as work progresses, with level and plumb-line. May fasten brick or terracotta veneer to face of masonry structures.

**Bricklayer (Ornamental).** Lays specially shaped and coloured bricks to form ornamental designs or cuts bricks to required shape and sets them in position to form design.

**7-91.25 Bricklayer (Chimney Building).** Lays brick or tile to construct tapering chimneys of great height: examines drawings and other specifications; lays tiers or heavy brick, using mortar as binder, to follow circular outline of chimney, setting each layer with slight offset to produce desired taper; lays brick to back up outside tiers of chimney and to form lining; attaches rigging and tackle to chimney to support scaffolding and lays planks to form scaffolding; builds flue opening at required height; washes down outside surface of chimney with diluted acid solution. May do ornamental work on chimneys. May attach lightning-rod system to chimney.

**7-91.30 Bricklayer (Firebrick).** Lays firebricks or refractory blocks and tiles to build and repair various types of high-temperature equipment, such as furnaces, kilns, ovens, and retorts; examines drawings and other specifications; spreads fireclay mortar with trowel, lays and taps bricks or blocks in place, aligns them, and finishes joints. May specialise in building and repairing a particular type of high-temperature equipment and be designated accordingly.

**Bricklayer (Furnace Lining).** Lays firebricks and sets refractory tiles to install or repair linings of steam boilers or metal melting, melting and heat-treating furnaces, and converters: makes provision for expansion joints in linings; replaces arched roofs of furnaces by using frame to support brickwork or by setting special tile shapes in structural hangers. May patch or replace linings of ladles or tapping spouts in furnaces.

**Bricklayer (Oven and Kilns).** Lays firebricks to build and repair kilns and fireboxes and prepares kilns for operations by closing doors by means of temporary walls and sealing cracks and holes with plaster of fireclay. May build new smokestacks or smoke tunnels.

**7-91.40 Stonemason (Construction).** Builds stone structures, such as walls, piers, or abutments, or lays walks, kerb stones, or other types of stone masonry: examines drawings and other specifications; selects, cuts and shapes stone preparatory to setting, using chisel, hammer and other shaping tools; spreads mortar with trowel over foundation or laid stone; sets stone in mortar bed by hand or with aid of crane, and taps it into place with hammer; aligns stone with level and plumb line; fills vertical joints between stone with mortar and finishes them with pointing trowel. May specialise in a particular
type of stonemasonry and be designated accordingly. May fasten stone facings to structures of brick or similar materials.

**Stonemason (Mine).** Constructs or repairs stonework, either on surface of mine or underground, using prepared or partly prepared stone blocks.

**Stone Setter.** Sets cut and dressed ornamental and structural stone in buildings and other structures, and decorates and repairs stone structures.

7-91.50 Marble Setter. Cuts, dresses and sets marble blocks or slabs to make ornamental and protective surfaces: examines drawings and specifications; prepares blocks by cutting, facing and trimming them to proper size and fit; sets blocks by preparing foundation, checking fit of block by laying it on foundation, checking and aligning it, removing block and spreading mortar on its base and on side of adjacent block, lifting block back to position, tapping it into place, and pouring grout to fill joints between blocks; prepares slabs by cutting or bevelling them; sets slabs by locating, marking and drilling anchor holes for bracket attachments on walls and slabs, attaching wire anchors through drilled holes and securing them in position, applying daubs of plaster to wall, hanging slabs in position by means of anchors, aligning slab surface flush with surfaces of adjacent slabs, filling joints between slabs with plaster and pointing joints with trowel or wooden paddle; removes excess plaster and dirt from marble surfaces.

7-91.55 Rubble-Stone Setter. Grades and paves surfaces of earthen slopes or drainage channels with rock or stone to prevent soil erosion: grades slope and prepares soil bed to hold stones; fits stones closely together on prepared base and tamps them firmly into place; breaks off projecting surfaces with a stone hammer to produce a flat finish; fills spaces between stones with clay or small pieces of rock. May cement stones together by placing mortar between stones.

7-91.60 Tile Setter. Sets tiles to surface walls and floors, according to specified designs: examines drawings and other specifications; soaks tiles in water to prepare them for setting; sets wall tiles by applying plaster coat and layer of cement mortar to wall, laying tiles in rows in cement according to pattern and tapping them into place, and aligning rows of tiles by use of spirit level; sets floor tiles by sprinkling dry cement over fresh concrete foundation, laying tiles evenly in rows on foundation, sliding levelling board over surface of tiles, tapping tiles with board to level surface and to increase bond between tile and cement; chips tiles with hammer and chisel or cuts them when irregular shapes are desired to fit into corners or around fixtures; wipes newly laid tile surfaces with cement mortar to fill joints; cleans tile surfaces.

7-91.65 Mosaic Cutter and Setter. Constructs and lays mosaic panels to decorate floors, walls and other surfaces: selects mosaic tiles, or cuts or breaks up variegated pieces of stone, ceramic, opaque coloured glass and other artificial materials; matches and fits tiles and pieces of stone and glass to a drawn pattern; sets out matched tiles or pieces on sheet of paper, attaching them thereto with adhesive to form mosaic panel in reverse; prepares surface of structure for mosaic panel; mixes cement and spreads it over surface with trowel or float; beds mosaic design in cement foundation by pressing reverse side of panel upon it; removes paper and excess cement; touches up face of design by filling joints with cement and polishing. May specialise in cutting or setting mosaic and be designated accordingly.

7-91.70 Tuckpointer. Finishes and repairs mortar joints between bricks and stones of masonry walls: scrapes mortar out of joints to required depth with a raker; brushes loose mortar from joint; wets joint to increase adhesion of fresh mortar; inserts fresh mortar into joints and smooths and shapes it with pointing trowel or jointer.

7-91.90 Bricklayers, Stonemasons and Tile Setters, Other. This group includes bricklayers, stonemasons and tile setters not elsewhere classified, for example, those laying bricks, concrete blocks or shaped tiles for constructing sewers or manholes or chambers for enclosing water-line valves; laying tile conduits to insulate and protect water and steam lines.

7-92 Plasterers

Workers in this unit group apply lath and plasters in buildings. Their functions include applying one or more coats of various kinds of plaster to interior walls and ceilings of buildings to produce a finished surface; moulding and installing ornamental plaster panels and trim and casting ornamental plaster cornices; applying a protective and decorative covering of cement, plaster and similar materials to outside building surfaces; fastening metal or wooden laths to walls, ceilings and partitions to provide a supporting base for plaster and fireproofing material; performing various other tasks related to the foregoing.

7-92.10 Plasterer, General. Applies one or more coats of various kinds of plaster to interior walls and ceilings of buildings to produce a finished surface: applies preliminary coats or-application of rough coats or preliminary (rough) coats or first coat of plaster on surface with trowel, levelling and smoothing it, scratching surface to provide bond for second coat, shaping border of plaster along sides of surface to provide a supporting base for plaster and fireproofing material; performing various other tasks related to the foregoing.

7-92.20 Plasterer (Ornamental). Moulds and installs ornamental plaster panels and trim, and casts ornamental plaster cornices: moulds and installs plaster panels by mixing plaster, shaping it with template, sawing hardened and shaped plaster to length, erecting temporary support for cornice, applying coat of plaster to surface and pressing mould into position; casts plaster cornices by nailing wooden strip to surface as template for cornice, applying plaster coat to surface, and pushing a template over plaster to shape and smooth it. May specialise in applying preliminary (rough) coats or in finish coat and be designated accordingly. May fasten lath to surfaces prior to plastering, perform ornamental plastering or plaster outside surfaces of buildings.
7-92.30 Plasterer (Stucco). Applies a protective and decorative covering of cement, plaster or similar material to outside building surfaces: erects scaffolds; applies first coat, pressing plaster into the interstices of lathing or directly on to wall with trowel, and roughens surface of coat to facilitate its bonding with second coat; applies second coat with trowel, levels it with straightedge, presses it firmly with darby, scratches the surface, allows it to cure several days and moistens it daily; applies finish coat with trowel, removes excess plaster with straightedge, smooths coat with darby and marks it with brush or trowel, or spatters it with sand, small stones or plaster to obtain protective or decorative finish. May fix wire mesh, laths or similar material to outside surfaces before plastering.

7-92.40 Lather. Fastens metal or wooden laths to walls, ceilings and partitions to provide a supporting base for plaster or fireproofing material; erects framework on walls to which laths are to be fastened; cuts laths to sizes and provides openings for electrical fixtures, heating and ventilating pipes, or other fixtures; fastens laths with nails or wires to framework on walls or to joists of ceiling. May specialise in metal or wood lathing and be designated accordingly. May also install other materials for holding plaster, such as plaster board, mastic board, cork board lath.

7-92.90 Plasterers, Other. This group includes plasterers not elsewhere classified, for example, those maintaining in good repair the plaster work in an establishment; applying special plaster for acoustical purposes.

7-93 Cement Finishers and Terrazzo Workers

Workers in this unit group finish and repair cement surfaces and lay terrazzo floors. Their functions include finishing surfaces of concrete structures and smoothing surfaces of freshly poured concrete sections; applying to floors a durable, smooth surfacing composed of cement, sand, pigment and marble particles; repairing floors, walls, vats and other concrete structures and equipment; performing various other tasks related to the foregoing.

7-93.20 Cement Finisher. Finishes surfaces of concrete structures and smooths surfaces of freshly poured concrete sections: cuts ridges, bumps and projecting wire from concrete surface with chisel and hammer; patches holes and broken corners by wetting them, spreading mortar into them, and smoothing surface with trowel or float; removes blemishes from and smooths surface by wetting or applying a liquid mixture of sand, cement and water and rubbing with abrasive block; finishes surface by wiping it with a damp brush; levels, smooths and shapes surfaces of freshly poured concrete sections with straightedge and float for fine finish, and edging tool to shape corners. May specialise in a particular type of concrete finishing work and be designated accordingly.

7-93.30 Terrazzo Worker. Applies to floors a durable, smooth surfacing composed of cement, sand, pigment and marble particles: examines drawings and specifications; places temporary wooden frames to define first layer of terrazzo floor; spreads sand and roofing paper on surface of foundation to prevent bonding between foundation and first layer; spreads mixed cement and sand on prepared surface forming first layer, smooths it with trowel and float, strikes it off to level of temporary frames with straightedge, and removes frames; cuts grooves with trowel into first layer for metal division strips; presses division strips into grooves so that their top edges define the level of finished-floor surface; spreads top layer with trowel and reduces it to level of metal division strips; scatters marble chips on surface and rolls them into it; grinds and polishes hardened terrazzo surface smooth and level; finishes interstices with wash of cement and plaster of Paris.

7-93.90 Cement Finishers and Terrazzo Workers, Other. This group includes cement finishers and terrazzo workers not elsewhere classified, for example, those repairing floors, walls, tanks, vats and other concrete structural parts and equipment.

7-94 Insulation Appliers

Workers in this unit group apply insulating materials to buildings, boilers and pipes, and for refrigeration and air-conditioning equipment. Their functions include applying slabs and bats (sheets) of insulating material, such as cork and spun glass, to walls, floors and ceilings in buildings; blowing and packing insulating material, such as mineral wool, shredded cork and asbestos, with power-driven machine into cavities between walls, floors and ceilings in buildings; applying adhesive, sound-absorbing material upon ceilings and other surfaces with power-driven machine, to prevent reverberation of sound; applying insulating material, such as asbestos mastic, cork, felt and mineral wool to exposed hot or cold surfaces of equipment such as boilers, pipes, and tanks; insulating refrigeration and air-conditioning equipment with various materials, such as cork and asbestos, to retain desired temperature; and performing various tasks related to the foregoing.

7-94.20 Insulator (Buildings), Hand. Applies slabs or bats (sheets) of insulating material, such as cork or spun glass, to walls, floors, and ceilings in buildings: examines drawings and other specifications; nails or wires bats of insulating material, such as cork wool or spun glass, to interiors of walls, on attic roofs and on bottoms of floors; or spreads hot asphalt on surface and embeds courses of cork slabs in it; or spreads cement mortar with trowel on slabs and sticks them to surface; nails slabs to walls and ceilings for additional security; saws slabs to make them fit at ends of courses and around outlets and fixtures. May construct interior insulating walls by fixing courses of compressed-cork blocks one upon another with cementing substance. May finish cork surface of walls and ceilings with plaster or spread concrete over floor slabs to form wearing floor.
7-94.30 Insulator (Buildings), Machine. Blows and packs insulating material, such as mineral wool, shredded cork or asbestos, with power-driven machine into cavities between walls, floors and ceilings in buildings; carries hose nozzle to working position; inserts hose nozzle into openings in walls, floors or ceilings; orders the starting of blower to release compressed air which blows insulating material through hose; directs hose nozzle to distribute insulating material. May insulate open spaces, such as cupboards, walls, or attic roofs, by nailing sheets of insulating material to studs or rafters.

7-94.40 Insulator (Acoustical). Applies adhesive, sound-absorbing material upon ceilings and other surfaces with power-driven machine, to prevent reverberation of sound: prepares machine for operation by filling container with insulating material; starts machine and directs hose nozzle towards surface to be covered; applies insulating material to surface in even layer of required thickness. Excluded is the fixing of acoustical blankets and fixing them to turbines to prevent loss of heat.

7-94.50 Insulator (Boilers and Piping). Applies insulating material, such as asbestos mastic, cork, felt or mineral wool to exposed hot or cold surfaces of equipment such as boilers, pipes or tanks: cleans surface of object to be insulated; binds heavy wires around object and attaches small tie wires to them; applies base coating of asbestos mastic or insulating cement to surface; or covers object with a layer of other insulating material; covers base coating or layer with wire netting to reinforce insulation; fastens netting in place with the small tie wires; applies one or more coatings over wire netting, smoothing final coat with trowel. May cover object with felt bound with wire or with gauze covered with plaster of Paris. May cover insulated pipes, etc., with strips of canvas or sacking. May paint or whitewash insulating surface.

7-94.60 Insulator (Refrigeration and Air-Conditioning Equipment). Insulates refrigeration and air-conditioning equipment with various materials, such as cork or asbestos, to retain desired temperature: shapes, trims and smooths insulating sheets and blocks to cover and to fit parts of equipment such as expansion chamber, condenser and piping; applies waterproof cement to insulating material and surfaces of members to be insulated and presses them together; secures insulating material with wire and wire netting; applies one or more layers of asbestos plaster over wire netting with trowel; packs walls or partially assembled casing with sheets or loose particles of insulating material. May apply insulating material to hot- or cold-air ducts and pipes.

7-94.90 Insulation Appliers, Other. This group includes insulation appliers not elsewhere classified, for example, those cutting asbestos cloth, making it into blankets and fixing them to turbines to prevent loss of heat.

7-95 GLAZIERS

Workers in this unit group cut, fit and set glass in buildings and vehicles. Their functions include cutting and fixing glass panes in window, door, display case and other frames; fastening glass panes in puttyless roof lights; fixing flat and curved plate glass in window frames, store fronts, swing doors, show cases, portholes and other similar openings; making and installing decorative window and glass panels in a lead or copper framework; cutting and fixing ordinary and shatterproof glass panels in windows, windshields and doors which are subject to vibration in vehicles; performing various other tasks related to the foregoing.

7-95.20 Glazier (Buildings). Cuts and fixes glass panes in window, door, display case or other frames: lays stock sheet of glass on padded surface of table, marks outline or places pattern on it; cuts glass with cutting tool, following outline or pattern; breaks away excess glass by hand or with notched tool and smooths rough edges; cleans recesses in sash in which pane is to be placed; mixes putty and spreads a thin layer of it in sash recesses; presses pane into place and fastens it with glazier's points or spring clips; spreads and smooths putty around edge of pane and against sides of sash recesses; removes excess putty from pane. May perform work of Glazier (Puttyless Skylights) (7-95.30) or Glazier (Plate Glass) (7-95.40).

7-95.30 Glazier (Puttyless Skylights). Fastens glass panes into puttyless roof lights: measures recesses in skylight, and cuts strips of treated felt to measured sizes; lays and bolts felt strips along sash members to pad sash recesses; places glass pane in padded recesses and fastens it with spring clips. May use other methods of fastening panes into different kinds of frames. May make pavement lights by fixing glass prisms in iron or reinforced concrete frames with cementing substances. May cut glass panes to fit sash.

7-95.40 Glazier (Plate Glass). Fixes flat or curved plate glass in window frames, store fronts, swing doors, show cases, portholes, or other openings: cuts and screws metal drain moulding around opening to provide frame for plate glass; places plate glass in frame, bedding it in putty, on cork or soft wood blocks, or on strips of leather, velvet, or rubber; cuts and places metal face mouldings around edges of plate glass; drills holes through mouldings and bolts them together to hold the plate glass rigidly in the opening. May bolt metal corner pieces to mouldings. May measure up and cut glass to shape and make template for preparing bent plate glass.

7-95.50 Glazier (Leaded Glass). Makes and installs decorative windows or glass panels in a lead or copper framework: studies artist’s designs, drawings and other specifications; cuts clear, ornamental or coloured glass into sections according to specifications; fits lead or copper framework around sections and soldering intersecting joints; rubs putty or cement into gaps between glass and framework to stiffen it and make it airtight and watertight; puts horizontal bars in place to support window; solders metal ties to framework and secures them to bars; fixes constructed window or panel in position. May specialise in cutting glass, fitting sections in lead or fixed constructed window in position and be designated accordingly.

7-95.60 Glazier (Vehicles). Cuts and fixes ordinary and shatterproof glass panels in windows, windshields and doors which are subject to vibration in vehicles such
as trucks, buses, automobiles, railway coaches, tramcars and aircraft: marks outline or places pattern on glass; cuts glass with hand glass-cutter, following outline or pattern, and smooths rough edges, using abrasive wheel, or, when cutting shatterproof glass, heats glass along cutting line to soften filler and breaks it to shape; places glass in frame, fixing channeling rubber strips around edges of glass to hold it securely and make window weather and rattle-proof; installs window in vehicle. May make minor adjustments to metal window sash, such as oiling locks or straightening bent frames.

7-95.90 Glaziers, Other. This group includes glaziers not elsewhere classified, for example, those installing sheets of structural glass to form decorative building fronts, walls, and ceilings, using mastic cement and metal strips to fasten glass in place; cutting, fitting, and fastening glass parts into china closets, book-cases, and office partitions;

7-99 Construction Workers Not Elsewhere Classified

Workers in this unit group perform miscellaneous construction and building maintenance tasks and are not elsewhere classified. Their functions include performing the duties of a number of building trades in building or repairing entire structures such as homes, barns, commercial houses and garages, mainly in areas where specialists are not available; covering roof frameworks with various types of materials; keeping structures of establishments such as office buildings, apartment houses, factories or similar establishments in good repair; performing maintenance, repair and construction work at unusual heights; cleaning metal, stone and brick structures by directing a jet of sand or steam from a hose nozzle against surfaces; paving and repairing sidewalks, streets and roadways by hand; working in diving suit and helmet below surface of water to perform duties in the construction and maintenance of structures, vessels and floating docks; digging pits for structural column footings or water wells; laying clay, concrete, or cast-iron pipe in ditches to form sanitary or storm sewers, drains and water mains; erecting temporary metal or wooden scaffolding on construction locations. Excluded from this group are workers who smooth and finish cement, who are classified as Cement Finisher (7-93.20), workers who install gas mains and high-pressure steam lines, who are classified as Pipe Fitters (7-55.40) and workers who operate excavating, grading, construction and lifting machinery, who are classified as Stationary-Engine and Excavating and Lifting Equipment Operators and Related Workers (minor group 8-7).

7-99.10 Housebuilder, General. Builds and repairs such structures as homes, barns, commercial houses and garages in areas where specialists in individual building trades are not available: makes own plans from rough sketches; performs the duties of a number of building trades according to his abilities, especially those of Bricklayer (Construction) (7-91.15), Carpenter, General (7-71.10), Painter (Buildings) (7-81.20), Paperhanger (7-81.50) and Plasterer, General (7-92.10). May subcontract to skilled specialists those portions of work which he is unable to perform.

7-99.15 Floor-Layer (Mastic Composition). Applies to floors a durable surfacing composed of asphalt, clay or sand, naphtha and asbestos fibre: prepares floor by sweeping it and covering it with treated paper or other material; spreads composition over paper with a trowel, using guides and straightedge to obtain uniform thickness of layer; smooths surface with trowel; applies additional layers to obtain required thickness; polishes surface by moistening it with petrol and smoothing it with trowel after top layer has set.

7-99.20 Floor-Layer (Composition Tile). Applies shock-absorbing, sound-deadening, decorative floor of composition tiles: examines drawings and other specifications; cleans and prepares floor by sweeping it, driving projecting nails into flooring or filling wide cracks with plastic material; coats floor with adhesive cement and lays foundation material on it, rolling material smooth with hand roller; marks foundation with lines to guide laying of tiles; spreads adhesive over foundation material as laying of tiles progresses; lays tiles on cement according to design; rolls finished surfaces to make them smooth and adhere to cement. May heat tiles prior to laying. May specialise in a particular type of tile, such as asphalt, cork, linoleum, or rubber, and be designated accordingly.

7-99.25 Roofer (Slate, Tile and Similar Materials). Applies and fastens slate, tile and similar materials to roofs to make them weatherproof: covers sheathing of roof with roofing felt; measures location for each row of slates or tiles and marks chalk guide lines; fixes slates or tiles by nailing, cementing or hooking to the roof sheathing in overlapping courses; cuts slates or tiles to fit ridges, valleys and edges of roof; seals ridge joint by cementing tiles along ridge with roofing cement; applies sheet-metal strips bent to fit angles between walls and roof or between different roof surfaces; seals exposed nails; cleans surface of finished roof with a diluted acid solution. May punch holes in slates or tiles. May replace broken slates or tiles.

7-99.30 Roofer (Composition). Covers roof with various kinds of composition material in sheets: measures and cuts roofing materials to fit roof and corners or around chimneys and other objects on roof; fastens roofing material to roof base with nails or a cementing substance; seals overlapping joints; applies sheet-metal strips bent to fit angles between walls and roof or between different roof surfaces. May spread asphalt and pebbles over surface.

7-99.35 Roofer (Asphalt and Similar Materials). Applies alternate layers of roofing paper and hot tar and a surface layer of gravel to build up a roof covering:
spreads hot tar over roof base with mop, brush or other device; applies overlapping strips of roofing paper until the entire roof is covered; cuts roofing paper to fit roof corners or around pipes, chimneys or other objects; applies alternate layers of hot tar and roofing paper until roof covering is built up as specified; cuts strips of sheet metal or heavy tar paper and fixes them into angles between walls and roof surface; applies a heavy coat of hot tar over top layer and spreads gravel over the tar with rake or stiff-bristled broom.

7-99.40 Roof Thatcher. Constructs a thick roof covering with thatching material such as straw, reeds, rushes and heather: ties material in bundles; covers roof framework by fastening material to slats across the rafters with tarred string, wire, straw ropes or osier strips; applies additional layers, affixing each with wood spars, until desired thickness is obtained; combs and trims up surface and cuts eaves square, using shears and special knives. May soak material in fire-proofing solution.

7-99.45 Building Maintenance Man. Keeps structures of establishments, such as office buildings, apartment houses and factories, in good repair: performs painting, carpentry and other maintenance duties according to his abilities; makes minor repairs to mechanical equipment usually found in such establishments.

7-99.50 Steeplejack. Performs, at unusual heights, maintenance, repair, or construction work, such as painting smokestacks, industrial chimneys, flagpoles or water-tanks, and repairing roofs, stonework or other parts of steeples and high towers: drives spikes into structures being scaled and hangs scaling ladder on spikes, repeating process until desired work location is reached; sets in place flying scaffold, from which he works, by reaching sideways and driving spikes along chimney or other structure, hanging brackets on spikes and laying planks on brackets; performs maintenance, repair and construction work according to abilities in such building trades as Bricklayer (Chimney Building) (7-91.25), Carpenter, General (7-71.10), Painter (Buildings) (7-81.20), Roofer (Slate, Tile and Similar Materials) (7-99.25), Sheet-Metal Worker (7-54.10) and Constructional-Steel Erector (7-57.20).

7-99.55 Sand Blaster, Building Exteriors. Cleans stone, brick, and metal structures by directing a jet of sand from a hose nozzle against surfaces: erects scaffoldings; carries hose to working position; orders release of compressed air which forces sand through hose and nozzle and directs jet of sand over surface to be cleaned; replaces worn rubber lining in nozzle.

7-99.60 Steam Cleaner, Building Exteriors. Cleans stone, brick and metal structures by directing spray of steam from hose nozzle against surfaces: erects scaffoldings; carries hose to working position; orders release of compressed air which forces sand through hose and nozzle and directs jet of sand over surface to be cleaned; replaces worn rubber lining in nozzle.

7-99.65 Paver. Lays paving blocks, slabs, bricks and kerb stones on sand or otherwise prepared bed: stakes out longitudinal grade line; sets block or other paving unit in position on bed and taps it with hammer; cuts unit to required shape if necessary; checks alignment of units, using a straightedge; pours hot tar or liquid cement mortar into joints between units. May specialise in a particular type of paving material, such as stone, brick, or wood, and be designated accordingly.

7-99.70 Diver. Works below surface of water, dressed in diving suit and helmet, to perform duties concerned with the construction and maintenance of structures, vessels and floating docks: descends into water with aid of helper on land, barge or boat, and maintains communication with helper by signal line or telephone; inspects underwater grounds, docks, and shipways; assists in pipe laying; places suction hoses; saws piles; cuts steel; caulks leaks in caissons; removes obstructions from marine railway tracks or launching ways, and levels uneven rails by driving wedges beneath tracks; loosens and removes launching cradles and sliding ways from keels of newly launched vessels; makes minor underwater repairs to vessels and docks, such as replacing hose or missing rivets and cleaning debris from intake and discharge strainers; sets sheet pilings for cofferdams and caulks spaces between pilings; comes to surface by opening air-hose throttle to inflating diving suit. May drill holes in rock for blasting purposes at the bottom of a lake, harbour or other body of water.

7-99.75 Well Digger. Digs pits for structural-column footings or water wells: measures distances between stakes that locate the corners of pit, and measures, marks, and saws planks for sheathing; excavates earth, using pick and shovel, tripod hoist and bucket; sheaths pit walls with planks to prevent earth from caving into excavation as digging progresses; shatters rock with air hammer equipped with demolition drill. May bail or pump water from well, using hand pump or bucket. Excluded are Well Drillers and Related Workers (unit group 5-11).

7-99.80 Pipe Layer. Lays glazed or unglazed clay, concrete or cast-iron pipe into ditches to form sanitary or storm sewers, drains or water mains: smooths bottom of ditch to proper elevation, cuts out place for 'bell' end of pipe and places rubber gasket in groove on straight end of pipe; assists in lowering pipe into ditch; places straight end of pipe into bell end of last section laid; sets pipe to grade and line by digging earth from under pipe or raising pipe with blocks, measuring grade and line with plumb line and grade pole; forces oakum or lead into pipe joints with caulking tool or fills joints of concrete and clay pipes with cement mortar, using trowel. May lay iron pipes having straight ends and join them with couplings. May install valves and fire hydrants. Excluded is Pipe Fitter (7-55.40).

7-99.85 Scaffolding Erector, Metal or Wood. Erects temporary metal or wooden scaffolding on construction locations: fixes upright members in place; secures horizontal members on uprights to serve as platform supports; lays wooden platforms; fixes guard rails, ladders and similar items in place; alters and extends scaffolding as work proceeds, and removes it when construction is completed. May erect and fix slings, suspended scaffolds and cradles. May specialise in metal or wood and be designated accordingly.

7-99.90 Construction Workers Not Elsewhere Classified, Other. This group includes construction workers not elsewhere classified.
8-0 Compositors, Pressmen, Engravers, Bookbinders, and Related Workers

Workers in this minor group print on paper, textile, metal or other materials, bind books and perform related tasks. Their functions include setting printing type by hand or machine and performing related tasks; setting and operating various types of printing machines; making printing plates from set-up type by stereotyping and electrotyping processes; engraving, by various processes, plates, rollers, dies and blocks; cutting designs on prepared surfaces of lithographic stones; binding books; carrying out other printing operations.

8-01 Compositors and Typesetters

Workers in this unit group set printing type by hand or machine and perform related tasks. Their functions include performing all or several tasks in setting up type and operating letterpress printing machines, usually in a small establishment; setting type by hand; operating a machine that casts lines of type from matrices set by hand; operating linotype and monotype keyboard machines; setting and operating monotype casting machine; arranging set-up type, illustration blocks and spacing material to form pages of type; arranging pages of type in predetermined order and locking them in chase; operating keyboard of photo-typesetting machine; arranging photo-composed type in readiness for reproduction on printing plates; performing various other tasks related to the foregoing. Excluded is Proof-Reader, Printing (2-99.63).

8-01.10 Printer, General. Performs all or several tasks in the setting up of type and operating letterpress printing machines, usually in a small establishment: sets type by hand; prints proof, checks it for errors, and makes alterations to type if necessary; arranges set-up type to form pages for printing; arranges pages of type in predetermined order and locking them in chase; sets and operates a flat-bed letterpress to print required number of copies. For details of tasks see Compositor, Hand (8-01.20), Proof-Reader, Printing (2-99.63), Maker-up, Printing (8-01.45), Imposer, Printing (8-01.50), Pressman (Flat-bed Letterpress) (8-02.20).

8-01.20 Compositor, Hand. Sets type by hand for printing: examines manuscript to determine length of lines and type to be used; adjusts guide in composing stick to required length of lines; reads copy, selects type, arranges it in stick and inserts spaces to form line; clamps stick into machine; starts machine and sees that casting is proceeding correctly; removes stick and line of type when casting is completed and distributes matrices into proper compartments. May use mechanical saw to cut and trim slugs (strips of type) as necessary.

8-01.30 Linotype Operator. Operates keyboard of a machine that selects matrices, assembles them in lines and automatically casts strips of type (slugs): sets marginal stops and gauges according to length and thickness of lines to be formed; starts mechanism that selects and assembles matrices; reads original copy and presses keys of keyboard so that matrices are selected from magazine(s) of machine and assembled into a line; starts mechanism to cast slug when each line is complete; checks slugs and passes them on for proof printing; examines proof and recasts lines requiring correction; maintains supply of type metal in melting-pot of machine. May specialise in a particular kind of linotype machine, such as intertype machine, and be designated accordingly.

8-01.35 Monotype-Keyboard Operator. Operates keyboard of a machine that perforates strips of paper for use in a monotype casting machine: examines copy, selects and installs keyboard on machine according to size and style of type required; sets and locks scale to indicate spacing of words in line; inserts paper roll through guides on machine; admits compressed air to machine; reads copy and presses keys of keyboard to obtain required perforation in paper strip; spaces out lines as necessary; removes perforated strip from roll and passes it on for type casting, with instructions.

8-01.40 Monotype Casting Machine Operator. Sets up and operates a type-casting machine in which the casting and assembly of type is controlled by perforations in a specially prepared paper strip: places perforated paper on machine holder, threads end of paper through guides and attaches it to winding roll; sets machine composing stick to length of line according to instructions; selects matrix case and fixes it in position; locks galley on bed of machine; starts machine; sees that casting is proceeding correctly and maintains supply of molten metal and cooling water; stops machine when galley is full or paper roll is finished; removes galley and passes type on for proof printing; removes and stores paper strip.

8-01.45 Maker-up, Printing. Arranges set-up type, spacing material and illustration blocks to form pages for printing: arranges type and illustrations according to instructions or own judgment; places spacing material between type and blocks and between columns; inserts or removes leads for proper spacing between lines; places number at top or bottom of page; ties up page with cord for delivery to imposer. May set headlines.
8-01.50 Imposer, Printing. Arranges pages of set-up type in predetermined order and locks them in chase in readiness for printing: places pages of type side by side on imposing stone, or table, so that when sheets are printed and folded pages will appear in numerical order; places spacing material around pages of type; checks alignment and spacing of letters and columns and makes necessary adjustments; places chase frame around assembled pages of type; locks type in frame by means of wedges; places wooden block over type and taps it with mallet to level printing surface; tests solidity of assembly and passes it on for proof printing; examines corrected proof and makes necessary alterations. May print and correct own proof. May arrange pages of type for printing in more than one colour.

8-01.55 Photo-Type-Setting-Machine Operator. Operates machine that reproduces letters on film or sensitized paper for eventual reproduction in printing: places unexposed film or sensitized paper in photographic element of machine; examines lay-out copy for typographical indications, such as spacing type-faces and length of lines; starts machine and sets its dial according to typographical instructions on layout copy; reads copy and depresses keys of keyboard to reproduce required letters on film or sensitized paper; manipulates machine controls as necessary, to change type size and spacing, adjust the camera light and eliminate incorrect lines; removes container with exposed film or sensitized paper on completion of operation and sends it to developing room.

8-01.60 Maker-up, Photo-Type-Setting. Arranges photo-composed type-film and fixes it on paper (positive), in readiness for reproduction on printing plates: examines lay-out copy; marks positive to guide in arranging type; draws lines on positions for decorative purposes and tabular matter; waxes proof sheets of photo-composition and cuts out letters and lines as required; places cut-out pieces in position on paper, using measuring instruments for guidance; presses a sheet of tissue paper over photo-composition to ensure that wax holds pieces in position; checks arrangement of composition and makes necessary alterations; passes on completed sheet for printing reproduction.

8-01.90 Compositors and Typesetters, Other. This group includes compositors and typesetters not elsewhere classified, for example, those taking proofs of set-up type by means of proof presses; impressing metal sheets in making braille type.

8-02 Pressmen (Printing)

Workers in this unit group set and operate various types of printing machines that print on paper, textiles, tinplate and other materials. Their functions include setting and operating flat-bed and rotary letterpresses, offset and direct lithographic machines, rotogravure machines and wallpaper and textile printing machines; performing various other tasks related to the foregoing.

8-02.20 Pressman (Flat-Bed Letterpress). Sets and operates a printing machine in which separate sheets of paper are pressed by means of cylinder or plate (platen) on inked type locked on a flat surface: cleans inking rollers and oils machine; fills ink fountain and regulates flow of ink on inking rollers; locks type in position on bed of press by means of wedges; places wooden block over type and tapis it with mallet to level printing surface; packs surface of cylinder or platen with tissue paper so that all parts of print receive correct pressure; starts press and runs off a proof sheet; examines proof sheet and makes an adjustment by pasting patches of paper on portions of light impression and by cutting out portions of dark impression; places overlay on cylinder or platen in perfect alignment with type; runs off several proof sheets and makes adjustments until evenly printed proof is obtained; sets and adjusts paper guides and automatic counting and feeding mechanism; supervises supply of required paper; starts press and ensures that printing proceeds correctly; stops press when printing is completed and removes type from machine. May mix inks to match colours, feed paper sheets into machine by hand or direct helpers to do so, make up pages of type. May also do minor repairs.

Pressman (Cylinder Letterpress). Operates a cylinder-type letterpress.

Pressman (Platen Letterpress). Operates a platen-type letterpress.

8-02.30 Pressman (Rotary Letterpress). Sets and operates a printing machine in which a continuous roll of paper (web) is printed by means of stereotype plates locked in a revolving cylinder: cleans inking rollers and oils machine; fills ink fountains and regulates flows of ink on inking rollers; locks printing plates in position on cylinders; supervises loading of paper rolls on machine; threads paper through machine guides and rollers; makes adjustments and paper-folding and cutting mechanism: makes trial run; checks legibility and uniformity of printing and makes further adjustments as necessary; restarts press and raises it to full speed; checks printed copies at regular intervals and ensures that printing, folding and cutting proceed correctly; re-threads paper if web breaks; stops press when required number of copies have been printed, and removes plates; keeps records of production. May file and grind cutting blades.

8-02.40 Pressman (Offset Lithographic). Sets and operates a machine in which separate sheets of paper, tinplate or other materials are printed by a roller which obtains an ink impression from an engraved (lithographic) plate: cleans inking rollers and oils machine; examines plate for defects; cleans plate to remove protective coating and make surface more ink-attracting; packs back of plate with tissue paper to obtain desired printing thickness; clamps plate in position on cylinder, adjusting it for correct tension; inserts packing under rubber blanket of impression roller until roller has correct diameter; fills ink fountain and regulates flow of ink on inking rollers; adjusts space between cylinders according to thickness of sheets to be printed, and sets water-damping rollers to deliver proper moisture to non-image portion of plate cylinder; runs off several proof sheets and makes further adjustments as necessary; sets and adjusts paper guides and supervises supply of required paper; starts press and ensures that printing proceeds correctly; stops press when printing is completed and removes plate from machine. May mix inks to match colours, mount plates of different colours in cylinders, and do minor repairs.

8-02.50 Pressman (Direct Lithographic). Sets and operates a machine in which sheets of paper, tinplate or other materials are printed directly, from prepared
lithographic stone: cleans inking rollers and oils machine; examines stone for defects; cleans stone to remove protective coating and make surface more ink-attracting; clamps stone in position on bed of press; fills ink fountain and regulates flow of ink to inking rollers; adjusts space between stone and cylinder according to thickness of sheets to be printed, and sets water-damping rollers to deliver proper moisture to non-image portions of stone; runs off several proof sheets and makes further adjustments as necessary; sets and adjusts paper guides and automatic counting and feeding mechanism; starts machine and ensures that printing proceeds correctly; supervises supply of required materials; stops press when printing is completed and removes stone from machine. May mix inks to match colours and feed sheets into machine by hand, or direct helper to do so, and do minor repairs. May operate a hand press.

8-02.60 Pressman (Rotogravure). Sets and operates a machine that prints on continuous roll of paper from photo-engraved plates or cylinders upon which the subject matter is etched below the surface: cleans inking rollers and oils machine; locks plate or cylinder in position on machine; fills ink fountain and regulates flow of ink; threads paper through machine guides and rollers; adjusts rollers and paper-folding and cutting mechanism; sets and adjusts scraper blade which removes excess of ink from surface of plate or cylinder; makes trial run; checks legibility and uniformity of printing on paper and makes further adjustments as necessary; restarts machine and raises it to full speed; checks printed copies at regular intervals and ensures that printing, folding and cutting proceed correctly; re-threads paper through press if web breaks; stops press when required number of copies have been printed and removes plates or cylinders from machine; keeps records of production. May file and grind scraping and cutting blades.

8-02.70 Pressman (Wallpaper Printing). Sets and operates a machine in which patterns of various designs and colours are printed on wallpaper or other decorative papers by a series of engraved rollers: cleans inking rollers and oils machine; locks printing rollers in position on machine; threads paper through machine guide and rollers; fills colour boxes with required inks; adjusts printing rollers and scraper blades which remove excess of ink from surface of rollers; prints test piece of paper; compares it with sample and makes necessary adjustments; starts machine and ensures that printing proceeds correctly; stops machine when printing is completed and removes rollers from machine. May mix inks to match colours and grind scraping blades.

8-02.80 Pressman (Textile Printing). Sets and operates a machine that prints patterns of various designs and colours on cloth or yarn by a series of engraved rollers: cleans inking rollers and oils machine; locks printing rollers in position on machine; threads cloth or yarn through machine guides and rollers; fills colour boxes with required inks; adjusts printing rollers and scraper blades which remove excess of ink from surface of rollers; prints test piece of cloth or yarn; compares it with sample and makes further adjustments as necessary; starts machine and ensures that printing proceeds correctly; stops machine when printing is completed and removes rollers. May mix inks to match colours, fabric and grind scraping blades. May specialise in printing a particular type of textile and be designated accordingly.

8-02.90 Pressmen (Printing), Other. This group includes pressmen (printing) not elsewhere classified, for example, those assisting printing-machine operators to feed and clean presses.

8-03 STEREOTYPERS AND ELECTROTYPERS

Workers in this unit group make printing plates from set-up type, by stereotyping and electroplating processes. Their functions include making moulds of set-up type with papier mâché, wax or other materials; making printing plates by casting metal in moulds; making printing plates from shell formed by electroplating moulds; performing various other tasks related to the foregoing.

8-03.20 Stereotyper. Performs all or several of the tasks involved in making printing plates from set-up type by stereotyping processes: places set-up type on bed of a hydraulic press; lays a sheet of papier mâché or similar material on type and presses it to make mould; removes mould from press and trims edges; turns mould face down and fills in hollows on back of mould with pieces of heavy paper or felt to prevent it bending during casting process; heats mould and sets it in a casting box; pours molten type metal into box to make the plate; allows metal to cool and removes plate from box; shaves, trims, smooths and bends plate as required, in readiness for printing; prints proof from plate and makes new plate if necessary. May make mould by hand.

8-03.30 Electrotyper. Performs all or some of the tasks in making printing plates from set-up type by electroplating processes: places set-up type on bed of hydraulic press; lays a wax-coated sheet of metal or a sheet of plastic or lead on type and presses it to make mould; removes mould from press and trims edges of it; coats mould with electro-conductive substances; places mould in electrolytic bath until shell of desired thickness has formed on mould; removes shell from mould by rinsing it in hot water; pours a backing of molten metal on shell and allows it to cool and form plate; shaves, trims, smooths and bends plate as required, in readiness for printing; prints proof from plate and makes new plate if necessary.

8-03.90 Stereotypers and Electrotypers, Other. This group includes stereotypers and electrotypers not elsewhere classified, for example, those performing specialised tasks in the making of printing plates by stereotype and electrolyte processes.

8-04 ENGRAVERS, PRINTING (EXCEPT PHOTO-ENGRAVERS)

Workers in this unit group engrave, by various processes (except photogravure), lithographic stones, plates, rollers, dies and blocks for use in printing. Their functions include applying gum arabic or some other substance to lithographic stone and cutting designs through surface film; engraving steel or copper plates and rollers using hand tools; operating machine
that engrav res soft steel or copper rollers by pressing with a hard metal roller; engraving wood, rubber or linoleum blocks; engraving metal dies by hand; engraving metal plates or rollers with aid of pantograph machine; transferring designs from prepared lithographic stones to metal plates; etching prepared plates or rollers with acid; performing various other tasks related to the foregoing. Excluded are Engraver (Creative) (0-91.40) and Photo-Engravers (unit group 8-05).

8-04.15 Engraver (Lithographic Stone). Applies gum arabic or other substance to clean, polished lithographic stone and cuts design through surface film: treats clean, polished stone with gum arabic or other means to render surface impervious to grease; outlines design on sheet of celluloid or tracing paper; covers traced lines on design with coloured chalk; places design face down on surface of stone and rubs back of paper to transfer design; cuts design through surface film using sharp pointed engraving tools; applies grease on the surface, which is absorbed by the stone in the parts laid bare by the tools. May brush protective coating on design and lightly etch stone with acid to desensitize it to ink. May cut fine lines by machine to shade design.

8-04.20 Engraver, Hand (Metal Printing Plates and Rollers). Engraves steel or copper plates and rollers for use in printing on paper, textiles and other materials, using hand tools: transfers outline of engraving to plate or roller by pressing pattern of engraving on it; cuts grooves of proper depth and uniformity following design, using fine, sharp-pointed tools. May correct errors by cutting in omitted lines or by filling up incorrect lines with metal.

8-04.25 Engraver, Machine (Metal Printing Rollers). Operates a machine that engraves copper or other soft metal rollers, for use in printing, by pressing with an embossed hard metal roller: sets embossed hard metal roller and roller to be engraved into machine and in contact with each other; starts machine and gradually increases pressure between rollers as impression is being made; stops machine when impression of required depth is obtained; moves hard metal roller to new position, if necessary, to engrave another section adjacent to the first; cleans and oils machine.

8-04.30 Engraver, Hand (Metal Dies). Engraves metal dies by hand for use in stamping informative or decorative impressions in metal, plastic, porcelain or other materials: examines pattern of engraving; traces pattern on a gelatine sheet and dusts powdered graphite into outline; presses gelatine sheet on die blank to transfer graphite outline; cuts blank according to graphite outline to make stamping die, using hand tools. May engrave some parts of die by machine or by etching. May adapt pattern to particular article for which die is made. May engrave dies for seals, coins and medals and be designated accordingly.

8-04.35 Engraver, Hand (Wood, Rubber and Linoleum Blocks). Engraves wood, rubber or linoleum blocks for use in printing on wallpaper, textile or other materials: draws pattern of engraving on blocks; cuts out parts of block, leaving pattern on raised parts; repeats operation on separate block for each colour of pattern. May design simple patterns.

8-04.40 Engraving Pantograph Operator. Engraves metal plates or rollers for use in printing with aid of pantograph machine: polishes surface of plate or roller and clamps it in position under cutting tools of machine; clamps pattern plate in position under tracing point of machine; starts machine and manipulates control bar so that tracing point follows pattern on master plate and cutting tools reproduce it on plate or roller; adjusts control bar to required scale.

8-04.45 Transferrer, Direct Lithographic. Transfers designs from prepared lithographic stones to metal plates, for use in printing: inks stones and impresses inked design on special paper by means of press; transfers design from paper to chemically coated plate; washes plate with weak acid to remove coating from around design; dampens plate and re-inks design to intensify it; dusts design with protective powder and etches plate with acid to desensitize it to ink, the non-printing portions. May transfer illustrations from lithographic stone to cellophane sheets for use in photographing on plate.

8-04.50 Etcher (Metal Engraving). Etches plates or rollers with acid, for use in printing: polishes plate and applies a coating of wax to it; scribes desired design through wax according to pattern, using sharp-pointed tools; immerses plate or roller in acid solution so that part of metal not covered with wax will be corroded; removes plate or roller from acid bath after specified period; measures depth of corrosion, using micrometer; repeats operation until correct depth of corrosion is obtained; rinses etched metal in cold water to remove acid and then in hot water to remove wax.

8-04.90 Engravers, Printing (except Photo-Engravers), Other. This group includes printing engravers (except photo-engravers) not elsewhere classified, for example, those preparing plates for music printing, copying designs on lithographic stones prior to engraving; engraving wooden rollers; cutting metal stencils.

8-05 PHOTO-ENGRAVERS

Workers in this unit group prepare metal plates for use in printing, by photogravure process. Their functions include performing all or several tasks in preparing printing plates by photogravure process; photographing illustrations and textual material to obtain negatives; retouching photographic negatives to make them more suitable for use in preparing printing plates; reproducing matter to be printed from negatives on metal plates; etching photo-printed plates with acid; correcting imperfections on etched printing plates to make them ready for use; performing various other tasks related to the preparation of metal printing plates by photogravure process.
8-05.10 Photo-Engraver. Performs all or several of the tasks involved in preparing metal plates for use in printing by photogravure process: photographs copy of matter to be printed; develops film and retouches negative as necessary; prints negative on metal plate; etches metal plate with acid; retouches plates. May mount plates on wooden blocks. May make proof from finished plate. For details of tasks see Cameraman, Photo-Mechanical (8-05.30), Retoucher (Photographic Negatives, Photogravure) (8-05.40), Transferrer, Photo-Mechanical (8-05.50), Etcher (Photo-Engraving) (8-05.60), Retoucher (Printing Plates) (8-05.70).

8-05.30 Cameraman, Photo-Mechanical. Photographs illustrations and textual materials to obtain negatives for use in making metal printing plates: mounts copy of matter to be printed on board in front of camera and illuminates it with strong artificial light; adjusts camera to obtain picture of desired size and focuses lens; places fine cross-lined glass screens between film and copy for half-tone printing; takes a photograph of a piece of metal; develops and dries film to obtain negative. May prepare photo-sensitive glass plates for exposure in camera and do retouching.

8-05.40 Retoucher (Photographic Negatives, Photogravure). Retouches photographic negatives to make them more suitable for use in preparing metal printing plates: examines negative for defects; makes unclear lines sharper by cutting away darkened emulsion with stylus; paints out spots or blemishes and alters tone of negative to match illustration or text to be printed. May specialise in retouching colour negatives.

8-05.50 Transferrer, Photo-Mechanical. Reproduces matter to be printed from photographic negatives on metal plates for use in printing: spreads photo-sensitive material evenly over metal plate by hand or machine; places sensitized plate face up on bed of composing material; mounts negative in frame over plate or mounts negative directly on plate; turns on arc light and exposes plate to negative for a specified period; removes plate and treats it with developing ink until image appears; washes plate with water and applies solution to remove undeveloped photo-sensitive coating.

8-05.60 Etcher (Photo-Engraving). Etches photo-printed metal plates with acid for use in printing: brushes acid-resisting materials on design photo-printed on plate; places plate in etching machine; starts machine that sprays acid on plate and causes parts not covered with acid-resistant to be eaten away; removes plate from machine before acid starts to eat under printed design; washes and dries plate and dusts it with acid-resisting powder; places plate in stove to harden powder on design; replaces plate in etching machine and repeats operations until required depth of design is obtained; cleans off powder from finished plate with alkali solution. May etch plates by immersing them in acid bath. May touch up areas of plate by hand etching.

8-05.70 Retoucher (Printing Plates). Corrects imperfections in etched printing plates to make them ready for use: examines plates for defects; cleans off burs or bits of metal; repairs defective half-tone dots; corrects defects in lines and intensifies light or dark portions of plate. Frequently works with aid of magnifying glass. May re-etch design on plate before mounting and make proof from retouched plate.

8-05.90 Photo-Engravers, Other. This group includes photo-engravers not elsewhere classified, for example, those graining metal plates prior to coating them with sensitized material; mounting printing plates on wooden blocks; taking proofs of finished plates.

8-06 Bookbinders and Related Workers

Workers in this unit group bind or do work related to binding of books. Their functions include performing all or several tasks in binding books by hand; setting and operating one or more machines used in bookbinding; embossing designs or titles on book covers with hand tools; performing various other tasks related to bookbinding.

8-06.20 Bookbinder, Hand. Performs all or several tasks in binding books by hand: folds printed sheets of book to be bound to form sections (signatures); gathers signatures in correct order and collates them; sews signatures together to form body of book; compresses sewed signatures in hand press to reduce book to required thickness; trims and rounds edges of pages as required; rounds the back of book body into convex shape; forms grooves, on which book cover is to be hinged, in back edges of book body; makes hinges by gluing fabric or heavy paper strips on the back of book body; makes book cover and glues it on end sheets and on back of book body; puts book in press and allows glue to dry. May perform some tasks by machine. May emboss designs and titles on covers and decorate book edges with plain or mixed colours or with gold leaf. May rebind damaged or worn books.

8-06.30 Embosser, Book, Hand. Embosses designs or titles on book covers with hand tools: marks off cover with guide lines; fits metal type into holder or selects die of design to be reproduced; heats type or die and presses it into cover according to markings. May imprint designs or titles in gold, silver or colours. May apply coat of varnish to embossed covers.

8-06.90 Bookbinders and Related Workers, Other. This group includes bookbinders and related workers not elsewhere classified, for example, those setting and operating one of the machines which fold printed sheets, gather and sew book signatures, round backs of book bodies, make covers and glue them on book bodies, press books, emboss book covers and perform other bookbinding operations; decorating book edges with plain or mixed colours or with gold leaf by hand.

8-09 Printing Workers Not Elsewhere Classified

Workers in this unit group carry out miscellaneous printing operations which are not performed by those classified elsewhere. Their functions include cutting stencils according to designs for use in silk-screen printing on paper, metal textile and other materials by a silk screen process; printing designs on cloth or wallpaper by means of engraved wooden blocks; performing various other tasks related to the foregoing,
8-09.20 Stencil Cutter, Silk-Screen Printing. Cuts stencils, according to design, for use in silk-screen printing: superimposes shellacked, transparent paper on design of matter to be reproduced; cuts with knife the design in shellac without cutting paper; irons paper on silk screen to transfer shellac stencil to it; cuts different stencils for each colour to be reproduced. May draw design directly on screen and make stencil by filling in surfaces round design with glue, lacquer or paper. May operate silk-screen printing equipment.

8-09.30 Silk-Screen Printer. Prints on paper, metal, textile and other materials by means of silk-screen process: mounts stencil of matter to be printed on silk screen; stretches and fits silk screen on printing frame; bolts printing frame to hinged outer frame on printing table; places paper or other material to be printed accurately in position and lowers screen on to it; deposits ink of required colour on screen and forces it through stencil and screen by means of squeegee; lifts screen, removes printed material and repeats process to obtain required number of prints; cleans screen with solvent at end of run or when colour of print is to be changed. May use different screens for each colour to be reproduced.

8-09.40 Block Printer. Prints designs on cloth or wallpaper by means of engraved wooden blocks: sets cloth or wallpaper in position on printing table; coats block with colour by pressing it on colour pad; places block in exact position on cloth or wallpaper and raps it sharply with weight; repeats process until whole length of material has been printed; removes finished cloth or wallpaper from table and allows it to dry. May use different blocks for each colour to be reproduced.

8-09.90 Printing Workers Not Elsewhere Classified, Other. This group includes printing workers not elsewhere classified, for example, those making stencils for silk-screen printing by photographic process; operating presses for embossing paper.

8-1 Potters, Kilnmen, Glass and Clay Formers and Related Workers

Workers in this minor group produce glass and make glass, clay and abrasive products. Their functions include shaping, cutting, grinding and finishing glass products; forming clay and abrasive products; operating furnaces and kilns in the production of glass and glassware, clay and abrasive products; decorating glass and clay products; performing other tasks in the making of glass and abrasive products.

8-11 Glass Formers, Cutters, Grinders and Finishers

Workers in this unit group shape, cut, grind and do related work, except decoration, in the making of glass products. Their functions include blowing molten glass into shape by means of a blowpipe; shaping glass tubing by blowing and bending to make scientific apparatus; heating and bending glass tubing for making neon signs and other objects; shaping glass into lens blanks and other objects by heating, hand moulding and pressing; pressing molten glass into specified shape, using hand tools; operating a machine which blows objects from molten glass; operating a glass-drawing machine that produces continuous sheets of window and other flat glass; operating a machine which presses molten glass into shape; cutting slabs of optical glass stock to various sizes and shapes with a diamond-toothed saw; grinding and polishing lenses, prisms and other optical elements to fine tolerances; bevelling and smoothing edges of lenses, prisms or other optical elements of intricate shape or design; setting up and operating a battery of machines that grind and polish surfaces of lens blanks; coating mirror glass with silvering solutions; performing various other tasks related to the making of non-decorative glass products.

8-11.15 Blower, Glass (except Laboratory Apparatus). Blows molten glass into shape by means of blowpipe: dips end of blowpipe into molten glass, gathering the exact amount on the end of the pipe for object to be made; shapes glass by blowing into and manipulating pipe or by blowing glass into shape of mould; breaks thin film of glass that connects pipe with object. May specialise in a particular object and be designated accordingly. Excluded is Blower, Glass (Laboratory Apparatus) (8-11.20).

8-11.20 Blower, Glass (Laboratory Apparatus). Shapes glass tubing by blowing and bending to make scientific apparatus, such as retorts, stills, and flasks; heats tubing to a viscous condition by manipulating it over a bunsen burner; blows heated tubing into shape by means of compressed air or own breath; bends and joins together sections of blown tubing, using various glass-forming tools. May work from drawings or other specifications.

8-11.25 Bender, Glass Tube. Heats and bends glass tubing for making neon signs and other articles: tacks asbestos pattern on workbench; notches glass tubing with file and breaks off required length; ignites gas burner and holds tube in flame at point where a bend is desired, rotating the tube to heat it uniformly; places one end of rubber hose over end of tube and the other in his mouth; blows through hose to prevent tube from collapsing and

145
bends the tube; places bent tube on asbestos pattern to check accuracy of bend, reheating and bending glass if necessary; fuses together sections of bent tubing. May specialise in a particular product and be designated accordingly.

8-11.30 Moulder, Glass, Lenses. Shapes glass into lens blanks and other objects by heating, hand moulding and pressing: adjusts temperature of small furnace to heat glass to required state of plasticity; places lump of glass on furnace floor, using hand paddles; shapes plastic glass between paddles to approximate form; removes glass from furnace and places it in press; operates press to mould glass to desired shape; places moulded glass in container for cooling. May shape glass by placing glass discs in moulds and heating them in furnace until required shape is obtained. May place weights on moulded glass so that shape is retained during cooling. Excluded are Presser (Glass), Hand (8-11.35) and Pressing-Machine Operator, Glass (8-11.30).

8-11.35 Presser (Glass), Hand. Presses molten glass into specified shape, using hand tools: shears off proper amount of molten glass from iron rod, held by helper, into mould; presses metal plunger down into mould by hand, causing molten glass to fill the space between plunger and mould; withdraws plunger when glass has set, opens mould and removes glass object.

8-11.40 Blowing-Machine Operator, Glass. Operates machine which blows objects such as bottles and glass parts of valves and light-bulbs from molten glass: regulates flow of molten glass and compressed air into machine; adjusts flow of lubricant to prevent glass sticking to mould; tests sample of finished article on scale for weight and regulates glass flow accordingly.

8-11.45 Drawing-Machine Operator, Flat Glass. Operates a glass-drawing machine that produces continuous sheets of window and other flat glass: observes the progress of a continuous flat sheet of plastic glass from the melting tank to the top of machine; makes adjustments to a series of asbestos rollers, through which the glass passes, to prevent warping and breakage of sheets; adjusts speed of machine to maintain desired thickness of glass.

8-11.50 Pressing-Machine Operator, Glass. Operates a machine which presses molten glass into shape: shears off proper amount of molten glass from iron rod, held by helper, into machine mould; places metal ring on mould; swings mould into place under plunger; moves lever to press plunger into mould and squeeze it up from the bottom of mould and around the sides until the mould is filled; withdraws plunger when glass has set, opens mould and releases glass object.

8-11.55 Cutter, Optical Glass. Cuts slab of optical glass stock to various sizes and shapes with a diamond-toothed saw, for use in making lenses, prisms, mirrors and other optical elements of precision instruments: inspects glass stock for defects, such as bubbles, cracks or striiae; clamps stock in machine holder; starts machine, brings glass in contact with saw blade and cuts it according to markings on glass; removes cut piece from machine holder. May mark off glass.

8-11.60 Grinder, Precision (Optical Elements). Grinds lenses, prisms and other optical elements to fine tolerances, for use in precision optical instruments, such as telescopes, gun-sights, cameras and microscopes: grinds blanks or optical glass stock to approximate size and shape by hand or machine, using coarse emery abrasive; mounts work in pilcher or other compound for precision finishing; grinds elements with fine emery abrasive in oscillating and rotating machines to precise size and shape; polishes surfaces in a similar manner with rouge abrasive to very fine tolerances; grinds reticles and the edges of lenses to fit holders; inspects and measures work frequently as grinding proceeds. May cement lens elements together to obtain corrected lens assemblies. Excluded is Optician (7-41.35).

8-11.65 Polisher, Precision (Optical Elements). Polishes (by machine) lenses, prisms and other optical elements to fine tolerances for use in precision optical instruments such as telescopes, gun-sights, cameras and microscopes: mounts optical elements in revolving spindle of machine; installs properly shaped tool in oscillating tool-holder; applies rouge abrasive to polishing tool and manipulates controls to bring elements into contact with it; starts machine and observes polishing action to detect overheating or scratching; adjusts stroke of tool-holder to produce correct shapes of elements; inspects shapes of elements by observing effects on light rays passed through them, using special testing devices.

8-11.70 Beveller, Optical Elements. Bevels and smooths edges of lenses, prisms or other optical elements of intricate shape or design: locates optical axis to determine angle at which work must be held against grinding wheel; manipulates work against abrasive wheel to produce desired bevel and smooth rough edges; measures and inspects work for conformity with specifications. May dress grinding wheel.

8-11.75 Lens-Grinding-Machine Operator. Sets up and operates a battery of machines that grind surfaces of lens blanks to desired specifications: selects metal grinding disc with required dioptric curve and clamps it on spindle of machine; positions metal block, on which lens blanks are mounted, against disc; starts machine and applies emery, rouge or other abrasive to disc periodically during grinding process; removes block from machine after specified time, and examines blanks for defects. May mount blanks on metal block.

8-11.80 Lens-Polishing-Machine Operator. Sets up and operates a battery of machines that polish surfaces of lens blanks to a high lustre: selects polishing tool (felt-covered disc) with required dioptric curve and secures it to spindle of machine; positions metal block, on which lens blanks are mounted, against disc; starts machine and applies rouge abrasive to disc periodically during polishing process; removes block from machine after specified time and examines blanks for defects. May remove blanks from metal blocks and glue felt pad to disc.

8-11.85 Mirror Silverer. Coats new and old mirror glass with silvering solutions: weighs and mixes ingredients according to formula; lays cleaned mirror glass on silvering table; covers surface of glass with silvering solution and levels glass by means of wedges so that solution will not run off; drains excess solution from glass after a prescribed period and washes mirror in distilled water; dries mirror on drying table; coats dry mirror with shellac and paint to protect silvering from moisture.
8-11.90 Glass Formers, Cutters, Grinders and Finishers, Other. This group includes glass formers, cutters, grinders and finishers not elsewhere classified, for example, those ladling molten glass into moulds; shearing off excess amounts of molten glass from the edges of moulds; gathering required amounts of molten glass on the end of a metal rod and handing it to other workers; bevelling and polishing plate or sheet glass; drilling holes in glass; mounting lens blanks in blocks prior to grinding; cementing lens elements together to obtain corrected lens assemblies; making glass tubing by hand or machine.

8-12 Potters and Related Clay and Abrasive Formers

Workers in this unit group form, and do work related to the forming of, pottery and porcelain ware, bricks, tiles and abrasive products. Their functions include performing all or several tasks in forming pottery or porcelain ware by hand; making clay or plaster-of-Paris models for use in preparing moulds for ware; making moulds of plaster of Paris for the manufacture of ware; forming ware by moulding clay with hands as it revolves on potter's wheel or by pressing a shaping tool against plastic clay held in a revolving mould; operating a lathe in which dry, unbaked ware is shaped by hand tools; forming ware by casting semi-liquid clay or by pressing plastic clay in moulds; operating screw press or hydraulic press to make ware from clay dust; moulding bricks or tiles by hand or in hand-operated press; operating a machine in which moist clay is extruded in strips for further processing; performing various other tasks related to clay forming.

8-12.10 Potter. Performs all or several tasks in forming pottery or porcelain ware by hand: makes clay or plaster-of-Paris models of pottery and porcelain ware for use in preparing moulds for ware; makes moulds of plaster of Paris; forms ware by moulding clay with hands as it revolves on potter's wheel; operates a lathe in which dry, unbaked ware is shaped by hand tools; forming ware by casting semi-liquid clay (slip) into plaster-of-Paris moulds; forms ware by pressing damp, plastic clay into shape of mould. May decorate, glaze and bake pottery and porcelain ware.

8-12.15 Modeller, Pottery and Porcelain. Makes clay or plaster-of-Paris models of pottery or porcelain ware, according to drawings or specifications, for use in preparing moulds: examines drawings or specifications; makes model by carving plaster or clay, by shaping material on a potter's wheel or in a lathe, or by other methods. May create own designs. May specialise in modelling a particular type of product.

8-12.20 Mould Maker, Pottery and Porcelain. Makes moulds of plaster of Paris in the manufacture of pottery and porcelain ware: takes model of article to be made and sets it in clay so that only one half is exposed; applies soap solution to exposed half of model; sets wooden form around model; pours liquid plaster of Paris over model to make one half of master mould (block mould); removes clay, turns mould over, after it has dried, leaving model in it, and applies soap solution to other half; builds wooden form as before and pours in plaster to form other half of block mould; casts a replica of model (case mould), using block mould as pattern; casts several working moulds, using case mould as pattern.

8-12.25 Thrower, Pottery and Porcelain. Forms pottery or porcelain ware by moulding clay with hands as it revolves on potter’s wheel: sets ball of pliable clay on centre of wheel; rotates wheel by foot or by machine; centres clay on wheel by pressure of hands, softening it by manipulation and sprinkling water on it; moulds clay into desired shape. May make large ware by moulding separate sections and joining them together.

8-12.30 Jiggerman, Pottery and Porcelain. Forms pottery or porcelain ware by pressing a shaping tool against plastic clay held in or on a revolving mould: clamps mould, covered with flat sheet of clay upon wheel; selects or designs a shape according to drawings or specifications; sets automatic stop to obtain desired thickness of ware; starts wheel to cause clay to revolve; lowers tool on clay to shape the ware and applies wet sponge as necessary to keep proper consistency for shaping; removes moulded article from machine.

8-12.35 Turner (Pottery and Porcelain), Hand. Operates a lathe in which dry, unbaked pottery and porcelain are shaped by hand tools: fixes ware in lathe and selects required tool; starts machine to rotate the ware; presses and manipulates tool against ware to obtain desired shape; removes shaped ware from lathe. May sharpen own tools.

8-12.40 Caster (Pottery and Porcelain), Hand. Forms pottery or porcelain ware by casting semi-liquid clay (slip) in plaster-of-Paris moulds: stirs slip thoroughly in container, adding water if necessary to obtain proper consistency; fills pitcher with slip and pours it into mould; pours excess slip from mould after a shell of clay of required thickness has formed inside mould; sets mould on bench upside down to drip and dry; trims top of partly dry ware with knife, opens mould and removes ware; scrapes ware with knife-like tool, sponges it and sets it on drying rack ready for kiln.

8-12.45 Moulder (Brick and Tile), Hand. Moulds, by hand, bricks or tiles which cannot be conveniently moulded or pressed by machine because of their special shapes: applies a thin coating of oil or clay dust, or both, to inside of mould to prevent moist clay from adhering to it; kneads moist clay on bench until it is of desired consistency and places or throws it forcibly into mould; presses clay firmly into mould by hand, with a mallet or by means of a pneumatic ramming tool; scrapes off projecting clay with a float or trowel or by drawing a wire across it; allows clay to remain in mould for short time to dry and shrink slightly; turns out moulded brick or tile for removal to drying chamber.

8-12.50 Moulder (Abrasive Wheel), Hand. Forms abrasive wheels by pressing specified abrasive mixture into plastic or metal mould: mixes abrasive powder and adhesive paste according to formula; places mixture in mould and compresses it to form wheels of desired thickness and size; mounts wheel on prongs to facilitate handling in baking process.
8-12.55 Presser (Pottery and Porcelain), Hand. Forms pottery and porcelain ware by pressing damp, plastic clay into shape of mould by hand: places sheet of clay (bat) upon mould; smooths clay down upon mould, raising an edge of clay to let air escape; trims edge of clay with hand tool until it fits mould properly; presses outside of clay, into proper form and smoothness with specifically shaped piece of sheet rubber dipped in water; sets mould aside to dry. Usually makes oval, square or irregularly shaped articles.

8-12.60 Presser (Brick and Tile), Hand. Operates a press by hand to form bricks and tiles of clay: places roughly formed clay in bottom part of press mould; brushes oil over clay to prevent adherence of clay: pulls lever to lower top part of mould on clay and jogs lever several times to press clay into shape of mould; turns out moulded article and runs hand over it to remove adhering particles.

8-12.65 Die Presser, Pottery and Porcelain. Operates screw press or hydraulic press to make pottery or porcelain ware from clay dust: inserts appropriate steel die into press; pours proper amount of suitably moistened clay dust into press; operates press to form articles, such as electrical insulators and wall tiles; takes finished article out of press.

8-12.70 Extruding-Press Operator, Clay. Operates a machine in which moist clay is extruded in strips for further processing: feeds moist clay into machine: moves lever to regulate speed of worm which forces clay through outlet form (die); examines texture of clay periodically as it is extruded from machine and, if required, warns other workers to change moisture content of clay before it enters press.

8-12.90 Potters and Related Clay and Abrasive Formers, Other. This group includes potters and related clay and abrasive formers not elsewhere classified, for example, those operating semi-automatic lathes to mass-produce clay articles; smoothing and trimming clay ware, using hand tools; preparing slabs of clay for use in presses; drilling holes in clay ware; operating machines to cut strips of clay into bricks or tiles.

8-13 Furnacemen and Kilnmen, Glass and Ceramics

Workers in this unit group operate furnaces and kilns in the production of glass and glassware, pottery and porcelain ware, bricks and tiles and abrasive products. Their functions include operating a furnace in which glass is produced from mixed ingredients; operating an annealing kiln or furnace to prevent or remove internal stresses from glass or glassware; operating kiln to make pottery or porcelain ware to proper hardness or to bake ware after glazing or decorating process; operating a kiln to bake bricks or tiles to proper hardness; performing various other tasks related to the foregoing.

8-13.20 Furnaceman (Glass Making). Operates furnace in which glass is produced from ingredients such as sand, soda, potash and broken glass: feeds, or directs the feeding of, mixed ingredients to furnace; heats furnace and maintains temperature at correct level with the aid of instrument controls; sees that melting process is proceeding correctly. May specialise in operating a particular type of furnace and in making a particular kind of glass, such as ordinary, optical or quartz glass, and be designated accordingly.

8-13.30 Furnaceman (Glass Annealing). Operates annealing kiln or furnace to prevent or remove internal stresses from glass or glassware: places glass or glassware in and seals kiln or furnace; heats furnace and maintains temperature at correct level; sees that annealing process is proceeding correctly. Removes and inspects products when annealed. May specialise in operating a particular type of furnace or kiln and be designated accordingly.

8-13.40 Kilnman (Pottery and Porcelain). Operates kiln to bake pottery and porcelain ware to proper hardness or to bake ware after glazing or decorating process: supervises helper in sealing entrance door with firebrick and laying and lighting fires; regulates temperature by adjusting draughts and feeding of fuel (coal, gas or oil) or supply of electricity; observes temperature-indicating devices through peep-hole and decides when baking is completed. May specialise in operating a particular kind of kiln and be designated accordingly.

8-13.50 Kilnman (Brick and Tile). Operates kiln to bake bricks or tiles to proper hardness: sees that bricks or tiles have been stacked properly; starts gas or oil fires by lighting burners, or instructs other workers to kindle wood or coal fires; keeps kiln at correct temperature, regulates draught and decides when baking is completed. May specialise in operating a particular kind of kiln and be designated accordingly.

8-13.90 Furnacemen and Kilnmen, Glass and Ceramics, Other. This group includes furnacemen and kilnmen (glass and ceramics) not elsewhere classified, for example, those weighing out and mixing materials for the manufacture of glass; tending furnaces for tempering safety glass or for baking or hardening grinding wheels; loading kilns prior to and unloading kilns after firing pottery and porcelain ware and bricks and tiles; assisting in the preparation and firing of kilns and furnaces.

8-14 Decorators, Glass and Ceramics

Workers in this unit group decorate or do work related to the decoration of glass, pottery or porcelain ware and bricks or tiles. Their functions include engraving monograms, coats of arms and ornamental designs on glassware with grinding wheel; etching decorative designs, calibration markings, numerals and other figures on glass articles; cutting designs according to pattern in surfaces of glass articles, using sandblasting equipment; painting decorative designs on glass and on pottery or porcelain ware or tiles according to patterns; spraying paint on pottery or porcelain ware or bricks or tiles, or spraying liquid glaze on large pieces which cannot easily be dipped in a solution; covering...
biscuit ware with glaze solution by dipping; performing various other tasks related to the decoration of glass and ceramics.

8-14.20 Engraver (Glass). Engraves monograms, coats of arms, and ornamental designs on glassware with grinding wheel: makes crayon sketches of design on glassware; mounts copper or stone wheel of proper width and diameter on machine; starts machine and holds glassware against outer edge of wheel, turning and twisting article so that the wheel grinds the glass according to the sketched design; changes wheels to make cuts of different sizes.

8-14.30 Etcher (Glass). Etches, with acid, decorative designs, calibration markings, numerals and other figures on glass articles: draws design or markings on wax-covered glass article; prepares acid bath; dips glass into bath or exposes it to acid fumes so that the portion of the glass not covered with wax will be eaten away; rinses etched glass in cold water to remove acid and then in hot water to remove wax. May coat articles with wax.

8-14.40 Sandblaster (Glass). Cuts designs, according to patterns, in surfaces of glass articles by means of sandblasting equipment: transfers drawing of design to outer side of adhesive tape; covers glass with tape and cuts design out of tape with knife to uncover area of glass to be sandblasted; operates compressed-air gun that blows fine sand against uncovered glass and cuts design into surface; removes protective tape from glass.

8-14.50 Painter (Glass), Hand. Paints designs with a brush, freehand, on glass according to patterns: mixes paint, stain or enamel to obtain desired colours; places object on workbench and applies paints of various colours to it by means of a hand brush and according to pattern. May place painted glass in furnace for a prescribed period so that colours are fused to glass. Excluded is Painter (Sign) (7-81.40).

8-14.60 Painter (Ceramics), Hand. Paints designs with a brush, freehand, on pottery or porcelain ware or tiles, according to patterns: mixes paint to obtain desired colours; places object on workbench and applies paints of various colours to it by means of a hand brush and according to pattern; sets painted ware on rack to dry.

8-14.70 Painter (Ceramics), Spray. Sprays paint on pottery, porcelain ware, bricks or tiles, or sprays liquid glaze on large pieces which cannot be dipped easily in a solution: fills container of spray-gun with paint or glaze of desired colour; fixes container to spray-gun and couples gun to air hose; starts compressor or opens valve on compressed-air line; presses trigger and directs spray of liquid over surfaces of objects; places ware on rack to dry; cleans gun and hose with solvent. May use stencils for spraying various designs on objects.

8-14.80 Dipper (Ceramics), Hand. Covers biscuit ware with glaze solution by dipping: grasps object such as dish, plate or saucer with tongs or fingers and dips it in tub containing liquid glaze; removes it from tub and holds it just above surface of liquid, turning article around to ensure even coating and to throw off excess glaze; sets ware on rack to dry and rubs glaze over spot where fingers or tongs touched; removes excess glaze from dry ware by rubbing it with a buffing wheel or other implement.

8-14.90 Decorators, Glass and Ceramics, Other. This group includes decorators (glass and ceramics) not elsewhere classified, for example, those covering glass with wax prior to etching operations; operating pantograph devices to cut designs in the surface of glass articles; cutting glass into decorative shapes; marking out glass objects for other workers; immersing glass articles in acid bath to impart clear polish to decorations; grinding and mixing colours; tracing around patterns printed or painted on ware with brush; drawing line of colour or gold around edge or rim of ware; coating ware or parts of ware with oil and dusting oiled surface with powder colour; drawing lines on ceramic ware to guide other workers in applying coloured glazes and other decorations; applying glaze to ware with brush, sponge or pad; applying transfers to ware; etching patterns and borders on glazed ware; polishing up gold decorated ware by scouring with fine white sand and finishing with agate or blood stone; correcting defects in decorations; tending machines which convey ware through glaze sprays or dipping troughs.

8-19 Glass and Ceramics Workers, Not Elsewhere Classified

Workers in this unit group carry out miscellaneous operations in the manufacture of glass, clay and abrasive products which are not performed by those classified elsewhere. Their functions include operating a machine in which clay is ground, mixed and tempered in preparation for moulding; operating a machine in which large pieces of rock or clay are ground or crushed into fine particles in the manufacture of ceramic and abrasive products; operating a machine in which various clays are mixed into a thin semi-liquid form (slip) for making ceramic products; operating a machine (pug-mill) that mixes clay with water and kneads it into a suitable plastic condition for moulding; mixing, grinding, fusing and regrinding ingredients such as borax, lead, sand and lime to make glaze; mixing, ingredients by machine according to formulae to make grinding or polishing compounds; performing various other tasks related to the foregoing.

8-19.20 Millman, Clay. Operates a machine in which clay is ground, mixed and tempered in preparation for the manufacture of ceramic products: regulates flow of materials into machine; examines texture and consistency of plastic clay as it emerges from mill on a conveyor belt or in a chute, visually or by feeling; makes simple adjustments to mill to alter degree of fineness of grinding or the percentage of water to clay in mixing.

8-19.30 Grinder (Rock and Clay). Operates a machine in which large pieces of rock or clay are ground or crushed into fine particles for the manufacture of ceramic and abrasive products: starts machine and watches material being fed to machine by a conveyor or by another worker; breaks up excessively large pieces with maul or bar; loosens clogged material in machine with bar; regulates water valve which drips water into the machine to settle dust.
8-19.40 Slip Maker, Clay. Operates a machine in which various clays are mixed into a thin, semi-liquid form (slip) for making ceramic products: regulates flow of materials into mixer; starts mixer and allows it to run for specified time; pumps slip over magnets to remove any iron or steel particles and through filter press to remove excess water, regulating flow by means of a valve; cleans filters and magnets with water as required.

8-19.50 Pug-Mill Operator, Clay. Operates a machine (pug-mill) that mixes clay with water and kneads it into a suitable plastic condition for moulding: starts rotation of mixing paddles; opens valves or gates to permit dry clay and water to flow into mixing chamber; examines clay for consistency as it leaves machine and regulates valves to change proportion of water to clay as required. May feed pieces of filter-pressed clay into mixing chamber by hand. May make minor repairs to machine.

8-19.60 Glaze Maker. Mixes, grinds, fuses and re-grinds ingredients such as borax, lead, sand and lime to make glaze: weighs out materials, dips these into a grinding mill and grinds them for a specified time; drains out mixture, passes it through screens and heats it in kiln for a prescribed period to fuse it; regrinds fused material (frit) into fine powder and mixes it with water to form a slip for use in dipping process.

8-19.70 Mixer, Abrasives. Mixes ingredients by machine, according to formula, to make grinding or polishing compounds: fills mixing bowl of machine with ingredients by opening and closing valves; starts machine to turn paddles in mixing bowl; runs machine for a specified time or until ingredients are thoroughly mixed; stops machine and drains mixture from bowl.

8-19.90 Glass and Ceramics Workers Not Elsewhere Classified, Other. This group includes glass and ceramics workers not elsewhere classified, for example, those tending machines for crushing and washing scrap glass; operating filter presses to remove excess water from clay; operating and supervising the loading of a battery of pans and screens used for grinding and sifting clay; tending machines that remove air bubbles from wet clay.

8-2 Millers, Bakers, Brewmasters and Related Food and Beverage Workers

Workers in this minor group prepare foodstuffs and beverages on an industrial basis. Their functions include crushing, grinding, blending and otherwise mechanically processing grains, spices, oil seeds, fruit and related foods for human and animal consumption; producing baked goods by preparing ingredients, mixing them into dough, shaping the dough, operating ovens and applying finishing substances; making sugar and chocolate confectionery and chewing gum by mixing and cooking ingredients and otherwise processing them; producing malt liquors, wines and related products by crushing, mixing, malting, cooking and fermenting grains and fruits; cooking, freezing and dehydrating foodstuffs in readiness for canning or other form of preservation; slaughtering animals, cutting and curing meat and fish; processing milk and cream in the making of dairy products; performing related tasks concerned with the industrial preparation of food.

8-21 Millers, Grain and Related Products

Workers in this unit group crush, grind, blend and otherwise mechanically process grains, spices, oil seeds and related foods for human and animal consumption. Their functions include operating machinery for the production of flour, meal and animal feed; operating machinery for processing rice; grinding spices to specified consistency in a mill; extracting oil from seeds using crushing and pressing machines; performing a variety of related functions.

8-21.20 Miller (Grain). Operates machinery for the production of flour, meal and animal feed: starts machinery, such as cleaners, conveyors, grinders, hammer mills and sifters, and also starts flow of grain to processing equipment; observes milling process, keeping grain moving at a regular rate by tapping clogged spouts with mallet and by adjusting gates; examines product periodically by rubbing sample between fingers or comparing its colour and texture with those of standard sample, and adjusts grinders as necessary; makes blends of flour, meal or feed by regulating flow of ingredients in specified proportions from bins to blending machines; takes samples for laboratory analysis; keeps records of materials received and products milled. May operate equipment to crack and treat grain for further processing in the manufacture of grain products, such as breakfast food. May supervise other workers concerned with tending machines at various stages of the processing. May specialise in a particular kind of grain ground or product milled and be designated accordingly.

8-21.30 Miller (Rice). Operates machinery for processing rice: starts machinery, such as conveyors, sifters, hullers and polishers and also starts flow of rice to processing equipment; observes process, adjusting flow of rice from storage bins; examines rice periodically and adjusts machines as necessary. Keeps records of materials received and makes production reports. May supervise workers tending machines used in various stages of the processing.

8-21.40 Miller (Spices). Grinds spices to specified consistency in a mill: loads spice into feed bin by hand or by adjusting gates of storage hopper; adjusts grinding rollers to regulate fineness of ground spice; starts machine, and places containers underneath sifting screens; re-
grinds material that does not sift through screens. May mix ground spices according to formula for use in canning and preserving foodstuffs.

8-21.50 Miller (Oil Seed). Extracts oil from seeds, using crushing and pressing machines: loads crushing machine by shovelling seeds or regulating flow of seeds into hopper of machine and starts machine to crush seeds preparatory to further processing; places cooked or uncooked seeds between hair mats or metal sheets, loads them in layers in hydraulic press and starts press that forces mats or sheets together, pressing oil from seeds; or presses seeds in expeller (horizontal cylinder equipped with worm shaft which carries seeds along cylinder to restricted opening). May specialise in a particular kind of seed treated and be designated accordingly.

8-21.90 Millers, Grain and Related Products, Other. This group includes millers, grain and related products not elsewhere classified, for example, those operating cleaning, washing and husking equipment to prepare grains and related foods for milling; operating equipment to sift milled products at various stages in milling process.

8-22 BAKERS AND PASTRYCOOKS

Workers in this unit group produce baked goods by preparing ingredients, mixing them into dough, shaping dough, operating ovens, and applying finishing substances. Their functions include producing finished baked goods, such as bread, cake, pies and pastries, in a commercial bakery or other establishment; performing specialised duties, such as weighing and mixing ingredients, cutting and shaping dough, operating automatic ovens, and decorating goods.

8-22.10 Baker, General. Produces finished baked goods, such as bread, cake, pastries and pies, in a commercial bakery or eating establishment, performing any or all of the required duties: calculates quantities of ingredients, such as flour, sugar, eggs, milk, shortening and water, needed to make required amount of product; weighs out ingredients, places them in mixing machine and mixes for prescribed time; shapes dough, and performs other necessary operations prior to baking; places pans with dough in oven, using long-handled, wooden paddle; controls temperature of oven by regulating thermostats or by adjusting dampers; checks progress of baking by observing appearance of products and noting length of time in oven; removes baked products and places them on cooling racks; mixes ingredients for icings, fillings and icings used in finishing products and prepares and applies them. May estimate costs and order supplies.

8-22.20 Baker (Bread). Tests consistency of dough by observing and feeling it, and checks temperature of dough by inserting thermometer; cuts dough into sections of desired size with knife or by machine; kneads dough by hand prior to and after cutting to remove excess gases caused by fermentation of yeast, and shapes it by hand or by feeding into moulding machine; places formed dough in pans or on boards, allows it to rise to proper height and places it in oven; bakes hardcrust breads directly on hearth of oven.

8-22.90 Bakers and Pastrycooks, Other. This group includes bakers and pastrycooks not elsewhere classified, for example, those weighing and mixing ingredients to make dough by hand or machine; cutting and shaping dough by hand or machine; operating automatic ovens; decorating baked products with icing, liquid chocolate, marzipan or other finishing substances.

8-23 SUGAR AND CHOCOLATE CONFECTIONERY MAKERS

Workers in this unit group make sugar and chocolate confectionery and chewing gum by mixing and cooking ingredients and otherwise processing them. Their functions include making sugar and chocolate confectionery by preparing and cooking batches of ingredients; processing cooked batches by hand or machine; preparing chocolate for making confectionery, using grinding, pressing, mixing and other machines; and preparing chewing-gum by cooking and mixing chicle and other ingredients.

8-23.10 Sugar and Chocolate Confectionery Maker, General. Makes sugar and chocolate confectionery by preparing and cooking batches of ingredients, and processing cooked batches by hand or machine: weighs or measures ingredients according to formula and mixes them by hand or electric agitator; cooks batch in open or vacuum containers, adjusting temperature as required; operates heating, pulling, moulding and other types of machines; coasts candies with chocolate, sugar or other substances by hand or machine to give flavour, decorate or provide protective covering. May specialise in making a particular kind of confectionery and be designated accordingly.

8-23.20 Chocolate Maker. Prepares chocolate in grinding, pressing, mixing and other machines for use in making confections: grinds cracked cocoa beans in mill that reduces them to a liquid or paste; presses cocoa-butter from ground beans, using hydraulic press, to obtain blocks of cocoa used in making chocolate; grinds pressed blocks of cocoa to thick liquid; mixes liquid chocolate, sugar, and other ingredients to a dough-like consistency in a machine; feeds coarse mixed chocolate into machine which by action of rollers converts it to flakes; obtains desired texture and flavour by operating machine that heats and mixes flaked chocolate and cocoa-butter.

8-23.30 Chewing-Gum Maker. Prepares chewing-gum by cooking and mixing chicle and other ingredients: measures ingredients, places them in steam kettle and cooks them to proper consistency; transfers cooked ingredients to steam-heated mixing machine and adds
measured amounts of scrap gum cuttings, sugar, glucose, corn starch and flavouring; starts motor and mixes materials for required period; stops motor and removes mixed gum to sugar-coated storage trough preparatory to further processing.

8-23.90 Sugar and Chocolate Confectionery Makers, Other. This group includes sugar and chocolate confectionery makers not elsewhere classified, for example, those mixing sugar, water and other ingredients in steam-heated pan or sugar-boiling stove and boiling mixture to make fondant, toffee or other sweets; putting fruit, jam or other filler on sheet of boiled sugar mixture, manipulating sheet into elongated roll and passing it through shaping and cutting machines; covering fondant, toffee, nuts or other foods with chocolate by hand or machine; operating automatic machines that mould chocolate, soft candies or jellies; maintaining correct temperature and grain of liquid chocolate, using tempering machine.

8-24 BREWERS, WINEMAKERS AND RELATED WORKERS

Workers in this unit group produce malt liquors, wines and related products by crushing, mixing, malting, cooking and fermenting grains and fruits. Their functions include supervising all production activities concerned with making malt liquors, malt vinegar and wine; preparing malt by causing barley and other grain to germinate (sprout), and drying the germinated grain to arrest further growth and to colour and flavour it; cooking malt and water to prepare mash used in making distilled and malt liquors; controlling fermentation process in making of distilled malt and liquors, and wines; producing yeast for use as ingredient in the fermentation of mash; performing other tasks related to the foregoing. Workers engaged in the distillation of alcoholic beverages are classified in unit group 8-31.

8-24.15 Brewmaster. Supervises all production activities in making malt liquors; observes operations, such as receiving and cleaning of grain, malting, making mash, fermenting, and storing liquor, giving specific instructions on handling of each batch; tastes liquor, giving directions as to alteration of malt content and other changes as necessary. May buy raw materials.

8-24.20 Germination Worker. Causes barley or other grain to germinate (sprout) in preparation for the making of distilled and malt liquors: weighs and dumps grain into tanks, cisterns or pits filled with water; allows it to soak for specified time, stirring it with long pole; spreads soaked grain on floor and turns it over with wooden hand plough or shovel to aerate and cool it, sprinkling water on it as necessary; or loads soaked grain into drums and controls air current, temperature, water sprinkling and rotation of drum; or loads compartments with soaked grain and controls temperature and operation of agitators; supervises removal of germinated grain to drying kiln.

8-24.25 Kilnman (Malt). Dries germinated grain to arrest further growth as part of the preparation of malt for the making of distilled and malt liquors: directs loading of grain into kilns; fires furnaces, and regulates temperature and air supply, as required; turns over grain with hand fork or by means of mechanical plough.

8-24.30 Cooker (Mash). Cooks malt with water to prepare a mash used in making distilled or malt liquors: fills tubs (cookers) equipped with mechanical agitators to specified level with water, and heats by steam to prescribed temperature; weighs out prescribed quantities of malt and puts it into heated water; cooks mixture, while it is being mechanically agitated, for specified time at prescribed temperature. May cool mash preparatory to distilling by pumping it into cooling vat equipped with coils through which cold water circulates. May drain off liquid part of mash or pump mash to tank preparatory to fermenting.

8-24.35 Fermenting-Room Man. Controls fermentation process in making distilled or malt liquors or wine: removes steam by compressed air from fermentation tanks and cools them to specified temperature by admitting cold water to pipe lines; pumps wort (liquid separated from solid part of mash) or mash into fermentation tank and simultaneously admits yeast from another pipe; maintains solution at specified temperature during fermentation process by observing thermometer and regulating valves of steam-heating coils; makes periodic tests of specific gravity with hydrometer; adds yeast, sugar or water as necessary; accelerates chemical reaction by admitting air through a valve; removes yeast by suction or other means and pumps fermented solution to cistern or other settling vessel; flushes tanks with cold water, closes drain and refills them with live steam.

8-24.40 Yeast Maker. Produces yeast required in the fermentation of mash used in the production of distilled and malt liquors: weighs out prescribed amount of barley, rye or other grain meal and dumps it into measured amount of water heated to specific temperature in special wooden vat; mixes grain and water, using powered agitator; cooks mixture by admitting steam into coils in vat; cools mash by running cold water through cooling coils in vat; pours prepared yeast solution or culture into mixture and stirs with agitator; regulates temperature of fermenting mash by running hot or cold water through coils in vat; ascertains specific gravity and acid content of mash by using hydrometer and performing simple chemical tests; separates yeast from liquor by means of centrifugal separator or filter press. May draw off yeast from fermentation tanks by suction pump or by skimming.

8-24.45 Malt-Vinegar Maker. Supervises all processes concerned with manufacture of malt vinegar: observes operations, such as steeping of grain in tanks filled with water, spreading of steeped grain on floor, grinding of grain, making and fermenting of mash and clarifying of fermented vinegar by filtering; issues instructions concerning temperatures, rate of flow of materials and amounts of materials needed.

8-24.50 Winemaker. Supervises all processes connected with the making of wine: observes weighing, testing and crushing of fruit, fermenting and fortifying of juice, fortifying, clarifying and storing (ageing) of the wine, the finishing of the wine, including pasteurisation and further clarification and filtration, and preparation
of wine for shipment in tank cars, tank trucks, barrels or bottles; instructs workers at various processing locations, as necessary. Excluded is Farmer-Winemaker (4-01.24).

8-24.90 Brewers, Winemakers and Related Workers, Other. This group includes brewers, winemakers and related workers not elsewhere classified, for example, those roasting malt for special purposes; polishing and milling malt; adding hops and sugar to malt-and-water mash and cooking them; drying spent grain so that it may be reclaimed for manufacture into feed; blending wines according to formula; clarifying wines by chemical action.

8-25 CURERS, FREEZERS, COOKS AND RELATED CANNERS AND PRESERVERS

Workers in this unit group cook, freeze and dehydrate foodstuffs in readiness for canning or other form of preservation. Their functions include cooking meat, fish, fruit, vegetables or other foods in large quantities, according to recipes; making sauces or condiments according to formulae for table use or for combining with pre-cooked foods; freezing fruit, vegetables and other foods before or after packing; removing moisture from fruit, vegetables or other food in drying units; preserving meat, especially ham and bacon, by curing with salt and subjecting the meat so cured to wood smoke; curing fish by dry-salting, brining, drying or smoking; extracting essences from food by heat processes; fulfilling other functions related to food canning or other forms of preservation. Excluded are cooks preparing and cooking foodstuffs in public or private eating places (unit group 9-12).

8-25.10 Cook (Preserving). General. Cooks meat, fruits, vegetables or other foods according to recipes in large quantities preparatory to canning or preserving: weighs or otherwise measures ingredients; loads cooking vessels, such as kettles, pressure cookers, vacuum or evaporating pans and frying machines, manually or by means of chute or conveyor; cooks ingredients, adding syrup, spices, sugar, colouring matter or other substances as required; drains off cooked ingredients by opening valve at bottom of vessel or by blowing material through means of chute or conveyor; cooks ingredients, adding water, and cooks for prescribed time; scoops contents from vessel into container or drains contents of vessel by opening valve at bottom of it. May cook ingredients separately before mixing. May feed cooked material into electric grinder which reduces it to correct consistency. May pump finished product into storage vats or bottling plant.

8-25.20 Cook, Sauces and Condiments (Preserving). Makes sauces or condiments according to formula for table use or for combining with pre-cooked foods preparatory to canning: selects and weighs or measures ingredients, such as vegetables, flavourings, and spices; chops them into fine pieces by hand or electric chopper and mixes them in bowl or mixing machine; loads mixture into cooking vessel, adds water, and cooks for prescribed time; scoops contents from vessel into container or drains contents of vessel by opening valve at bottom of it. May cook ingredients separately before mixing. May feed cooked material into electric grinder which reduces it to correct consistency. May pump finished product into storage vats or bottling plant.

8-25.30 Freezer, Foodstuffs. Freezes fruit, vegetables and other foods before or after packing: places prepared food or cartons of food on shelves or on moving belt in freezing unit; regulates temperature and freezing time. May remove frozen food.

8-25.40 Dehydrator, Foodstuffs. Removes moisture from fruit, vegetables or other food in drying units: examines size, shape and skin of food to estimate drying time; pushes car loaded with food into drying unit and closes door; adjusts heat and humidity by manipulating valve wheels and levers; inspects food periodically by feeling it and observing its colour and regulates heat and humidity accordingly; pulls car out when food is dehydrated properly; keeps record of drying time for each load.

8-25.50 Meat Curer. Preserves meat, especially ham and bacon, by curing with salt and subjecting the salt-cured meat to woodsmoke: cures meat by submerging it in a brine solution for a prescribed period, by injecting it with brine or by rubbing in salt by hand and piling layer on layer of meat and salt alternately; smokes salted meat by hanging it for a prescribed period over a slow-burning wood fire; cooks meat and wraps it in paper or other protective covering. May brand trademark or other symbol on meat.

8-25.60 Fish Curer. Cures fish by dry-salting, brining, drying or smoking: dry-salts fish in bulk by turning them over on heavily salted floor with shovel and then shovelling them into barrels; brines fish by packing them into tanks or barrels with salt or with brine solution; dries fish in sun, in drying room or in ovens; smokes fish by placing them in smoke chamber until flesh has turned to desired colour. May be designated according to type of curing performed.

8-25.90 Curers, Freezers, Cooks and Related Canners and Preservers, Other. This group includes curers, freezers, cooks and related canners and preservers not elsewhere classified, for example, those extracting essences from foods by heat processes, whitening or enriching, in a machine, the natural colours of fruits or vegetables; heating containers of canned or preserved foods to sterilise their contents or to perform final cooking.

8-26 BUTCHERS AND MEAT CUTTERS

Workers in this unit group slaughter animals, cut meat and perform related tasks. Their functions include slaughtering animals, boning and trimming carcasses, and reducing them to portions suitable for sale, cooking or curing;
slaughtering animals, flaying and trimming carcasses in readiness for meat cutters; reducing flayed and trimmed carcasses to portions suitable for sale, cooking or curing; preparing ingredients for sausages and operating a sausage-making machine; performing various other tasks related to the foregoing.

8-26.10 Butcher, General. Slaughters animals, bones and trims carcasses, and prepares standard meat cuts: kills or stuns animal and thrusts knife into jugular vein to drain off blood; flays carcass, opens it and removes entrails; splits carcass into halves by sawing and cleaving; removes offal and washes down meat; cuts, saws and chops carcasses into standard meat cuts and into smaller portions as required. May make various kinds of sausages or other meat products. May cut and prepare meat according to customers' needs in a retail establishment.

8-26.20 Slaughterer. Slaughters animals, flays and trims carcasses in readiness for meat cutters: kills or stuns animal; thrusts knife into jugular vein to drain off blood; flays carcass, opens it and removes entrails; splits carcass into halves by sawing and cleaving and washes down meat. May remove offal from carcasses and place carcasses in cold storage rooms.

8-26.30 Meat Cutter. Reduces flayed and trimmed carcasses to portions suitable for sale, cooking or curing; determines the most economical way of cutting the meat; cuts, saws and chops carcass into standard meat cuts and into smaller portions as required, removing bones and offal; trims excess fat from meat; minces meat of poorer quality; cleans chopping block, tools and equipment and sharpens knives. May make various kinds of sausages and other meat products. May cut and prepare meat according to customers' needs in a retail establishment.

8-26.40 Sausage Maker. Prepares ingredients for sausages and operates sausage-making machine: weighs out various meats, spices and other ingredients according to formula; chops, minces and mixes ingredients by machine as required; feeds sausage meat into machine and gathers sausage casing over machine spout; starts machine to force meat into sausage casing; pinches and ties end of filled casing. May be designated according to kind of sausage made.

8-26.90 Butchers and Meat Cutters, Other. This group includes butchers and meat cutters not elsewhere classified, for example, those shooting or stunning animals; skinning carcasses; operating machines to chop, mince or mix materials for sausage making.

8-27 DAIRY WORKERS

Workers in this unit group perform various tasks in the processing of milk and cream and in the making of dairy products. Their functions include performing all or several of the tasks involved in the preparation of dairy products; pasteurising raw milk or other dairy products to remove harmful bacteria; developing bacterial culture (mother culture) and using it to obtain an acid bacteria (starter) for use in making butter, buttermilk, cheese and other products; performing all or several tasks in the making of butter; performing all or several tasks in the making of cheese; making ice-cream from milk, sugar and other ingredients; performing various other tasks related to the processing of milk and cream and the making of dairy products.

8-27.10 Dairy Worker, General. Performs all or several tasks in the preparation of various dairy products: pasteurises raw milk or other dairy products to remove harmful bacteria; develops bacterial culture for use in making butter, buttermilk, cheese and other products; separates cream from milk and churns it into butter; curdles milk and converts curds into cheese. May make ice-cream. For details of tasks see Pasteuriser, Dairy (8-27.20), Cultureman, Dairy (8-27.30), Butter Maker (8-27.40), Cheese Maker (8-27.50), Ice-Cream Maker (8-27.60).

8-27.20 Pasteuriser, Dairy. Removes harmful bacteria from raw milk and other dairy products by pasteurising process: pumps cold raw milk or other dairy products through a heating tank; maintains liquid at required temperature for a specified time and pumps it through cooling unit into bottling machine; checks thermometers and gauges and makes necessary adjustments to ensure that liquid is properly pasteurised; cleans and sterilises tanks and inter-connecting pipes; disconnects filters and renew or cleans straining devices.

8-27.30 Cultureman, Dairy. Develops bacterial culture (mother culture), uses it to obtain an acid bacteria (starter) and prepares starter for use in making butter, buttermilk, cheese and other products: pours fresh pasteurised milk into a jar and adds proportional amount of lactic ferment culture; heats jar in incubator for about a day to produce mother culture; adds prescribed proportion of mother culture to milk in pasteuriser and maintains it at a constant temperature for a specified period to produce starter; draws off starter into cans and stores them in refrigerator.

8-27.40 Butter Maker. Performs all or several tasks in the making of butter: pasteurises milk to eliminate harmful bacteria; separates cream from milk in a centrifuge; adds lactic ferment to ripen the cream; pours or pumps cream into a mechanical churn; starts churn to make butter, controlling butter moisture, temperature and time of churning. May add salt to butter in churn. May take samples of butter for testing.

8-27.50 Cheese Maker. Performs all or several tasks in the making of cheese: pours milk into a kettle or vat; adds acid bacteria (starter) to curdle the milk and rennet to assist coagulation; cuts the resulting curd and allows whey to sink to bottom of container; heats the curd to prescribed temperature, stirring constantly, until it reaches desired firmness; scoops curd into burlap containers to drain off excess moisture; places cheese in moulds and presses it into shape. May salt cheeses by immersing them in brine. May supervise the ripening of cheeses. May specialise in making a particular type of cheese and be designated accordingly.

8-27.60 Ice-Cream Maker. Makes ice-cream from milk, sugar and other ingredients: measures and mixes ingredients; pasteurises mixture to eliminate harmful bacteria; pumps ingredients through a homogeniser to
break down butter-fat globules; pours mixture into freezing machine; starts machine to stir and cool mixture; unloads machine when ice-cream of required consistency is obtained. May form ice-cream into special shapes.

8-27.90 Dairy Workers, Other. This group includes dairy workers not elsewhere classified, for example, those salting cheeses by immersing them in brine or by rubbing them with dry salt; sterilising milk; operating machines which homogenise milk; moulding butter or cheese into shape; making condensed or powdered milk.

8-29 FOOD PROCESSERS NOT ELSEWHERE CLASSIFIED

Workers in this unit group perform various tasks related to the processing of miscellaneous foodstuffs, and are not elsewhere classified. Their functions include tasting brewed samples of coffee or tea; tasting samples of wine or liquor; operating machines which mix various grades of coffee or tea; roasting coffee beans, chicory root, or cocoa beans in heated, revolving cylinders; operating equipment to make ice blocks; performing various duties in the making of macaroni and similar wheat products; extracting juice from fruit pulp, using power press; preparing various types of fish and other seafoods for sale, cooking or curing; performing various other tasks related to the processing of foodstuffs.

8-29.15 Taster, Coffee or Tea. Tastes brewed samples of coffee or tea: ascertains and judges such qualities as flavour and aroma of a brewed sample of coffee or tea and approximate market value of lot sampled; recommends specific mixtures of lots that will produce commercially acceptable blends. May be required to ascertain country of origin of the coffee or tea. May attend auctions and buy coffee or tea in bulk.

8-29.20 Taster, Wine or Liquor. Tastes sample of wine or liquor: ascertains and judges such qualities as flavour, aroma and colour of wine or liquor by use of his senses; classifies samples according to a system of standards; recommends specific blends of lots that will be acceptable commercially. May be required to ascertain place of origin and age of wine or liquor.

8-29.25 Blender (Coffee). Operates a machine which mixes various grades of green coffee: empties bags of various grades of coffee, as specified in formula, into bin of machine; starts blending mechanism which mixes coffee; sees that coffee is blended properly and decides when blending is finished; manipulates levers to dump blended coffee into elevators that convey coffee to cleaning bins or to other processing units prior to roasting.

8-29.30 Blender (Tea). Operates a machine which mixes various grades of tea: opens boxes of tea and weighs out specific quantities of each sort; scoops or shovels weighed out quantities into machine and starts it; sees that tea is blended properly and decides when blending is finished. May deliver mixture to packing machine.

8-29.35 Roaster (Coffee or Chicory). Roasts blended coffee beans or chicory root in heated revolving cylinders: loads cylinder with blended beans or chicory root; according to specifications, and starts it; observes roasting process and adjusts heating mechanism as necessary; discharges roasted coffee or chicory from roaster on to cooling trays, spreads them evenly and starts cooling fans. May grind coffee or chicory by machine.

8-29.40 Roaster (Cocoa-Bean). Roasts cocoa beans in heated revolving cylinders: loads cylinder with cocoa beans and starts it; observes roasting process and adjusts heating mechanism as necessary; tests beans during roasting process by tasting, smelling and feeling and decides when roasting is finished; discharges roasted beans into cooling receptacle. May operate machine in which beans are crushed and husks and chaff are separated.

8-29.45 Ice Maker. Operates equipment to make ice blocks: regulates ammonia condenser and compressor to maintain correct temperature in an ice-freezing tank; observes pressure and temperature gauges; checks specific gravity of brine solution in tank, and adjusts necessary adjustments; fills tanks with water and places them in brine solution with the aid of hoisting equipment; lifts cans out of tank when freezing process is completed; lowers cans into thawing-off tank; removes ice blocks by tipping cans. May operate machine in which ice blocks are crushed. May sell ice blocks to customers.

8-29.50 Macaroni Maker. Performs various duties in the making of macaroni and similar wheat products: mixes flour or semolina and hot or cold water in a machine until dough of specified consistency is obtained; kneads dough in trough equipped with rollers until homogeneous mass is obtained; places dough in cylinders of extruding press and starts it to force dough through die with perforations of desired diameter or shape; places racks of macaroni in steam-heated drying room for specified time to prevent souring and moulding; checks and regulates temperature of air circulating in drying room; removes dried products from drying room and passes them on for packing or cutting.

8-29.55 Fruit-Press Operator. Extracts juice from fruit pulp, using power press: puts pulp in filter cloths or sacks by hand or fills them from feed line; places packed pulp in press, and starts press to squeeze out juice; pumps juice from vat, and puts press pulp in cans.

8-29.60 Fish Butcher. Prepares fish and other sea foods for sale, cooking or curing: scraps off scales with a scaling knife or strips entire skin from fish; cuts off head, tail and fins, and removes entrails, securing edible parts, such as roe of the sturgeon for making caviar; removes bones from flesh with a boning knife; cuts and shapes fillets, fillets, steaks or individual portions of a predetermined size or weight from large fish, such as swordfish or salmon. May mince fish of poorer quality and make sausages. May sell fish and fish products in a retail establishment.

8-29.90 Food Processors Not Elsewhere Classified, Other. This group includes food processors not elsewhere classified, for example, those breaking outer covering of cocoa beans and crushing them into nibs; grinding cocoa and coffee; shelling, cleaning, roasting, bleaching and polishing all kinds of nuts; reducing fruit to a pulp in a mill; filtering liquor by means of a filter-press or a centrifuge.
8-3 Chemical and Related Process Workers

Workers in this minor group perform a variety of tasks in chemical and related processes. Their functions include distilling and refining liquid chemicals, alcoholic beverages, perfumes and aromatic oily substances; performing various cooking, roasting and heat-treating tasks in chemical and related processes; operating machines that mill, grind, crush, knead, beat or calender materials in various chemical and related processes; preparing pulp for production of paper, by mechanical and chemical treatment of materials; making various kinds of paper and paper-board; performing various tasks in chemical and related processes which are not performed by workers classified elsewhere. Excluded are Mineral Treaters (unit group 5-21); Furnacemen, Rollers, Drawers, Moulders and Related Metal Making and Treating Workers (minor group 7-3); Potters, Kilnmen, Glass and Clay Formers and Related Workers (minor group 8-1); Millers, Bakers, Brewmasters and Related Food and Beverage Workers (minor group 8-2).

8-31 Batch- and Continuous-Still Operators

Workers in this unit group distil and refine liquid chemicals, alcoholic beverages, perfumes and aromatic oily substances. Their functions include operating one or more stills in which batches of liquid chemicals, other than petroleum, are treated to separate them into their chemical constituents or to refine those constituents; operating one or more stills in which a continuous feed of a liquid chemical, other than petroleum, is separated into its chemical constituents, which are drawn off from the bottom or top of the still, or to refine those constituents; operating, with assistance, one or several stills in which petroleum is distilled to separate it into products such as petrol, paraffin, lubricating oil and fuel oil, or to refine those products; distilling alcoholic beverages from prepared mixtures; and distilling perfumes and aromatic substances of an oily nature from vegetable products.

8-31.20 Batch-Still Operator, Chemical (except Petroleum). Operates one or more stills in which batches of liquid chemicals, other than petroleum, are treated to separate them into their chemical constituents or to refine those constituents: manipulates feed valves to fill tank with liquid to desired level; adjusts valves to control pressure in tank and rate of heating; regulates valves to control amount of condensed vapour returned to tank to enrich vapours driven from it; draws, from containers receiving condensed vapours, product samples for testing either by himself or in laboratory; determines by purity of samples to which container product should be routed; returns impure samples to main stock; maintains record of temperature, pressure and feed-indicator readings. May make adjustments to still auxiliaries such as heat exchangers, absorbers, strippers, reboilers and compressors. May specialise in type of chemical treated and be designated accordingly.

8-31.40 Stillman, Petroleum. Operates, with assistance, one or several stills in which petroleum is distilled to separate it into products such as petrol, paraffin, lubricating oil and fuel oil, or to refine those products: patrols unit to check operating conditions; observes and records readings of temperature, pressure and flow gauges and meters and adjusts valves or automatic controls; tests products for specific gravity and observes their colour to determine whether processing is being carried out properly; makes minor adjustments to equipment; shuts down still for cleaning and opens it up again; supervises workers who assist in operation of still. May fire oil- or gas-burning furnace through which oil is run to heat it to processing temperature. May specialise in a particular type of still, kind of oil processed, department or process and be designated accordingly.

8-31.90 Batch- and Continuous-Still Operators, Other. This group includes batch- and continuous-still operators not elsewhere classified, for example, those distilling alcoholic beverages from prepared mixtures; distilling vegetable products with the aid of steam to obtain perfumes and aromatic substances of an oily nature; assisting in operation of stills by controlling units and firing furnaces.

8-32 Cookers, Roasters and Other Heat Treaters, Chemical and Related Processes

Workers in this unit group perform cooking, roasting and other heat-treating tasks involved in chemical and related processes. Their functions include cooking organic and inorganic
materials, such as bones, fats, sugars, molasses, oils, salts, acids and alkalis in open vats, boiling pans, kettles and similar containers, to mix or compound them, to give them a special property or to effect a chemical change; heating substances, such as limestone, gypsum, sulphur, wood and bone, in ovens, kilns and similar devices, or exposing them to open flames to dry them, to give them a special property, or to effect a chemical change; operating evaporating tanks, vacuum pans and similar devices to concentrate solutions and suspensions by driving off excess water; charging, operating and unloading autoclaves (high-pressure vessels) used in chemical and similar processes; tending furnaces or burning-kilns to calcine mixtures of raw ground stone, clay and other materials in the production of cement; operating electro-thermal resistor furnaces to graphitise carbon electrodes by controlled heating and cooling; operating ovens to bake, harden and dry the finish of freshly painted enamelled products or parts; controlling the formation of coke from coal in special ovens; operating one or more retorts in the production of gas from coal. 

Excluded are heat treaters classified under Furnacemen, Rollers, Drawers, Moulders and Related Metal Making and Treating Workers (minor group 7-3); Furnacemen and Kilnmen, Glass and Ceramics (unit group 8-13); Millers, Bakers, Brewmasters and Related Food and Beverage Workers (minor group 8-2); Batch- and Continuous-Still Operators (unit group 8-31); Paper-Pulp Preparers (unit group 8-34); and Wood Seasoner (7-79.40).

8-32.15 Cooker (Chemical and Related Processes). Cooks organic or inorganic materials such as bones, fats, molasses, oils, salts, acids and alkalis in open vats, boiling pans, kettles or similar containers to purify, mix or compound them, to give them a special property or to effect a chemical change: loads vessel with required materials by hand or by operating mechanical loaders or pourers; controls heating device to ensure that materials attain the required temperature; adds further ingredients and stirs mixture as necessary to obtain the required compound or chemical change; observes temperature, time and other measuring instruments and makes tests as necessary to ascertain when cooking process is completed; runs off product into storage tanks or other containers. May be designated according to type of cooking vessel used or type of process involved.

8-32.20 Roaster (Chemical and Related Processes). Heats substances such as limestone, gypsum, sulphur, wood or bone in oven, kiln or similar device or exposes them to open flames to dry them, to give them a special property, or to effect a chemical change: loads heated cylinders, oven, kiln or other heating device by hand or by operating mechanical loader and ensures that substances are spread or stacked so that they are properly heated; controls heating device to ensure that materials are maintained at correct temperature; observes temperature, time and other measuring instruments and makes tests as necessary to ascertain when process is completed; stops heating and unloads containers. May be designated according to type of heating device used or to type of process involved. Excluded are Coke Burner (8-32.50), Coal-Gas Maker (8-32.55) and Furnaceman (Cement) (8-32.35).

8-32.25 Evaporator Operator. Operates evaporating tank, vacuum pan or similar device to concentrate solutions and suspensions by driving off excess water: pumps liquid into tank or pan; operates vacuum pump to obtain vacuum in pan if required; regulates flow of steam into heater coils of evaporator; periodically tests concentrations of solution by use of instruments or by making simple chemical tests; makes necessary adjustments to temperature and pressure to obtain required solution; pumps concentrated solution from evaporator for auxiliary heating. May tend auxiliary equipment such as settling tanks, preheating tanks, condensers and cooling equipment. May treat solutions, such as those of glue, glycerine, glucose or caustic soda, and be designated accordingly.

8-32.30 Autoclave Operator, Chemical and Related Processes. Charges, operates and unloads an autoclave (high-pressure vessel) used in chemical or similar processes: charges vessel with predetermined amounts of chemicals; checks valves for operation; raises temperature in vessel by increasing steam pressure; observes pressure gauges, thermometers, timing and other instruments and makes necessary adjustments to ensure that process is carried out correctly; unloads products on completion of process and prepares vessel for next batch.

8-32.35 Furnaceman (Cement). Tends a furnace or burning kiln to calcine a mixture of raw ground stone, clay and other materials in the production of cement: directs the charging of kiln with materials; light kiln stoker and regulates fuel feed to maintain proper temperature; observes colour of burning material and intensity of stoker flame to ascertain temperature in kiln; removes material from kiln after burning process.

8-32.40 Furnaceman (Electrode Baking). Operates an electrothermal resistor furnace to graphitise carbon electrodes by controlled heating and cooling: supervises and assists in loading of furnace with carbon electrodes, ensuring correct preparation of furnace bed and stacking electrodes in place according to number, size and spacing; starts furnace operation by switching on electricity; regulates temperature in furnace after reading thermoelement and produces required sequence of heating and cooling in furnace sections; supervises the cooling of charge in furnace to prevent damage due to temperature stresses, and its removal from furnace; makes minor repairs to furnace equipment. May load or unload furnace and be designated accordingly.

8-32.45 Oven Tender, Paint-Drying. Operates an oven to bake, harden and dry the finish of freshly painted or enamelled products or parts: heats oven to prescribed temperature; pushes car loaded with freshly painted products into heated oven, or hangs products on hooks suspended from an overhead trolley; removes products or parts from oven after specified time; or places products on a conveyor-belt to carry them through heated oven;
regulates speed of belt through oven in accordance with temperature of oven and size of products. Excluded is Killman (Pottery and Porcelain) (8-13.40).

8-32.50 Coke Burner. Controls the formation of coke from coal in special ovens: supervises sealing of doors through which coke will be removed, leaving of cracks to admit limited amount of air into oven, kindling of fire on floor of each oven and proper charging of oven with coal; ensures that coal is properly burned by watching colour of flame and adjusting supply of air into oven; decides by colour and length of flame when coke is ready for removal; quenches coke partially to cause it to break into fragments; supervises removal of coke from oven.

8-32.55 Coal-Gas Maker. Operates one or more retorts in the production of gas from coal: loads retort with coal, by himself or with others, by hand or mechanically; kindles fire and starts forced draught to hasten combustion; sets controls of forced-draught system; periodically directs jet of steam into heated coal; determines if process is proceeding correctly by observing various gauges and colour of fuel being consumed; withdraws spent coal from retort. May be designated according to type of gas produced or type of retort operated.

8-32.90 Cookers, Roasters and Other Heat Treaters, Chemical and Related Processes, Other. This group includes cookers, roasters and other heat treaters (chemical and related processes) not elsewhere classified, for example, those drying chemical solutions by a spraying or atomising process to produce powders; drying materials in drying rooms or in drying cabinets fitted with conveying equipment.

8-33 CRUSHERS, MILLERS AND CALENDERERS, CHEMICAL AND RELATED PROCESSES

Workers in this unit group operate machines that crush, grind, mill, knead, beat or calender materials in various chemical and related processes. Their functions include operating a crushing machine in which solid lumps of materials are reduced to a size suitable for milling, further processing or other purposes; operating a mill that grinds and pulverises solid chemicals or other materials used in chemical and related processes to reduce them to particles of specified size; selects screens, according to size of powder particles to be produced, and fits them to machine; starts machine and feeds stock through rollers to squeeze and knead the material; adjusts scraper blade on machine to remove sheet rubber adhering to roll or removes it by hand; folds and refeds sheets between rollers, as necessary, to complete kneading, mixing or warming process.

8-33.40 Millman, Rubber. Operates a machine that kneads, mixes or warms raw rubber or rubber compounds: adjusts steam and water valves to regulate the heat of machine rollers, judging heat by touch; starts machine and feeds stock through rollers to squeeze and knead the material; adjusts scraper blade on machine to remove sheet rubber adhering to roll or removes it by hand; folds and refeds sheets between rollers, as necessary, to complete kneading, mixing or warming process.

8-33.50 Calender-Machine Operator, Textile. Operates a machine in which textiles are pressed, stretched or given a lustre or a waterproof or other type of finish by means of a friction, heating and rolling process: places roll of material on machine feeder; threads end of roll through machine rollers and adjusts it to fit the machine; operates controls to bring rollers together and so press on cloth; starts machine and admits steam to rollers; observes material passing through rollers and regulates tension on material as required; removes calendered roll of textile from winder.

8-33.60 Calender-Machine Operator, Rubber. Operates a machine which produces sheets of rubber or rubberised fabric by means of a rolling process: adjusts steam valves to regulate the heat of machine rollers, judging heat by touch and by observing reaction of the rubber; sets thickness gauge by turning hand-wheels; starts machine, feeds it with chunks of rubber and, where appropriate, threads fabric through rollers; tests thickness of product with a gauge and makes necessary adjustments; supervises helpers who load and unload material from machine.

8-33.90 Crushers, Millers and Calenderers (Chemical and Related Processes), Other. This group includes crushers, millers and calenderers (chemical and related processes) not elsewhere classified, for example, those operating fan-type grinding or beating machines in the treatment of asbestos fibres; operating calendering machines in which primary materials are mixed to form plastic dough.
Workers in this unit group prepare pulp for the production of paper by mechanical and chemical treatment of materials such as wood, rags, esparto, straw and waste paper. Their functions include operating a power-driven grinding machine to reduce logs to pulp; operating a rotary or stationary boiler (digester) which produces pulp and removes impurities from paper ingredients by chemical process; operating a machine that bleaches or washes paper ingredients; operating a machine that mixes, beats and hydrates pulp and other ingredients to prepare stuff for making paper; performing various other tasks related to the foregoing.

8-34.20 Wood Grinder (Paper Pulp). Operates power-driven grinding machine to reduce logs to pulp for use in making paper: pushes logs into machine feeder, using hooks; regulates water sprays to cool grindstones and to control consistency of pulp; sets pressure of hydraulic pistons that force logs against revolving grindstones; regulates flow of pulp from machine; observes colour of flowing pulp for evidence of burns caused by dull or broken grindstones or by jamming of logs; loosens jams and notifies supervisor of need of repairs if necessary. May be designated according to type of grinding machine used.

8-34.30 Digester Operator (Paper Pulp). Operates rotary or stationary boiler (digester) to produce pulp and to remove impurities from material, such as wood, rags, esparto, straw, or waste paper, by chemical process in the manufacture of paper pulp: supervises charging of digester with material and chemicals; admits steam into digester to raise temperature and pressure; observes recording instruments and adjusts valves to maintain required temperature and pressure; tests samples by titration or standard colour test to determine completion of cooking process; drains liquids from digester; supervises removal of cooked pulp from digester. May be designated according to materials processed or chemicals used.

8-34.40 Bleacher Operator (Paper Pulp). Operates machine that bleaches material, such as wood pulp, rags, esparto, straw or waste-paper pulp: charges machine with material and bleaching solution and starts agitator; admits steam for heating mixture and regulates valves in accordance with temperature readings; observes bleaching process; notes colour of material, and sends samples to laboratory for testing; transfers bleached material into washer and washes it with water sprays; transfers washed pulp into blending tank and mixes several batches to obtain uniform quality. May add chemicals during bleaching process and make chemical or electrolytic tests. May prepare bleaching solutions and be designated accordingly.

8-34.50 Beater Operator (Paper Pulp). Operates machine that mixes, beats and hydrates pulp and other ingredients to prepare stuff for use in making paper: supervises charging of machine with pulp, fillers, size, dyes, alum and other chemicals; sets and adjusts beater roller for desired degree of hydration; examines stuff for consistency and size of fibres and sends samples to laboratory for testing; transfers completed stuff to storage tank and starts agitator to maintain consistency. May mix and cook colouring matter for dyeing stuff in machine.

8-34.90 Paper-Pulp Preparers, Other. This group includes paper-pulp preparers not elsewhere classified, for example, those operating a machine that cuts rags to size for cooking, bleaching or defibring prior to making pulp; screening pulp stock, pumped from digester, to separate coarse fibres from pulp; operating a machine that eliminates surplus water and impurities from fibrous material prior to beating; operating a machine which refines pulp by brushing out knots and shortening fibres.

8-35 Paper Makers

Workers in this unit group make various kinds of paper and paperboards from wood or rag pulp and similar materials. Their functions include making, by hand, paper of high quality and durability, such as is required for bank notes, documents, account books, drawings and other purposes; operating section of paper-making machine in which wet pulp, fed in on an endless wire-mesh belt, is formed into paper; operating section of paper-making machine in which paper is dried, calendered, slit and rewound; operating a supercalender machine, equipped with heated and chilled rollers, that imparts gloss and finish to surface of paper; operating a machine that glazes and impregnates paper with coating mixture; performing various other tasks related to paper making.

8-35.20 Paper Maker, Hand. Makes, by hand, paper of high quality and durability, such as is required for bank notes, documents, account books, drawings and other purposes: fits bevelled wooden frame (deckle) on wire-mesh mould; dips mould with deckle into paper pulp and brings it up level; shakes mould to felt fibres of pulp together and to obtain correct sheet formation as water drains off through mould; removes deckle, turns mould over, and deposits sheet on wet felt; forms pile of alternate felts and sheets, and presses it in a power press; separates sheets from felts and lays sheets in packs; represses packs for a specified period; separates sheets from compressed pack and suspends them on soft ropes, or lays them out on hessian sheets to dry.

8-35.30 Paper-Making-Machine Operator (Wet End). Operates section of machine in which wet pulp, fed on an endless wire-mesh belt, is formed into paper: starts flow of stuff from storage chest through rotary screens to machine, adds water as necessary to thin stuff; removes dirt and other foreign matter from screens and regulates flow of stuff to wire-mesh belt; co-ordinates speed of belt and flow of stuff to obtain paper of desired weight; sets machine controls for width, thickness and moisture content of paper; threads formed paper between press rolls; supervises machine crew drying, sizing, calendering, winding, and cutting paper. May weigh samples of paper and install dandy rollers to impress watermark in paper.
8-35.40 Paper-Making-Machine Operator (Back End). Operates section of paper-making machine in which paper is dried, calendered, wound, slit and rewound: threads paper through drier and calender rollers; winds end of paper around reel or blows it around reel with compressed air; adjusts controls to regulate tension of paper, temperature of drier rollers and pressure of calender rollers; examines paper for defects, such as dirt, slime, spots, holes and wrinkles, and marks defective portions for removal at reel; directs workers in slitting and rewinding paper. May operate size tub when surface sizing is desired and spray paper with steam, water, or dyes to obtain specified finish.

8-35.50 Supercalender Operator (Paper). Operates a supercalender machine, equipped with heated and chilled rollers, which impart gloss and finish to surface of paper: positions roll of paper on reel stand of machine, using crane or hoist; threads paper between machine rolls and wraps end around rewinder reel; adjusts controls to regulate tension of paper, temperature and pressure of rollers, and application of steam to paper; examines paper for dirt, slime spots, wrinkles and ensures correct compactness of winding; mends breaks in paper with glue or mending tissue and heated flat iron; tests paper samples for finish and gloss with special instrument.

8-35.60 Coating-Machine Operator, Paper. Operates a machine that glazes or impregnates paper with coating mixture by machine: adjusts rollers, or aligns and fastens brushes, in machine; positions roll of paper on feed rack and threads paper through rollers; admits coating mixture into machine tank; starts machine, and adjusts tension of paper and pressure of rollers; regulates temperature of drying roller; observes coating process, examines paper for defects, such as unevenness of colour, wrinkles, or breaks, and makes necessary adjustments or repairs. May be designated according to coating material used.

8-35.90 Paper Makers, Other. This group includes paper makers not elsewhere classified, for example, those making paper plate, laminated or crepe paper; making imitation hand-made paper on a cylinder mould; making sizes of glue, starch, rosin, and other materials according to formula, for surface treatment of paper; operating a machine that waterproofs paper by coating it with wax; coating paper with an ink-wax-carbon mixture, by machine, to make carbon paper.

8-39 Chemical and Related Process Workers Not Elsewhere Classified

Workers in this unit group perform various tasks in chemical and related processes which are not performed by workers classified elsewhere. Their functions include operating or tending a number of pieces of equipment, except those used for treating petroleum, which perform a sequence of complex operations in a chemical reaction process; operating or supervising the operation of a reactor in which hydrocarbons derived from petroleum are dehydrogenated by catalytic cracking; operating filtering devices in which solutions to be filtered are forced under pressure through a filtering unit fitted with replaceable filtering media or are drawn, by means of a vacuum, through filtering media fitted to a rotating drum; operating a machine that separates solids from liquids, or liquids of different specific gravity from each other, by means of centrifugal force; operating a machine in which solids or liquids required in a chemical or similar process are mixed or blended; tending a machine that forces a liquid solution through fine holes into an acid solidifying bath to form textile filaments and wind them into untwisted threads; operating a plant in which petrol, paraffin, crude and distilled oils, wax and other petroleum products are treated with chemicals, steam, water or air to remove sulphur and other undesirable impurities; treating chemical solutions with bleaching reagent to improve their colour; controlling tanks in which impurities in sugar liquor are precipitated by carbonation process; tending a tank in which hot sugar liquor is agitated and cooled to obtain sugar crystals; performing various other tasks in chemical and related processing.

8-39.15 Reactor-Convertor Operator (except Petroleum). Operates or tends a number of pieces of equipment, other than those used for treating petroleum, which perform a sequence of complex operations in a chemical reaction process: regulates feed of gaseous, liquid or solid materials into equipment; checks progress of process by looking through peep holes, observing temperature readings and pressure gauges and other instruments and making simple chemical tests; regulates material feed and heating or cooling devices and makes other adjustments as necessary to ensure that processes are correctly carried out. A worker who tends only one piece of equipment in a reactor-convertor process is classified according to the type of equipment tended, for example, Autoclave Operator, Chemical and Related Processes (8-32.30) or Batch-Still Operator, Chemical (except Petroleum) (8-31.20).

8-39.20 Reactor Operator, Petroleum. Operates or supervises the operation of a reactor in which hydrocarbons derived from petroleum are dehydrogenated by catalytic cracking; regulates flow of hydrocarbons to reactor; maintains temperatures, pressures, liquid levels and other operating variables within closely prescribed limits; ensures proper function of all pieces of equipment; directs and supervises helpers as necessary. May be designated according to type of materials produced.

8-39.25 Filter-Press Operator. OPERATES a filtering device in which solutions to be filtered are forced under pressure through a filtering unit (filter press) fitted with replaceable filtering media: opens filter press and covers filter plates with canvas, paper or other filtering media; closes press and ensures that its joints make a liquid-tight seal; mixes and agitates diatomaceous earth, sawdust or other filter compound with solution to settle impurities; pumps mixture through filter press, keeping watch on pressure gauge, until the required quantity of liquid has been filtered or the filter needs cleaning;
removes impurities from filter by compressed air, water or steam, opening filter press and cleaning or replacing filtering medium as required. May be designated according to type of materials filtered.

**8-39.30 Filterer, Rotary Drum.** Operates a filtering device in which solutions to be filtered are drawn, by means of a vacuum, through filtering media fitted to a rotating drum: operates valves to regulate the flow of solution to the filter tank and adjusts speed of rotation of drum; starts vacuum pump to draw solution through filter and observes discharge from filter to ensure that drum scraper is keeping the filtering media clean. May make minor adjustments to filter and tend auxiliary equipment. May be designated according to type of solution filtered or solid separated.

**8-39.35 Centrifugal-Separator Operator.** Operates a machine that separates solids from liquids, or liquids of different specific gravity from each other, by means of centrifugal force: operates valves or pumps to load container of machine or loads manually; starts machine and adjusts speed at which container rotates to ensure efficient separation of substances; empties container as necessary. May fix and clean filtering media in machine, operate a machine fitted with heating attachment, or one fitted with a continuous feed, and test samples for moisture content. May be designated according to type of materials separated.

**8-39.40 Mixing-Machine Operator (Chemical and Related Processes).** Operates a machine in which solids or liquids used in a chemical or similar process are mixed or blended: loads prescribed quantities of materials into machine container by hand or by operating valves, pumps or other mechanical loaders; starts machine agitators to mix materials thoroughly; adds further ingredients to mixture if required; runs machine until mixing process is completed; removes mixture from machine container by hand, or by operating valves or pumps; prepares machine for fresh run. May be designated according to type of materials mixed or to type of product obtained.

**8-39.45 Spinner (Rayon and Similar Products).** Tends machine that forces a liquid solution through fine holes into an acid solidifying bath to form textile filaments and winds them into untwisted threads: starts machine and catches ends of filaments as they pass through acid bath; brings several ends together, passes them over a guide wheel and attaches them to a spool, bobbin or similar winding device; repeats process with other filaments; ties thread together when it breaks; replaces full winding devices with empty ones. May operate machine with centrifugal arrangement for drawing and piling thread into special boxes.

**8-39.50 Treater (Petrol Refining).** Operates a plant in which petrol, paraffin, crude and distilled oils, wax and other petroleum products are treated with chemicals, steam, water or air to remove sulphur and other undesirable impurities: observes and records readings of oil flowing into unit, to mix, mechanically or by air agitation, oils and chemicals in towers or tanks, to wash or treat oil with water or steam, and to separate oil and spent chemicals or water; makes chemical, specific-gravity and colour tests to determine whether treatment is being carried out properly, and draws samples for laboratory analysis. May operate pumps which circulate oil through plant and regulate refrigerating equipment to reduce temperature of petroleum products and facilitate treatment. May be designated according to type of product treated, type of plant operated or chemical used.

**8-39.55 Bleacher Operator (Chemical).** Treats chemical solutions with bleaching reagent to improve their colour: pumps liquids to be bleached into tank; adds bleaching ingredients according to formula by pumping or by opening valves; starts agitator; ensures that temperature is maintained by observing temperature recorders and regulating steam valves; draws sample and sends it for laboratory check; pumps product to storage tank or to other department for further processing; makes minor repairs to equipment.

**8-39.60 Carbonation Man, Sugar Refining.** Controls tanks in which impurities in sugar liquor are precipitated by carbonation process: admits sugar liquor to tank; controls flow of slaked lime, carbon dioxide, sulphur dioxide and other ingredients into liquor; tests solution to ascertain sufficiency of ingredients and makes adjustments to mixture if necessary. May operate sulphur burner to produce sulphur dioxide gas. May be designated according to phase of process controlled.

**8-39.65 Crystalliser Operator, Sugar Refining.** Tends a tank in which hot sugar liquor is agitated and cooled to obtain sugar crystals: operates valves to allow the required quantity of heated sugar-liquor to enter tank; starts stirrers in tank; admits cooling water to coils in tank, ensuring that the liquor is cooled evenly and at a controlled rate; stops machine when required state of crystallisation has been obtained and drains off mixture of sugar crystals and liquor. May add powdered sugar to liquor to induce crystallisation.

**8-39.90 Chemical and Related Process Workers Not Elsewhere Classified, Other.** This group includes chemical and related process workers not elsewhere classified, for example, those tending electrolytic cells used in the production of chemicals; washing chemicals in the processing of chemical products; coating pills and tablets to make them palatable and to preserve their ingredients; oxidising lead to form white lead; preparing sizes, starches and glucose.
8-4 Tobacco Preparers and Tobacco-Product Makers

Workers in this minor group process tobacco leaves and make cigarettes, cigars and other tobacco products. Their functions include processing and preparing tobacco for the making of tobacco products; making cigars and cigarettes; performing other tasks in the making of tobacco products.

8-41 Tobacco Preparers

Workers in this unit group prepare tobacco for the making of various tobacco products. Their functions include grading tobacco leaves by type and quality according to colour, texture, size of leaf and locality where grown; mixing various grades and kinds of tobacco leaves in accordance with formula to form blend of distinctive flavour; conditioning tobacco leaves, to make them pliable for further processing, by moistening them with water or steam; removing mid-ribs and stalks from tobacco leaves by hand and machine; cutting tobacco leaves into coarse or fine shreds by machine; and performing other work in tobacco preparation, such as flavouring, drying and cooling leaf or cut tobacco.

8-41.20 Grader (Tobacco). Grades cured tobacco leaves as to type and quality according to colour, texture, size of leaf, and locality grown: takes samples of leaves from hogsheads received; looks at and feels leaves to ascertain grade and class of tobacco, and decides whether leaves are to be conditioned prior to further processing; keeps record of grades contained in each hogshead received.

8-41.30 Blender (Tobacco). Mises various grades and kinds of tobacco leaves in accordance with formula to form blend of distinctive flavour: removes leaves of tobacco from each of several hogsheads; spreads leaves on trays and picks out those unsuitable for desired blend; weighs out quantities of each kind of leaf according to formula and mixes them together; sprinkles water containing acetic acid on tobacco during mixing process to act as a preservative.

8-41.40 Conditioner (Tobacco). Treats tobacco leaves by moistening them with water or steam to make them pliable for further processing: moistens leaves by dipping them in or spraying them with water, stacks leaves on drainboard, covers them with cloth or paper and allows them to absorb moisture for a specified time; or feeds leaves into steam-heated conditioning machine, observes gauges, maintains appropriate steam pressure and allows leaves to absorb steam for specified time. May specialise in conditioning a particular kind of tobacco leaf and be designated accordingly.

8-41.50 Stripper (Tobacco), Hand. Removes mid-ribs and stalks from tobacco leaves by hand: takes moistened leaf from pile; cuts and strips mid-rib and stalk from pliable portion of leaf, starting at tip end of leaf and avoiding damage to surface; stacks stripped leaves in piles and ties them together, keeping right and left halves separate, and covers them with wet burlap. May specialise in stripping a particular kind of leaf, such as those used for filling or wrapping, and be designated accordingly.

8-41.60 Stripper (Tobacco), Machine. Removes mid-ribs and stalks from tobacco leaves by machine: depresses foot treadle to start feed rollers in machine; takes moistened leaf from pile; inserts one leaf at a time between feed rollers of machine which strips mid-rib and stalk, and cuts leaves into halves; removes leaves from machine, stacks them in piles, ties them together, keeping right and left halves separate, and covers them with wet burlap; removes mid-ribs and centre stalks from machine. May clean and oil machine. May specialise in stripping particular kinds of leaves such as those used for filling or wrapping, and be designated accordingly.

8-41.70 Tobacco-Cutting-Machine Operator. Cuts tobacco leaves into coarse or fine shreds by machine: fills hopper of cutting machine with leaves; starts machine, causing feed rolls to revolve and knives to reciprocate; watches cutting process to see that machine is shredding tobacco correctly; makes minor adjustments to machine, such as tightening bolts that hold knives in place and adjusting rollers. May clean and oil machine and replace dull knives with sharpened ones.

8-41.90 Tobacco Preparers, Other. This group includes tobacco preparers not elsewhere classified, for example, those preparing flavouring mixtures and treating tobacco with them; mixing and fluffing cut or shredded tobacco in revolving cylinder; drying leaf or cut tobacco in one of a variety of heating devices; cooling tobacco as it comes from steamer or drying room.

8-42 Cigar Makers

Workers in this unit group make cigars by hand or machine and examine and sort leaves and finished cigars.

8-42.20 Cigar Maker, Hand. Makes complete cigar by hand: tears or cuts section of binder leaf to desired size and lays it on table; takes filler tobacco and rolls it between the palms of both hands; lays rolled filler on binder and rolls them together to form bunch (inner part of cigar); glues or twists end of binder to hold it in position; cuts wrapper leaf to desired size; lays bunch on wrapper and rolls them together; glues end of wrapper to hold it in place; presses cigars in moulds after rolling to give them a finished shape.

8-42.30 Cigar Maker, Machine. Makes complete cigar by machine: spreads pre-cut binder leaf on breaker (rubberised fabric apron) of machine; places filler tobacco on top of binder and presses foot treadle, causing breaker to roll filler and binder together and form the
bunch (inner part of cigar); removes bunch from machine and glues end of binder to hold it in place; cuts wrapper leaf to desired size, using die; places bunch in automatic rolling machine; feeds cut wrapper into machine, which wraps it in spirals around bunch; presses cigars in moulds to give them a finished shape. May specialise in bunch making or wrapping and be designated accordingly.

8-42.90 Cigar Makers, Other. This group includes cigar makers not elsewhere classified, for example, those examining wrapper leaves and sorting them for colour and size; separating good binder leaves from imperfect ones; laying wrappers on cigar-making machine and patching leaves which have holes in them; examining finished cigars for imperfections and sorting for colour and size.

8-43 CIGARETTE MAKERS

Workers in this unit group make cigarettes. Their functions include making special sizes and types of cigarettes by hand; making cigarettes by operating an automatic machine; examining finished cigarettes.

8-43.20 Cigarette Maker, Hand. Makes special sizes and types of cigarettes by hand: spreads shredded tobacco on piece of cigarette paper, rolls paper and tobacco with fingers and palms of hands; applies gum to inner edge of paper and presses edge in place; or rolls cut tobacco in piece of parchment, fits cigarette paper sheath to end of parchment, pushes tobacco from parchment into sheath with pencil-shaped stick; cuts off protruding tobacco with scissors. May attach cork, gold or other type of tip.

8-43.30 Cigarette Maker, Machine. Makes cigarettes by operating an automatic machine: feeds cut tobacco into hopper of machine; sets regulating device for flow of tobacco so that cigarettes will contain correct amount; places bobbins of cigarette paper on holding spindle; threads paper through guide rolls; fills gum receptacle; sets device to print trade name or mark; starts machine and watches operations to see that tobacco is automatically drawn and wrapped in cigarette paper, forming a continuous tube, and that tube of wrapped tobacco is cut at correct intervals into cigarettes; adjusts friction tension on holding spindles and automatic sharpener; replaces full cigarette-catching trays with empty ones. May make cigarettes with tips of special material.

8-43.90 Cigarette Makers, Other. This group includes cigarette makers not elsewhere classified, for example, those examining cigarettes for proper filling, printing, gluing; checking weight of cigarettes and measuring their length on gauge.

8-49 TOBACCO-PRODUCT MAKERS NOT ELSEWHERE CLASSIFIED

Workers in this unit group perform miscellaneous tobacco production tasks and are not elsewhere classified. Their functions include making snuff tobacco by pulverising and blending various types of tobacco with machines; forming plugs of chewing tobacco by hand and with machine; making plugs of tobacco which are to be sliced for pipe tobacco.

8-49.20 Snuff Maker. Makes snuff tobacco by pulverising and blending various types of tobacco with machines: places tobacco leaves, stalks and chopped tobacco in a bin, adds salt solution and allows mixture to ferment for specified period of time; watches fermentation, turning mixture occasionally, toasts fermented tobacco on heated table, and pulverises it to flour-like consistency in a grinding machine; sifts snuff flour through fine mesh-wire or cloth screens; blends various types of snuff in mixing machine, according to formula, and adds aromatic oils or essences. May specialise in a particular snuff-making process such as fermenting, grinding, sifting, or blending and be designated accordingly.

8-49.90 Tobacco-Product Makers Not Elsewhere Classified, Other. This group includes tobacco product makers not elsewhere classified, for example, those forming plugs of chewing tobacco by hand; pressing plugs of chewing tobacco with machine; making plugs of tobacco which are to be sliced for making pipe tobacco.

8-5 Craftsmen and Production-Process Workers Not Elsewhere Classified

Workers classified in this minor group are craftsmen and production process workers not specifically allocated to one of the minor groups 7-0 to 8-4. Included are various distinct categories of craftsmen and production-process workers not elsewhere classified who perform functions requiring specialised training and experience in the application of particular techniques, or the use of particular tools and materials, such as those vulcanising, moulding and treating prepared rubber to make tyres or other products; making stringed, wind or other musical instruments; cutting and carving marble, granite or other stone; performing various other specialised tasks. Also included are process workers not elsewhere classified whose functions require little or no previous experience or specialised training, who perform relatively simple tasks, frequently of a repetitive nature, calling mainly for manual dexterity and not requiring any significant knowledge of the qualities of the materials used or the work processes and procedures involved in the complete cycle of production of the goods concerned, who are generally associated with, or working under the supervision of, craftsmen or other specialised workers in all kinds of production processes, and who carry out simple functions such as filling cushions and mattresses; riveting, clipping or gluing fabrics together;
sorting garments for passing to tailors and sewers; operating a machine to stamp, cut or slice bread in a bakery or to cut compressed oil-cake (cattle feed) into blocks in a grain-milling establishment; feeding logs and wood blocks into a machine for reduction to chips for further processing in pulp making; washing, peeling and cutting fruit and vegetables in a cannery; and performing other simple processing functions in various industrial processes.

8-51 BASKETRY WEAVERS AND RELATED WORKERS

Workers in this unit group fabricate all types of baskets and wicker furniture by weaving, plaiting, and interlacing willow, rattan, reed, rush and similar vegetable materials. Their functions include making, by hand, baskets of various shapes by interlacing osier or willow, rattan, and similar materials; making, by hand, wicker furniture from peeled and softened rattan, reed, rushes, willow sticks and similar vegetable materials; performing various other tasks related to basketry and wicker work.

8-51.20 Basket Maker. Makes, by hand, baskets of various shapes by interlacing osier, willow, rattan, or similar vegetable materials; forms bottom of basket by interlacing strips of rattan or similar material with framework of rods of material such as willow; inserts rods around edge of bottom and between woven sections of bottom to serve as framework for sides; bends rods perpendicular to bottom and places hoop around them to hold them in position for weaving of sides; weaves strips through rods until sides are completed; tapers or points ends of protruding rods, and bends and inserts them into spaces in top edge of woven sides. May specialise in making a particular type of basket, or section thereof, and be designated accordingly.

8-51.30 Wicker-Furniture Maker. Makes, by hand, wicker furniture from peeled and softened rattan, reeds, rushes, or willow sticks or similar vegetable materials; bends rods of material such as willow over gas flame or steam jet to desired shape and fastens them together to form frame; weaves willow, rushes or similar material in, through, and around frame; cuts off, conceals or weaves together loose ends, to finish edges; strengthens and conceals frame joints by winding split willows, rushes or similar material around them. May specialise in fabricating a particular article or part of furniture and be designated accordingly.

8-51.90 Basketry Weavers and Related Workers, Other. This group includes basketry weavers and related workers not elsewhere classified, for example, those plaiting braids of grass, reed, and similar material to form plait for the making of mats; cutting veneer cover mats to correct size, by machine, to make tops for baskets; stapling rims to cover mats for baskets by machine; splitting canes or willow rods by hand or machine.

8-52 TYRE BUILDERS, VULCANISERS AND RELATED RUBBER-PRODUCT MAKERS

Workers in this unit group make rubber products from prepared rubber. Their functions include operating a machine in which compounded rubber is extruded through a heated die to form a continuous shaped strip; operating a machine in which soft, uncured rubber is shaped in a mould and vulcanised by steam heat; building up pneumatic tyres on a form; shaping new or reconditioned pneumatic tyres in a mould; controlling ovens (curing pots) in which pneumatic tyres and other rubber articles contained in moulds are vulcanised by means of pressurised steam; performing various other tasks, related to the making of rubber products. Excluded are those making synthetic rubber, or milling and otherwise processing natural rubber, who are classified in minor group 8-3 (Chemical and Related Process Workers).

8-52.20 Extruding-Machine Operator (Rubber). Operates a machine in which compounded rubber is extruded through a heated die to form a continuous shaped strip: selects die and fits it to machine; turns steam valve to heat die to required temperature; feeds chunks of rubber into hopper of machine; starts machine which forces rubber through die; adjusts controls to synchronise speed of conveyor belt with speed of extrusion of rubber.

8-52.30 Rubber-Moulding-Press Operator. Operates a machine in which soft, uncured rubber is shaped in a mould and vulcanised by steam heat: places uncured rubber between upper and lower dies of mould; inserts mould in press; turns valve to lower ram on mould and to apply pressure and steam heat simultaneously; removes mould from press after specified length of time; opens dies and removes formed pieces with tongs or by hand. May operate press in which rubber is injected into moulds. Excluded is Tyre Moulder (8-52.50).

8-52.40 Tyre Builder. Builds up pneumatic tyres on a form: wraps layers of rubberised fabric around form as it is turned by hand or machine: presses layers together and guides them to shape of form by means of hand roller or other hand tool; places heading on edge of fabric layers and folds fabric evenly around it; winds on cushion band, rubber side walls and tyre tread; trims tyre, removes it from form and places it to one side in readiness for moulding and vulcanising (curing).

8-52.50 Tyre Moulder. Shapes unfinished, new or reconditioned, pneumatic tyres in a mould: places air or water bag inside unfinished tyre; clamps tyre in mould; fills bag with air or hot water under pressure to force tyre to shape of mould; applies heat to mould to vulcanise tyre or passes mould to Vulcaniser, Hot Process (8-52.60); removes tyre from mould when vulcanising is complete and extracts the bag.

8-52.60 Vulcaniser, Hot Process. Controls ovens (curing pots) in which uncured pneumatic tyres and other rubber articles are made less plastic and more durable
8-53 PLASTICS-PRODUCT MAKERS

Workers in this unit group make various products from plastic materials. Their functions include operating a machine in which layers of plastics or plastic-impregnated materials are heated and pressed to form a solid laminated product; operating a machine in which plastic materials are extruded through a die and cut to shape; feeding specified quantities of material into machine; may feed specified quantities of material into mould; opens mould after specified time and removes moulded object. May soften material in oven or on steam-heated table in preparation for moulding. May perform all or several of the tasks involved in giving final finish to hides after they have been tanned; preparing solutions; performing all or several of the tasks in separating residual wool from sheepskins and preserving them until required for further treatment; removing flesh and hair from hides by hand or machine; operating a machine in which hides are split edgeways; treating hides to convert them into leather (tanning); preparing solutions for use in tanning hides; performing all or several of the tasks involved in giving final finish to hides after they have been tanned; preparing and applying dyes and stains to dressed leather; sorting fur- or wool-bearing pelts before or immediately after they have been dressed; removing particles of flesh and fat from fur- or wool-bearing pelts; removing long coarse hair from fur pelts and trimming underlying hair to even length; applying dye to fur-bearing pelts by hand; stretching, or smoothing and stretching, dressed pelts; performing a variety of other tasks related to the treatment of hides, sheepskins and pelts, such as washing hides, operating automatic machines for buffing and polishing leather and immersing pelts or hides in dyes or pickling solutions.

8-54 TANNERS, FELLMONGERS, PELT DRESSERS AND RELATED WORKERS

Workers in this unit group treat hides, sheepskins and fur-bearing pelts to prepare them for making up into leather and fur products. Their functions include sorting and grading hides before or after processing; performing all or several tasks in separating residual wool from sheepskins and preserving them until required for further treatment; removing flesh and hair from hides by hand or machine; operating a machine in which hides are split edgeways; treating hides to convert them into leather (tanning); preparing solutions for use in tanning hides; performing all or several of the tasks involved in giving final finish to hides after they have been tanned; preparing and applying dyes and stains to dressed leather; sorting fur- or wool-bearing pelts before or immediately after they have been dressed; removing particles of flesh and fat from fur- or wool-bearing pelts; removing long coarse hair from fur pelts and trimming underlying hair to even length; applying dye to fur-bearing pelts by hand; stretching, or smoothing and stretching, dressed pelts; performing a variety of other tasks related to the treatment of hides, sheepskins and pelts, such as washing hides, operating automatic machines for buffing and polishing leather and immersing pelts or hides in dyes or pickling solutions.
length and quality; dries wool in drying room or by machine; grades skins according to size and quality; pickles skins in specially prepared solution to preserve them until required for further treatment.

8-54.30 Hide Flesher and De-Hairer, Hand. Removes flesh and last traces of hair from hides with hand knife; stretches wet hide over iron or wooden beam: scrapes flesh and hair off hide with circular or two-handled knife; piles scraped hides.

8-54.35 Hide Flesher and De-Hairer, Machine. Operates a machine in which flesh, hair and foreign matter are removed from hides: starts machine to rotate machine rollers; lays hide over lower roller and smooths out wrinkles; presses treadle to bring roller, carrying hide, against rotating roller equipped with special knife blades; feeds half of hide through rollers; depresses pedal to open rollers and removes hide; reverses hide, and repeats operation to scrape other half of hide; piles scraped hides. May operate a machine in which a rotating, bladed roller is moved over hides placed on machine table or on frame.

8-54.40 Hide Splitter. Operates a machine in which hides are split edgeways to form two or more pieces or to give uniform thickness: starts machine and adjusts thickness of cut; places hide on machine table and smooths out wrinkles; guides hide between rollers which force edge of hide against machine knife; removes split hides from machine or directs helper to do so. May direct helpers in feeding hides into machine.

8-54.45 Tanner. Treats hides or skins in solutions to convert them into leather: fills container with tanning solution and a weighed amount of hides; starts machine to agitate solution; stops machine after specified time or when process is judged to be complete; extracts sample piece of leather and boils it in water to test completeness of tanning, and continues tanning process, if necessary; removes hides when tanning is complete. May retan hides to restore colour lost in bleaching, splitting or other processes. May specialise in particular type of tanning and be designated accordingly.

8-54.50 Tanning Liquor Maker. Prepares solutions for use in tanning hides: pours a predetermined quantity of ground bark and chemicals into vat; opens valves to fill vat with water; admits steam to heaters in vat to raise temperature of solution; tests solution for specific gravity with hydrometer; starts motor and opens valves to pump solution to other vats or containers. May grind bark for use in tanning solutions.

8-54.55 Leather Currier. Performs all or several tasks in dressing and giving finish to hides after they have been tanned: scrapes hide with tool to expel moisture and scum left from tanning; applies grease, oil, soap or other compounds to hide by hand or machine; softens hide by stroking it with knife blade, flexing it over rigid blade or by rolling it under pressure in machine; rubs hair side of hide against itself to bring out the grain; removes rough spots and blemishes from hides by hand scraping or by machine; polishes hide by hand or machine. May also dye and stain leather.

8-54.60 Leather Dyer and Stainer. Prepares colour solutions, dyes and stains to match specified colour samples or according to prescribed formulae and applies or supervises their application to dressed leather: weighs out prescribed quantities of dyes and mixes them with water in a container; heats (cooks) solution for required length of time and tests it with hydrometer and chemical indicators; inspects hides and rejects those unsuitable for dyeing; loads drum with hides, water and dyeing solution or directs helpers to do so; starts mechanism to agitate solution; examines test piece of hide and adds bleach or further colouring if necessary to obtain the desired effect; supervises workers staining hides.

8-54.65 Pelt Grader. Sorts fur- or wool-bearing pelts before or immediately after they have been dressed: compares untreated pelts visually and sorts them according to type, quality, size, colour and markings; sorts pelts after they have been dressed, dyed or otherwise treated. A worker grading furs immediately prior to cutting up and making into garments or other articles is classified as Grader and Matcher, Fur (7-12.30).

8-54.70 Pelt Flesher. Removes particles of flesh and fat from fur- or wool-bearing pelts prior to curing or other processing: scrapes particles from pelt with knife, or stretches skin over fixed steel blade and works it back and forth, taking great care not to damage hair roots embedded in the skin. May remove particles by use of power-operated revolving knife. May reduce thickness of hides by paring with machine or hand knife.

8-54.75 Pelt Plucker and Trimmer. Removes long coarse hair from fur pelts and trims underlying hair to even length: tacks skin, fur side up, over beam; removes loose hairs, and flattens fur by stroking it with double-handled, blunt-edged knife, occasionally dusting fur with powder to make hair more visible; evens length of fur over entire skin with thin, keen-edged knife, scissors or shears.

8-54.80 Pelt Dyer, Hand. Applies dye to fur-bearing pelts by hand: applies dyes to pelt with feather or brush to improve appearance of fur or to simulate hair of another fur-bearing animal. May spray dyes on fur, mix own dyes and be designated according to type of dyeing performed.

8-54.85 Pelt Stretcher. Stretches, or smooths and stretches, the skins of dressed pelts: pulls softened and greased pelts over fixed blade by hand to enlarge area and smooth texture of skin; stretches pelt by feeding it through a power-operated machine or by holding pelt flat on table with one hand and pulling it taut with the other. May also finish pelt by buffing, beating, brushing and combing the fur. A worker stretching and trimming fur to pattern in the manufacture of fur garments and other articles is classified as Nailer, Fur (7-12.50).

8-54.90 Tanners, Fellmongers, Pelt Dressers and Related Workers, Other. This group includes tanners, fellmongers, pelt dressers and related workers not elsewhere classified, for example, those operating a machine which removes fur from pelts for fur-felt making; nailing leather on boards and frames; rubbing dyes or stain on leather with brushes or pads; washing hides; operating an automatic machine for buffing and polishing leather; immerging pelts in pickling and other solutions; feeding skins or pelts into dyeing vats.

8-55 PHOTOGRAPHIC DARK-ROOM WORKERS

Workers in this unit group process still and motion-picture photographic negatives and prints in a dark room. Their functions include
treats exposed colour films with series of timed chemical and water baths, and diffused light; to prepare coloured transparent negatives and positives; treats exposed black-and-white films and photographic plates with series of timed chemical and water baths to prepare transparent black-and-white negatives and positives; printing and developing black-and-white and colour photographs with contact printing machine; enlarging and reducing photographs with projection printer; and performing various other tasks related to the foregoing.

8-55.20 Developer (Photographic, Colour). Treats exposed colour films with series of timed chemical and water baths and diffused light in a dark room to prepare coloured transparent negatives or positives. When developing reversal film to produce positive: immerses film in developer solution to blacken exposed silver in different layers of the film; rinses film in water to wash off developer solution; exposes film to diffused light to produce a transparent positive; rinses film in water to remove fixing solution; places positive in hardening solution to harden colours and make them resistant to fading; rinses positive in water to remove hardening solution; dries positive by swabbing off excess water with sponge and exposing it to air in dustless location. When developing negative film to produce negative: immerses film in colour-developer solution; immerses film in fixing solution to wash out blackened silver and to produce a transparent negative; rinses film in water to wash off colour-developer solution; places negative in hardening solution to harden colours and make them resistant to fading; rinses negative in water to remove hardening solution; dries negative by swabbing off excess water with sponge and exposing it to air in dustless location; times period of immersion in each bath and maintains solutions and water at required temperature. May specialise in other developing processes, depending on make of film.

8-55.30 Developer (Photographic, Black-and-White). Treats exposed black-and-white films and photographic plates with series of timed chemical and water baths in a dark room to prepare transparent black-and-white negatives or positives: prepares the various developing solutions by mixing chemicals with water according to formulae; immerses film or plate in developer solution to make image visible; rinses film in water to wash off developer solution; places film or plate into fixing bath to produce transparent and light-constant negative; rinses negative in water to wash off fixing solution; dries negative by swabbing off excess water with sponge and exposing it to air in dustless location; times period of immersion in each bath and maintains solutions and water at required temperature. May prepare transparent positives from negatives.

8-55.40 Printer (Photographic). Prints and develops black and white, and colour photographs with contact-printing machine in a dark room: examines negatives for contrast, and selects appropriate photographic paper to produce clear prints; positions negative and paper in printing frame, fastening down edges; arranges lights to compensate for variations of light and shade in negative; exposes negative and paper to light for timed period, using colour-filters when processing colour prints; develops exposed print in series of timed chemical and water baths; dries and trims finished prints. May apply glossy finish to prints by heated metal press. May print colour photographs by other methods such as projection or reproduction process.

8-55.50 Enlarger (Photographic). Enlarges or reduces photographs with projection printer in a dark room: inserts negative in holder on printer and switches on light which shines through negative to easel below; adjusts various parts of printer, and centres image, to secure desired projection; determines exposure time and lens opening and selects colour-filters when enlarging colour photographs, and selects appropriate photographic paper; switches off light and fixes photographic paper in easel; switches on light, and exposes paper to light for a timed period, shading darker areas of image to produce prints with roughly equivalent intensity, or correcting colour deficiencies of negative with coloured filters; develops exposed prints in series of timed chemical and water baths; dries and trims finished prints. May apply glossy finish to prints with heated metal press.

8-55.90 Photographic Dark-Room Workers, Other. This group includes photographic dark-room workers not elsewhere classified, for example, those operating an automatic printing and developing machine which produces photographic prints in large quantities; operating machines for developing and drying motion-picture films.

8-56 Makers of Musical Instruments and Related Workers

Workers in this unit group make, or do work related to the making of, musical instruments. Their functions include making stringed and wind instruments, accordions, and instrumental parts of organs, pianos, and other musical instruments; tuning organs and pianos; making and tuning various other instruments.

8-56.15 Musical-Instrument Maker (Stringed). Makes stringed instruments of wood, ebonite, metal or other materials, using hand or power tools: selects and marks materials, saws out, drills, carves, shapes and finishes parts of instrument; glues or screws parts together; applies stain and several coats of varnish; attaches strings, pegs and other fittings; tests instrument and makes changes, if necessary, to improve tone. May repair instruments. May specialise in making a particular type of instrument, for example, violin, harp, or guitar. Excluded is Piano Maker (8-56.40).

8-56.20 Musical-Instrument Maker (Woodwind). Makes wind instruments, mainly of wood, using hand or power tools: selects and marks materials, saws out, drills, shapes and finishes parts of instrument; screws parts together; fits keys and other attachments into position; tests instrument and makes changes, if necessary, to improve tone. May make keys by cold forging, filing and polishing, and may repair instruments. May specialise in making a particular type of instrument, for example, clarinet, oboe or flute. Excluded are Accordion Maker (8-56.30) and Organ Maker (8-56.35).

8-56.25 Musical-Instrument Maker (Metal, Wind). Makes metal wind instruments, using hand or power tools: saws metal tubes to specified lengths and bends
them to required shape; makes valves and pistons on lathe and makes keys by cold forging, filing and polishing; fits and solderers together pistons, valves, keys and other parts; tests instrument and makes changes, if necessary, to improve tone. May repair instruments. May specialise in making a particular type of instrument, for example, cornet, saxophone, or trombone. Excluded is Organ Maker (8-56.35).

8-56.30 Accordion Maker. Makes accordions of wood, paper, plastics, artificial leather, metal and other materials, using hand or power tools: builds box sections of plywood; glues and clamps joints; cuts slots in each end for keys; makes bellows of plastics or of paper covered with artificial leather; sets reeds in holding blocks and checks tuning with fork; glues plastic strips on box ends and keys and glues bellows to end of each case; trims material with knife; finishes accordion with lacquer or other decorative or protective covering. May repair accordions.

8-56.35 Organ Maker. Makes the instrumental parts of organs of wood, metal, leather and other materials, using hand or power tools: makes parts for organ action; bolts down, couples up and rivets together key-boxes, drill stops and other parts; makes organ pipes of wood or casts sheets of various metals and forms them into pipes. May insert mechanical or electrical mechanisms, erect organs in churches, cinemas and other buildings, tune and repair organs. May specialise in one or more operations, such as making action parts or organ pipes, and be designated accordingly.

8-56.40 Piano Maker. Makes instrumental parts of pianos of wood, felt, wire and other materials, using hand or power tools; makes dampers, cheeks, hammers and other parts for the piano action; joins them together and fits them in position; adjusts action by loosening or tightening the setting of the hammers and by bending spring wire in hammer butts with fingers; makes and assembles piano keys; assembles and mounts sound board on back panel of piano; cuts piano strings to required length and attaches them to rest pins in frame. May tune and repair pianos. May specialise in one or more operations, such as making action parts, keys or sound boards, and be designated accordingly.

8-56.45 Tuner (Organ). Tests and adjusts organ pipes to produce correct tones and keeps playing mechanisms in good condition: strikes tuning fork and compares tune with that of selected pipe; adjusts distance between lips of pipe until tone coincides with that of tuning fork; adjusts other pipes, comparing their tones by ear with that of the "A" string already adjusted. May replace broken strings and make repairs.

8-56.50 Tuner (Piano). Tests and adjusts pianos to produce correct tone: strikes tuning fork and compares tone with that of the "A" string of the piano; tightens or loosens the string by turning the string pin until tone coincides with that of tuning fork; adjusts other strings, comparing their tones by ear with that of the "A" string already adjusted. May replace broken strings and make repairs.

8-56.90 Makers of Musical Instruments and Related Workers, Other. This group includes makers of musical instruments and related workers not elsewhere classified, for example, those making drums, xylophones and castanets; tuning musical instruments other than organs and pianos.

8-57 STONE CUTTERS AND CARVERS

Workers in this unit group cut, shape and finish granite, limestone, marble, sandstone, slate and other stones for building, ornamental, monumental and other purposes. Their functions include selecting blocks of granite, marble and other stone according to order specifications; making patterns and marking shapes on stone for subsequent sawing, planing, drilling, cutting and dressing operations; cutting and shaping building and monumental stone from rough blocks and slabs of granite, marble and freestone, using pneumatic and hand tools; sawing large, rough blocks of building and monumental limestone, marble, granite, sandstone and soapstone into slabs and smaller blocks with machine saw; shaping and smoothing surfaces of blocks and slabs of stone on a stone planer; smoothing rough sawed surfaces of stone blocks and slabs on a grinding machine preparatory to polishing; polishing surfaces of blocks and slabs of stone, such as marble and granite, to a lustrous finish by machine; polishing curved and irregular surfaces of blocks and slabs of stone, such as marble and granite, to a lustrous finish by hand; cutting and turning stone blocks into columns, pillars and other cylindrical shapes, and polishing such shapes to a lustrous finish on a lathe; drilling holes in finished slabs and blocks of building stones for insertion of wires and rods in mounting and fastening them in place; carving figures and designs in relief on blocks and slabs of stone with pneumatic and hand tools; cutting incised or raised numbers or letters on stones with pneumatic and hand tools; carving out simple designs on blocks of stones used for monuments, memorials and decorative facings on buildings, and setting stones in the erection of monuments and memorials; performing various other tasks related to the foregoing. Excluded from this unit group are Sculptor, Creative (0-91.35); Stone Setter (7-91.40); Miners and Quarrymen (unit group 5-01); Engraver (Lithographic Stone) (8-04.15).

8-57.15 Grader (Stone). Selects blocks of granite, marble or other stone according to order specifications; studies order specifications; examines stock in yard and selects blocks, making choice through knowledge of colour and quality of standard grading samples; orders stone from quarry if stone ordered is not in stock; makes preliminary marking on blocks to guide cutting.

8-57.20 Stonework Layout Man. Makes patterns and marks shapes on stone for subsequent sawing, planing, drilling and other dressing and cutting opera-
tions: marks off pattern on sheet metal according to specifications; cuts pattern into sections and marks these for identification; measures blocks and marks them for most economical cut, using rule, straightedge and crayon; lays pattern on stone, centres it, and traces outline on surface. May design layout and cut stencils to be applied to the face of monumental stones preparatory to sandblasting.

8-57.25 Stone Cutter, Yard. Cuts and shapes building and monumental stone from rough blocks or slabs of granite, marble, and freestone, using pneumatic and hand tools: places stone in working position or directs placing; marks off dimensional lines for cutting according to specifications; cuts block to size and shape, drilling, chipping, splitting and chiselling stone with pneumatic and hand tools; checks size and shape frequently. May cut decorative designs in stone surface. May drill holes in stone which are used to fasten and mount it in place. May be designated according to type of work performed or kind of stone cut and shaped.

8-57.30 Sawyer (Stone). Saws large, rough blocks of building or monumental limestone, marble, granite, sandstone or soapstone into slabs or smaller blocks with machine saw: directs placing of block on saw truck or carriage; aligns, levels and fixes stone in cutting position with wedges; turns on faucet to direct stream of water to blade during cutting; starts saw and guides blade into stone (or truck with stone under blade); reverses forward motion of blade or truck until cut is completed; stops saw and turns off faucet; directs removal of stone from saw truck or carriage; changes and adjusts saw blades as necessary. May specialise in operating a particular type of stone-cutting saw, such as circular saw, gang saw, rip saw, or wire saw, and be designated accordingly.

8-57.35 Planer Operator, Stone. Shapes and smooths surfaces of blocks or slabs of stone on stone planer: directs mounting of block or slab on planer table; selects cutting tool and fixes it in tool-holder above stone; marks off dimensional cutting lines on stone; cuts off roughly large sections of excess stone with hammer and chisel; starts machine which moves table and stone under cutting tool, and adjusts tool-holder to proper depth of cut; continues planing process until block or slab is cut to required dimensions; directs removal of stone from table. May smooth edges of stone with a file. May sharpen and shape cutting edges of tools.

8-57.40 Grinder (Stone). Smooths rough-sawn surfaces of stone blocks or slabs on a grinding machine preparatory to polishing: directs placing and fixing of block or slab on holding table; mounts coarse-grade abrasive wheel on machine shaft; starts machine and turns on water which flows over stone; guides grinding wheel over block or slab until surface is smooth; replaces coarse-grade with fine-grade wheel and grinds surface to smoother finish; washes surface with water and directs removal of block or slab.

8-57.45 Polisher (Stone), Machine. Polishes surfaces of blocks or slabs of stone, such as marble or granite, to lustrous finish by machine: directs placing and fixing of block or slab on polishing lathe; mounts fine grade abrasive wheel on machine shaft; guides grinding wheel over block or slab surface until very smooth surface is obtained; washes surface to remove abrasives; mounts buffing wheel on machine shaft and polishes surface to a high lustre by buffing it with polishing powder. May select coloured wax and melt it into cracks or flaws on marble surface before buffing. May polish curved and irregular surfaces by hand. May specialise in polishing a particular kind of stone, such as marble or granite, and be designated accordingly.

8-57.50 Polisher (Stone), Hand. Polishes curved or irregular surfaces of blocks or slabs of stone, such as marble or granite, to a lustrous finish by hand: directs placing of block or slab on floor bench; rubs surface evenly to a smooth finish with blocks of different grades and kinds of abrasive, such as pumice or emery; frequently wets surface of stone to facilitate polishing process; washes surface to remove abrasives; polishes to a lustrous finish with felt and polishing powder or very fine hone. May select coloured wax and melt it into cracks or flaws on marble surface before giving final polish. May use portable polishing machine. May specialise in polishing a particular kind of stone, such as marble or granite, and be designated accordingly.

8-57.55 Lathe Operator (Stone Cutting). Cuts or turns stone blocks into columns, pillars or other cylindrical shapes on stone-cutting lathe: directs mounting of block between centres of lathe, which support and rotate the stone during cutting; knocks off corners of block with hammer; mounts and adjusts roughing tool or grinding wheel on carriage; starts machine which causes stone to rotate; opens water valve to supply cooling water for roughing tool or grinding wheel and moves carriage against and along rotating stone; replaces roughing or grinding tools with finishing tools; measures diameter of stone frequently for size with calipers. May use special tools to cut designs. May sharpen tools.

8-57.60 Lathe Operator (Stone Polishing). Polishes the rough surface of turned columns, pillars or other cylindrical shapes of stone such as marble or granite to a smooth, lustrous finish on polishing lathe: directs mounting of turned stone between centres of lathe, which support and rotate the stone during polishing; covers top of stone with shot or other abrasive; fixes plates over shot so that they keep shot on top of stone; starts machine which causes stone to rotate and moves plates along length of stone to finish surface evenly; measures diameter of stone frequently for size with calipers; stops machine and repeats process with emery dust and thin polishing powder; buffs surface to a highly polished finish with felt and paste of rouge or putty; directs removal of stone from lathe. May use high-speed honing wheel to finish surface prior to buffing.

8-57.65 Driller, Stone. Drills holes in finished slabs and blocks of building stones for insertion of wires or rods for mounting and fastening purposes: locates and marks off centre of holes; selects suitably sized bit and fixes it in electric or compressed-air drill; drills holes in stone. May sharpen drilling bits.

8-57.70 Stone Carver, Hand. Carves figures or designs in relief on blocks or slabs of stone with pneumatic and hand tools: lays out figure or design on stone surface by freehand sketching, with drawing instruments, by means of tracing paper or by taking measurements from model; carves work roughly along outline with pneumatic hammer and cutting chisels of various shapes; carves work to final shape with smaller pneumatic hammer and finishing chisels or with mallet and hand chisels; checks work frequently against specifications or...
model; finishes surface with a rubbing stone. May carve numbers and letters and create own designs. Excluded is Sculptor, Creative (0-91.35).

8-57.75 Stone Letter Cutter, Hand. Cuts incised or raised numbers or letters on stones with pneumatic and hand tools; places or directs placing of stone in working position; pastes paper bearing the letters, or traces pattern of letters, on stone surface; outlines tracing in stone with small pneumatic hammer and chisel; roughs out incised tracing or cuts away background of raised tracing; shapes and finishes letters to exact outline, using small chisels and mallet. May paint or gild incised lettering or fill with lead by hammering. May sharpen chisels.

8-57.80 Monument Carver-Setter. Carves out simple designs on blocks of stones used for monuments, memorials or decorative facings on buildings, and sets stones in the erection of monuments and memorials: marks off designs on stone surface with drafting instruments and by means of pattern or tracing paper; chisels narrow groove along lines of marking and cuts unwanted stone away roughly to desired depth, using pneumatic and hand tools; levels and smooths new surface; carves design to final shape and smoothness with finishing tools; sets stone in the erection of monuments and memorials, aligning and levelling stone, and finishing joints, using mortar and trowel. May cut letters on stones. Excluded are Sculptor, Creative (0-91.35), and Stone Setter (7-91.40).

8-57.90 Stone Cutters and Carvers, Other. This group includes stone cutters and carvers not elsewhere classified, for example, those cutting lettering and designs on stones by directing a blast of sand or shot against surfaces left exposed by a stencil on the stone face; operating machines with specially shaped abrasive wheels for cutting mouldings, grooves, panels and other decorative designs in stone blocks.

8-58 Paper-Product Makers

Workers in this unit group make or perform work related to the making of various paperboard, cardboard and paper products such as boxes, envelopes and bags. Their functions include making and decorating paper boxes by hand; setting and operating machines that glue paper on cardboard and cut it to desired length; cut and crease sheets of cardboard or paper board to form box blanks; fold or both fold and glue prepared box blanks to form boxes; cut, fold and glue paper for making envelopes and bags; form cellophane into bags; performing various other tasks related to the making of paper products. Excluded are those treating paper, for example, those making abrasive, photographic and stencil paper and tarring and asphalting paper and paper felt (unit group 8-59); and those corrugating, crepeing, laminating, glazing, sizing, oilsing and waxing paper (unit group 8-35).

8-58.20 Paper-Box Maker, Hand. Makes and decorates paper boxes by hand: cuts cardboard or paperboard blank to required shape; folds and glues pieces together to form box; presses pieces together and allows glue to dry; covers boxes by gluing protective or decorative paper. May affix paper lace, partitions or hinges on box and use stapling machine to fasten parts together. May impregnate box by dipping it in melted wax.

8-58.25 Lining-Machine Operator, Cardboard. Sets and operates machine that glues paper to cardboard and cuts it to desired length: regulates distance between feeding and gluing rollers and sets sheets according to length of board to be cut; fills glue reservoir of machine; threads paper from roll through guide and gluing rollers of machine; regulates temperature of heated rollers and starts machine; feeds cardboard blanks into machine between rollers; examines boards to ensure that they have been lined and cut properly and makes necessary adjustments to machine. May mix glue solution.

8-58.30 Cutting-and-Creasing-Press Operator, Paper-Box Making. Sets and operates machine that cuts and creases sheets of cardboard or paper board to form box blanks: sets dies in machine and performs other preparatory tasks according to type of machine; starts machine and feeds sheets into press; folds or bends cut and creased sheets periodically to determine conformity to specifications and makes necessary adjustments to machine. May set and operate machine which is also equipped for printing information or decoration on box blanks.

8-58.35 Paper-Box Maker, Machine. Sets and operates machine that folds, or both folds and glues, prepared box blanks to form boxes: adjusts feeding devices according to size of sample box blank; fills glue reservoir and regulates flow of glue; sets bending and folding mechanism and counting device; starts machine and feeds, or supervises feeding of, blanks into machine; sees that operation is proceeding correctly and makes necessary adjustments to machine.


8-58.45 Cellophane-Bag Maker, Machine. Sets and operates machine that forms cellophane into bags: sets into machine a metal form on which the bag is shaped; loads roll of cellophane on spindle of machine; threads cellophane through folding, cutting and gluing devices; adjusts machine to produce bags of specified size; starts machine, sees that operation is proceeding correctly and makes necessary adjustments. May set and operate machine also equipped for printing information and decorations on bags.

8-58.90 Paper-Product Makers, Other. This group includes paper-product makers not elsewhere classified, for example, those gluing decorative and protective paper to surfaces of completed boxes; making envelopes by hand or from die-cut blanks; making paper drinking cups; making miscellaneous paper novelties such as hats, place cards and party favours; making travelling cases with specially treated cardboard; performing auxiliary operations at machines making paper and paper products,
Workers in this unit group are craftsmen and production-process workers not specifically allocated to one of the unit groups 7-01 to 8-58. Included are miscellaneous craftsmen and production-process workers not elsewhere classified who perform functions requiring specialised training and experience in the application of particular techniques, or the use of particular tools and materials, such as those making rubber stamps, wigs or photographic film and performing various other specialised tasks. Also included are process workers not elsewhere classified whose functions require little or no previous experience or specialised training, who perform relatively simple tasks, frequently of a repetitive nature, calling mainly for manual dexterity and not requiring any significant knowledge of the qualities of the materials used, or the work processes and procedures involved in the complete cycle of production of the goods concerned, who are generally associated with, or working under the supervision of, craftsmen or other specialised workers in all kinds of production processes, and who carry out simple functions such as filling cushions and mattresses; riveting, clipping or gluing fabrics together; sorting garments for passing to tailors and sewers; operating a machine to stamp, cut or slice bread in a bakery or to cut compressed oil-cake (cattle feed) into blocks in a grain-milling establishment; feeding logs and wood blocks into a machine for reduction to chips for further processing in pulp making; washing, peeling and cutting fruit and vegetables in a cannery; and performing other simple processing functions in various industrial processes.

8-59.15 Abrasive-Coated Cloth and Paper Maker. Makes abrasive and polishing cloth or paper with machine: feeds paper or cloth into automatic machine which coats one side with adhesive material and abrasive grit and prints name, grade and other data on reverse side; observes operation of machine, making necessary adjustments and keeping it supplied with adhesive and abrasive materials; feeds gritted cloth or paper to drying oven; rolls up the dried abrasive cloth or paper with machine.

8-59.20 Artificial-Stone Maker. Performs one or more hand or machine tasks in the making of artificial stone which simulates natural stone: mixes materials, such as water, cement, gravel, granite chippings, slag, coke, breeze or stone dust in required proportions by hand or machine; fills moulds with mixture, allows mixture to harden and removes it from mould; finishes cast stone by smoothing surface with sandstone, polishing with emery and buffing wheel, and bevelling corners and edges. May be designated according to work performed.

8-59.25 Artificial-Tooth Maker. Performs one or more tasks in the making of artificial teeth: crushes and grinds feldspar to a fine powder in a machine, and mixes it with gum and other ingredients according to formulae; forms artificial tooth in brass mould and vitrifies moulded tooth in small electrical furnace; inverts mould and flux in slot of tooth and places it in soldering furnace; after soldering, tests security of pin by means of weights; examines finished tooth for cracks, flaws and specification requirements. May be designated according to work performed. Excluded are Plastics-Product Makers (unit group 8-53) and Maker and Repairman, Dental Prosthesis (7-41.45).

8-59.30 Broom Maker. Selects and prepares materials, such as broom corn, bass, whisker or fibre, and fastens them to broom handles by hand or machine: grades and mixes material according to type of broom made and cleans and otherwise prepares it; arranges material around end of handle in a broad flat shape and fastens it by winding and stapling wire, leather strips or metal strips around material and handle; trims broom material to uniform length. May be designated according to type of broom made or material used.

8-59.35 Brush Maker, Hand. Selects and prepares brush materials, such as bristles, fibre, nylon or wire, and sets them in brush handle or base: grades and mixes filling material according to type of brush made and cleans and otherwise prepares it; sorts and arranges material in tufts; inserts them in prepared holes and secures them with glue, cement, pitch or wire; trims brush material to uniform length. May be designated according to type of brush made or material used.

8-59.40 Button Maker. Performs one or more hand or machine tasks in the making of buttons: cuts button blanks from various materials, such as composition or vegetable material, ivory or pearl, by hand or with automatic cutting machine; takes off rough edges, levels back and front of button blanks and reduces them to uniform thickness, using automatic machines; makes holes in buttons by means of automatic drilling machine; cleans buttons prior to polishing by dipping them in chemicals and wiping them dry; polishes buttons by means of revolving buffer; examines finished buttons and rejects faulty ones. May be designated according to job performed.

8-59.45 Candle Maker. Performs one or more hand or machine tasks in making candles: forms candles by dipping or moulding; cuts wicks, ejects candles from moulds.

Candle Dipper.Suspends candle wicks from metal frame and manipulates pulley system by hand to dip wicks into molten wax, paraffin or similar material many times as may be necessary to build up candles to proper dimensions.

Candle Moulder. Places wicks in moulds; places molten wax, paraffin or similar material around wicks into moulds; allows poured material to harden in moulds, admitting cold water to jackets surrounding moulds to aid hardening process.

8-59.55 Doll Maker. Performs one or more hand or machine tasks in the making of moulded or stuffed toys: moulds doll parts from plastic material by operating a press, or stuffs pre-cut parts with operating a press, or stuffs pre-cut parts with cotton, excelsior or other material.
them shape; fastens legs and arms on to torso; affixes artificial eyes in head; secures head to shoulders by means of a shank collar so that head may be turned at will; dresses dolls by hand with under and outer garments, fastening them with hooks, buttons or ribbons. May be designated according to type of work performed.

8-59.60 Linoleum Maker. Performs one or more hand or machine tasks in the making of linoleum: mixes materials such as oil, resin and ground cork in a mixing machine to produce linoleum cement; operates calender machine which spreads linoleum cement on burlap or hessian; stores coated cloth in heated rooms where it is left for several days to dry and harden; operates a rotary machine which prints patterns on linoleum by means of engraved or cut hollow rollers fed with various oil colours; passes linoleum through machine which trims edges and cuts it off to desired length; examines finished linoleum for defects. May be designated according to job performed.

8-59.65 Match Maker. Performs one or more hand or machine tasks in the making of matches: operates a grinding and mixing mill to make composition for heading match splints, according to formula; feeds small blocks of wood into automatic machine that cuts them into sizes suitable for matches; feeds and operates machine which fixes match splints in perforated wooden frame; fills heated tray with match-head composition; holds frame with match-head composition; fastens them with hooks, buttons or ribbons. May be designated according to type of work performed.

8-59.70 Pencil Maker. Performs one or more hand or machine tasks in the making of wood-encased pencils: weights and mixes materials, such as graphite, chalk, colouring pigment or dyestuff, and water according to formulae, and passes mixture through rollers of a grinding or milling machine; places milled graphite or clay mixture in cylinder of hydraulic extrusion press and starts machine which presses mixture through extrusion die, thus forming pencil lead; stores extruded leads in drying chambers and cuts dried leads to pencil lengths, using gauge and hand lever knife; packs cut leads in core and winds specified number of coils around it; stops machine, cuts wire and removes coils. May specialise in winding particular types of coils, such as transformer, or stator or rotor coils, and be designated accordingly.

8-59.80 Rubber-Stamp Maker. Makes rubber stamps to order and mounts them for use: composes metal type to match copy, locks type in chase and mounts chase on bed of vulcaniser; mixes french chalk, china clay, plaster of Paris, dextrine and water and places mixture in metal moulding plate; reverses moulding plate over chase to receive type impression; dries compound in oven; covers moulded impression with cut-to-size piece of uncured rubber; clamps rubber-covered mould under steam chamber of vulcaniser until rubber is cured; removes cured rubber from mould, trims away excess rubber, and mounts stamp on wooden or metal backing with rubber cement.

8-59.83 Coil Winder, Machine. Winds light-gauge electrical wire on to cores by machine: secures core to revolving mechanism of machine; pulls wire from feeder spool and attaches end to core; starts machine to revolve core and winds specified number of coils around it; stops machine, cuts wire and removes coils. May specialise in winding particular types of coils, such as heavy-duty transformer coils or stator or rotor coils for large generators, and be designated accordingly.

8-59.86 Coil Winder, Hand. Winds heavy-gauge electrical wire on to cores by hand: secures core in rotary holding device; pulls wire from feeder spool and attaches end to core; rotates holding device to wind specified number of turns on core; cuts wire and removes coil. May specialise in winding particular types of coils, such as heavy-duty transformer coils or stator or rotor coils for large generators, and be designated accordingly.

8-59.90 Miscellaneous Craftsmen and Production-Process Workers Not Elsewhere Classified, Other. This group includes miscellaneous craftsmen and production-process workers not elsewhere classified in unit group 8-59, for example, those making footwear from raffia, straw or similar material; operating machine that automatically drills holes and inserts bristles in brushes; cleaning and mixing bristles used in manufacture of brushes by operating mixing machine; stitching brooms by machine so they will retain shape; making fibre, bottle and similar brushes by placing bristles or similar material between parallel wires and twisting wires by hand or machine; tending automatic machine in which milled chalk or clay mixture is compressed in metal moulds to form crayons or coloured chalk pieces; operating machine which cuts square sections of natural cork to produce corks of required size and taper; cleaning, splitting, twisting, stretching, polishing and otherwise treating gut, by hand or machine, in the production of gut strings; making novelty buttons from strips of leather or other pliable material by hand knotting and weaving; making linen buttons with machine; making wooden or metal toys, following blueprints and other specifications, using hand and machine tools to cut, fit and assemble toys; making wigs according to specifications, fastening strands of hair to cloth base; operating machines for coating, backing and cutting photographic plates; treating and coating paper or paper felt with tar or asphalt; waterproofing textiles with oil. Excluded are workers performing simple routine tasks, such as those classified as Labourers Not Elsewhere Classified (minor group 8-9).
8-6 Packers, Labellers and Related Workers

Workers in this minor group pack, wrap and secure materials and products for transportation or storage, affix identifying or other information on products, materials and containers and perform related tasks.

8-61 Packers, Labellers and Related Workers

Workers in this unit group pack, wrap and secure materials and products for transportation or storage and affix identifying or other information on products, materials and containers. Their functions include operating or setting up and operating machines that fill or cap and seal bags, bottles, cans, cartons, tubes, sacks or other containers, wrap and seal goods or articles, pack cans or packaged articles into containers or glue labels, label wrappers or revenue stamps to articles, packages, containers, or to unassembled parts of boxes; packing expensive fragile or perishable materials or products by hand; performing other tasks concerned with packing, wrapping and labelling.

8-61.20 Container-Filling-Machine Operator. Operates, or sets up and operates, a machine that fills bags, bottles, cans, cartons, tubes, sacks or other containers with various types of materials: fills tank or hopper with material and adjusts filler guides to size of container or installs filler guides of correct size; starts machine and places container under filling device or on conveyor; trips lever to release specific quantity of material into container or observes automatic filling of container; adjusts filler guides as required or jogs them to facilitate flow of material; stops machine to clear jams and remove broken, defective or partially filled containers; cleans and lubricates machine and makes minor repairs. May weigh filled containers to check accuracy of machine. May operate filling machine equipped with capping or sealing mechanism. May keep records of containers filled. May be designated according to material packed or type of container filled.

8-61.30 Capping- and Sealing-Machine Operator. Operates, or sets up and operates, a machine that caps and seals filled bottles, cans, jars or other containers: adjusts machine to accommodate type and size of containers to be capped or sealed, using hand tools. When using semi-automatic capping machine places cap on container and container under ram or on feeding mechanism; starts machine, causing ram to descend and clamp cap to containers. When using automatic seaming machine loads hopper of machine with metal parts for sealing end of can; starts machine and observes its operation as filled cans enter machine and ends and cans are joined and seamed together; stops machine when jams occur and removes broken or defective containers. When using a vacuum-type machine puts top on container and starts machine and vacuum pump to exhaust air from container; places container in machine; reads gauge and adjusts valve to obtain specified pressure; seals top in place. Inspects closed containers visually and by feeling with fingers. Oils machine and makes minor repairs. May pack material into containers prior to sealing.

8-61.40 Packer, Hand. Packs materials or products in cardboard or wooden boxes, crates, cartons, kegs or other containers by hand for shipment or storage: wraps paper, excelsior, corrugated cardboard, cloth or other material around article; folds, stacks or arranges small articles in container or secures large articles to wood base, using bolts, metal straps or other means, and assembles and nails together pre-cut pieces around article. May clean surfaces of articles prior to packing, brush heavy oil on metal articles prior to wrapping to prevent rust, seal containers with glue or gummed tape and reinforce them with wire or metal bands, and mark or label container. May be designated according to type of container used or article packed.

8-61.50 Wrapping-Machine Operator. Operates, or sets up and operates, a machine that wraps goods or articles in waxed paper, cellophane, foil or other material: places roll of wrapping material on spindle, adjusts feed guides to size of article to be wrapped, and threads end through guide rollers into wrapping mechanism; pours sealing material into machine reservoir or turns on heating element that fuses wrapping material; starts machine and places articles in feed hopper or on conveyor; observes operation of machine and makes adjustments such as regulating rollers; cleans machine and makes minor repairs. May operate wrapping machine that also affixes revenue stamps or labels. May be designated according to article wrapped, kind of wrapping material used or machine operated.

8-61.60 Packer, Machine. Operates, or sets up and operates, a machine that packs cans or packaged articles into containers for transportation or storage: adjusts guides according to size of container and starts machine; places articles in hopper or on conveyor that feeds machine and feeds empty containers into machine; observes operation of machine, making adjustments as necessary. May feed filled containers into sealing machine.

8-61.70 Labeller, Machine. Operates, or sets up and operates, an automatic machine that glues labels, label wrappers or revenue stamps to articles, packages, containers, or to unassembled parts of boxes: adjusts feed hoppers and guides according to size and shape of label and object to be labelled; changes applicator plate according to size of label; regulates feeding mechanism and pressure of applicator rollers; fills glue reservoir and loads labels and containers or container parts into machine, or directs other workers to load machine; starts machine, observes operation and makes adjustments if necessary; removes jammed objects or twisted labels from machine. May be designated according to article or container labelled.
8-7 Stationary-Engine and Excavating and Lifting Equipment Operators and Related Workers

Workers in this minor group operate various types of stationary engines and excavating, lifting and moving equipment, install wire and rope cable systems, and perform related tasks. Their functions include operating, or operating and servicing, various types of stationary engines, air-conditioning, ventilating and refrigeration plants and similar equipment; operating boilers; erecting tackle for lifting and hauling; installing cables, ropes and wires in ships and aircraft, and on construction sites and other locations; operating excavating, grading and other construction machinery; operating trucks, conveyor belts and other equipment for moving materials in warehouses, storage yards, factories or other establishments; lubricating the moving parts of stationary engines or machinery (except on ships); and performing a variety of related tasks.

8-71 OPERATORS OF STATIONARY ENGINES AND RELATED EQUIPMENT AND BOILER FIREFRMS

Workers in this unit group operate, or operate and service, various types of stationary engines, heating, ventilating and refrigeration plant and similar equipment. Their functions include operating and servicing a stationary internal-combustion engine or reciprocating steam engine that provides motive power for other equipment; operating a steam- or water-powered turbine to drive generators for producing electricity; operating and servicing a compressor which generates and supplies compressed air to pneumatic tools, hoists or other equipment; operating and servicing one or more power-driven machines pumping liquids or other fluid material; operating refrigeration systems for preserving food, providing cooling media for industrial processes, cooling buildings or other purposes; controlling and servicing electric motors, fans and similar equipment in heating or ventilating systems; tending one or more boilers which produce steam for heat or power; operating other types of stationary engines and similar equipment. Excluded are Engine-Room Ratings, Firemen and Oilers, Ship (unit group 6-12).

8-71.20 Stationary-Engine Operator (Internal-Combustion or Reciprocating Steam). Operates, or operates and services, a stationary internal-combustion or reciprocating steam engine that provides motive power for other equipment: checks and adjusts the controls and starts engine; observes gauges and meters to ascertain running order of engine and makes further adjustments if necessary; maintains supply of fuel, lubricates working parts, tightens loose parts and performs other servicing tasks to keep engine in good running order. May make minor repairs. May be designated according to type of machine operated (such as diesel, petrol, gas or reciprocating steam engine).

8-71.30 Turbine Operator (Electricity Production). Operates a steam- or water-powered turbine which drives generators for producing electricity: starts turbine or directs helpers to do so; runs turbine at low speed for predetermined length of time and notifies switchboard operator when ready to run turbine at full working speed; increases speed of turbine and ensures that automatic regulator maintains correct working speed; notifies switchboard operator that turbine can be synchronized with other power units in plant; observes gauges and meters to see whether turbine can handle load and is working efficiently; alters power output of turbine and makes other adjustments as necessary. May keep records of instrument readings.

8-71.40 Air-Compressor Operator. Operates, or operates and services, a compressor which generates and supplies compressed air to pneumatic tools, hoists or other equipment: starts power unit and builds up required pressure; manipulates controls or sets automatic regulator to maintain correct supply of air to equipment; observes pressure, temperature and other gauges and makes further adjustments to controls as necessary; cleans and oils equipment, tightens loose parts and performs other servicing tasks to keep the compressor in good running order. May connect pipelines from compressor to equipment and make minor repairs.

8-71.50 Pump Operator. Operates, or operates and services, one or more power-driven machines for pumping liquids or other fluid material: starts pump, observes its operation and adjusts controls to maintain correct rate of pumping; stops pump when required quantity of fluid has been moved; cleans, oils and greases pump, tightens loose parts and performs other servicing tasks to keep pump in good running order. May do minor repairs. May connect pipelines from pump to vessel to be filled or emptied. May be designated according to type of pump operated or to type of material pumped.
8-71.60 Refrigeration System Operator. Operates a refrigeration system for preserving foods, providing cooling media for industrial processes, cooling buildings or for other purposes: starts and stops, as required, electric motors, pumps, compressors, coolers or other equipment related to refrigeration system; examines thermometers, pressure gauges and other instruments to ascertain working condition of plant; operates switches, rheostats and other controls to maintain the desired temperature; cleans and resets generator brushes, replaces moving parts; cleans and replaces worn thermostats and electric-motor brushes; tightens loose parts and performs other servicing tasks to keep system in good working order. May control and service air-cooling and air-purification equipment.

8-71.70 Heating- and Ventilating-Equipment Operator. Controls, or controls and services, electric motors, fans and similar equipment in heating or ventilating systems; inspects fans, electric motors and other parts of system; regulates speed of fans and adjusts dampers in heating or ventilating ducts as required; lubricates moving parts; cleans and replaces worn thermostats and electric-motor brushes; tightens loose parts and performs other servicing tasks to keep system in good working order. May control and service air-cooling and air-purification equipment.

8-71.80 Fireman (Steam Boiler). Tends one or more boilers which produce steam for heat or power: manipulates valves to maintain required level of water in boiler; shovels fuel into firebox and pokes fire to obtain maximum heat or sets device which feeds gas, oil or other fuel automatically; checks temperature and pressure of steam by reading gauges and feeds fuel or adjusts stoking mechanism accordingly. May remove ashes from ash pans, clean boilers and flues, and condition boiler water by adding chemicals. Excluded are Fireman, Coal (Ship) (6-12.20), Fireman, Oil (Ship) (6-12.30), and Fireman (Railway Engine, Steam) (6-31.20).

8-71.90 Operators of Stationary Engines and Related Equipment and Boiler Firemen, Other. This group includes operators of stationary engines and related equipment and boiler firemen not elsewhere classified, for example, those operating an electric motor controlling an overhead cable railroad; operating a machine for producing hydraulic power; tending air humidifying equipment; tending boilers in hot water systems.

8-72 CRANE AND HOIST OPERATORS

Workers in this unit group operate various types of cranes and other lifting equipment. Their functions include operating a bridge- or gantry-type crane in which the lifting equipment can be moved along an overhead metal bridge which runs on rails; operating a crane (other than a mobile crane) equipped with a movable jib (boom); operating a crane mounted on wheels or caterpillar tracks which can be driven under its own power in any direction; operating a hoisting or lifting device which consists essentially of a cable and hand- or power-driven drum; operating hoisting equipment, usually consisting of a power-controlled cage or platform, to raise or lower materials or men employed on construction work; operating power-driven equipment to raise or lower cages and skips containing materials or men in a mine; controlling the opening and closing of a bridge for the passage of road or water traffic; operating other types of lifting equipment. Excluded are Material-Handling-Equipment Operators (unit group 8-75).

8-72.20 Crane Operator (Bridge or Gantry). Operates a power-driven crane in which the lifting equipment can be moved along an overhead metal bridge which runs on rails: switches on power supply; operates controls to move bridge along rails and lifting equipment along bridge in readiness for moving load; lowers lifting tackle for load to be attached; raises, moves and lowers load in desired position; frequently operates crane in accordance with signals from workers on ground. May be designated according to type of work performed or type of materials moved.

8-72.30 Crane Operator (Jib, Other than Mobile Crane). Operates a crane (other than a mobile crane) equipped with a movable jib (boom): checks jib and cables for security and serviceability; starts crane motor; operates controls to swing, raise or lower jib and to place lifting tackle so that load can be attached; raises, moves and lowers load to desired position; frequently operates crane in accordance with signals from other workers. May operate a crane with a mechanical grab attached to lifting tackle.

8-72.40 Mobile-Crane Operator. Operates a crane mounted on wheels or caterpillar tracks which can be driven under its own power in any direction: starts engine and drives crane to work site; starts crane motor and manipulates controls to position crane, crane jib (boom) and lifting tackle so that load can be attached; raises, moves and lowers load to required position. May direct helper who drives crane into position. May operate a crane with a mechanical grab attached to lifting tackle. An operator of an adaptable crane used mainly for excavating, pile driving and similar tasks is classified under Operators of Earth-Moving and Other Construction Machinery Not Elsewhere Classified (unit group 8-74).

8-72.50 Winch Operator. Operates a hauling or lifting device which consists essentially of a cable and a hand- or power-driven drum: ensures that cable, winch drum and winch brake are in good working order; threads cable through pulley wheels and introduces additional pulley wheels in cable linkage if necessary; connects end of cable to object to be moved or directs helpers to do so; starts engine of winch or turns winch handle to raise or pull object into position, adjusting speed of pulling and applying brake as necessary. May control winch in accordance with signals by other workers. A member of a ship's crew operating a winch on a vessel afloat is classified with Engine-Room Ratings, Firemen and Oilers (Ships), Other (6-12.90).

8-72.60 Hoist Operator (Construction). Operates hoisting equipment, usually consisting of a power-controlled cage or platform, to raise or lower materials...
or men employed on construction work: ensures that cables and hoisting equipment are in good working order; loads or oversees the loading of cage, platform, or other lifting tackle connected to hoist, and starts motor; moves levers to raise or lower load to required point; moves lifting tackle to fresh position when unloading is complete. May raise and lower hoist in response to signals from other workers.

8-72.70 **Hoist Operator (Mine).** Operates power-driven equipment to raise or lower cages and skips, containing men or materials, in a mine: starts hoist motor; manipulates controls to raise or lower cage in response to bell or other signals given by worker at top of mine shaft or below the surface; stops hoist when dial indicator shows that cage has reached required level.

8-72.80 **Opening-Bridge Operator.** Controls the opening and closing of a bridge for the passage of road or water traffic: operates steam, electrical or other type of machinery to open or close bridge; operates light or semaphore signals to indicate whether bridge is open or closed; keeps bridge equipment in good working order. May make minor repairs.

8-72.90 **Crane and Hoist Operators, Other.** This group includes crane and hoist operators not elsewhere classified, for example, those operating cranes mounted on railway locomotives or on floating platforms.

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8-73 **Riggers and Cable Splicers.**

Workers in this unit group erect tackle for lifting and hauling, and install cables, ropes and wires in ships, aircraft, on construction sites and in other places. Their functions include setting up various types of lifting tackle and directing its use in moving machinery or other heavy objects about workshops, shipyards or other locations; setting up power-controlled cages, platforms and other lifting equipment for raising or lowering materials or men employed on constructional work; setting up cables and blocks for hauling felled timber; installing ropes, wires and cable fittings on ships; installing cable connections between cabins of aircraft and ailerons, rudders and fins; working as member of crew in erecting derricks used for drilling oil wells and equiping them with cables, hoisting and drilling equipment; working as member of gang in building up, fitting and erecting the wire cables used in the construction of suspension bridges; joining, repairing or fitting attachments to wire or hemp ropes or cables by splicing; erecting and installing cables, ropes and wires in other types of equipment. Excluded are **Linemen and Cable Jointers** (unit group 7-65) and **Metal-Plate and Structural-Metal Workers** (unit group 7-57).

8-73.10 **Rigger, Hoisting Equipment, General.** Sets up various types of lifting tackle and directs its use in moving machinery or other heavy objects about workshops, shipyards or other locations: examines object to be moved, estimates its weight and decides which type of lifting equipment is to be used; erects temporary derrick or jib, if necessary, and installs cables, pulleys and other tackle; selects or makes grappling equipment and attaches it to load; instructs operator of crane, winch or other source of power by hand signals to move load safely to desired position. May splice wire and hemp ropes in erecting, making or repairing equipment. Excluded is **Erector and Installer, Machinery (7-52.70).**

8-73.20 **Rigger, Hoisting Equipment (Construction).** Sets up power-controlled cages, platforms and other lifting equipment for raising or lowering materials and men employed on construction work: erects or fixes derrick, frame or jib, splicing and knotting wire and hemp ropes as required; selects and fits pulleys, cables and other lifting tackle; hangs working platforms and erects safety scaffolding; inspects operation and security of equipment and makes adjustments and alterations if required. May install power unit for lifting equipment. May operate equipment.

8-73.30 **Rigger (Logging).** Sets up cables and blocks for hauling felled timber: climbs tree selected as anchor for hauling equipment to ascertain best position for attachment of tackle; fastens block to tree with cables or chain; threads cable from hauling engine through block and through other pulleys in hauling linkage; secures anchor-tree by fastening guy ropes from tree to stumps or other objects on ground. May trim tree before attaching hauling tackle. Excluded is **High Climber, Logging (4-41.20).**

8-73.40 **Rigger (Ship).** Installs rope, wire and cable fittings on ships: lays out and cuts wire or rope for such parts as shrouds, braces, life lines, radio aerials, lifting gear and other rigging fitted to masts, spars and booms; splices cables and wires as required, using hand tools; nails, bolts or ties rigging into place; tests rigging and lifting gear for proper functioning and makes any necessary repairs or alterations. May install hatch and boat covers and other canvas equipment. A rigger working as member of ship's crew is classified in minor group 6-1.

8-73.50 **Rigger (Aircraft).** Installs cable connections between cabin controls of aircraft and ailerons, rudder and fins: connects one end of cable to control in cabin; threads cable through pulleys in wings and fuselage; adjusts tension of installed cables by tightening and loosening turn buckles; tests cables with tension meter; checks operation of controls and makes further adjustments to cable linkage, if necessary. May install cable pulleys in aircraft. May test and adjust cable linkage and controls after flight or aircraft.

8-73.60 **Rigger (Petroleum-Well Drilling).** Works as member of crew in erecting structures, used for drilling oil wells, and equipping them with cables, hoisting and drilling equipment; erects and installs working platform; splices cables; selects and places sheave blocks, tackle and cables; draws cables through sheave temporary derrick; fastens cables to fixed objects for anchorage. May assist in erecting and dismantling structures.
8-73.70 Wire Spinner and Cable Squeezer, Bridge Building. Works as member of gang building up, fitting and installing wire cables in the construction of suspension bridges: directs operator of machine which moves a sheave carrying a loop of wire across bridge (boom) equipped with endless chain of steel buckets anchoring point; places wire in proper relationship to other wires already carried across and fixes end of wire in tensioning clamp; applies tension to wire with block and tackle and secures it to adjoining wires when required tension is obtained; removes end of wire from tensioning clamp and shapes group of built-up wires with circular-jawed tongs to form a cable strand; repeats operation to build up the required number of strands; fits hydraulic clamp around strands and operates or directs the operation of clamp to squeeze strands into a cylindrical cable; binds end of cable with wire.

8-73.80 Splicer, Rope and Cable. Joins, repairs, or fits attachments to wire or hemp ropes or cables by splicing: cuts out parts of damaged cables; joins cables by opening up the ends and interweaving strands; fits cable around hooks, eyes or other attachments and splices end of cable back into itself; binds joints and ends of cables. May be designated according to type of cables spliced. Excluded is Jointer, Electric Cable (7-65.50).

8-73.90 Riggers and Cable Splicers, Other. This group includes riggers and cable splicers not elsewhere classified, for example, those erecting and installing cable systems for overhead, cable railways. Excluded are Linemen and Cable Jointers (unit group 7-65) and Metal-Plate and Structural-Metal Workers (unit group 7-57).

8-74 Operators of Earth-Moving and Other Construction Machinery Not Elsewhere Classified

Workers in this unit group operate excavating, grading and other construction machinery and are not elsewhere classified. Their functions include operating a power-driven machine, equipped with movable shovel, for excavating and moving earth, rock, sand, gravel, and other material and for clearing demolished sites; operating a power-driven machine, equipped with devices for digging trenches such as those for sewer, water, drainage, oil, and gas pipe-lines: starts engine and pulls levers to control movement of caterpillar treads to move machine into position; engages excavating mechanism and moves hand levers to start or stop digging equipment, and to raise or lower it for correct depth of trench; makes minor repairs to machine. May set up line along which machine is guided.

8-74.15 Excavating-Shovel Operator. Operates a power-driven machine equipped with movable shovel, for excavating and moving earth, rock, sand, gravel, and other material: shifts hand and foot levers to move shovel, fill it with material and swing it over conveyance or dumping location; pulls rope to allow bottom of shovel to open and release material; moves machine forward or backward to facilitate work; makes minor repairs to machine. May maintain power unit.

8-74.20 Trench-Digging-Machine Operator. Operates a power-driven machine equipped with devices for digging trenches such as those for sewer, water, drainage, oil, and gas pipe-lines: starts engine and pulls levers to control movement of caterpillar treads to move machine into position; engages excavating mechanism and moves hand levers to start or stop digging equipment, and to raise or lower it for correct depth of trench; makes minor repairs to machine. May set up line along which machine is guided.

8-74.25 Grab-Bucket Operator. Operates a power-driven machine equipped with hinge-type bucket attachment, for excavating and moving earth, rock or similar materials: moves machine under its own power to location of work; moves hand and foot levers to place jib (boom) with bucket directly above excavation point, drop open bucket into material, close and lift filled bucket, swing jib and place bucket over unloading point, open bucket and release material; makes minor repairs to machine.

8-74.30 Dragline Operator. Operates a power-driven machine equipped with a dragline bucket for excavating and moving earth, rock, gravel or similar materials: moves machine under its own power to location of work; moves hand and foot levers to place jib (boom) with bucket above excavation point, lower bucket on desired spot, drag it toward machine and fill it with material, place bucket over unloading point, tilt bucket and release material; makes minor repairs to machine.
8-74.35 Dredge Operator. Operates power-driven equipment mounted on a dredge: starts and stops engines for operating excavating equipment; watches tide gauge and adjusts excavating mechanism to keep work uniform; in operating ladder excavating equipment, manipulates levers and handwheels to raise or lower jib (boom) equipped with endless chain of steel buckets and observes contents of buckets to ascertain type of material being excavated; in operating hydraulic excavating equipment, pushes or pulls levers to raise or lower frame on which suction pipe and cutter head are mounted and to start and stop rotation of cutter head; observes vacuum and pressure gauges to determine whether sand or water is being raised. In operating dipper or hinged-bucket excavating equipment, operates hand and foot levers to raise or lower dipper or buckets into water, and to adjust position of jib for loading or unloading dipper or bucket. May change position of dredge by drawing in or letting out anchor cables. May make repairs to equipment. May be designated according to type of excavating equipment on dredge.

8-74.40 Pile-Driven Operator. Operates a power-driven machine equipped with pneumatic, steam or drop-hammer for driving wooden, concrete or steel piles into dry ground, or bottom of body of water: moves hand and foot levers to move machine into position for driving piles; hoists pile and lowers it into position for driving; manipulates controls to operate hammer; makes adjustment on hoisting engine, repairs and adjusts hammer, and assists in repairing and maintaining machine. May operate air compressor when using pneumatic power hammer.

8-74.45 Bulldozer Operator. Operates a mobile power-driven machine equipped with concave steel blade to move, distribute and level earth: starts motor and adjusts hand lever to regulate height of blade from ground; drives machine to push earth and operates levers to level and distribute it; lubricates, fuels and makes minor repairs to machine. May push or pull other equipment with bulldozer.

8-74.50 Road-Grader and Scraper Operator. Operates a power-driven machine equipped with steel blade or scoop blade which removes material from it: starts motor and adjusts hand lever to regulate height of blade or scoop; drives machine over centre of road, pushing ridges of earth to the edge for removal; tilts wheels of machine to resist lateral thrust on blade and prevent hubs from seizing on axles; makes minor adjustments and repairs to machine. May operate special types of road-grading and scraping machines, such as those equipped with scooplike bowl that scoops up earth and holds it until scoop is ready to be discharged or those equipped with wagon-like scraper that scrapes up earth and transports it to designated areas, and be designated accordingly.

8-74.55 Road-Roller Operator. Operates a power-driven roller to compact and smooth various layers of material used in making roads, pavements and similar works of construction: starts engine and makes minor repairs. May operate special types of road rollers, such as those equipped with a small wheel midway between front and back rollers which enables machine to roll surfaces to a more accurate plane, or those equipped with a scarifier to roughen or tear up surfaces, and be designated accordingly.

8-74.60 Paving-Machine Operator, Concrete. Operates a power-driven machine that mixes and dumps concrete on a roadway under construction or repair: starts motors, moves paving machine into position and sets mixing-drum rotating; lowers pan to receive batch (cement, sand and gravel); raises pan and empties batch into mixing drum; admits measured amount of water into mixing drum; opens discharge chute to deposit concrete in a bucket or conveyor from which it is dumped on roadway, where paving is completed by road gang; moves machine to facilitate dumping of concrete.

8-74.65 Concrete-Mixer Operator. Operates a mobile or transportable power-driven machine that mixes sand, gravel, dry cement and water to make concrete or cement mortar and deposit it at locations required: starts motor and rotation of mixing drum; lowers pan to receive batch (cement, sand and gravel); raises pan to empty batch into mixing drum; admits measured amount of water into drum; opens discharge chute to empty mixing-drum, cleans interior with water and removes hardened concrete with hammer and chisel. May estimate amount of water needed when automatic measuring tank is not provided.

8-74.70 Concrete-Mixing-Plant Operator. Operates power-driven central mixer plant that prepares batch and mixes concrete: starts power unit and rotation of mixing drum; opens hopper doors of gravel, sand and cement bins to allow these materials to flow into scale hoppers for weighing; opens scale hopper doors to allow weighed materials to pass into mixing-drum; opens valve allowing correct amount of water to flow from measuring tank into mixing-drum; opens discharge chute to empty concrete from drum into bucket, conveyor or other carrier; controls batch timer and records number of batches; cleans mixer. May repair and maintain mixer and power unit. May supervise helpers.

8-74.90 Operators of Earth-Moving and Other Construction Machinery Not Elsewhere Classified, Other. This group includes operators of earth-moving and other construction machinery not elsewhere classified, for example, those operating earth-boring machines to dig holes for poles or posts; operating excavating-draglines between poles or posts; operating excavating-draglines or excavating machines which spread and level asphalt or bituminous surfaces on roadway.

8-75 MATERIAL-HANDLING-EQUIPMENT OPERATORS

Workers in this unit group operate trucks, conveyor belts and similar equipment for moving materials in warehouses, storage yards, factories or other establishments. Their functions include operating a small power-driven truck equipped with a lifting platform; operating a truck equipped with a scoop attachment to move loose materials such as sand or fertilisers;
driving a motorised vehicle that carries loads of timber beneath its elevated frame for short hauls; operating other equipment for handling materials in warehouses and other establishments. Excluded are Crane and Hoist Operators (unit group 8-72) and Operators of Earth-Moving and Other Construction Machinery Not Elsewhere Classified (unit group 8-74).

8-75.20 Lift-Truck Operator. Operates a power-driven truck equipped with a lifting platform to transport or stack merchandise and other material in warehouse, storage yard, factory or similar establishment; drives truck to location of load; moves levers to place platform under and raise load; drives truck, often through confined spaces, into desired position; unloads and stacks material by operating truck platform. May tow hand trucks. May load or unload truck by hand. May carry out routine servicing of truck.

8-75.30 Scoop-Truck Operator. Operates a truck equipped with a scoop attachment to move loose materials, such as sand or fertiliser, in warehouse or other establishment: starts truck and moves lever to lower scoop; drives truck forward to push scoop into heap of material to be moved; raises scoop and drives truck forward until scoop is over storage bin or dumping location; moves lever to tilt scoop forward and empty its contents; repeats operation to move required quantity of material.

8-75.40 Timber-Carrier Driver. Drives a motorised vehicle that carries loads of timber beneath its elevated frame for short hauls within or near a timber mill or other establishment: starts machine and drives it astride load of timber to be moved; manipulates lever to cause two clamps, under frame of vehicle, to grasp load and raise it a short distance above the ground; drives machine to delivery point and moves levers to lower load on to ground. May lubricate, service and make minor adjustments to vehicle.

8-75.90 Material-Handling-Equipment Operators, Other. This group includes material-handling-equipment operators not elsewhere classified, for example, those operating endless-belt conveyors, small power-driven trucks fitted with fixed containers or platforms, and other mechanical devices for moving materials.

8-76 Oilers and Greasers (Stationary Engines, Motor Vehicles and Related Equipment)

Workers in this unit group lubricate mechanical equipment and perform related tasks. Their functions include oiling and greasing the moving parts of stationary engines, machinery or motor vehicles, and performing a variety of related tasks. Excluded is Oiler and Greaser (Ship) (6-12.40).

8-76.20 Oiler and Greaser (Stationary Engines or Machinery). Lubricates the moving parts of stationary engines or machinery and performs a variety of related tasks: fills oil-cans and grease-guns with required type of lubricant; lubricates parts according to lubricating charts, records or own judgment and knowledge of type of engine or machine to be lubricated; changes oils in engine reservoirs at prescribed intervals; reports apparent defects to repairman. May make minor adjustments, tighten loose parts and assist machine operator or repairman. May keep records of tasks performed.

8-76.30 Oiler and Greaser (Motor Vehicles). Lubricates moving parts of automobiles, trucks and other motor vehicles and performs a variety of related tasks: lubricates vehicle according to chart and instructions or according to own judgment and knowledge of type of vehicle to be lubricated; injects oil or grease in various parts of chassis and cleans or replaces clogged or damaged lubricators; examines oil levels in gearbox, rear axle, steering box, engine and other components and replenishes or changes oils as required; reports apparent defects to repairman. May check and replenish fluids in accumulators, hydraulic braking systems and shock absorbers. May flush and refill radiators with clean water, tighten loose parts, change electric-lamp bulbs, pump tyres and perform other servicing tasks. May assist repairman.

8-76.90 Oilers and Greasers (Stationary Engines, Motor Vehicles and Related Equipment), Other. This group includes oilers and greasers of stationary engines, motor vehicles and related equipment not elsewhere classified, for example, those lubricating cranes and those performing routine oiling and greasing tasks which require little or no training or independent judgment.

8-8 Longshoremen and Related Freight Handlers

Workers in this minor group load and unload freight carried by ships and by conveyances on land and in the air, and stored in warehouses and other establishments. Excluded are Crane and Hoist Operators (unit group 8-72) and Material-Handling-Equipment Operators (unit group 8-75).

8-81 Longshoremen and Related Freight Handlers

Workers in this unit group load and unload freight. Their functions include loading and unloading cargoes into and from ships; connecting hose lines between pipes of main shore installation and barges, ships and tankers for the loading and unloading of petroleum and petrol; loading and unloading goods into and
from lorries, freight cars and other vehicles; loading and unloading cargoes into and from aircraft; carrying and stocking merchandise and other material in a warehouse, manufacturing plant or other establishment; performing various other tasks in the handling of freight.

8-81.20 Longshoreman. Loads and unloads cargoes into and from ships; carries items of cargo from quayside to ship's hold or vice versa, or places them in position for removal by mechanical means; stows cargo in position in hold so as to conserve space and prevent damage in transit; sorts cargo on quay before or after loading.

8-81.30 Boat Loader (Petroleum). Connects hose lines between pipes of main shore installation and tanks of barges, ships and tankers in the loading and unloading of petroleum and petrol; ties line to hose and swings one end of hose into position near valve on pipe-line ashore; couples hose to valve on pipe-line; swings other end of hose on to boat and connects it to tanks if required; attaches wire to hose and ground to prevent possible oil explosion due to static electricity; opens gate valve to allow flow of oil through hose or notifies pumpman to start pumping for the loading or unloading of boat; disconnects hose when the operation is complete; cleans hose with steam or water.

8-81.40 Vehicle Loader (Railway and Road Transport). Loads and unloads goods into and from lorries, freight cars and other vehicles: loads articles on to vehicle by hand or by using hand truck, skids, bars, jacks and similar equipment; stows articles in vehicle to form a compact load which will not be damaged in transit and will facilitate unloading; unloads articles from vehicle by hand or by using similar equipment as for loading. May secure load with ropes, metal straps or other fastenings and pad articles to prevent breakage. May be designated according to type of vehicle or material handled.

8-81.50 Aircraft Loader. Loads and unloads cargoes into and from aircraft: stows cargo into aircraft according to size, weight, type and destination of goods, and following general loading instructions; removes cargo from aircraft. May weigh cargo before loading and keep record of loaded or unloaded items. May secure cargo with ropes, straps or other fastenings and pad articles to prevent breakage.

8-81.60 Porter, Warehouse. Carries and stacks merchandise and other material in a warehouse, manufacturing plant or other establishment: carries items of loads, unloads and propels hand truck or wheelbarrow; stores items in bins or on shelves according to instructions. May load and unload lorries or freight cars, operate conveyor, elevator or stacking machine, pack or weigh materials and mark identifying information on them.

8-81.90 Longshoremen and Related Freight Handlers, Other. This group includes longshoremen and related freight handlers not elsewhere classified, for example, those carrying hand baggage at railway or bus stations, airports or piers; handling furniture and carrying it into and from vans; carrying meat, fish, fruit and other food products in wholesale markets.

8-9 Labourers Not Elsewhere Classified

Workers classified in this minor group are those not specifically allocated to another minor group who perform manual tasks, generally of a simple nature, involving principally physical effort. Included are workers, not elsewhere classified, whose functions are to carry out the simpler tasks requiring principally physical effort on building and construction sites and elsewhere, such as digging holes or trenches, or filling them, using pick and shovel; clearing construction sites of rubbish; mixing and spreading mortar or cement with a shovel and rake; fragmenting stone or demolishing walls and other structures, using hand pick and hammer; clearing waste material from workplaces or carrying materials to workplaces in factories or other workplaces; lifting and stacking, by hand, bricks, timber and other materials and objects; shovelling loose materials by hand; carrying surveyor's equipment; assisting surveyor by placing and holding rods and measures and clearing the view of underbrush or trees; patrolling a stretch of road or railway and doing routine maintenance, such as patching road bed or distributing ballast, using hand shovel, pick and other hand tools; clearing switch points and applying grease; cleaning up parks and sweeping streets; clearing away snow with a shovel; handling garbage cans; washing motor vehicles and railway coaches; moving scenery in theatres; and similar labouring work. Excluded are workers performing labouring functions in farming, hunting, fishing and forestry operations (classified in major group 4); mining, quarrying, well drilling and mineral treating at mine site (classified in minor group 5-9), loading, unloading and handling freight, furniture and baggage (classified in minor group 8-8); cleaning business premises and residences (classified in minor group 9-3); packing, wrapping and labelling goods (classified in minor group 8-6); serving on board a ship, boat or barge as member of the crew (classified in minor group 6-1). Also excluded are assemblers, machine minders and other process workers (classified, according to their particular functions, in minor groups 7-0.
to 8-5); and operators of machines, or material-handling equipment, stationary enginemen, oilers and greasers, and drivers of vehicles (classified, according to their functions, in major groups 2, 4, 5 and 6 or elsewhere in major group 7/8).

**8-99 Labourers Not Elsewhere Classified**

Workers in this unit group perform tasks of a simple and routine nature, requiring either light or heavy physical effort.

**8-99.20 Labourer, Light Physical Work.** Performs tasks of a simple and routine nature requiring light physical effort: removing waste material from working areas; washing and cleaning vehicles; sweeping streets and collecting garbage.

**8-99.30 Labourer, Heavy Physical Work.** Performs tasks of a simple and routine nature requiring heavy physical effort: performs tasks such as lifting, carrying, moving and stacking heavy materials; hand-shovelling loose materials; digging holes or trenches using pick or shovel; scaling and cleaning boilers.
MAJOR GROUP 9

SERVICE, SPORT AND RECREATION WORKERS

Workers in this major group are directly concerned with protective, personal and domestic services; photography services; and sports and recreational activities.

9-0 Fire Fighters, Policemen, Guards and Related Workers

Workers in this minor group protect society, individuals and property and enforce law and order. Their functions include extinguishing fires, eliminating fire hazards and protecting property at fire sites; maintaining law and order, and preventing and solving crimes; performing miscellaneous tasks in the maintenance of law and order and in the protection of property.

9-01 Fire Fighters and Related Workers

Workers in this unit group extinguish fires, eliminate fire hazards and protect property at fire sites. Their functions include fighting fires as members of a public fire-fighting force; detecting and eliminating or reducing fire hazards in industrial plants or other establishments; protecting and salvaging goods during and after fires; performing various other tasks related to the foregoing. Excluded is Fire Fighter, Forest (4-41.80).

9-01.10 Fire Fighter, General. Fights fires as a member of a public fire-fighting force: rides on special fire-fighting vehicle or boat to scene of fire; connects hose and directs jet of water or chemicals on fire, or uses portable fire extinguisher in places not accessible with hose; demolishes parts of buildings or other structures as necessary, to reach and combat fire; rescues trapped persons and administers artificial respiration to those who have been overcome by heat or smoke. Performs other services during emergencies where specialised equipment is useful, for example, rescuing people in danger as a result of flood or storm, manning hoses to control rioters, and extricating persons or animals from places not easily accessible. May drive fire truck or boat.

9-01.20 Fire-Prevention Specialist. Detects and eliminates or reduces fire hazards in industrial plants or other establishments: inspects fire-extinguishing and fire-protection equipment at regular intervals; patrols plant working and storage areas, and notes and investigates conditions and practices which are likely to cause fires, using instruments and making special tests to determine such conditions as temperature and pressure; reports findings and makes suggestions for repairing and replacing fire-extinguishing and fire-protection equipment and for eliminating undesirable conditions. May establish and operate fire-safety programme.

9-01.30 Fire-Salvage Specialist. Protects and salvages goods during and after fires: accompanies fire-fighting crew to fire and removes goods from threatened areas if possible; prevents further damage to furniture, fixtures and goods in burned building by covering them with tarpaulin or other material and by removing water from area; guards premises.

9-01.90 Fire Fighters and Related Workers, Other. This group includes fire fighters and related workers not elsewhere classified, for example, those serving as members of fire-fighting crew in an industrial establishment and qualified to fight special types of fires; serving in fire-fighting groups sponsored by private individuals or companies to protect specified property; investigating fire sites to determine cause of fire and degree of personal or company liability (if any) or to appraise damage done.

9-02 Policemen and Detectives

Workers in this unit group maintain law and order, prevent and solve crimes and enforce laws and regulations. Their functions include maintaining law and order, protecting persons and property from hazards and unlawful acts and apprehending violators of the law; discovering facts concerned with the prevention and solution of crimes and apprehending criminals.

9-02.10 Policeman. Maintains law and order, protects persons and property from hazards and unlawful acts and apprehends violators of the law; familiarises himself with area and persons living in it, and notes suspicious persons and establishments; performs services such as patrolling assigned area, directing traffic, assum-
ing authority in case of accident, rendering first aid and making necessary investigations, maintaining order at fires, inspecting licensed places of public assembly and providing information of a general nature; arrests or assists in arrest of violators of law; keeps records and makes reports of activities. May perform duties on water, or in the air as well as on land. May be designated according to type of duty performed, means of transportation, or type of area patrolled. Works in co-operation with Detective (9-02.20).

Police Guard, Private. Polices property or parts of establishments, such as customers' floor of a bank, betting areas at a race track, or rooms and corridors of a museum to prevent or to take action in case of violence, theft or other irregularities. May make arrests if authorised. May guard messengers carrying valuables to and from bank or other establishment.

9-02.20 Detective. Uncovers facts concerned with the prevention and solution of crimes and apprehends criminals; frequents haunts of criminals to learn their habits, associations, characteristics, aliases and other personal information and to detect planned crime; investigates circumstances of a particular case, questions persons concerned and examines scene of crime to obtain clues and other evidence; takes statements and makes regular reports of investigations; arrests or assists in arrest of criminal. May be concerned with the investigation of particular types of crimes, such as automobile theft, homicide and illegal sale and use of narcotics. Works in co-operation with Policeman (9-02.10).

9-09 GUARDS AND RELATED WORKERS NOT ELSEWHERE CLASSIFIED

Workers in this unit group perform miscellaneous tasks in the maintenance of law and order and in the protection of property, and are not elsewhere classified. Their functions include conducting private investigations for commercial or other establishments or for individuals; watching inmates of jail, reformatory or penitentiary, seeing to their needs and maintaining discipline; guarding industrial plant, warehouse or other property against fire, theft and illegal entry; performing various other tasks related to the foregoing.

9-09.20 Inquiry Agent, Private. Conducts private investigations for commercial or other establishments or for individuals: investigates shoplifting, thievery, dishonesty or other undesirable conduct among employees or customers of a business establishment or other private organisation; makes inquiries concerning conduct of persons and watches suspected persons; makes reports of investigations. May make arrests if authorised.

9-09.30 Prison Guard. Watches inmates of jail, reformatory or penitentiary, sees to their needs and maintains discipline: searches arriving prisoners and puts their valuables in safe keeping; makes out records regarding prisoners; escorts prisoners to cell and locks them in; makes periodic inspection tours of cells; supervises prisoners at work; patrols prison areas and walls to prevent escape. May serve meals to prisoners.

9-09.40 Watchman. Guards industrial plant, warehouse or other property against fire, theft and illegal entry: makes periodic inspection tours about buildings and grounds, examining doors, windows and gates to see that they are properly secured, and have not been tampered with, and watches for other irregularities such as broken waterpipes and fire hazards; registers at regular stations to record the making of inspection rounds at specified times. May perform other duties, such as sweeping floors or firing boilers. May be designated according to type of property guarded.

9-09.90 Guards and Related Workers Not Elsewhere Classified, Other. This group includes guards and related workers not elsewhere classified, for example, those riding in railway express cars or motor vehicles to guard shipments of valuables such as money or bullion; investigating irregularities in answer to signal received at central office; serving summonses on persons to be tried for crimes or misdemeanours or on those whose properties are to be foreclosed; maintaining order in courtrooms; patrolling beaches and swimming pools to prevent accidents and to rescue bathers from drowning.

9-1 Housekeepers, Cooks, Maids and Related Workers

Workers in this minor group render personal and domestic services to individuals and families and attend to their effects or living quarters or provide similar services in commercial establishments and in institutions. Their functions include organising, supervising and carrying out housekeeping functions in commercially operated establishments, institutions and private households; preparing and cooking meals for consumption in hotels, restaurants and other establishments and in private households; performing various domestic duties to promote the comfort of individuals in private households, hotels and other establishments, and aboard ships, airplanes and other conveyances.

9-11 HOUSEKEEPERS, HOUSEKEEPING STEWARDS AND MATRONS

Workers in this unit group organise, supervise and carry out housekeeping functions in commercially operated establishments, institutions and private households. Their functions include organising and supervising the work of domestic staff in hospitals, hotels and similar establishments, and in private households; controlling, purchasing, storing and issuing of supplies, and supervising kitchen workers not engaged in cooking, in large hotels and res-
Matrons, Other. This group includes housekeepers, form domestic tasks involving cleaning of living quarters. May chases and issues household and first-aid supplies. May assist in dressing and give other personal service. May perform various tasks in establishments providing only shelter.

9-11.20 Housekeeper (except Private Service). Organises and supervises the work of domestic staff in hospitals, hotels or similar establishments: supervises staff and sees to it that prescribed standards of efficiency and cleanliness are met; assigns duties to domestic staff; disciplines, hires and discharges employees; writes reports, checks accounts and takes inventories; gives out supplies and equipment. May buy supplies and housekeeping equipment.

9-11.30 Housekeeper (Private Service). Organises and supervises the work of domestic staff in private households: supervises staff and sees that prescribed standards of efficiency and cleanliness are met; assigns duties to domestic staff; disciplines, hires and discharges employees. May buy supplies and housekeeping equipment and issue them, record expenditure on supplies, upkeep of home and service. May perform domestic tasks involving cleaning and preparing and serving meals.

9-11.40 House Steward. Controls the purchasing, storing and issuing of supplies and supervises kitchen workers not engaged in cooking in large hotels, restaurants and clubs: purchases food supplies and kitchen equipment and checks them for quality and quantity; supervises storage and issue of supplies and cleaning of china, silverware and glassware; supervises kitchen workers not engaged in cooking; employs and discharges workers supervised; keeps records. May plan and price menus.

9-11.50 Butler. Serves or supervises the serving of foods and beverages and performs additional services in private households; sets or supervises setting of table for meals and for special occasions; serves or oversees serving of meals and wines; removes or directs removal of dishes between courses; prepares or supervises preparation of fancy uncooked dishes such as fruit cocktails and salads; prepares and serves tea, coffee, liquors and accompanying foods; performs additional services such as receiving guests. May supervise cleaning of dining-room, living-room and other downstairs quarters.

9-11.60 Matron, Housekeeping. Organises and supervises the work of domestic staff and supervises the general welfare and conduct of individuals in residential institutions: supervises domestic staff and sees that prescribed standards of efficiency and cleanliness are met; supervises conduct and behaviour of residents and maintains order among them; assists in cases of injury or illness by performing tasks such as preparing bandages, taking temperature and administering medicines; purchases and issues household and first-aid supplies. May assist in dressing and give other personal service. May perform domestic tasks involving cleaning of living quarters.

9-11.90 Housekeepers, Housekeeping Stewards and Matrons, Other. This group includes housekeepers, housekeeping stewards and matrons not elsewhere classified, for example, those performing supervisory tasks in establishments providing only shelter, such as tourist camps and lodging-houses.

9-12 Cooks

Workers in this unit group prepare and cook foodstuffs in public or private eating places. Their functions include planning meals and supervising and co-ordinating the work of cooks and other kitchen workers; preparing and cooking foodstuffs; performing various other tasks related to the preparation and cooking of food.

9-12.20 Head Cook. Plans meals and supervises and co-ordinates the work of cooks and other kitchen helpers in large hotels, restaurants or other establishments and aboard ships or railway trains: plans daily menu, taking into account probable number of guests, marketing conditions, popularity of various dishes and recency of menus used, and assigns prices to items; supervises preparation and cooking of food, sizes of portions and type of garnishing, and instructs cooks as required; concocts special dishes and invents recipes; tests cooked foods by tasting or smelling them; requisitions or purchases food supplies and kitchen equipment as necessary and checks them for quality and quantity; supervises cooks and other kitchen workers and employs and discharges them.

9-12.30 Cook (except Private Service). Prepares, seasons and cooks soups, meats, vegetables, desserts and other foodstuffs for consumption in hotels, restaurants and other establishments, railway dining cars, ships' dining-rooms, and clubs: fries, boils, broils, roasts or steams vegetables, meats, fish and other food to prepare dishes listed on menu; prepares salads, sandwiches, cakes, fruit juices and other cold foods; supervises dishwashing and preparing of vegetables and other foodstuffs for cooking or eating raw. May specialise in preparing a particular type of food, such as meat, salad, pastry or vegetables, and be designated accordingly.

9-12.40 Cook (Private Service). Prepares and cooks meals in private households: plans menu according to own judgment or employer's instructions; prepares and serves tea, coffee, liquors and accompanying foods; performs additional services such as receiving guests. May supervise cleaning of dining-room, living-room and other downstairs quarters.

9-12.90 Cooks, Other. This group includes cooks not elsewhere classified, for example, those preparing special foods for diets.

9-19 Maids, Valets and Related Service Workers Not Elsewhere Classified

Workers in this unit group perform various duties to provide comfort for persons in private households, in hotels and other establishments.
and in public conveyances. Their functions include cleaning and servicing public and guest rooms and baths in hotels or other establishments; cleaning rooms, cooking and serving meals, washing dishes and performing additional duties in private households; attending to employer's personal needs and keeping employer's wardrobe and personal effects in good order; taking care of children in private households and overseeing their daily activities; performing a variety of tasks for guests in hotels and similar establishments, especially at arrival and departure; taking care of general needs and comfort of ship or aircraft passengers; performing various other duties related to the providing of comfort in private households or in public establishments.

9-19.20 Maid (except Private Service). Cleans and services public and guest rooms and baths in hotels or other establishments: removes rubbish and maintains cleanliness of furnishings; makes beds and changes linen; cleans bathrooms; replenishes supplies of towels, soap, stationery and other items. May provide personal services to guests.

9-19.30 Maid (Private Service). Cleans rooms, cooks and serves meals, washes dishes and performs additional duties in private households: dusts and polishes furniture, sweeps and cleans floors and floor coverings and washes windows; makes beds and changes linen; washes, pares, cuts and otherwise prepares food for cooking or eating raw; cooks meats and vegetables and bakes cakes, breads and pastries; prepares beverages, salads and desserts; washes dishes and cleans silverware; sets table and arranges chairs in dining-room and serves food; washes linen and other textiles by hand or machine and mends and irons them if necessary; performs additional duties such as answering telephone and doorbell, feeding pets and purchasing food and other supplies.

9-19.40 Maid (Personal). Attends to employer's personal needs and keeps her wardrobe and personal effects in good order: takes care of employer's wardrobe by mending, cleaning or washing garments or by having these services performed; packs and unpacks clothing; assists employer in dressing, bathing and in making toilet; tidies up employer's bedroom, dressing room and bathroom. May give body and facial massages. May prepare meals and serve them. May assist in preparation of refreshments for social functions. May travel with employer.

9-19.50 Valet (Private Service). Attends to employer's personal needs and keeps his wardrobe and personal effects in good order: takes charge of employer's wardrobe, keeping articles of clothing cleaned, pressed and ready to wear; assists employer by performing various personal duties such as preparing bath, laying out clothes for wear, mixing and serving drinks, making travel or theatre reservations and packing and unpacking luggage. May drive employer's car and keep it clean. May clean bedroom.

9-19.60 Nursemaid. Takes care of children and oversees their daily activities: assists children in bathing and dressing; feeds children at scheduled periods; takes children outdoors for recreation and plays games with them; maintains order in children's bedrooms and playrooms; assists children to prepare for bed, and frequently reads or tells stories to them; mends, washes and irons children's clothes. May perform household duties not related to child care.

9-19.70 Concierge (Hotel). Performs a variety of tasks for guests in hotels and similar establishments, especially at arrival and departure: controls issue and return of hotel guest-room keys; helps guests with baggage; receives and distributes mail, telegrams and packages or instructs bell-boy to deliver them to guest rooms; supplies information about entertainment, eating facilities, transportation and other matters. May operate hotel switchboard, sell tobacco, stamps and newspapers and attend small gift shop. May let rooms and receive payment of bills.

9-19.80 Steward, Ship, Deck or Cabin. Takes care of general needs and comfort of ship's passengers: keeps staterooms in order, makes beds and berths and changes linen; assists passengers on deck or in lounge by arranging chairs and rugs and running errands as requested; serves beverages in clubroom or smoke room; serves meals in rooms on request. May be designated according to duties performed or to class of passengers served. Stewards mainly or only engaged in serving foods or beverages are classified as Waiter, General (9-21.10).

9-19.85 Air Hostess. Takes care of general needs and comfort of passengers in aircraft: greets passengers boarding plane and assigns seats; sees that passengers' seat belts are fastened before take-offs and landings; distributes reading matter, answers questions about plane, its schedule or route, and points out places of interest; observes passengers during flight to detect signs of discomfort and administers minor medical aid as necessary; serves meals; keeps cabin tidy; renders any other service contributing to passengers' comfort. May perform various routine clerical duties.

9-19.90 Maids, Valets and Related Service Workers Not Elsewhere Classified, Other. This group includes maids, valets and related service workers not elsewhere classified, for example, those attending children in shower and rest rooms of schools and institutions; taking care of needs and comfort of train or bus passengers; rendering valeting services to guests and employees of a hotel; performing various tasks in preparation of food, such as cleaning and peeling vegetables.
9-2 Waiters, Bartenders and Related Workers

Workers in this minor group serve food and beverages, mix drinks and perform miscellaneous related tasks in commercially operated dining and drinking places, and in clubs and institutions.

9-21 Waiters, Bartenders and Related Workers

Workers in this unit group serve food and beverages in commercially operated dining and drinking places, and in clubs, institutions and canteens and perform related tasks. Their functions include serving food and beverages; advising on the selection of wines and serving wines; serving alcoholic and non-alcoholic drinks at a bar; performing various other tasks related to the foregoing.

9-21.10 Waiter, General. Serves food and beverages in commercially operated dining places, and in clubs, institutions and canteens: prepares tables or counters for meals by placing on them clean linen, glasses, condiment holders, flowers and silverware; presents guests with menu, answers questions about food and beverages and makes suggestions if required; writes order on check or menu, answers questions about food and beverages and memorises it and orders food from kitchen; places dishes in front of each person and serves food; pours out wine or other beverages if required; observes guests periodically to fulfil any additional request and to perceive when meal has been completed; presents bill for payment or for signature of guest; removes soiled dishes, glasses and silverware or has them removed.

9-21.20 Waiter (Wine). Advises on the selection of wines and serves them in commercially operated dining and drinking places and in clubs and institutions: presents guests with wine card, answers questions concerning vintage growth and other characteristics of wines and advises guests as to the wines suitable for various dishes; takes order, selects wine and ensures that it has the required temperature; places glasses in front of guests and pours out wine; observes guests periodically to fulfill any additional request; presents bill for payment or for signature by guest.

9-21.30 Bartender. Serves alcoholic and non-alcoholic drinks at a bar: mixes various ingredients to make standard or other types of drinks; serves mixed drinks or straight drinks and collects cash payment. May take charge of bar, request replenishment of stock and keep inventory records. May serve snacks and wash and dry glasses.

9-21.90 Waiters, Bartenders and Related Workers, Other. This group includes waiters, bartenders and related workers not elsewhere classified, for example, those showing customers to seats; removing used linen and dishes from tables; arranging tables and chairs; wheeling hors d'oeuvre, roasts and desserts to tables for selection by guests; washing and drying glasses and cleaning bars.

9-3 Building Caretakers, Cleaners and Related Workers

Workers in this minor group take care of and clean building interiors, equipment and furniture. Their functions include taking care of apartment houses, office buildings, churches and other buildings and maintaining them in an orderly and clean condition; cleaning the windows, chimneys and interiors of buildings and the furniture and equipment in them.

9-31 Building Caretakers

Workers in this unit group take care of apartment houses, office buildings, churches and other buildings and maintain them in an orderly and clean condition. Their functions include attending to the operation of an apartment house as representative of owner or managing agent; keeping apartment house, office, or similar building in clean and orderly condition and operating furnaces and boilers to provide heat and hot water for tenants; taking care of church buildings and furnishings; performing similar tasks in other establishments. Excluded is Building Maintenance Man (7-99.45).

9-31.20 Concierge, Apartment House. Attends to the operation of an apartment house as representative of the owner or managing agent: supervises and participates in the cleaning, repair and maintenance of the building and its equipment; maintains safety protection for tenants and public and eliminates fire or other hazards; provides special services such as arrangements for additional lighting, heating and ventilating equipment; deals with complaints of tenants and regulates conduct of tenants in such matters as noise and misuse of property; keeps record of labour and material costs for operating building and issues reports to owner or agent. May advertise vacancies, show empty apartments to prospective tenants and collect rents. May supervise workers engaged in cleaning and maintaining building and its equipment. May perform some duties of Janitor (9-31.30).

9-31.30 Janitor. Keeps apartment house, hotel, office building or similar building in clean and orderly condition and operates furnaces and boilers to provide heat and hot water for tenants: sweeps, scrubs and mops public parts of building; empties tenants' garbage cans and disposes of refuse and ashes; tends furnace and boiler by stoking fuel and removing ashes or by regulating
flow of oil or gas; replaces burnt-out light bulbs and 
and makes minor repairs to installed equipment; 
cleans sidewalks of snow and debris. May grease elevator 
slides and clean elevator pits. May perform some duties 
of Concierge, Apartment House (9-31.20). Excluded is 

- Building Maintenance Man (7-99.45).
- Verger. Takes care of church buildings and 
furnishings: directs or participates in the cleaning 
and heating of church; prepares church for services; 
takes care of vestments and sacred vessels. May assist 
in services, keep records and conduct visitors between 
church services.

- Building Caretakers, Other. This group 
includes building caretakers not elsewhere classified, for 
example, those taking care of historical monuments, such 
as castles or other buildings of interest, and establish­
ments such as clubs, institutes and dance halls.

9-32.20 Charwoman. Cleans and keeps in orderly 
condition the interior of public buildings, offices, 
commercial establishments, and apartment and private 
houses: sweeps and scrubs floors and disposes of waste 
or litter; cleans carpets and rugs with brush, beater or 
vacuum cleaner; polishes metal fixtures and fittings; 
dusts furniture and office equipment.

9-32.30 Window Cleaner. Cleans windows in build­
ings: washes window with water, cleaning powder, or 
cleaning solution, using brush, sponge, or cloth; dries 
window with squeegee, cloth or chamois skin. May 
clean showcase glass, mirrors and light shades. May 
work above the ground floor and wear safety belt.

9-32.40 Chimney Sweep. Removes soot from flues, 
chimneys and connecting pipes: when cleaning flue 
removes smoke pipe connecting furnace to flue, removes 
soot from chimney pit with vacuum cleaner, cleans pipe 
with long-handled brush, and replaces pipe; when 
cleaning chimney closes fireplace openings and other 
household outlets, lowers weighted bag down flue which, 
when withdrawn, expands and scrapes soot from chim­
ney walls; cleans chimney pit with vacuum cleaner; or 
brushes interior of chimney by pushing and pulling a 
long-handled brush through chimney or lifting and 
lowering a weighted brush attached to a rope. May clean 
furnaces and boilers, using similar cleaning methods.

9-4 Barbers, Hairdressers, Beauticians and Related Workers

Workers in this minor group cut and dress hair, apply cosmetics and make-up, and perform 
related tasks to improve or alter the appearance of individuals.

9-41 Barbers, Hairdressers, Beauticians 
and Related Workers

Workers in this unit group cut and dress hair, 
apply cosmetics and make-up and perform 
other tasks to improve or alter the appearance 
of individuals. Their functions include giving 
various forms of beauty treatment to customers; 
applying make-up to faces of actors and other 
performers to improve their appearance for 
studio or stage productions; cutting, washing 
and waving women’s hair and performing other 
personal services incidental to hairdressing; 
cutting hair, shaving and trimming beards and 
performing other personal services to male 
persons; cleaning, shaping and polishing finger 
or toe nails; attending to clients taking baths 
and administering elementary massage to im-
prove their sense of well-being; performing 
various other tasks related to the foregoing.

9-41.20 Beautician. Gives various forms of beauty 
treatment to customers: examines customer’s skin and 
suggests suitable treatment; applies lotions, creams and 
packs to stimulate circulation, lubricate tissues and 
remove wrinkles and lines; massages face, neck, arms, 
legs or other parts of body; gives treatment for superficial 
skin blemishes; removes superficial hair by wax treat­
ment or other method; shapes, colours and otherwise 
treats eyebrows and eyelashes; applies cosmetics and 
advises on suitable make-up. May cut, comb and wave 
hair according to customer’s instructions or according 
to a particular style, tint or dye hair, and give scalp 
treatment. May clean, shape and polish finger nails.

9-41.30 Make-up Man, Stage and Studio. Applies 
make-up to faces of actors and other performers to 
improve or alter their appearance for studio or stage 
productions: examines casting list and requisitions wigs, 
beards and other materials needed; applies make-up,
such as grease paint, rouge, lipstick, face powder, wigs and beards to impart the desired facial characteristics or expression to the actor or actress; issues instructions to hairdresser as to style of hairdressing required.

9-41.40 Hairdresser, Women's. Cuts, washes and waves hair and performs other personal services incidental to hairdressing; cuts hair according to instructions of client or according to a particular style; washes, rinses and dries hair, using special shampoos and solutions as necessary; bleaches, dyes or tints hair; waves hair by wrapping it round curlers, adding wave solutions, applying heat by various means and performing other tasks to obtain the required effect. May give different kinds of scalp treatment to customers. May clean, shape and polish finger nails.

9-41.50 Hairdresser-Barber, Men's. Cuts hair, shaves and trims beards and performs other personal services to persons incidental to barbering: cuts hair according to instructions of customer or according to a particular style; shaves customer's neck; shampoos, dries and combs hair, applying tonic on request; gives scalp treatment to cure dandruff or check falling hair; dries and combs hair, applying tonic on request; gives scalp treatment to customers. May clean, shape and polish finger nails.

9-41.60 Manicurist. Cleans, shapes and polishes finger or toe nails; applies liquid polish-remover to take off old nail polish; files nails to shape; softens nail cuticles with lukewarm water and oil and pushes back cuticle of each nail with cuticle pusher; trims cuticle with scissors or nippers; smoothes edges with emery board; applies polish to nails with small brush; cleans and sterilises equipment.

9-41.70 Bath Attendant. Attends to clients taking baths and administers elementary massage to improve their sense of well-being: prepares water or steam bath for client and attends client during bathing; shows client to the bathing chair after bath; rubs, kneads and slaps body to remove dead cuticle, cleans the pores and stimulates circulation; gives client a shower or washes him off with a hose; rubs client's body with salt, alcohol or other substance to cleanse skin further.

9-41.90 Barbers, Hairdressers, Beauticians and Related Workers, Other. This group includes barbers, hairdressers, beauticians and related workers not elsewhere classified, for example, those suggesting coiffures most becoming to individual customers; washing and rinsing hair; dressing the hair of actors and actresses; fitting wigs according to customers' requirements.

9-5 Launderers, Dry Cleaners and Pressers

Workers in this minor group launder, dry clean and press clothing, bedding, textile furnishings and similar articles.

9-51 Launderers, Dry Cleaners and Pressers

Workers in this unit group launder, dry-clean and press clothing, bedding, textile furnishings and similar articles. Their functions include performing duties such as washing, drying and ironing articles in a small laundry or in private houses; operating washing machine(s) to wash articles, or dry-cleaning machine(s) to clean articles with a chemical solution; cleaning, by hand and with a chemical solution, clothing, textile furnishings, leather goods and similar articles unsuitable for cleaning by machine; removing, with chemical solution or substance, spots and stains from clothing, textile furnishings, leather goods and similar articles; smoothing and shaping clothing, textile furnishings and similar articles by means of a pressing machine or heated flat iron; performing other related processes such as marking and sorting articles, washing them by hand, starching, and ironing with small mangle.

9-51.10 Launderer, General. Performs duties such as washing, drying and ironing of clothing, bedding and similar articles in a small laundry or in private houses: sorts soiled articles according to type and treatment to be given; dries articles in a machine, by hanging them in a drying room, cabinet, or the open air, or by placing them on heated metal forms; irons articles with a heated hand iron or with a heated pressing machine. May work with minimum of equipment and wash articles in rivers or troughs. May receive articles, mark them for identification, sort them on receipt and sort and pack them for delivery to customers.

9-51.20 Washing-Machine Operator, Laundry. Operates machine(s) to wash clothing, bedding and similar articles: places articles in container of machine; operates valve to fill machine with water to prescribed level; adds soap and other cleansing agents to water; operates valve to admit steam into machine to raise water to and maintain it at desired temperature; operates controls to start rotation of container; drains water from machine and refills it as required to rinse articles; stops machine and removes articles, packs them into a hand truck or drying machine. May sort articles according to colour, condition and type of material.

9-51.30 Dry-Cleaning-Machine Operator. Operates machine(s) to dry-clean, with a chemical solution, clothing, textile furnishings and similar articles: places article in drum of machine and fastens cover or door; operates valves to feed chemical solution into machine; operates controls to start rotation of drum; stops rotation and drains off solution; opens machine, removes articles from it and packs them into hand truck. May sort articles according to colour and condition and type of
material and remove spots or stains by rubbing them with solvent. May filter solution after use to make it fit for re-use.

9-51.40 Dry Cleaner, Hand. Cleans, by hand and with a chemical solution, clothing, textile furnishings, leather goods and similar articles, when machine cleaning is unsuitable or unavailable: examines articles to ascertain condition and type of material and decides on type of treatment to be given; lays article on table, treats with chemical solution and rubs or brushes the parts most soiled; immerses article in solution for required period; rinses article in fresh solution and allows it to dry. May moisten material before or during pressing. May specialise in one or more types of pressing and be designated accordingly.

9-51.50 Spotter, Dry Cleaning. Removes, with chemical solution or substance, sports and stains from clothing, textile furnishings, leather goods and similar articles: examines article for condition and identifies spots or stains; lays article on table and removes spot by rubbing or brushing it with chemical solution. May wash article before removing spot. May be designated according to kind of material worked on.

9-51.60 Presser (Machine). Smooths and shapes clothing, textile furnishings and similar articles by means of a pressing machine: arranges material on padded surface of machine; pulls pressing head of machine on to garment or article worked on; operates pedals to control pressure on material, the flow of steam through material and the vacuum for drawing away the moisture; raises pressing head, rearranges the material and repeats the process until pressing is complete. May specialise in one or more types of pressing and be designated accordingly.

9-51.70 Presser, Hand. Smooths and shapes clothing, textile furnishings and similar articles by pressing with a heated flat-iron: arranges material on ironing-board; moves iron over material, applying necessary heat and pressure to obtain desired effect. May moisten material before or during pressing. May specialise in one or more types of pressing and be designated according to garment or article worked on.

9-51.90 Launderers, Dry Cleaners and Pressers, Other. This group includes launderers, dry cleaners and pressers not elsewhere classified, for example, those marking for identification articles received for treatment; sorting articles according to type and colour of material and fastness of dye; washing delicate or excessively soiled articles by hand; treating articles with a starch solution; ironing articles with a small mangle; cleaning carpets with a soap or chemical solution and subsequently brushing them.

9-6 Athletes, Sportsmen and Related Workers

Workers in this minor group take part in organised competitive sport or athletic events, teach and control sports and games and conduct physical training for monetary payment.

9-61 Athletes, Sportsmen and Related Workers

Workers in this unit group take part in organised competitive sport or athletic events, teach and control sports and games and give physical training in exchange for monetary payment. Their functions include taking part in public exhibitions or competitions of a game or sport for gain; teaching groups or individuals in schools, colleges, recreation centres, or other organisations the fundamentals, techniques and rules of sports; applying appropriate rules at sports events; improving the physical fitness of individuals by means of group callisthenics, gymnastics, sports and games; performing various other tasks related to the foregoing.

9-61.20 Athlete. Takes part in public exhibitions or competitions of a game or sport for gain: plays games or engages in sport according to established rules; trains for sport by physical exercise and practice, usually under the direction of a trainer or coach. May be designated according to kind of athletics in which engaged.

9-61.30 Athletic Coach. Teaches groups or individuals in schools, colleges, recreation centres, or other organisations, the fundamentals, techniques and rules of sports: demonstrates technique of play, usually by example; drills player(s) in fundamentals of sport and assists them to acquire proficiency by helpful criticism. May be designated according to sport coached.

9-61.40 Sports Official. Applies appropriate rules at a sports event: watches game or event continuously from close quarters; judges matters connected with the game or event, informs superior officials of serious irregularities detected; settles disputes if necessary. May keep record of time. May be designated according to game or event judged or duties performed.

9-61.50 Physical Trainer. Improves the physical fitness of individuals by means of group callisthenics, gymnastics and games: instructs and leads groups in physical exercises with or without the aid of equipment; organises, leads, instructs and refers games, such as football and basketball. May give massage, alcohol rubs and heat or ultra-violet-ray treatments. May give remedial exercises to individuals or groups.

9-61.90 Athletes, Sportsmen and Related Workers, Other. This group includes athletes, sportsmen and related workers not elsewhere classified, for example, those conditioning persons for a particular athletic event by regulating rest, diet and exercise; attending a prize fighter between rounds; driving automobiles or motorcycles in races; training horses for running races and riding them during races; teaching horse-riding and the care and management of horses in riding schools.
9-7 Photographers and Related Camera Operators

Workers in this minor group take photographs and operate motion-picture and television cameras. Excluded are Cameraman, Photo-Mechanical (8-05.30) and Photographic Dark-Room Workers (unit group 8-55).

9-71 Photographers and Related Camera Operators

Workers in this unit group take photographs and operate motion-picture and television cameras. Their functions include taking photographs of persons, places or other subjects, using various kinds of photographic equipment; taking portraits of persons, using a studio-type camera; taking photographs of persons, building exteriors and interiors, machinery, merchandise and other subjects, for use in advertising and selling; taking photographs of news events or of persons, on location, for use in newspapers, magazines and similar publications; photographing scenes with a motion-picture camera; operating an electronic camera for televising scenes; assisting in operations of motion picture and television cameras. Excluded are Cameraman, Photo-Mechanical (8-05.30) and Photographic Dark-room Worker (Unit group 8-55).

9-71.10 Photographer (General). Takes photographs of persons, places, or other subjects, using various kinds of photographic equipment: loads camera with film or plate; holds or places camera at desired angle and distance from subject to be photographed; measures daylight or arranges artificial lighting; adjusts lens opening and exposure time; opens lens shutter and exposes film or plate; removes negative from camera; develops negatives in dark room and makes prints or enlargements. May retouch negatives or prints. A photographer specialising in a particular type of photography is classified elsewhere in unit group 9-71.

9-71.20 Photographer (Portrait). Takes portraits of persons, using a studio-type camera: discusses photographic details with customer; arranges equipment, such as lights, screens and shades; poses subject in position in such a way as to bring out desirable features; views subject through camera lens and adjusts focus; slides the negative-plate holder into camera; warns subject to remain motionless; removes protective screen from the plate holder by sliding it upwards; grasps and squeezes the shutter control bulb and exposes plate; closes protective screen and removes negative with holder from camera. May develop negatives and make prints. May retouch negatives or prints.

9-71.30 Photographer (Commercial Illustration). Takes photographs of persons, buildings and interiors, machinery, merchandise and other subjects for use in advertising and selling; selects or arranges suitable background and, where necessary, positions or arranges subject to be photographed; measures daylight or arranges artificial lighting; loads camera and sets it at desired angle and distance from subject; adjusts lens for proper focus and makes exposure. May develop negatives and make prints.

9-71.40 Photographer (News). Takes photographs of news events or of persons, on location, for use in newspapers, magazines and similar publications: travels to location; sets camera according to measurements taken or own judgment; waits for suitable moment and takes photograph. May develop film and make prints or enlargements. May file negatives or pictures for future use.

9-71.50 Camera Operator (Motion-Picture). Photographs scenes with a motion-picture camera: loads camera with a reel of film; instructs assistant to position camera; focuses and sets camera on scene to be shot, usually according to instructions received; exposes a certain length of film by pressing a button, holding his eye close to the view finder and following the scene of action, with the camera; alters angle or distance of shot as required; unloads camera when film is completed and passes on film for developing.

9-71.60 Camera Operator (Television). Operates an electronic camera for televising scenes: instructs assistant to position camera; focuses camera and maintains scenes in sharp focus by adjusting lens; follows scene of action with camera and watches reproduction of scenes through a monitor on camera; alters angle or distance of shot as required.

9-71.90 Photographers and Related Camera Operators, Other. This group includes photographers and related camera operators not elsewhere classified, for example, those operating cameras for making aerial pictures or assisting in operation of motion-picture and television cameras.

9-8 Embalmers and Undertakers

Workers in this minor group perform various tasks in the preservation and disposal of human bodies after death.
9-81 EMBALMERS AND UNDERTAKERS

Workers in this unit group perform various tasks in the preservation and disposal of human bodies after death. Their functions include embalming bodies of human beings to retard or arrest the process of decay; making arrangements for and conducting funerals; performing various other tasks related to the foregoing.

9-81.20 Embalmer. Embalsms bodies of human beings to retard or arrest the process of decay: washes body with germicidal soap; sews lips shut and packs orifices with cotton to prevent leakage; drains blood from body, if possible, and injects embalming fluid; punctures internal organs through abdomen to remove natural fluids and gases; restores maimed or disfigured bodies to their normal appearance by affixing pieces of moulded wax, plaster of Paris or other material to injured portions of body; closes incisions and dresses body; applies cosmetics to face to restore its natural expression; places body in coffin.

9-81.30 Undertaker. Makes arrangements for and conducts funerals: interviews family to acquire data about the deceased and to aid in planning details, such as selecting coffin and burial clothes, arranging for services and floral displays, publishing death notices and selecting burial plot; arranges coffin in room where services are to be held, adjusting lights and floral displays; estimates number of mourners and provides for their transport, selects bearers, if requested, and directs them to remove coffin to hearse and from hearse to grave or vault; makes arrangements for transport of body by various means of conveyance; operates device to lower coffin into grave. May embalm body.

9-81.90 Embalmers and Undertakers, Other. This group includes embalmers and undertakers not elsewhere classified, for example, those assisting with the various duties in connection with funeral arrangements.

9-9 Service, Sport and Recreation Workers Not Elsewhere Classified

Workers in this minor group perform miscellaneous tasks in services and sports and recreational activities not performed by those elsewhere classified.

9-99 SERVICE, SPORT AND RECREATION WORKERS NOT ELSEWHERE CLASSIFIED

Workers in this unit group perform miscellaneous tasks in services and sports and recreational activities not performed by those elsewhere classified. Their functions include providing companionship and performing various personal services for employer; wearing and displaying clothes in showrooms; caring for costumes of members of theatrical or cinema production cast; determining odds and receiving and paying off bets on results of sporting events; conducting games of chance in gambling establishments; performing a variety of other services and sports and recreational tasks.

9-99.20 Companion. Provides companionship and performs various personal services for employer: engages employer in conversation on matters of current interest and in pleasant activities such as reading, various kinds of hobbies, sports and other forms of amusement; reminds employer of social engagements and answers the telephone; accompanies employer on social visits and assists in entertaining callers and visitors at home; goes shopping with employer, sometimes driving automobile; accompanies employer in travelling, attending to all arrangements. May assist in bathing, dressing and toilet, prepare and serve foods or diet. May give instructions to other domestic workers.

9-99.30 Mannequin. Wears and displays clothes in showrooms: dresses in sample apparel of latest style or of type wanted by customer; models clothing before customers by walking gracefully about to display clothing to best advantage. May inform prospective purchasers as to model, number and price of each garment.

9-99.40 Wardrobe Mistress, Stage and Studio. Cares for costumes of members of theatrical or movie production cast: examines costumes and cleans and mends them as necessary; presses costumes; refits costume if required; aids actor or actress to don complicated costumes.

9-99.50 Bookmaker, Sport. Determines odds and receives and pays off bets on results of sporting events: determines risks to decide odds and to hedge or refuse bets; declares, or prepares and issues, list of approximate odds on animals, individuals or teams; receives bets in person, by telephone, messenger or teletype; pays off bets. May operate on pari-mutuel system.

9-99.60 Croupier. Conducts games of chance in gambling establishments: distributes cards, rolls dice or spins a roulette wheel; announces winning numbers on game boards; pays out winning bets and collects losing ones; sells gambling chips to customers at table and cashes them; explains and interprets operating rules of establishment.
9-99.90 Service, Sport and Recreation Workers Not Elsewhere Classified, Other. This group includes service, sport and recreation workers not elsewhere classified, for example, those posing for paintings, sculptures or other types of art; rendering first aid to individuals; performing non-medical and non-technical services for patients in hospitals; conducting sightseeing tours; serving as escorts to men and women; receiving patrons of entertainment and recreational establishments and conducting them to their places; operating lifts; taking charge of hats and coats in public places; performing personal services for users of lavatories and restrooms and keeping such places clean and tidy; assisting persons at doors of shops, hotels and other establishments; carrying the baggage of hotel guests and running errands for them; assisting players of games by performing non-playing activities, such as carrying golf clubs, setting-up pins (skittles) and retrieving balls; walking about streets carrying advertising signs; pasting advertising posters and notices on walls and billboards; making public announcements vocally in the streets; exterminating vermin; cleaning and polishing shoes; operating roundabout and other fairground equipment, including slot machines and the like.
MAJOR GROUP X

WORKERS NOT CLASSIFIABLE BY OCCUPATION

Workers in this major group are new workers seeking employment, workers reporting occupations which cannot be identified, workers reporting occupations not sufficiently well described to permit classification in one of the preceding major groups and workers not reporting any occupation.

X-1  New Workers Seeking Employment

Workers classified in this minor group are young persons and other new workers entering the labour force who have no employment, are seeking work and either have had no previous work experience or have had only incidental work experience such as temporary or casual work during school vacations or helping in a family enterprise.

X-19  NEW WORKERS SEEKING EMPLOYMENT

Workers classified in this unit group are young persons and other new workers entering the labour force who have no employment, are seeking work and either have had no previous work experience or have had only incidental work experience such as temporary or casual work during school vacations or helping in a family enterprise.

X-29  WORKERS REPORTING OCCUPATIONS UNIDENTIFIABLE OR INADEQUATELY DESCRIBED

Workers classified in this unit group are those reporting occupations which cannot be identified, those reporting occupations not sufficiently well described to permit classification in one of the preceding major groups and those reporting occupations not classifiable elsewhere because of erroneous reporting or for other reasons.
X-3 Workers Not Reporting Any Occupation

Workers classified in this minor group are those not reporting any information as to their occupation.

X-39 WORKERS NOT REPORTING ANY OCCUPATION

Workers classified in this unit group are those not reporting any information as to their occupation.

X-39.00 Workers Not Reporting Any Occupation.

This group includes those not reporting any information as to their occupation.
ARMED FORCES

MEMBERS OF THE ARMED FORCES

Members of the armed forces are those personnel who are serving in the armed forces, including women's auxiliary services, whether on a voluntary or involuntary basis, and who are not free to accept civilian employment. Included are regular members of the army, navy, air force and other military services, as well as temporary members enrolled for full-time training or other service for a period of three months or more. Excluded are persons in civilian employment, such as administrative staff of government establishments concerned with defence questions; police (other than military police); customs inspectors and members of other armed civilian services; members of military reserves not currently on full-time active service; and persons who have been temporarily withdrawn from civilian life for a short period of military training.
### LIST OF TITLES USED

#### MAJOR GROUP 0: PROFESSIONAL, TECHNICAL AND RELATED WORKERS

**0-0 Architects, Engineers and Surveyors**

- **0-01 Architects**
  - 0-01.20 Architect, Buildings
  - 0-01.30 Town Planner

- **0-02 Engineers**
  - **Civil Engineers:**
    - 0-02.02 Civil Engineer, General
    - 0-02.04 Civil Engineer (Building Construction)
    - 0-02.06 Civil Engineer (Highway and Street Construction)
    - 0-02.08 Civil Engineer (Airport Construction)
    - 0-02.10 Civil Engineer (Railway Construction)
    - 0-02.12 Civil Engineer (Bridge Construction)
    - 0-02.14 Civil Engineer (Tunnel Construction)
    - 0-02.16 Civil Engineer (Sanitary)
    - 0-02.18 Civil Engineer (Hydraulic)
    - 0-02.20 Civil Engineer (Soil Mechanics)
    - 0-02.22 Civil Engineers, Other
  - **Electrical Engineers:**
    - 0-02.24 Electrical Engineer, General
    - 0-02.26 Electronics Engineer
    - 0-02.28 Electrical Engineer (Power Generation)
    - 0-02.30 Electrical Engineer (Power Distribution and Transmission)
    - 0-02.32 Electrical-Equipment Engineer
    - 0-02.34 Telecommunication Engineer
    - 0-02.36 Electrical Engineers, Other
  - **Mechanical Engineers:**
    - 0-02.38 Mechanical Engineer, General
    - 0-02.40 Mechanical Engineer (Machinery and Tools)
    - 0-02.42 Mechanical Engineer (Turbines) (except Marine and Aeronautical)
    - 0-02.44 Mechanical Engineer (Reciprocating Steam Engines) (except Marine)
    - 0-02.46 Mechanical Engineer (Internal-Combustion Engines) (except Marine, Aeronautical and Automotive)
    - 0-02.48 Mechanical Engineer (Boilers and Accessories)
    - 0-02.50 Mechanical Engineer (Heating, Ventilating and Refrigerating)
    - 0-02.52 Mechanical Engineer (Automotive)
    - 0-02.54 Mechanical Engineer, Aeronautical
    - 0-02.56 Mechanical Engineer (Marine)
    - 0-02.58 Mechanical Engineers, Other

**Chemical and Metallurgical Engineers:**

- 0-02.60 Chemical Engineer, General
- 0-02.62 Chemical Engineer (Chemical Products Other than Petroleum)
- 0-02.64 Chemical Engineer (Petroleum)
- 0-02.66 Metallurgist (Extractive)
- 0-02.68 Metallurgist (Physical)
- 0-02.70 Ceramic and Glass Engineer
- 0-02.72 Chemical and Metallurgical Engineers, Other

**Mining Engineers:**

- 0-02.74 Mining Engineer, General
- 0-02.76 Mining Engineer (Metal)
- 0-02.78 Mining Engineer (Other than Metal)
- 0-02.80 Engineer, Petroleum and Natural Gas
- 0-02.82 Mining Engineers, Other

**Engineers, Other:**

- 0-02.84 Industrial Efficiency Engineer
- 0-02.86 Safety Engineer
- 0-02.88 Agricultural Engineer
- 0-02.90 Naval Architect
- 0-02.99 Engineers Not Elsewhere Classified

**0-03 Surveyors**

- 0-03.10 Surveyor, General
- 0-03.20 Surveyor (Land)
- 0-03.30 Surveyor (Mine)
- 0-03.40 Surveyor (Marine)
- 0-03.90 Surveyors, Other

**0-1 Chemists, Physicists, Geologists and Other Physical Scientists**

**0-11 Chemists**

- 0-11.10 Chemist (General)
- 0-11.20 Chemist (Biological)
- 0-11.30 Chemist (Organic)
- 0-11.40 Chemist (Inorganic)
- 0-11.50 Chemist (Physical)
- 0-11.90 Chemists, Other

**0-12 Physicists**

- 0-12.10 Physicist, General
- 0-12.20 Physicist (Mechanics)
- 0-12.30 Physicist (Heat)
- 0-12.40 Physicist (Light)
- 0-12.50 Physicist (Sound)
### List of Titles Used

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<td>University Teachers, Other</td>
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<tr>
<td>0-69</td>
<td>Teachers Not Elsewhere Classified</td>
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<tr>
<td>0-69.20</td>
<td>Teacher (Nursery School)</td>
</tr>
<tr>
<td>0-69.30</td>
<td>Teacher (Primary School)</td>
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<tr>
<td>0-69.40</td>
<td>Teacher (Secondary School)</td>
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<td>0-69.90</td>
<td>Teachers Not Elsewhere Classified, Other</td>
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<td>0-7</td>
<td>Clergy and Related Members of Religious Orders</td>
</tr>
<tr>
<td>0-71</td>
<td>Clergy and Related Members of Religious Orders</td>
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<tr>
<td>0-71.20</td>
<td>Ordained Religious Leader Missionary</td>
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<tr>
<td>0-71.30</td>
<td>Non-Ordained Religious Worker</td>
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<td>Clergy and Related Members of Religious Orders, Other</td>
</tr>
<tr>
<td>0-8</td>
<td>Jurists</td>
</tr>
<tr>
<td>0-81</td>
<td>Jurists</td>
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<tr>
<td>0-81.10</td>
<td>Lawyer, General</td>
</tr>
<tr>
<td>0-81.20</td>
<td>Solicitor</td>
</tr>
<tr>
<td>0-81.30</td>
<td>Barrister</td>
</tr>
<tr>
<td>0-81.35</td>
<td>Prosecutor</td>
</tr>
<tr>
<td>0-81.40</td>
<td>Judge</td>
</tr>
<tr>
<td>0-81.50</td>
<td>Notary</td>
</tr>
<tr>
<td>0-81.90</td>
<td>Jurists, Other</td>
</tr>
</tbody>
</table>
### List of Titles Used

#### 0-9 Artists, Writers and Related Workers

**0-91 Painters, Sculptors and Related Creative Artists**
- 0-91.20 Painter (Creative)
- 0-91.25 Commercial Artist
- 0-91.30 Cartoonist
- 0-91.35 Sculptor, Creative
- 0-91.40 Engraver (Creative)
- 0-91.45 Etcher (Creative)
- 0-91.50 Interior-Decoration Designer
- 0-91.55 Display Artist
- 0-91.60 Painting Restorer
- 0-91.90 Painters, Sculptors and Related Creative Artists, Other

#### 0-92 Authors, Journalists and Related Writers
- 0-92.20 Author
- 0-92.30 Critic
- 0-92.40 Editor
- 0-92.50 Reporter
- 0-92.60 Advertising-Copy Writer
- 0-92.70 Publicity Writer
- 0-92.80 Technical Writer
- 0-92.90 Authors, Journalists and Related Writers, Other

#### 0-93 Actors, Musicians, Dancers and Related Workers
- 0-93.20 Actor
- 0-93.25 Instrumentalist
- 0-93.30 Dancer
- 0-93.35 Singer
- 0-93.40 Composer
- 0-93.45 Orchestra and Band Conductor
- 0-93.50 Vocal Group Conductor
- 0-93.55 Orchestrator
- 0-93.60 Choreographer
- 0-93.65 Radio and Television Announcer
- 0-93.70 Theatrical Director
- 0-93.90 Actors, Musicians, Dancers and Related Workers, Other

#### 0-X Draughtsmen, and Science and Engineering Technicians Not Elsewhere Classified

**0-X1 Draughtsmen**
- 0-X1.10 Draughtsman (General)
- 0-X1.15 Draughtsman (Architectural)
- 0-X1.20 Draughtsman (Structural)
- 0-X1.25 Draughtsman (Marine)
- 0-X1.28 Draughtsman (Aircraft)
- 0-X1.30 Draughtsman (Electrical)
- 0-X1.35 Draughtsman (Mechanical)
- 0-X1.40 Draughtsman (Geological)
- 0-X1.45 Cartographer
- 0-X1.90 Draughtsmen, Other

**0-X9 Science and Engineering Technicians Not Elsewhere Classified and Laboratory Assistants**
- 0-X9.20 Technician (Engineering)
- 0-X9.30 Technician (Research Laboratory)
- 0-X9.40 Technician (Industrial Laboratory)
- 0-X9.90 Science and Engineering Technicians Not Elsewhere Classified and Laboratory Assistants, Other

#### 0-Y Other Professional, Technical and Related Workers

**0-Y1 Accountants, Professional**
- 0-Y1.10 Accountant, Professional
- 0-Y1.20 Auditor

**0-Y2 Social Workers**
- 0-Y2.10 Social Worker, General
- 0-Y2.20 Social Worker (Case Work)
- 0-Y2.30 Social Worker (Group Work)
- 0-Y2.90 Social Workers, Other

**0-Y3 Librarians and Archivists**
- 0-Y3.10 Librarian
- 0-Y3.20 Archivists
- 0-Y3.90 Librarians and Archivists, Other

**0-Y4 Economists, Actuaries and Statisticians**
- 0-Y4.20 Economist
- 0-Y4.30 Actuary
- 0-Y4.40 Statistician

**0-Y9 Professional, Technical and Related Workers Not Elsewhere Classified**
- 0-Y9.20 Sociologist
- 0-Y9.23 Anthropologist
- 0-Y9.26 Historian
- 0-Y9.29 Political Scientist
- 0-Y9.32 Geographer
- 0-Y9.35 Mathematician
- 0-Y9.38 Psychologist
- 0-Y9.41 Personnel Specialist, Industrial
- 0-Y9.44 Student Personnel Counsellor
- 0-Y9.47 Occupational Analyst
- 0-Y9.50 Philologist
- 0-Y9.53 Translator
- 0-Y9.56 Interpreter
- 0-Y9.62 Designer (Industrial and Commercial Products)
- 0-Y9.65 Taxidermist
- 0-Y9.90 Professional, Technical and Related Workers Not Elsewhere Classified, Other
**LIST OF TITLES USED**

### MAJOR GROUP 1: ADMINISTRATIVE, EXECUTIVE AND MANAGERIAL WORKERS

<table>
<thead>
<tr>
<th>Group</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>1-0</td>
<td>Administrators and Executive Officials, Government</td>
</tr>
<tr>
<td>1-01</td>
<td>Elected Official, Government</td>
</tr>
<tr>
<td>1-01.20</td>
<td>Administrator (Government)</td>
</tr>
<tr>
<td>1-01.60</td>
<td>Executive Officer, Government</td>
</tr>
<tr>
<td>1-1</td>
<td>Directors, Managers and Working Proprietors</td>
</tr>
<tr>
<td>1-11</td>
<td>Directors, Managers and Working Proprietors, Mining and Quarrying, Manufacturing, Construction, Electricity, Gas, Water and Sanitary Services</td>
</tr>
<tr>
<td>1-11.20</td>
<td>Administrator (Mining and Quarrying)</td>
</tr>
<tr>
<td>1-11.30</td>
<td>Administrator (Manufacturing)</td>
</tr>
<tr>
<td>1-11.40</td>
<td>Administrator (Construction)</td>
</tr>
<tr>
<td>1-11.50</td>
<td>Administrator (Electricity, Gas, Water and Sanitary Services)</td>
</tr>
<tr>
<td>1-12</td>
<td>Directors and Managers, Wholesale and Retail Trade</td>
</tr>
<tr>
<td>1-12.20</td>
<td>Administrator (Wholesale Trade)</td>
</tr>
<tr>
<td>1-12.30</td>
<td>Administrator (Retail Trade)</td>
</tr>
<tr>
<td>1-13</td>
<td>Directors, Managers and Working Proprietors, Banks and Other Financial Institutions, Insurance and Real Estate</td>
</tr>
<tr>
<td>1-19</td>
<td>Directors, Managers and Working Proprietors Not Elsewhere Classified</td>
</tr>
<tr>
<td>1-19.20</td>
<td>Administrator (Forestry and Logging)</td>
</tr>
<tr>
<td>1-19.30</td>
<td>Administrator (Fishing)</td>
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### MAJOR GROUP 2: CLERICAL WORKERS

<table>
<thead>
<tr>
<th>Group</th>
<th>Title</th>
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<tbody>
<tr>
<td>2-0</td>
<td>Book-keepers and Cashiers</td>
</tr>
<tr>
<td>2-01</td>
<td>Book-keepers and Cashiers</td>
</tr>
<tr>
<td>2-01.10</td>
<td>Book-keeper, General</td>
</tr>
<tr>
<td>2-01.20</td>
<td>Book-keeping Clerk</td>
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<tr>
<td>2-01.30</td>
<td>Cashier (Office)</td>
</tr>
<tr>
<td>2-01.40</td>
<td>Teller, Bank</td>
</tr>
<tr>
<td>2-01.50</td>
<td>Cashier (Cash-Desk)</td>
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<tr>
<td>2-01.90</td>
<td>Book-keepers and Cashiers, Other</td>
</tr>
<tr>
<td>2-1</td>
<td>Stenographers and Typists</td>
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<tr>
<td>2-11</td>
<td>Stenographers and Typists</td>
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<td>2-11.10</td>
<td>Stenographer-Typist, General</td>
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<td>2-11.20</td>
<td>Secretary, Stenographic</td>
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<td>2-11.30</td>
<td>Stenographer-Typist, Specialised</td>
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<td>2-11.40</td>
<td>Verbatim Reporter</td>
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<td>2-11.50</td>
<td>Typist</td>
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<td>Stenographers and Typists, Other</td>
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<tr>
<td>2-9</td>
<td>Other Clerical Workers</td>
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<tr>
<td>2-91</td>
<td>Office-Machine Operators</td>
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<tr>
<td>2-91.20</td>
<td>Book-keeping-Machine Operator</td>
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<tr>
<td>2-91.30</td>
<td>Calculating-Machine Operator</td>
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<tr>
<td>2-91.40</td>
<td>Card-Punching-Machine Operator</td>
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<tr>
<td>2-91.50</td>
<td>Punched-Card Sorting-Machine Operator</td>
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<tr>
<td>2-91.60</td>
<td>Punched-Card Tabulating-Machine Operator</td>
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<td>2-91.90</td>
<td>Office-Machine Operators, Other</td>
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<td>2-99</td>
<td>Clerical Workers Not Elsewhere Classified</td>
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<td>2-99.10</td>
<td>Clerk, Office, General</td>
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<tr>
<td>2-99.15</td>
<td>Clerk (Statistical)</td>
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<td>2-99.18</td>
<td>Clerk (Cost Computing)</td>
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<td>2-99.21</td>
<td>Clerk (Payroll and Time-keeping)</td>
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<td>2-99.24</td>
<td>Clerk (Correspondence)</td>
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<td>2-99.27</td>
<td>Clerk (Personnel)</td>
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<td>2-99.30</td>
<td>Clerk (Finance)</td>
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<td>Clerk (Insurance)</td>
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<td>Clerk (Legal)</td>
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<td>Clerk (Library)</td>
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<td>2-99.42</td>
<td>Clerk (Shipping and Receiving)</td>
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<tr>
<td>2-99.45</td>
<td>Clerk (Transportation Booking)</td>
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<tr>
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<td>Clerk (Production Planning)</td>
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<td>Clerk (Stock Records)</td>
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<td>Clerk (Storeroom)</td>
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<td>2-99.57</td>
<td>Clerk (Weighing)</td>
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<td>Clerk (Filing)</td>
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<td>2-99.63</td>
<td>Proof-Reader, Printing</td>
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### MAJOR GROUP 3: SALES WORKERS

<table>
<thead>
<tr>
<th>3-0 Working Proprietors, Wholesale and Retail Trade</th>
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<tbody>
<tr>
<td>3-01 Working Proprietors, Wholesale Trade</td>
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<td>3-01.20 Working Proprietor, Wholesale Trade</td>
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<table>
<thead>
<tr>
<th>3-02 Working Proprietors, Retail Trade</th>
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<table>
<thead>
<tr>
<th>3-1 Insurance and Real-Estate Salesmen, Salesmen of Securities and Services and Auctioneers</th>
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<tbody>
<tr>
<td>3-11 Insurance and Real-Estate Salesmen, Salesmen of Securities and Services and Auctioneers</td>
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<tr>
<td>3-11.20 Salesman (Insurance)</td>
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<td>3-11.30 Salesman (Real-Estate)</td>
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<td>3-11.40 Salesman (Securities)</td>
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<td>3-11.50 Salesman (Business Services)</td>
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<tr>
<td>3-11.60 Auctioneer</td>
</tr>
<tr>
<td>3-11.70 Appraiser</td>
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### MAJOR GROUP 4: FARMERS, FISHERMEN, HUNTERS, LOGGERS AND RELATED WORKERS

<table>
<thead>
<tr>
<th>4-0 Farmers and Farm Managers</th>
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<tbody>
<tr>
<td>4-01 Farmers and Farm Managers</td>
</tr>
<tr>
<td>4-01.10 Farmer, General</td>
</tr>
<tr>
<td>4-01.12 Farmer (Crops), General</td>
</tr>
<tr>
<td>4-01.14 Farmer (Grains and Feed Grasses Other than Rice)</td>
</tr>
<tr>
<td>4-01.16 Farmer (Rice)</td>
</tr>
<tr>
<td>4-01.18 Farmer (Flax)</td>
</tr>
<tr>
<td>4-01.20 Farmer (Vegetable Market Gardener)</td>
</tr>
<tr>
<td>4-01.22 Farmer (Fruit and Nut Trees)</td>
</tr>
<tr>
<td>4-01.24 Farmer-Winemaker</td>
</tr>
<tr>
<td>4-01.26 Farmer (Tobacco)</td>
</tr>
<tr>
<td>4-01.28 Farmer (Cotton)</td>
</tr>
<tr>
<td>4-01.30 Farmer (Tea)</td>
</tr>
<tr>
<td>4-01.32 Farmer (Coffee)</td>
</tr>
<tr>
<td>4-01.34 Farmer (Rubber)</td>
</tr>
<tr>
<td>4-01.36 Farmer (Livestock), General</td>
</tr>
<tr>
<td>4-01.38 Farmer (Beef Cattle)</td>
</tr>
<tr>
<td>4-01.40 Farmer (Poultry)</td>
</tr>
<tr>
<td>4-01.42 Poultry Hatchery Operator</td>
</tr>
<tr>
<td>4-01.45 Farmer (Dairy)</td>
</tr>
<tr>
<td>4-01.48 Farmer (Sheep)</td>
</tr>
<tr>
<td>4-01.51 Farmer (Goat)</td>
</tr>
<tr>
<td>4-01.54 Farmer (Pig)</td>
</tr>
<tr>
<td>4-01.57 Farmer (Horse, Mule and Donkey)</td>
</tr>
<tr>
<td>4-01.60 Farmer (Fur-Bearing Animals)</td>
</tr>
<tr>
<td>4-01.63 Beekeeper</td>
</tr>
<tr>
<td>4-01.66 Silkworm Raiser</td>
</tr>
<tr>
<td>4-01.69 Nurseryman, General</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4-1 Farm Workers Not Elsewhere Classified</th>
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<tbody>
<tr>
<td>4-11 Farm Workers Not Elsewhere Classified</td>
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<tr>
<td>4-11.10 Farm Hand, General</td>
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<tr>
<td>4-11.15 Farm Hand (Crops)</td>
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<tr>
<td>4-11.20 Farm Hand (Livestock)</td>
</tr>
<tr>
<td>4-11.25 Poultry Hatchery Worker</td>
</tr>
<tr>
<td>4-11.30 Farm Hand (Fur-Bearing Animals)</td>
</tr>
<tr>
<td>4-11.35 Farm Hand (Bees)</td>
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<tr>
<td>4-11.40 Farm Hand (Silkworms)</td>
</tr>
<tr>
<td>4-11.45 Operator, Farm Equipment (Motor-Driven)</td>
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<tr>
<td>4-11.50 Operator, Farm Equipment (Animal-Drawn)</td>
</tr>
<tr>
<td>4-11.55 Nursery Worker</td>
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<tr>
<td>4-11.60 Propagator</td>
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<tr>
<td>4-11.65 Gardener</td>
</tr>
<tr>
<td>4-11.70 Grounds Keeper</td>
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<tr>
<td>4-11.75 Farm Labourer</td>
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<td>4-11.90 Farm Workers Not Elsewhere Classified, Other</td>
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</tbody>
</table>

### MAJOR GROUP 5: FARMERS, FISHERMEN, HUNTERS, LOGGERS AND RELATED WORKERS

<table>
<thead>
<tr>
<th>5-0 Farmers and Farm Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-01 Farmers and Farm Managers</td>
</tr>
<tr>
<td>5-01.10 Farmer, General</td>
</tr>
<tr>
<td>5-01.12 Farmer (Crops), General</td>
</tr>
<tr>
<td>5-01.14 Farmer (Grains and Feed Grasses Other than Rice)</td>
</tr>
<tr>
<td>5-01.16 Farmer (Rice)</td>
</tr>
<tr>
<td>5-01.18 Farmer (Flax)</td>
</tr>
<tr>
<td>5-01.20 Farmer (Vegetable Market Gardener)</td>
</tr>
<tr>
<td>5-01.22 Farmer (Fruit and Nut Trees)</td>
</tr>
<tr>
<td>5-01.24 Farmer-Winemaker</td>
</tr>
<tr>
<td>5-01.26 Farmer (Tobacco)</td>
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<tr>
<td>5-01.28 Farmer (Cotton)</td>
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<td>5-01.32 Farmer (Coffee)</td>
</tr>
<tr>
<td>5-01.34 Farmer (Rubber)</td>
</tr>
<tr>
<td>5-01.36 Farmer (Livestock), General</td>
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<tr>
<td>5-01.38 Farmer (Beef Cattle)</td>
</tr>
<tr>
<td>5-01.40 Farmer (Poultry)</td>
</tr>
<tr>
<td>5-01.42 Poultry Hatchery Operator</td>
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<tr>
<td>5-01.45 Farmer (Dairy)</td>
</tr>
<tr>
<td>5-01.48 Farmer (Sheep)</td>
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<td>5-01.51 Farmer (Goat)</td>
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<tr>
<td>5-01.54 Farmer (Pig)</td>
</tr>
<tr>
<td>5-01.57 Farmer (Horse, Mule and Donkey)</td>
</tr>
<tr>
<td>5-01.60 Farmer (Fur-Bearing Animals)</td>
</tr>
<tr>
<td>5-01.63 Beekeeper</td>
</tr>
<tr>
<td>5-01.66 Silkworm Raiser</td>
</tr>
<tr>
<td>5-01.69 Nurseryman, General</td>
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</tbody>
</table>

### MAJOR GROUP 6: FARMERS, FISHERMEN, HUNTERS, LOGGERS AND RELATED WORKERS

<table>
<thead>
<tr>
<th>6-0 Farmers and Farm Managers</th>
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<tbody>
<tr>
<td>6-01 Farmers and Farm Managers</td>
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<td>6-01.10 Farmer, General</td>
</tr>
<tr>
<td>6-01.12 Farmer (Crops), General</td>
</tr>
<tr>
<td>6-01.14 Farmer (Grains and Feed Grasses Other than Rice)</td>
</tr>
<tr>
<td>6-01.16 Farmer (Rice)</td>
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<tr>
<td>6-01.18 Farmer (Flax)</td>
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<tr>
<td>6-01.20 Farmer (Vegetable Market Gardener)</td>
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<tr>
<td>6-01.22 Farmer (Fruit and Nut Trees)</td>
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<tr>
<td>6-01.24 Farmer-Winemaker</td>
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<tr>
<td>6-01.26 Farmer (Tobacco)</td>
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<td>6-01.28 Farmer (Cotton)</td>
</tr>
<tr>
<td>6-01.30 Farmer (Tea)</td>
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<tr>
<td>6-01.32 Farmer (Coffee)</td>
</tr>
<tr>
<td>6-01.34 Farmer (Rubber)</td>
</tr>
<tr>
<td>6-01.36 Farmer (Livestock), General</td>
</tr>
<tr>
<td>6-01.38 Farmer (Beef Cattle)</td>
</tr>
<tr>
<td>6-01.40 Farmer (Poultry)</td>
</tr>
<tr>
<td>6-01.42 Poultry Hatchery Operator</td>
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<tr>
<td>6-01.45 Farmer (Dairy)</td>
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<td>6-01.48 Farmer (Sheep)</td>
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<td>6-01.51 Farmer (Goat)</td>
</tr>
<tr>
<td>6-01.54 Farmer (Pig)</td>
</tr>
<tr>
<td>6-01.57 Farmer (Horse, Mule and Donkey)</td>
</tr>
<tr>
<td>6-01.60 Farmer (Fur-Bearing Animals)</td>
</tr>
<tr>
<td>6-01.63 Beekeeper</td>
</tr>
<tr>
<td>6-01.66 Silkworm Raiser</td>
</tr>
<tr>
<td>6-01.69 Nurseryman, General</td>
</tr>
</tbody>
</table>
LIST OF TITLES USED

4-2 Hunters and Related Workers

4-21 Hunters and Related Workers
4-21.20 Hunter
4-21.30 Trapper
4-21.40 Guide, Hunting and Fishing
4-21.90 Hunters and Related Workers, Other

4-3 Fishermen and Related Workers

4-31 Fishermen and Related Workers
4-31.15 Fisherman (Deep-Sea)
4-31.20 Fisherman (Inland and Coastal Waters)
4-31.30 Shell-fish Gatherer
4-31.40 Diver (Sponge and Pearl)
4-31.50 Harpooner, Whale
4-31.60 Fisherman (Seal)
4-31.70 Fish Hatcher
4-31.80 Oyster Culturist
4-31.90 Fishermen and Related Workers, Other

4-4 Loggers and Other Forestry Workers

4-41 Loggers and Other Forestry Workers
4-41.10 Logger, General
4-41.15 Cruiser, Timber
4-41.20 High Climber, Logging
4-41.25 Feller, Logging
4-41.30 Bucker, Logging
4-41.35 Scaler, Logging
4-41.40 Log-Raft Maker
4-41.45 River Driver
4-41.50 Tree Tapper
4-41.55 Charcoal Burner, Forest
4-41.60 Extractor Operator, Wood Distillation, Forest
4-41.65 Distiller, Wood Turpentine, Forest
4-41.70 Distiller, Gum Turpentine, Forest
4-41.75 Afforestation Worker
4-41.80 Fire Fighter (Forest)
4-41.90 Loggers and Other Forestry Workers, Other

MAJOR GROUP 5: MINERS, QUARRYMEN AND RELATED WORKERS

5-0 Miners and Quarrymen

5-01 Miners and Quarrymen
5-01.10 Miner, General
5-01.20 Quarryman, General
5-01.30 Cutting-Machine Operator, Mine
5-01.40 Drilling-Machine Operator, Quarry and Mine
5-01.50 Shot Firer
5-01.60 Timberman, Underground
5-01.90 Miners and Quarrymen, Other

5-1 Well Drillers and Related Workers

5-11 Well Drillers and Related Workers
5-11.10 Derrickman, Petroleum and Gas Wells
5-11.20 Rotary Driller, Petroleum and Gas Wells
5-11.30 Cable Driller, Petroleum and Gas Wells
5-11.40 Cementer, Petroleum and Gas Wells
5-11.50 Well Puller, Petroleum and Gas Wells
5-11.60 Acidiser, Petroleum and Gas Wells
5-11.80 Well Driller (except Petroleum and Gas Wells)
5-11.90 Well Drillers and Related Workers, Other

5-2 Mineral Treaters

5-21 Mineral Treaters
5-21.20 Stone Splitter
5-21.30 Crusher Operator, Minerals
5-21.40 Jig Tender
5-21.50 Flotation Man
5-21.60 Cyanide Man, Ore Treating
5-21.70 Precipitator
5-21.90 Mineral Treaters, Other

5-9 Miners, Quarrymen and Related Workers Not Elsewhere Classified

5-99 Miners, Quarrymen and Related Workers Not Elsewhere Classified
5-99.20 Engine Driver, Mine and Quarry
5-99.50 Shuttle-Car Operator, Mine
5-99.40 Driver, Animal-Drawn Vehicle (Mine and Quarry)
5-99.50 Brakeman, Mine and Quarry
5-99.60 Cageman, Mine
5-99.70 Sampler, Mine
5-99.80 Crude-Oil Treater
5-99.90 Miners, Quarrymen and Related Workers Not Elsewhere Classified, Other

MAJOR GROUP 6: WORKERS IN TRANSPORT AND COMMUNICATION OCCUPATIONS

6-0 Deck Officers, Engineer Officers and Pilots, Ship

6-01 Deck Officers and Pilots, Ship
6-01.15 Ship's Captain (Sea)
6-01.20 Ship's Captain (Inland Waterways, Estuaries and Ports)

6-01.30 Navigating Officer (Sea)
6-01.40 Navigating Officer (Inland Waterways, Estuaries and Ports)
6-01.50 Pilot (Ship)
6-01.90 Deck Officers and Pilots (Ship), Other
LIST OF TITLES USED

6-02 Engineer Officers, Ship
- 6-02.15 Chief Engineer, Ship
- 6-02.20 Marine Engineer, Ship
- 6-02.30 Marine Engineer, Superintendent

6-1 Deck and Engine-Room Ratings (Ship), Barge Crews and Boatmen

6-11 Deck Ratings (Ship), Barge Crews and Boatmen
- 6-11.15 Boatswain
- 6-11.20 Quartermaster, Ship
- 6-11.30 Able Seaman
- 6-11.40 Ordinary Seaman, Deck Hand (Ship, Barge, Boat)
- 6-11.90 Deck Ratings (Ship), Barge Crews and Boatmen, Other

6-12 Engine-Room Ratings, Firemen and Oilers, Ship
- 6-12.15 Engine Mechanic (Ship)
- 6-12.20 Fireman (Coal), Ship
- 6-12.30 Fireman (Oil), Ship
- 6-12.40 Oiler and Greaser (Ship)
- 6-12.90 Engine-Room Ratings, Firemen and Oilers, Ship, Other

6-2 Aircraft Pilots, Navigators and Flight Engineers

6-21 Aircraft Pilots, Navigators and Flight Engineers
- 6-21.10 Pilot (Aircraft) General
- 6-21.20 Pilot (Aircraft), Specialised
- 6-21.30 Flight Navigator
- 6-21.40 Flight Engineer

6-3 Drivers and Firemen, Railway Engine

6-31 Drivers and Firemen, Railway Engine
- 6-31.15 Driver, Railway Engine (Steam)
- 6-31.20 Fireman, Railway Engine (Steam)
- 6-31.30 Driver, Railway Engine (Electric or Diesel-Electric)
- 6-31.40 Assistant Driver, Railway Engine (Electric or Diesel-Electric)
- 6-31.50 Driver, Railway Engine (Internal Combustion)
- 6-31.60 Assistant Driver, Railway Engine (Internal Combustion)
- 6-31.70 Driver, Underground or Elevated Train
- 6-31.90 Drivers and Firemen, Railway Engine, Other

6-4 Drivers, Road Transport

6-41 Drivers of Motorised Vehicles
- 6-41.15 Tram Driver
- 6-41.20 Motor Car Driver
- 6-41.30 Motor Bus Driver
- 6-41.40 Lorry and Van Driver (Heavy)
- 6-41.50 Lorry and Van Driver (Light)
- 6-41.60 Motor Cyclist
- 6-41.90 Drivers of Motorised Vehicles, Other

6-42 Drivers of Animals and Animal-Drawn Vehicles
- 6-42.15 Driver, Animal-Drawn Vehicle (Passenger)
- 6-42.20 Driver, Animal-Drawn Vehicle (Freight)
- 6-42.90 Drivers of Animals and Animal-Drawn Vehicles, Other

6-43 Drivers Propelling Their Vehicles
- 6-43.15 Driver, Pedalled Vehicle
- 6-43.20 Driver, Hand-Propelled Vehicle
- 6-43.90 Drivers Propelling Their Vehicles, Other

6-5 Conductors and Brakemen, Railway

6-51 Conductors and Brakemen, Railway
- 6-51.15 Conductor, Railway
- 6-51.20 Brakeman (Railway)

6-6 Inspectors, Supervisors, Traffic Controllers and Despatchers, Transport

6-61 Inspectors and Supervisors, Transport
- 6-61.15 Transport Service Inspector (Railway)
- 6-61.20 Transport Service Inspector (Road)
- 6-61.30 Station Master, Railway
- 6-61.40 Goods Agent, Railway
- 6-61.90 Inspectors and Supervisors, Transport, Other

6-62 Traffic Controllers and Despatchers, Transport
- 6-62.15 Aircraft Traffic Controller
- 6-62.20 Aircraft Despatcher
- 6-62.30 Railway Despatcher
- 6-62.40 Railway Signalman
- 6-62.50 Railway Shunter
- 6-62.60 Despatcher, Road Transport
- 6-62.90 Traffic Controllers and Despatchers, Transport, Other

6-7 Telephone, Telegraph and Related Telecommunication Operators

6-71 Telephone and Telegraph Operators
- 6-71.15 Telephone Switchboard Operator (Public Service)
- 6-71.20 Telephone Switchboard Operator (Private Exchange)
- 6-71.30 Telegrapher
- 6-71.40 Teleprinter Operator
- 6-71.90 Telephone and Telegraph Operators, Other

6-72 Radio Communication Operators
- 6-72.15 Radio Broadcasting Station Operator
- 6-72.20 Television Broadcasting Station Operator
- 6-72.30 Radio Operator (Ship)
- 6-72.40 Radio Operator (Aircraft)
- 6-72.90 Radio Communication Operators, Other
### LIST OF TITLES USED

**6-8 Postmen and Messengers**

- **6-81 Postmen**
  - 6-81.10 Postman

- **6-82 Messengers**
  - 6-82.10 Messenger

**6-9 Workers in Transport and Communication Occupations Not Elsewhere Classified**

- **6-91 Conductors, Road Transport**
  - 6-91.10 Conductor (Bus or Tram)

### MAJOR GROUP 7/8: CRAFTSMEN, PRODUCTION-PROCESS WORKERS, AND LABOURERS NOT ELSEWHERE CLASSIFIED

#### 7-0 Spinners, Weavers, Knitters, Dyers and Related Workers

##### 7-01 Fibre Preparers

- 7-01.15 Grader and Classer, Fibre
- 7-01.20 Mixer and Blender, Fibre
- 7-01.25 Picker, Fibre
- 7-01.30 Carder, Fibre
- 7-01.35 Comber, Fibre
- 7-01.40 Lapper, Fibre
- 7-01.45 Drawer, Fibre
- 7-01.50 Rover, Fibre
- 7-01.55 Scourer, Wool Fibre
- 7-01.90 Fibre Preparers, Other

##### 7-02 Spinners and Winders, Textile

- 7-02.20 Spinner (Thread and Yarn)
- 7-02.30 Doubler, Thread and Yarn
- 7-02.40 Twister, Thread and Yarn
- 7-02.50 Winder (Thread and Yarn)
- 7-02.90 Spinners and Winders, Textile, Other

##### 7-03 Weavers, Loom Fixers and Loom Preparers

- 7-03.15 Beam Warper
- 7-03.20 Loom Thredder, Hand
- 7-03.25 Loom Thredder, Machine
- 7-03.30 Weaver (Cloth), Hand Loom
- 7-03.35 Tapestry Maker, Hand
- 7-03.40 Weaver (Cloth), Machine Looms (except Jacquard Loom)
- 7-03.45 Weaver, Jacquard Loom
- 7-03.50 Weaver (Lace) Machine
- 7-03.55 Weaver (Carpet) Hand Loom
- 7-03.60 Weaver (Carpet) Machine Loom
- 7-03.65 Weaver (Net) Machine
- 7-03.70 Loom Fixer
- 7-03.90 Weavers, Loom Fixers and Loom Preparers, Other

#### 7-04 Knitters and Knitting-Machine Setters

- 7-04.10 Knitter, Power-Driven Machine
- 7-04.20 Knitter, Hand-Operated Machine
- 7-04.30 Knitter, Hand
- 7-04.40 Knitting-Machine Setter
- 7-04.90 Knitters and Knitting-Machine Setters, Other

#### 7-05 Pattern-Card Preparers

- 7-05.20 Copyist' Design, Jacquard Card
- 7-05.30 Card Cutter, Jacquard
- 7-05.90 Pattern-Card Preparers, Other

#### 7-06 Bleachers, Dyers and Finishers of Textiles

- 7-06.15 Bleacher, Textile
- 7-06.20 Dyer (Yarn)
- 7-06.25 Dyer (Fabric)
- 7-06.30 Dyer (Garment)
- 7-06.35 Washer, Textile
- 7-06.40 De-gummer, Silk
- 7-06.45 Carboniser, Textile
- 7-06.50 Shrinker, Textile
- 7-06.55 Fuller, Textile
- 7-06.60 Waterproofer, Textile
- 7-06.65 Weighter, Silk
- 7-06.90 Bleachers, Dyers and Finishers of Textiles, Other

#### 7-09 Textile Fabric and Related Product Makers Not Elsewhere Classified

- 7-09.15 Examiner, Fabrics
- 7-09.20 Repairer, Fabrics
- 7-09.25 Braid Maker, Hand
- 7-09.30 Braid Maker, Machine
- 7-09.35 Crocheter, Hand
- 7-09.40 Crocheting-Machine Operator
- 7-09.45 Net Maker, Hand
- 7-09.50 Fur-Fibre-Mixing-Machine Operator
### LIST OF TITLES USED

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<tr>
<th>Title</th>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>7-09.55 Former (Fur Felt Hoods)</td>
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<tr>
<td>7-09.60 Former (Wool Felt Hoods)</td>
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<td>7-09.90 Textile Fabrics and Related Products Makers Not Elsewhere Classified, Other</td>
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<tr>
<td>7-11 Tailors, Dressmakers and Garment Makers</td>
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<td>7-11.10 Tailor (Made-to-Measure Garments)</td>
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<td>7-11.20 Tailor (Ready-to-Wear Garments)</td>
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<td>7-12 Fur Tailors and Related Workers</td>
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<td>7-12.10 Tailor (Fur)</td>
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<td>7-12.20 Patternmaker (Fur)</td>
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<td>7-12.30 Grader and Matcher, Fur</td>
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<td>7-12.50 Nailer, Fur</td>
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<td>7-12.90 Fur Tailors and Related Workers, Other</td>
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<td>7-13 Milliners and Hatmakers</td>
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<td>7-13.10 Milliner</td>
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<td>7-13.90 Hatmakers, Other</td>
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<td>7-14 Upholsterers and Related Workers</td>
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<tr>
<td>7-14.20 Upholsterer (Furniture)</td>
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<td>7-14.30 Upholsterer (Vehicle)</td>
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<td>7-14.40 Mattress Maker</td>
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<td>7-14.90 Upholsterers and Related Workers, Other</td>
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<tr>
<td>7-15 Patternmakers, Markers and Cutters (Textile Products, Leather Garments and Gloves)</td>
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<tr>
<td>7-15.20 Patternmaker (Garments)</td>
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<td>7-15.30 Patternmaker (Hats and Caps)</td>
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<td>7-15.40 Marker (Garments)</td>
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<td>7-15.50 Cutter, Ready-to-Wear Garments (except Leather)</td>
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<td>7-15.60 Cutter, Garments (Leather)</td>
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<td>7-15.70 Cutter, Gloves (except Leather)</td>
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<td>7-15.80 Cutter, Gloves (Leather)</td>
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<td>7-15.90 Patternmakers, Markers and Cutters (Textile Products, Leather Garments and Gloves), Other</td>
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<td>7-16 Sewers and Embroiderers (Textile and Fur Products, Leather Garments and Gloves)</td>
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<td>7-16.20 Sewer, Hand (Fur)</td>
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<td>7-16.30 Sewer, Hand (Garments) (except Leather and Fur)</td>
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<td>7-16.40 Sewer, Hand (Leather Garments or Gloves)</td>
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<td>7-16.50 Embroiderer, Hand</td>
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<td>7-16.60 Sewer, Hand and Machine, General</td>
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<td>7-16.70 Sewing-Machine Operator (Textile and Fur Products, Leather Garments or Gloves)</td>
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<td>7-16.80 Embroiderer, Machine</td>
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<td>7-16.90 Sewers and Embroiderers (Textile and Fur Products, Leather Garments and Gloves), Other</td>
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<tr>
<td>7-19 Apparel and Related Product Makers Not Elsewhere Classified</td>
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<tr>
<td>7-19.10 Sail, Tent and Awning Maker</td>
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<td>7-19.20 Umbrella Maker</td>
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<td>7-19.90 Apparel and Related Product Makers Not Elsewhere Classified, Other</td>
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<tr>
<td>7-2 Leather Cutters, Lasters and Sewers (except Gloves and Garments) and Related Workers</td>
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<tr>
<td>7-21 Shoemakers and Shoe Repairers</td>
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<tr>
<td>7-21.10 Footwear Maker, General</td>
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<tr>
<td>7-21.20 Footwear Maker, Orthopaedic</td>
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<tr>
<td>7-21.30 Footwear Repairman</td>
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<td>7-21.90 Shoemakers and Shoe Repairers, Other</td>
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<tr>
<td>7-22 Cutters, Lasters, Sewers (Footwear) and Related Workers</td>
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<td>7-22.15 Patternmaker (Footwear)</td>
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<td>7-22.20 Clicker Cutter, Machine</td>
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<td>7-22.25 Clicker Cutter, Hand</td>
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<td>7-22.30 Preparer, Uppers</td>
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<td>7-22.35 Pressman, Soles</td>
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<td>7-22.40 Sole Fitter</td>
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<td>7-22.45 Laster</td>
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<td>7-22.50 Sewer, Machine (Footwear)</td>
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<td>7-22.55 Taker-off, Boot and Shoe Finishing</td>
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<td>7-22.90 Cutters, Lasters, Sewers (Footwear) and Related Workers, Other</td>
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<td>7-23 Harness and Saddle Makers</td>
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<td>7-29 Leather-Product Makers Not Elsewhere Classified</td>
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<td>7-29.10 Leather-Product Maker, General</td>
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<td>7-29.20 Leather Cutter (except Footwear, Gloves and Garments)</td>
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<td>7-29.30 Leather Sewer, Hand (except Footwear, Gloves and Garments)</td>
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<td>7-29.40 Leather Sewer, Machine (except Footwear, Gloves and Garments)</td>
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<td>7-29.90 Leather-Product Makers Not Elsewhere Classified, Other</td>
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<td>7-3 Furnacemen, Rollers, Drawers, Moulders and Related Metal Making and Treating Workers</td>
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<td>7-31 Furnacemen, Metal</td>
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<td>7-31.15 Blast Furnaceman, Ore Smelting</td>
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<td>7-31.20 Open-Hearth (Martin) Furnaceman, Steel</td>
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<td>7-31.25 Bessemer or Thomas Furnaceman, Steel Converting</td>
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<td>7-31.30 Electric-Arc Furnaceman, Steel Refining</td>
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<td>Annealers, Temperers and Related Heat Treaters</td>
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<td>7-33</td>
<td>Rolling-Mill Operators, Metal</td>
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<td>Rolling Mill Operator, Metal (Semi-finished Products)</td>
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<td>Rolling Mill Operator, Metal (Finished Products)</td>
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<td>Rolling Mill Operator, Metal (Continuous Mill)</td>
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<td>Cold-Rolling-Mill Operator, Metal</td>
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<td>Seamless Pipe and Tube Roller</td>
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<td>Manipulator, Rolling Mill, Metal</td>
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<td>Blacksmiths, Hammersmiths and Forgemen</td>
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<td>Precision-Instrument Makers, Watch and Clock Makers, and Repairmen</td>
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<td>7-5</td>
<td>Toolmakers, Machinists, Plumbers, Welders, Platers and Related Workers</td>
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<td>Fitter-Machinists, Toolmakers, and Machine Tool Setters, Other</td>
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### List of Titles Used

#### 7-51 Machine-Tool Operators

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#### 7-52 Fitter-Assemblers and Machine Erectors (except Electrical and Precision-Instrument Fitter-Assemblers)

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<td>Fitter-Assembler (Agricultural Machinery)</td>
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<td>Fitter-Assembler (Mining Machinery)</td>
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<td>Fitter-Assembler (Printing Machinery)</td>
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<td>Fitter-Assembler (Internal Combustion Engines) (except Marine and Aircraft Engines)</td>
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<td>Fitter-Assembler (Marine Engines)</td>
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<td>Fitter-Assembler (Reciprocating Steam Engines) (except Marine Engines)</td>
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<td>Fitter-Assembler (Turbines) (except Aircraft and Marine Turbines)</td>
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<td>Erector and Installer, Machinery</td>
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<td>Erector, Airframes, Metal</td>
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<td>Fitter-Assemblers and Machine Erectors (except Electrical and Precision Instrument Fitter-Assemblers), Other</td>
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#### 7-53 Mechanics-Repairmen (except Electrical and Precision-Instrument Repairmen)

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<td>Mechanic-Repairman (Agricultural Machinery)</td>
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<td>Mechanic-Repairman (Turbines) (except Aircraft and Marine Turbines)</td>
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<td>Mechanic-Repairman (Motor Cycles and Motorised Pedal Cycles)</td>
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#### 7-54 Sheet-Metal Workers

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#### 7-55 Plumbers and Pipe Fitters

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#### 7-56 Welders and Flame Cutters

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#### 7-57 Metal-Plate and Structural-Metal Workers

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### LIST OF TITLES USED

#### 7-58 Electro-Platers, Dip Platers and Related Workers
- 7-58.10 Electro-Plater, General
- 7-58.20 Plater, Hot Dip, Hand Galvanzier
- 7-58.30 Plater, Sheet, Hot Dip, Machine
- 7-58.40 Plater, Wire, Hot Dip, Machine
- 7-58.90 Electro-Platers, Dip Platers and Related Workers, Other

#### 7-59 Metal Workers Not Elsewhere Classified
- 7-59.15 Gunsmith
- 7-59.20 Locksmith
- 7-59.25 Assembler, Metal Products
- 7-59.30 Metal Spinner
- 7-59.35 Power-Press Operator, Metal Working
- 7-59.40 Metal Sawing Machine Operator
- 7-59.45 Buffing and Polishing Machine Operator, Metal Working
- 7-59.50 Tool Grinder, Machine Tools
- 7-59.55 Cutlery and Tool Grinder (except Machine Tools)
- 7-59.60 Saw Repairman and Sharpener
- 7-59.65 Card Grinder, Textile
- 7-59.70 Solderer, Hand
- 7-59.90 Metal Workers Not Elsewhere Classified, Other

#### 7-6 Electricians and Related Electric and Electronics Workers

#### 7-61 Electricians, Electrical Repairmen and Related Electrical Workers
- 7-61.10 Electrician, General
- 7-61.15 Electrician (Buildings)
- 7-61.20 Electrician (Ship)
- 7-61.25 Electrician (Aircraft)
- 7-61.30 Electrician (Vehicle)
- 7-61.35 Electrician (Stage and Studio)
- 7-61.40 Electrician (Maintenance)
- 7-61.45 Electrical Repairman
- 7-61.50 Electrical Load Despatcher, Power Station
- 7-61.55 Electrical Switchboard Operator, Power Station
- 7-61.90 Electricians, Electrical Repairmen and Related Electrical Workers, Other

#### 7-62 Electrical and Electronics Fitters
- 7-62.10 Electrical Fitter, General
- 7-62.15 Electrical Fitter (Motors and Dynamos)
- 7-62.20 Electrical Fitter (Transformers)
- 7-62.25 Electrical Fitter (Switchboards)
- 7-62.30 Electrical Fitter (Switchgear and Control Apparatus)
- 7-62.35 Electrical Fitter (Instruments)
- 7-62.40 Electrical Fitter (Office Machinery)
- 7-62.45 Electrical Fitter (Signalling Systems)
- 7-62.50 Electrical Fitter (Elevators and Related Equipment)
- 7-62.55 Electrical Fitter (Motor Vehicles)
- 7-62.60 Electrical Fitter (Refrigeration and Air-Conditioning Equipment)
- 7-62.65 Electrical Fitter (Domestic Appliances)
- 7-62.70 Electronics Fitter, General
- 7-62.75 Electronics Fitter (Radio and Television Transmitters and Radar Equipment)

#### 7-63 Mechanics-Repairmen, Radio and Television
- 7-63.10 Mechanic-Repairman, Radio and Television
- 7-63.90 Mechanics-Repairmen, Radio and Television, Other

#### 7-64 Installers and Repairmen, Telephone and Telegraph
- 7-64.20 Installer, Telephone and Telegraph
- 7-64.30 Repairman, Telephone and Telegraph

#### 7-65 Linemen and Cable Jointers
- 7-65.20 Lineman (Electrical Power)
- 7-65.90 Lineman, Electrical, High Tension
- 7-65.30 Lineman (Electric Traction)
- 7-65.40 Lineman (Telephone and Telegraph)
- 7-65.50 Jointer, Electrical Cable
- 7-65.90 Linemen and Cable Jointers, Other

#### 7-69 Electrical and Electronics Workers Not Elsewhere Classified
- 7-69.20 Assembler (Electrical Equipment)
- 7-69.30 Assembler (Electronic Equipment)
- 7-69.40 Sound-Recording-Equipment Operator
- 7-69.50 Public-Address-Equipment Operator
- 7-69.60 Cinema Projectionist
- 7-69.90 Electrical and Electronics Workers Not Elsewhere Classified, Other

#### 7-7 Carpenters, Joiners, Cabinetmakers, Coopers and Related Workers

#### 7-71 Carpenters and Joiners
- 7-71.10 Carpenter, General
- 7-71.15 Carpenter (Construction)
- 7-71.20 Carpenter (Stage and Studio)
- 7-71.25 Shipwright, Wood
- 7-71.30 Boatbuilder, Wood
- 7-71.35 Ship's Carpenter
- 7-71.40 Joiner (Ship)
- 7-71.45 Joiner (Aircraft)
- 7-71.50 Carpenter, Bench
- 7-71.55 Roofer (Wooden Shingles)
- 7-71.90 Carpenters and Joiners, Other

#### 7-72 Cabinetmakers
- 7-72.10 Cabinetmaker
- 7-72.90 Cabinetmakers, Other

#### 7-73 Sawyers and Woodworking-Machine Setters and Operators
- 7-73.15 Sawyer, Wood, Precision
- 7-73.20 Sawyer, General, Sawmill
- 7-73.25 Head Sawyer, Sawmill
- 7-73.30 Edge Sawyer, Sawmill
- 7-73.35 Veneer Cutter
- 7-73.40 Woodworking-Machine Setter, General
- 7-73.45 Woodworking-Machine Setter-Operator, General
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<td>7-73.75</td>
<td>Woodworking-Machine Operator, General</td>
</tr>
<tr>
<td>7-73.90</td>
<td>Sawyers and Woodworking-Machine Setters and Operators, Other</td>
</tr>
<tr>
<td>7-79</td>
<td>Woodworkers Not Elsewhere Classified</td>
</tr>
<tr>
<td>7-79.15</td>
<td>Coach-Body Builder, Wood</td>
</tr>
<tr>
<td>7-79.20</td>
<td>Cartwright, Wood</td>
</tr>
<tr>
<td>7-79.25</td>
<td>Wheelwright, Wood</td>
</tr>
<tr>
<td>7-79.30</td>
<td>Grader, Wood</td>
</tr>
<tr>
<td>7-79.35</td>
<td>Bender, Wood</td>
</tr>
<tr>
<td>7-79.40</td>
<td>Seasoner, Wood</td>
</tr>
<tr>
<td>7-79.45</td>
<td>Impregnator, Wood</td>
</tr>
<tr>
<td>7-79.50</td>
<td>Patternmaker, Wood</td>
</tr>
<tr>
<td>7-79.55</td>
<td>Turner, Wood</td>
</tr>
<tr>
<td>7-79.58</td>
<td>Marker, Woodworking</td>
</tr>
<tr>
<td>7-79.61</td>
<td>Wooden-Model Maker</td>
</tr>
<tr>
<td>7-79.67</td>
<td>Smoking-Pipe Maker</td>
</tr>
<tr>
<td>7-79.70</td>
<td>Sporting-Equipment Maker</td>
</tr>
<tr>
<td>7-79.73</td>
<td>Cooper</td>
</tr>
<tr>
<td>7-79.76</td>
<td>Wooden-Tank Maker</td>
</tr>
<tr>
<td>7-79.79</td>
<td>Marquetry Inlayer</td>
</tr>
<tr>
<td>7-79.82</td>
<td>Veneer Applier</td>
</tr>
<tr>
<td>7-79.85</td>
<td>Carver, Wood</td>
</tr>
<tr>
<td>7-79.88</td>
<td>Furniture Finisher, Wood</td>
</tr>
<tr>
<td>7-79.90</td>
<td>Woodworkers Not Elsewhere Classified, Other</td>
</tr>
</tbody>
</table>

**Painters and Paperhangers**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-81.20</td>
<td>Painter (Buildings)</td>
</tr>
<tr>
<td>7-81.30</td>
<td>Painter (Structural Steel and Ships' Hulls)</td>
</tr>
<tr>
<td>7-81.40</td>
<td>Painter (Sign)</td>
</tr>
<tr>
<td>7-81.50</td>
<td>Paperhanger</td>
</tr>
<tr>
<td>7-81.90</td>
<td>Painters and Paperhangers (Construction and Maintenance), Other</td>
</tr>
</tbody>
</table>

**Painters (except Construction and Maintenance)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-82.20</td>
<td>Painter (Brush)</td>
</tr>
<tr>
<td>7-82.30</td>
<td>Painter (Spray)</td>
</tr>
<tr>
<td>7-82.40</td>
<td>Dipper, Hand</td>
</tr>
<tr>
<td>7-82.90</td>
<td>Painters (except Construction and Maintenance), Other</td>
</tr>
</tbody>
</table>

**Bricklayers, Plasterers and Construction Workers Not Elsewhere Classified**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-91.15</td>
<td>Bricklayer (Construction)</td>
</tr>
<tr>
<td>7-91.16</td>
<td>Bricklayer (Ornamental)</td>
</tr>
<tr>
<td>7-91.25</td>
<td>Bricklayer (Chimney Building)</td>
</tr>
</tbody>
</table>

**Painters and Paperhangers, Construction and Maintenance**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-91.30</td>
<td>Bricklayer (Firebrick)</td>
</tr>
<tr>
<td>7-91.40</td>
<td>Bricklayer (Furnace-Lining)</td>
</tr>
<tr>
<td>7-91.50</td>
<td>Bricklayer (Ovens and Kilns)</td>
</tr>
<tr>
<td>7-91.60</td>
<td>Stonemason (Construction)</td>
</tr>
<tr>
<td>7-91.70</td>
<td>Stonemason (Mine)</td>
</tr>
<tr>
<td>7-91.80</td>
<td>Stone Setter</td>
</tr>
<tr>
<td>7-91.90</td>
<td>Marble Setter</td>
</tr>
<tr>
<td>7-92.50</td>
<td>Rubble-Stone Setter</td>
</tr>
<tr>
<td>7-92.60</td>
<td>Tile Setter</td>
</tr>
<tr>
<td>7-92.70</td>
<td>Mosaic Cutter and Setter</td>
</tr>
<tr>
<td>7-92.80</td>
<td>Tuckpointer</td>
</tr>
<tr>
<td>7-92.90</td>
<td>Bricklayers, Stonemasons and Tile Setters, Other</td>
</tr>
</tbody>
</table>

**Painters and Paperhangers (except Construction and Maintenance)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-92.10</td>
<td>Plasterer, General</td>
</tr>
<tr>
<td>7-92.20</td>
<td>Plasterer (Ornamental)</td>
</tr>
<tr>
<td>7-92.30</td>
<td>Plasterer (Stucco)</td>
</tr>
<tr>
<td>7-92.40</td>
<td>Lather</td>
</tr>
<tr>
<td>7-92.90</td>
<td>Plasterers, Other</td>
</tr>
</tbody>
</table>

**Cement Finishers and Terrazzo Workers**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-93.20</td>
<td>Cement Finisher</td>
</tr>
<tr>
<td>7-93.30</td>
<td>Terrazzo Worker</td>
</tr>
<tr>
<td>7-93.90</td>
<td>Cement Finishers and Terrazzo Workers, Other</td>
</tr>
</tbody>
</table>

**Insulation Appliers**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-94.20</td>
<td>Insulator (Buildings), Hand</td>
</tr>
<tr>
<td>7-94.30</td>
<td>Insulator (Buildings), Machine</td>
</tr>
<tr>
<td>7-94.40</td>
<td>Insulator (Acoustical)</td>
</tr>
<tr>
<td>7-94.50</td>
<td>Insulator (Boilers and Pipes)</td>
</tr>
<tr>
<td>7-94.60</td>
<td>Insulator (Refrigeration and Air-Conditioning Equipment)</td>
</tr>
<tr>
<td>7-94.90</td>
<td>Insulation Appliers, Other</td>
</tr>
</tbody>
</table>

**Glaziers**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-95.20</td>
<td>Glazier (Buildings)</td>
</tr>
<tr>
<td>7-95.30</td>
<td>Glazier (Puttyless Skylights)</td>
</tr>
<tr>
<td>7-95.40</td>
<td>Glazier (Plate Glass)</td>
</tr>
<tr>
<td>7-95.50</td>
<td>Glazier (Leaded Glass)</td>
</tr>
<tr>
<td>7-95.60</td>
<td>Glazier (Vehicle)</td>
</tr>
<tr>
<td>7-95.90</td>
<td>Glaziers, Other</td>
</tr>
</tbody>
</table>

**Construction Workers Not Elsewhere Classified**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-99.10</td>
<td>Housebuilder, General</td>
</tr>
<tr>
<td>7-99.15</td>
<td>Floor-Layer (Mastic Composition)</td>
</tr>
<tr>
<td>7-99.20</td>
<td>Floor-Layer (Composition Tile)</td>
</tr>
<tr>
<td>7-99.25</td>
<td>Roofer (Slate, Tile and Similar Materials)</td>
</tr>
<tr>
<td>7-99.30</td>
<td>Roofer (Composition)</td>
</tr>
<tr>
<td>7-99.35</td>
<td>Roofer (Asphalt and Similar Materials)</td>
</tr>
<tr>
<td>7-99.40</td>
<td>Roof Thatcher</td>
</tr>
<tr>
<td>7-99.45</td>
<td>Building Maintenance Man</td>
</tr>
<tr>
<td>7-99.50</td>
<td>Steeplejack</td>
</tr>
<tr>
<td>7-99.55</td>
<td>Sandblaster, Building Exteriors</td>
</tr>
<tr>
<td>7-99.60</td>
<td>Steam Cleaner, Building Exteriors</td>
</tr>
<tr>
<td>7-99.65</td>
<td>Faver</td>
</tr>
<tr>
<td>7-99.70</td>
<td>Diver</td>
</tr>
<tr>
<td>7-99.75</td>
<td>Well Digger</td>
</tr>
<tr>
<td>7-99.80</td>
<td>Pipe Layer</td>
</tr>
<tr>
<td>7-99.85</td>
<td>Scaffold Erector, Metal or Wood</td>
</tr>
<tr>
<td>7-99.90</td>
<td>Construction Workers Not Elsewhere Classified, Other</td>
</tr>
</tbody>
</table>
### LIST OF TITLES USED

#### 8-0 Compositors, Pressmen, Engravers, Bookbinders and Related Workers

<table>
<thead>
<tr>
<th>8-01 Compositors and Typesetters</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-01.10 Printer, General</td>
</tr>
<tr>
<td>8-01.20 Compositor, Hand</td>
</tr>
<tr>
<td>8-01.25 Ludlow Casting Machine Operator</td>
</tr>
<tr>
<td>8-01.30 Linotype Operator</td>
</tr>
<tr>
<td>8-01.35 Monotype Keyboard Operator</td>
</tr>
<tr>
<td>8-01.40 Monotype Casting Machine Operator</td>
</tr>
<tr>
<td>8-01.45 Maker-up, Printing</td>
</tr>
<tr>
<td>8-01.50 Imposer, Printing</td>
</tr>
<tr>
<td>8-01.55 Photo-Type-Setting-Machine Operator</td>
</tr>
<tr>
<td>8-01.60 Maker-up, Photo-Type-Setting</td>
</tr>
<tr>
<td>8-01.90 Compositors and Typesetters, Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8-02 Pressmen, Printing</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-02.20 Pressman (Flat-Bed Letterpress)</td>
</tr>
<tr>
<td>Pressman (Cylinder Letterpress)</td>
</tr>
<tr>
<td>Pressman (Rotary Letterpress)</td>
</tr>
<tr>
<td>Pressman (Offset Lithographic)</td>
</tr>
<tr>
<td>Pressman (Direct Lithographic)</td>
</tr>
<tr>
<td>Pressman (Rotogravure)</td>
</tr>
<tr>
<td>Pressman (Wallpaper Printing)</td>
</tr>
<tr>
<td>Pressman (Textile Printing)</td>
</tr>
<tr>
<td>Pressmen (Printing), Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8-03 Stereotypers and Electrotypers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-03.20 Stereotyper</td>
</tr>
<tr>
<td>8-03.30 Electrotypyer</td>
</tr>
<tr>
<td>8-03.90 Stereotypers and Electrotypers, Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8-04 Engravers, Printing (except Photo-Engravers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-04.15 Engraver (Lithographic Stone)</td>
</tr>
<tr>
<td>8-04.20 Engraver, Hand (Metal Printing Plates and Rollers)</td>
</tr>
<tr>
<td>8-04.25 Engraver, Machine (Metal Printing Rollers)</td>
</tr>
<tr>
<td>8-04.30 Engraver, Hand (Metal Dies)</td>
</tr>
<tr>
<td>8-04.35 Engraver, Hand (Wood, Rubber and Linoleum Blocks)</td>
</tr>
<tr>
<td>8-04.40 Engraving Pantograph Operator</td>
</tr>
<tr>
<td>8-04.45 Transferrer, Direct Lithographic</td>
</tr>
<tr>
<td>8-04.50 Etcher (Metal Engraving)</td>
</tr>
<tr>
<td>8-04.90 Engravers, Printing (except Photo-Engravers), Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8-05 Photo-Engravers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-05.10 Photo-Engraver</td>
</tr>
<tr>
<td>8-05.30 Cameraman, Photo-Mechanical</td>
</tr>
<tr>
<td>8-05.40 Retoucher (Photographic Negatives, Photogravure)</td>
</tr>
<tr>
<td>8-05.50 Transferer, Photo-Mechanical</td>
</tr>
<tr>
<td>8-05.60 Etcher (Photo-Engraving)</td>
</tr>
<tr>
<td>8-05.70 Retoucher (Printing Plates)</td>
</tr>
<tr>
<td>8-05.90 Photo-Engravers, Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8-06 Bookbinders and Related Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-06.20 Bookbinder, Hand</td>
</tr>
<tr>
<td>8-06.30 Embosser, Book, Hand</td>
</tr>
<tr>
<td>8-06.90 Bookbinders and Related Workers, Other</td>
</tr>
</tbody>
</table>

#### 8-09 Printing Workers Not Elsewhere Classified

| 8-09.20 Stencil Cutter, Silk-Screen Printing |
| 8-09.30 Silk-Screen Printer               |
| 8-09.40 Block Printer                     |
| 8-09.90 Printing Workers Not Elsewhere Classified, Other |

#### 8-1 Potters, Kilnmen, Glass and Clay Formers and Related Workers

<table>
<thead>
<tr>
<th>8-11 Glass Formers, Cutters, Grinders and Finishers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-11.15 Blower, Glass (except Laboratory Apparatus)</td>
</tr>
<tr>
<td>8-11.20 Blower, Glass (Laboratory Apparatus)</td>
</tr>
<tr>
<td>8-11.25 Bender, Glass Tube</td>
</tr>
<tr>
<td>8-11.30 Moulder, Glass, Lenses</td>
</tr>
<tr>
<td>8-11.35 Presser (Glass), Hand</td>
</tr>
<tr>
<td>8-11.40 Blowing-Machine Operator, Glass</td>
</tr>
<tr>
<td>8-11.45 Drawing-Machine Operator, Flat Glass</td>
</tr>
<tr>
<td>8-11.50 Pressing-Machine Operator, Glass</td>
</tr>
<tr>
<td>8-11.55 Cutter, Optical Glass</td>
</tr>
<tr>
<td>8-11.60 Grinder, Precision, Optical Elements</td>
</tr>
<tr>
<td>8-11.65 Polisher, Precision (Optical Elements)</td>
</tr>
<tr>
<td>8-11.70 Beveller, Optical Elements</td>
</tr>
<tr>
<td>8-11.75 Lens-Grinding-Machine Operator</td>
</tr>
<tr>
<td>8-11.80 Lens-Polishing-Machine Operator</td>
</tr>
<tr>
<td>8-11.85 Mirror Silverer</td>
</tr>
<tr>
<td>8-11.90 Glass Formers, Cutters, Grinders and Finishers, Other</td>
</tr>
</tbody>
</table>

#### 8-12 Potters and Related Clay and Abrasive Formers

| 8-12.10 Potter                              |
| 8-12.15 Modeller, Pottery and Porcelain     |
| 8-12.20 Mould Maker, Pottery and Porcelain  |
| 8-12.25 Thrower, Pottery and Porcelain      |
| 8-12.30 Jigheimer, Pottery and Porcelain    |
| 8-12.35 Turner (Pottery and Porcelain), Hand |
| 8-12.40 Caster (Pottery and Porcelain), Hand |
| 8-12.45 Moulder (Brick and Tile), Hand       |
| 8-12.50 Moulder (Abrasive Wheel), Hand       |
| 8-12.55 Presser (Pottery and Porcelain), Hand|
| 8-12.60 Presser (Brick and Tile), Hand       |
| 8-12.65 Die Presser, Pottery and Porcelain   |
| 8-12.70 Extruding-Press Operator, Clay       |
| 8-12.90 Potters and Related Clay and Abrasive Formers, Other |

#### 8-13 Furnacemen and Kilnmen, Glass and Ceramics

| 8-13.20 Furnaceman (Glass Making)            |
| 8-13.30 Furnaceman (Glass Annealing)         |
| 8-13.40 Kilnman (Pottery and Porcelain)      |
| 8-13.50 Kilnman (Brick and Tile)             |
| 8-13.90 Furnacemen and Kilnmen, Glass and Ceramics, Other |

#### 8-14 Decorators, Glass and Ceramics

| 8-14.20 Engraver (Glass)                     |
| 8-14.30 Etcher (Glass)                      |
| 8-14.40 Sandblaster (Glass)                 |
| 8-14.50 Painter (Glass), Hand               |
| 8-14.60 Painter (Ceramics), Hand            |
| 8-14.70 Painter (Ceramics), Spray           |
| 8-14.80 Dipper (Ceramics), Hand             |
| 8-14.90 Decorators, Glass and Ceramics, Other |

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209
<table>
<thead>
<tr>
<th>List of Titles Used</th>
<th>8-26 Butchers and Meat Cutters</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-19 Glass and Ceramics Workers Not Elsewhere Classified</td>
<td>8-26.10 Butcher, General</td>
</tr>
<tr>
<td>8-19.20 Millman, Clay</td>
<td>8-26.20 Slaughterer</td>
</tr>
<tr>
<td>8-19.30 Grinder (Rock and Clay)</td>
<td>8-26.30 Meat Cutter</td>
</tr>
<tr>
<td>8-19.40 Slip Maker, Clay</td>
<td>8-26.40 Sausage Maker</td>
</tr>
<tr>
<td>8-19.50 Pug-Mill Operator, Clay</td>
<td>8-26.90 Butchers and Meat Cutters, Other</td>
</tr>
<tr>
<td>8-19.60 Glaze Maker</td>
<td>8-27 Dairy Workers</td>
</tr>
<tr>
<td>8-19.70 Mixer, Abrasives</td>
<td>8-27.10 Dairy Worker, General</td>
</tr>
<tr>
<td>8-19.90 Glass and Ceramics Workers Not Elsewhere Classified, Other</td>
<td>8-27.20 Pasteuriser, Dairy</td>
</tr>
<tr>
<td>8-2 Millers, Bakers, Brewmasters and Related Food and Beverage Workers</td>
<td>8-27.30 Cultureman, Dairy</td>
</tr>
<tr>
<td>8-21 Millers, Grain and Related Products</td>
<td>8-27.40 Butter Maker</td>
</tr>
<tr>
<td>8-21.20 Miller (Grain)</td>
<td>8-27.50 Cheese Maker</td>
</tr>
<tr>
<td>8-21.30 Miller (Rice)</td>
<td>8-27.60 Ice-Cream Maker</td>
</tr>
<tr>
<td>8-21.40 Miller (Spices)</td>
<td>8-27.90 Dairy Workers, Other</td>
</tr>
<tr>
<td>8-21.50 Miller (Oil Seed)</td>
<td>8-29 Food Processers Not Elsewhere Classified</td>
</tr>
<tr>
<td>8-21.90 Millers, Grain and Related Products, Other</td>
<td>8-29.15 Taster, Coffee or Tea</td>
</tr>
<tr>
<td>8-22 Bakers and Pastrycooks</td>
<td>8-29.20 Taster, Wine or Liquor</td>
</tr>
<tr>
<td>8-22.10 Baker, General</td>
<td>8-29.25 Blender (Coffee)</td>
</tr>
<tr>
<td>Baker (Bread)</td>
<td>8-29.30 Blender (Tea)</td>
</tr>
<tr>
<td>Baker (Pastry)</td>
<td>8-29.35 Roaster (Coffee or Chicory)</td>
</tr>
<tr>
<td>8-22.90 Bakers and Pastrycooks, Other</td>
<td>8-29.40 Roaster (Cocoa-Bean)</td>
</tr>
<tr>
<td>8-23 Sugar and Chocolate Confectionery Makers</td>
<td>8-29.45 Ice Maker</td>
</tr>
<tr>
<td>8-23.10 Sugar and Chocolate Confectionery Maker, General</td>
<td>8-29.50 Macaroni Maker</td>
</tr>
<tr>
<td>8-23.20 Chocolate Maker</td>
<td>8-29.55 Fruit-Press Operator</td>
</tr>
<tr>
<td>8-23.30 Chewing-Gum Maker</td>
<td>8-29.60 Fish Butcher</td>
</tr>
<tr>
<td>8-23.90 Sugar and Chocolate Confectionery Makers, Other</td>
<td>8-29.90 Food Processers Not Elsewhere Classified, Other</td>
</tr>
<tr>
<td>8-24 Brewers, Winemakers and Related Workers</td>
<td>8-3 Chemical and Related Process Workers</td>
</tr>
<tr>
<td>8-24.15 Brewmaster</td>
<td>8-31 Batch- and Continuous-Still Operators</td>
</tr>
<tr>
<td>8-24.20 Germination Worker</td>
<td>8-31.20 Batch-Still Operator, Chemical (except Petroleum)</td>
</tr>
<tr>
<td>8-24.25 Kilnman (Malt)</td>
<td>8-31.30 Continuous-Still Operator, Chemical (except Petroleum)</td>
</tr>
<tr>
<td>8-24.30 Cooker (Mash)</td>
<td>8-31.40 Stillman, Petroleum</td>
</tr>
<tr>
<td>8-24.35 Fermenting-Room Man</td>
<td>8-31.90 Batch- and Continuous-Still Operators, Other</td>
</tr>
<tr>
<td>8-24.40 Yeast Maker</td>
<td>8-32 Cookers, Roasters and Other Heat Treaters, Chemical and Related Processes</td>
</tr>
<tr>
<td>8-24.45 Malt-Vinegar Maker</td>
<td>8-32.15 Cooker (Chemical and Related Processes)</td>
</tr>
<tr>
<td>8-24.50 Winemaker</td>
<td>8-32.20 Roaster (Chemical and Related Processes)</td>
</tr>
<tr>
<td>8-24.90 Brewers, Winemakers and Related Workers, Other</td>
<td>8-32.25 Evaporator Operator</td>
</tr>
<tr>
<td>8-25 Curers, Freezers, Cooks and Related Canners and Preservers</td>
<td>8-32.30 Autoclave Operator, Chemical and Related Processes</td>
</tr>
<tr>
<td>8-25.10 Cook (Preserving), General</td>
<td>8-32.35 Furnaceeman, Cement</td>
</tr>
<tr>
<td>Cook (Meat Preserving)</td>
<td>8-32.40 Furnaceeman, Electrode Baking</td>
</tr>
<tr>
<td>Cook (Fish Preserving)</td>
<td>8-32.45 Oven Tender, Paint Drying</td>
</tr>
<tr>
<td>Cook (Fruit and Vegetable Preserving)</td>
<td>8-32.50 Coke Burner</td>
</tr>
<tr>
<td>8-25.20 Cook, Sauces and Condiments (Preserving)</td>
<td>8-32.55 Coal-Gas Maker</td>
</tr>
<tr>
<td>8-25.30 Freezer, Foodstuffs</td>
<td>8-32.90 Cokers, Roasters and Other Heat Treaters, Chemical and Related Processes, Other</td>
</tr>
<tr>
<td>8-25.40 Dehydrator, Foodstuffs</td>
<td>8-33 Crushers, Millers and Calenderers, Chemical and Related Processes</td>
</tr>
<tr>
<td>8-25.50 Meat Curer</td>
<td>8-33.20 Crusher Operator (Chemical and Related Processes)</td>
</tr>
<tr>
<td>8-25.60 Fish Curer</td>
<td>8-33.30 Miller-Grinder (Chemical and Related Processes)</td>
</tr>
<tr>
<td>8-25.90 Curers, Freezers, Cooks and Related Canners and Preservers, Other</td>
<td></td>
</tr>
</tbody>
</table>
LIST OF TITLES USED

8-33.40 Millman, Rubber
8-33.50 Calender-Machine Operator, Textile
8-33.60 Calender-Machine Operator, Rubber
8-33.90 Crushers, Millers and Calenderers
          (Chemical and Related Processes), Other

8-34 Paper-Pulp Preparers
8-34.20 Wood Grinder (Paper Pulp)
8-34.30 Digestor Operator (Paper Pulp)
8-34.40 Bleacher Operator (Paper Pulp)
8-34.50 Beater Operator (Paper Pulp)
8-34.90 Paper-Pulp Preparers, Other

8-35 Paper Makers
8-35.20 Paper Maker, Hand
8-35.40 Paper-Making Machine Operator (Wet End)
8-35.50 Supercalender Operator, Paper
8-35.60 Coating-Machine Operator, Paper
8-35.90 Paper Makers, Other

8-39 Chemical and Related Process Workers Not Elsewhere Classified
8-39.15 Reactor-Convertor Operator (except Petroleum)
8-39.20 Reactor Operator, Petroleum
8-39.25 Filter-Press Operator
8-39.30 Centrifugal-Separator Operator
8-39.35 Mixing-Machine Operator (Chemical and Related Processes)
8-39.45 Spinner (Rayon and Similar Products)
8-39.50 Treater (Petrol Refining)
8-39.55 Bleacher Operator (Chemical)
8-39.60 Carbonation Man, Sugar Refining
8-39.65 Crystalliser Operator, Sugar Refining
8-39.90 Chemical and Related Process Workers Not Elsewhere Classified, Other

8-4 Tobacco Preparers and Tobacco-Product Makers

8-41 Tobacco Preparers
8-41.20 Grader (Tobacco)
8-41.30 Blender (Tobacco)
8-41.40 Conditioner (Tobacco)
8-41.50 Stripper (Tobacco), Hand
8-41.60 Stripper (Tobacco), Machine
8-41.70 Tobacco-Cutting-Machine Operator
8-41.90 Tobacco Preparers, Other

8-42 Cigar Makers
8-42.20 Cigar Maker, Hand
8-42.30 Cigar Maker, Machine
8-42.90 Cigar Makers, Other

8-43 Cigarette Makers
8-43.20 Cigarette Maker, Hand
8-43.30 Cigarette Maker, Machine
8-43.90 Cigarette Makers, Other

8-49 Tobacco-Product Makers Not Elsewhere Classified
8-49.20 Snuff Maker
8-49.90 Tobacco-Product Makers Not Elsewhere Classified, Other

8-5 Craftsmen and Production-Process Workers Not Elsewhere Classified

8-51 Basketry Weavers and Related Workers
8-51.20 Basket Maker
8-51.30 Wicker-Furniture Maker
8-51.90 Basketry Weavers and Related Workers, Other

8-52 Tyre Builders, Vulcanisers and Related Rubber-Product Makers
8-52.20 Extruding-Machine Operator (Rubber)
8-52.30 Rubber-Moulding-Press Operator
8-52.40 Tyre Builder
8-52.50 Tyre Moulder
8-52.60 Vulcaniser, Hot Process
8-52.90 Tyre Builders, Vulcanisers, and Related Rubber-Product Makers, Other

8-53 Plastics-Product Makers
8-53.20 Laminator (Plastics)
8-53.30 Extruding-Machine Operator (Plastics)
8-53.40 Moulding-Machine Operator (Plastics)
8-53.90 Plastics-Product Makers, Other

8-54 Tanners, Fellmongers, Pelt Dressers and Related Workers
8-54.20 Hide and Skin Grader
8-54.25 Fellmonger
8-54.30 Hide Flesher and De-hairer, Hand
8-54.35 Hide Flesher and De-hairer, Machine
8-54.40 Hide Splitter
8-54.45 Tanner
8-54.50 Tanning Liquor Maker
8-54.55 Leather Currier
8-54.60 Leather Dyer and Stainer
8-54.65 Pelt Grader
8-54.70 Pelt Flesher
8-54.75 Pelt Plucker and Trimmer
8-54.80 Pelt Dyer, Hand
8-54.85 Pelt Setter
8-54.90 Tanners, Fellmongers, Pelt Dressers and Related Workers, Other

8-55 Photographic Dark-Room Workers
8-55.20 Developer (Photographic, Colour)
8-55.30 Developer (Photographic, Black-and-White)
8-55.40 Printer (Photographic)
8-55.50 Enlarger (Photographic)
8-55.90 Photographic Dark-Room Workers, Other

8-56 Makers of Musical Instruments and Related Workers
8-56.15 Musical-Instrument Maker (Stringed)
8-56.20 Musical Instrument Maker (Wood, Wind)
8-56.25 Musical Instrument Maker (Metal, Wind)
8-56.30 Accordion Maker
8-56.35 Organ Maker
8-56.40 Piano Maker
### LIST OF TITLES USED

#### 8-57 Stone Cutters and Carvers
- 8-57.15 Grader (Stone)
- 8-57.20 Stonework Layout Man
- 8-57.25 Stone Cutter, Yard
- 8-57.30 Sawyer (Stone)
- 8-57.35 Planer Operator, Stone
- 8-57.40 Grinder (Stone)
- 8-57.45 Polisher (Stone), Machine
- 8-57.50 Polisher (Stone), Hand
- 8-57.55 Lathe Operator (Stone Cutting)
- 8-57.60 Lathe Operator (Stone Polishing)
- 8-57.65 Driller, Stone
- 8-57.70 Stone Carver, Hand
- 8-57.75 Stone Letter Cutter, Hand
- 8-57.80 Monument Carver-Setter
- 8-57.90 Stone Cutters and Carvers, Other

#### 8-58 Paper-Product Makers
- 8-58.20 Paper-Box Maker, Hand
- 8-58.25 Lining-Machine Operator, Cardboard
- 8-58.30 Cutting-and-Creasing-Press Operator, Paper-Box Making
- 8-58.35 Paper-Box Maker, Machine
- 8-58.40 Paper-Bag and Envelope Maker, Machine
- 8-58.45 Cellophane-Bag Maker, Machine
- 8-58.90 Paper-Product Makers, Other

#### 8-59 Miscellaneous Craftsmen and Production-Process Workers Not Elsewhere Classified
- 8-59.15 Abrasive-Coated Cloth and Paper Maker
- 8-59.20 Artificial-Stone Maker
- 8-59.25 Artificial-Tooth Maker
- 8-59.30 Broom Maker
- 8-59.35 Brush Maker, Hand
- 8-59.40 Button Maker
- 8-59.45 Candle Maker
- 8-59.55 Doll Maker
- 8-59.60 Linoleum Maker
- 8-59.65 Match Maker
- 8-59.70 Pencil Maker
- 8-59.75 Photographic Film and Paper Maker
- 8-59.80 Rubber-Stamp Maker
- 8-59.83 Coil Winder, Machine
- 8-59.86 Coil Winder, Hand
- 8-59.90 Miscellaneous Craftsmen and Production-Process Workers Not Elsewhere Classified, Other

#### 8-6 Packers, Labellers and Related Workers

#### 8-61 Packers, Labellers and Related Workers
- 8-61.20 Container-Filling-Machine Operator
- 8-61.30 Capping-and-Sealing-Machine Operator
- 8-61.40 Packer, Hand
- 8-61.50 Wrapping-Machine Operator
- 8-61.60 Packer, Machine
- 8-61.70 Labeller, Machine
- 8-61.90 Packers, Labellers and Related Workers, Other

#### 8-7 Stationary-Engine and Excavating and Lifting Equipment Operators and Related Workers

#### 8-71 Operators of Stationary Engines and Related Equipment and Boiler Firemen
- 8-71.20 Stationary-Engine Operator (Internal Combustion or Reciprocating Steam)
- 8-71.30 Turbine Operator (Electricity Production)
- 8-71.40 Air-Compressor Operator
- 8-71.50 Pump Operator
- 8-71.60 Refrigeration-System Operator
- 8-71.70 Heating and Ventilating Equipment Operator
- 8-71.80 Fireman (Steam Boiler)
- 8-71.90 Operators of Stationary Engines and Related Equipment and Boiler Firemen, Other

#### 8-72 Crane and Hoist Operators
- 8-72.20 Crane Operator (Bridge or Gantry)
- 8-72.30 Crane Operator, Jib (except Mobile Crane)
- 8-72.40 Mobile-Crane Operator
- 8-72.50 Winch Operator
- 8-72.60 Hoist Operator (Construction)
- 8-72.70 Hoist Operator, Mine
- 8-72.80 Opening-Bridge Operator
- 8-72.90 Crane and Hoist Operators, Other

#### 8-73 Riggers and Cable Splicers
- 8-73.10 Rigger, Hoisting Equipment, General
- 8-73.20 Rigger, Hoisting Equipment (Construction)
- 8-73.30 Rigger (Logging)
- 8-73.40 Rigger (Ship)
- 8-73.50 Rigger (Aircraft)
- 8-73.60 Rigger (Petroleum-Well Drilling)
- 8-73.70 Wire Spinner and Cable Squeezer, Bridge Building
- 8-73.80 Splicer, Rope and Cable
- 8-73.90 Riggers and Cable Splicers, Other

#### 8-74 Operators of Earth-Moving and Other Construction Machinery Not Elsewhere Classified
- 8-74.15 Excavating-Shovel Operator
- 8-74.20 Trench-Digging-Machine Operator
- 8-74.25 Grab-Bucket Operator
- 8-74.30 Dragline Operator
- 8-74.35 Dredge Operator
- 8-74.40 Pile-Driver Operator
- 8-74.45 Bulldozer Operator
- 8-74.50 Road-Grader and Scraper Operator
- 8-74.55 Road-Roller Operator
- 8-74.60 Paving-Machine Operator, Concrete
- 8-74.65 Concrete-Mixer Operator
- 8-74.70 Concrete-Mixing-Plant Operator
- 8-74.90 Operators of Earth-Moving and Other Construction Machinery Not Elsewhere Classified, Other
## LIST OF TITLES USED

### Major Group 9: Service, Sport and Recreation Workers

#### 9-0 Fire Fighters, Policemen, Guards and Related Workers

9-01 Fire Fighters and Related Workers
- 9-01.10 Fire Fighter, General
- 9-01.20 Fire-Prevention Specialist
- 9-01.30 Fire-Salvage Specialist
- 9-01.90 Fire Fighters and Related Workers, Other

9-02 Policemen and Detectives
- 9-02.10 Policeman
- 9-02.20 Detective

9-09 Guards and Related Workers Not Elsewhere Classified
- 9-09.20 Inquiry Agent, Private
- 9-09.30 Prison Guard
- 9-09.40 Watchman
- 9-09.90 Guards and Related Workers Not Elsewhere Classified, Other

#### 9-1 Housekeepers, Cooks, Maids and Related Workers

9-11 Housekeepers, Housekeeping Stewards and Matrons
- 9-11.20 Housekeeper (except Private Service)
- 9-11.30 Housekeeper (Private Service)
- 9-11.40 House Steward
- 9-11.50 Butler
- 9-11.60 Matron, Housekeeping
- 9-11.90 Housekeepers, Housekeeping Stewards and Matrons, Other

9-12 Cooks
- 9-12.20 Head Cook
- 9-12.30 Cook (except Private Service)
- 9-12.40 Cook (Private Service)
- 9-12.90 Cooks, Other

#### 9-2 Waiters, Bartenders and Related Workers

9-21 Waiters, Bartenders and Related Workers
- 9-21.10 Waiter (General)
- 9-21.20 Waiter (Formal Service)
- 9-21.30 Bartender
- 9-21.90 Waiters, Bartenders and Related Workers, Other

#### 9-3 Building Caretakers, Cleaners and Related Workers

9-31 Building Caretakers
- 9-31.20 Concierge, Apartment House
- 9-31.30 Janitor
- 9-31.40 Verger
- 9-31.90 Building Caretakers, Other

#### 9-19 Maids, Valets and Related Service Workers Not Elsewhere Classified

- 9-19.20 Maid (except Private Service)
- 9-19.30 Maid, Private Service
- 9-19.40 Maid, Personal
- 9-19.50 Valet, Private Service
- 9-19.60 Nursemaid
- 9-19.70 Concierge, Hotel
- 9-19.80 Steward, Ship, Dock or Cabin
- 9-19.85 Air Hostess
- 9-19.90 Maids, Valets and Related Service Workers Not Elsewhere Classified, Other

#### 9-8 Longshoremen and Related Freight Handlers

9-81 Longshoremen and Related Freight Handlers
- 9-81.20 Longshoreman
- 9-81.30 Boat Loader (Petroleum)
- 9-81.40 Vehicle Loader (Railway and Road Transport)
- 9-81.50 Aircraft Loader
- 9-81.60 Porter, Warehouse
- 9-81.90 Longshoremen and Related Freight Handlers, Other

#### 8-9 Labourers Not Elsewhere Classified

- 8-99.20 Labourer, Light Physical Work
- 8-99.30 Labourer, Heavy Physical Work
<table>
<thead>
<tr>
<th>Major Group</th>
<th>Code</th>
<th>Occupational Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-4 Barbers, Hairdressers, Beauticians and Related Workers</td>
<td>9-41</td>
<td>Barbers, Hairdressers, Beauticians and Related Workers</td>
</tr>
<tr>
<td></td>
<td>9-41.20</td>
<td>Beautician</td>
</tr>
<tr>
<td></td>
<td>9-41.30</td>
<td>Make-up Man, Stage and Studio</td>
</tr>
<tr>
<td></td>
<td>9-41.40</td>
<td>Hairdresser, Women's</td>
</tr>
<tr>
<td></td>
<td>9-41.50</td>
<td>Hairdresser-Barber, Men's</td>
</tr>
<tr>
<td></td>
<td>9-41.60</td>
<td>Manicurist</td>
</tr>
<tr>
<td></td>
<td>9-41.70</td>
<td>Bath Attendant</td>
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<tr>
<td></td>
<td>9-41.90</td>
<td>Barbers, Hairdressers, Beauticians and Related Workers, Other</td>
</tr>
<tr>
<td>9-5 Launderers, Dry Cleaners and Pressers</td>
<td>9-51</td>
<td>Launderers, Dry Cleaners and Pressers</td>
</tr>
<tr>
<td></td>
<td>9-51.10</td>
<td>Launderer, General</td>
</tr>
<tr>
<td></td>
<td>9-51.20</td>
<td>Washing-Machine Operator, Laundry</td>
</tr>
<tr>
<td></td>
<td>9-51.30</td>
<td>Dry-Cleaning-Machine Operator</td>
</tr>
<tr>
<td></td>
<td>9-51.40</td>
<td>Dry Cleaner, Hand</td>
</tr>
<tr>
<td></td>
<td>9-51.50</td>
<td>Spotter, Dry Cleaning</td>
</tr>
<tr>
<td></td>
<td>9-51.60</td>
<td>Presser, Machine</td>
</tr>
<tr>
<td></td>
<td>9-51.70</td>
<td>Presser, Hand</td>
</tr>
<tr>
<td></td>
<td>9-51.90</td>
<td>Launderers, Dry Cleaners and Pressers, Other</td>
</tr>
<tr>
<td>9-6 Athletes, Sportsmen and Related Workers</td>
<td>9-61</td>
<td>Athletes, Sportsmen and Related Workers</td>
</tr>
<tr>
<td></td>
<td>9-61.20</td>
<td>Athlete</td>
</tr>
<tr>
<td></td>
<td>9-61.30</td>
<td>Athletic Coach</td>
</tr>
<tr>
<td></td>
<td>9-61.40</td>
<td>Sports Official</td>
</tr>
<tr>
<td></td>
<td>9-61.50</td>
<td>Physical Trainer</td>
</tr>
<tr>
<td></td>
<td>9-61.90</td>
<td>Athletes, Sportsmen and Related Workers, Other</td>
</tr>
<tr>
<td>9-7 Photographers and Related Camera Operators</td>
<td>9-71</td>
<td>Photographers and Related Camera Operators</td>
</tr>
<tr>
<td></td>
<td>9-71.10</td>
<td>Photographer, General</td>
</tr>
<tr>
<td></td>
<td>9-71.20</td>
<td>Photographer (Portrait)</td>
</tr>
<tr>
<td></td>
<td>9-71.30</td>
<td>Photographer (Commercial Illustration)</td>
</tr>
<tr>
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<td>9-71.40</td>
<td>Photographer (News)</td>
</tr>
<tr>
<td></td>
<td>9-71.50</td>
<td>Camera Operator (Motion Picture)</td>
</tr>
<tr>
<td></td>
<td>9-71.60</td>
<td>Camera Operator (Television)</td>
</tr>
<tr>
<td></td>
<td>9-71.90</td>
<td>Photographers and Related Camera Operators, Other</td>
</tr>
<tr>
<td>9-8 Embalmers and Undertakers</td>
<td>9-81</td>
<td>Embalmers and Undertakers</td>
</tr>
<tr>
<td></td>
<td>9-81.20</td>
<td>Embalmer</td>
</tr>
<tr>
<td></td>
<td>9-81.30</td>
<td>Undertaker</td>
</tr>
<tr>
<td></td>
<td>9-81.90</td>
<td>Embalmers and Undertakers, Other</td>
</tr>
<tr>
<td>9-9 Service, Sport and Recreation Workers Not Elsewhere Classified</td>
<td>9-99</td>
<td>Service, Sport and Recreation Workers Not Elsewhere Classified</td>
</tr>
<tr>
<td></td>
<td>9-99.20</td>
<td>Companion</td>
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<td></td>
<td>9-99.30</td>
<td>Mannequin</td>
</tr>
<tr>
<td></td>
<td>9-99.40</td>
<td>Wardrobe Mistress, Stage and Studio</td>
</tr>
<tr>
<td></td>
<td>9-99.50</td>
<td>Bookmaker, Sport</td>
</tr>
<tr>
<td></td>
<td>9-99.60</td>
<td>Croupier</td>
</tr>
<tr>
<td></td>
<td>9-99.90</td>
<td>Service, Sport and Recreation Workers Not Elsewhere Classified, Other</td>
</tr>
</tbody>
</table>

**Major Group X: Workers Not Classifiable by Occupation**

| X-1 New Workers Seeking Employment |
| X-19 New Workers Seeking Employment |
| X-19.00 New Workers Seeking Employment |
| X-2 Workers Reporting Occupations Unidentifiable or Inadequately Described |
| X-29 Workers Reporting Occupations Unidentifiable or Inadequately Described |

**Armed Forces: Members of the Armed Forces**
ALPHABETICAL INDEX OF OCCUPATIONAL TITLES

This index gives the titles of groups and occupations in alphabetical order, indicating the corresponding code numbers. Minor groups appear in heavy type, unit group titles in block capitals. Titles consisting of two or more words are indexed, whenever necessary, according to each word. To find the exact wording of a title reference should in all cases be made either to the text of the classification or to the list of titles used (see p. 196).

A

Able Seaman, 6-11.30
Abrasive Coated Cloth and Paper Maker, 8-59.15
Abrasive Mixer, 8-19.70
Abrasive Wheel Moulder, Hand, 8-12.50
Accordion Maker, 8-56.30
Accountant, Professional, 0-Y1.10
ACCOUNTANTS, PROFESSIONAL, 0-Y1
Acidiser, Petroleum and Gas Wells, 5-11.60
Acoustical Insulator, 7-94.40
Actor, 0-93.20
ACTORS, MUSICIANS, DANCERS AND RELATED WORKERS, 0-93
Actuary, 0-Y4.30
Administrator (Banks and Other Financial Institutions), 1-13.20
Administrator (Communications), 1-14.40
Administrator (Community and Business Services), 1-15.20
Administrator (Construction), 1-11.40
Administrator (Electricity, Gas, Water and Sanitary Services), 1-11.50
Administrator (Fishing), 1-19.30
Administrator (Forestry and Logging), 1-19.20
Administrator (Government), 1-01.50
Administrator (Insurance), 1-13.30
Administrator (Manufacturing), 1-11.30
Administrator (Mining and Quarrying), 1-11.20
Administrator (Personal Services), 1-15.40
Administrator (Real-Estate), 1-13.40
Administrator (Recreation Services), 1-15.30
Administrator (Retail Trade), 1-12.30
Administrators and Executive Officials, Government, 1-0
Administrators and Executive Officials, Government, 1-0
Agnostic, 0-23.20
AGRONOMISTS, SILVICULTURISTS AND HORTICULTURAL SCIENTISTS, 0-23
Air-Compressor Operator, 8-71.40
Air-Conditioning and Refrigeration Equipment Insulator, 7-94.60
Aircraft Despatcher, 6-62.20
Aircraft Draughtsman, 0-X1.28
Aircraft Electrician, 7-61.25
Aircraft Engine Mechanic-Repairman, 7-53.45
Aircraft Engines, Fitter-Assembler, 7-52.45
Aircraft Joiner, 7-71.45
Aircraft Loader, 8-81.50
Aircraft Pilot, General, 6-21.10
AIRCRAFT PILOTS, NAVIGATORS AND FLIGHT ENGINEERS, 6-2
AIRCRAFT PILOTS, NAVIGATORS AND FLIGHT ENGINEERS, 6-2
Aircraft-Radio Operator, 6-72.40
Aircraft Rigger, 8-73.50
Aircraft Sheet-Metal Worker, 7-54.10
Aircraft-Traffic Controller, 6-62.15
Airframe Erector, Metal, 7-52.75
Air Hostess, 9-19.85
Airport Construction, Civil Engineer, 0-02.08
Analyst, Occupational, 0-Y9.47
Animal-Drawn Farm Equipment Operator, 4-11.50
Animal-Drawn-Vehicle Driver (Freight), 6-42.20
Animal-Drawn-Vehicle Driver (Mine and Quarry), 5-99.40
Animal-Drawn-Vehicle Driver (Passenger), 6-42.15
Animal Scientist, Domestic Animals, 0-22.80
Annealer, 7-32.20
ANNEALERS, TEMPERERS AND RELATED HEAT TREATERS, 7-32
Announcer (Television and Radio), 0-93.65
Anthropologist, 0-Y9.23
Anthropologist, 0-Y9.23
Apartment-House Concierge, 9-31.20
APPAREL AND RELATED PRODUCT MAKERS NOT ELSEWHERE CLASSIFIED, 7-19
Appraiser, 2-11.70
Architect (Buildings), 0-01.20
Architect (Naval), 0-02.90
ARCHITECTS, 0-01
Architects, Engineers and Surveyors, 0-0
ARCHITECTS, ENGINEERS AND SURVEYORS, 0-0
Architectural Draughtsman, 0-X1.15

215
ALPHABETICAL INDEX OF OCCUPATIONAL TITLES

Braid Maker, Hand, 7-09.25
Braid Maker, Machine, 7-09.30
Brakeman (Mine and Quarry), 5-99.50
Brakeman (Railway), 6-51.20
Brazer, Hand, 7-56.60
BREWERS, WINEMAKERS AND RELATED WORKERS, 8-24
Brewmaster, 8-24.15
Brick and Tile Kilnman, 8-13.50
Brick and Tile Moulder, Hand, 8-12.45
Bricklayer (Chimney Building), 7-91.25
Bricklayer (Construction), 7-91.15
Bricklayer (Firebrick), 7-91.30
Bricklayer (Furnace Lining), 7-91.30
Bricklayer (Ornamental), 7-91.15
Bricklayer (Ovens and Kilns), 7-91.30
Bricklayers, Plasterers and Construction Workers Not Elsewhere Classified, 7-9
BRICKLAYERS, STONEMASONS AND TILE SETTERS 7-91
Bridge Building, Wire Spinner and Cable Squeezer, 8-73.70
Bridge-Construction Engineer, Civil, 0-02.12
Bridge-Crane Operator, 8-72.20
Broadcasting Station Operator (Radio), 6-72.15
Broadcasting Station Operator (Television), 6-72.20
Broom Maker, 8-59.30
Brush Maker, Hand, 8-59.35
Brush Painter, 7-82.20
Bucker, Logging, 4-41.30
Buffing and Polishing Machine Operator, Metal Working, 7-59.45
BUILDING CARETAKERS, 9-31
Building Caretakers, Cleaners and Related Workers, 9-3
Building Construction, Civil Engineer, 0-02.04
Building Electrician, 7-61.15
Building Exteriors, Sandblaster, 7-99.55
Building Exteriors, Steam Cleaner, 7-99.60
Building Glazier, 7-95.20
Building Insulator, Hand, 7-94.20
Building Insulator, Machine, 7-94.30
Building-Maintenance Man, 7-99.45
Building Painter, 7-81.20
Bulb Grower, 4-01.78
Bulldozer Operator, 8-74.45
Burner, Coke, 8-32.50
Burner, Lead, 7-55.80
Bus Driver, Motor, 6-41.30
Business and Community Services Administrator, 1-15.20
Business Services Salesman, 3-11.50
Butcher (Fish), 8-29.60
Butcher, General, 8-26.10
BUTCHERS AND MEAT CUTTERS, 8-26
Butler, 9-11.50
Baker, 8-27.40
Button Maker, 8-59.40
Cabinetmaker, 7-72.10
CABINETMAKERS, 7-72
Cable Driller, Petroleum and Gas Wells, 5-11.30
Cable Splicer, 8-73.80
Cable Squeezer and Wire Spinner (Bridge Building), 8-73.70
Cameraman, Photo-Mechanical, 8-05.30
Camera Operator (Motion Picture), 9-71.50
Camera Operator (Television), 9-71.60
Can and Port Locks, Operator of, 6-92.20
Candle Dipper, 8-59.45
Candle Maker, 8-59.45
Canvasser, 3-32.30
CAPPING-AND-SEALING-MACHINE OPERATOR, 8-61.30
Captain, Ship (Inland Waterways, Estuaries and Ports), 6-01.20
Captain, Ship (Sea), 6-01.15
Carbonation Man, Sugar Refining, 8-39.60
Carboniser, Textile, 7-06.45
Car Conductor, Pullman, 6-41.15
Catapult Rider, 8-58.25
Card Cutter, Jacquard, 7-05.30
Carder, Fibre, 7-01.30
Card Grinder, Textile, 7-59.65
Card-Punching-Machine Operator, 2-91.40
Carpenter (Bench), 7-71.50
Carpenter (Construction), 7-71.15
Carpenter, General, 7-71.10
Carpenters and Joiners, 7-7
Carpenter (Ship), 7-71.35
Carpenters, Joiners, Cabinetmakers, Coopers and Related Workers, 7-7
Carpenter (Stage and Studio), 7-71.20
Carpet Weaver, Hand Loom, 7-03.35
Carpet Weaver, Machine Loom, 7-03.60
Cartographer, 0-XI.35
Cartoonist, 0-91.30
Cartwright, Wood, 7-79.20
Carver-Setter, Monument, 8-57.80
Carver, Stone, Hand, 8-57.70
Carver, Wood, 7-79.85
Case Hardener (Carbonising), 7-32.40
Case Hardener (Cyaniding), 7-32.40
Case Hardener, Metal, 7-32.40
Case Hardener (Nitriding), 7-32.40
Cauliflowerer, 0-01.30
Caster (Pottery and Porcelain), Hand, 8-12.40
Casting-Machine Operator, Ludlow, 8-01.25
Casting-Machine Operator, Monotype, 8-01.40
Cattle (Beef) Farmer, 4-01.38
Cellophane Bag Maker, Machine, 8-58.45
Cementer, Petroleum and Gas Wells, 5-11.40
Cement Finisher, 7-93.20
Cement Finishing and Terrazzo Workers, 7-93
Cement Furnacemen, 8-32.35
Centrifugal-Separator Operator, 8-39.35
Ceramic and Glass Engineer, 0-02.70
Ceramic and Related Processes, Autoclave Operator, 8-32.30
Chemical and Metallurgical Engineers: see Engineers (0-02)
Chemical and Related Processes, Autoclave Operator, 8-32.30
Chemical and Related Process Workers, 8-3
CHEMICAL AND RELATED PROCESS WORKERS NOT ELSEWHERE CLASSIFIED, 8-39
Chemical Batch-Still Operator (except Petroleum), 8-31.20
Chemical Bleacher Operator, 8-39.55
Chemical Continuous-Still Operator (except Petroleum), 8-31.30
Chemical Engineer (Chemical Products Other than Petroleum), 0-02.62
Chemical Engineer, General, 0-02.60
Chemical Engineer (Petroleum), 0-02.64
Chemist, Biological, 0-11.20
Chemist, General, 0-11.10
Chemist (Inorganic), 0-11.40
Chemist (Organic), 0-11.30
Chemist (Physical), 0-11.50
CHEMISTS, 0-11
Chemists, Physicists, Geologists and Other Physical Scientists, 0-1
Chewing Gum Maker, 8-23.30
Chicory or Coffee Roaster, 8-29.35
Chief Engineer, Ship, 6-02.15
Chimney-Building Bricklayer, 7-91.25
Chimney Sweep, 9-32.40
Chiropractor, 0-59.30
Chocolate and Sugar Confectionery Maker, General, 8-23.10
Chocolate Maker, 8-23.20
Choreographer, 0-93.60
Cigarette Maker, Hand, 8-43.20
Cigarette Maker, Machine, 8-43.30
CIGARETTE MAKERS, 8-43
Cigar Maker, Hand, 8-42.20
Cigar Maker, Machine, 8-42.30
CIGAR MAKERS, 8-42
Cinema Projectionist, 7-69.60
Civil Engineer (Airport Construction), 0-02.08
Civil Engineer (Bridge Construction), 0-02.12
Civil Engineer (Building Construction), 0-02.04
Civil Engineer, General, 0-02.02
Civil Engineer (Highway and Street Construction), 0-02.06
Civil Engineer (Hydraulic), 0-02.18
Civil Engineer (Railway Construction), 0-02.10
Civil Engineers : see Engineers (0-02)
Civil Engineer (Sanitary), 0-02.16
Civil Engineer (Soil Mechanics), 0-02.20
Civil Engineer (Tunnel Construction), 0-02.14
Classer and Grader, Fibre, 7-01.15
Chalk Pug-Mill Operator, 8-19.50
Clay and Rock Grinder, 8-19.30
Clay Extruding-Press Operator, 8-12.70
Clay Millman, 8-19.20
Clay Pug-Mill Operator, 8-19.50
Clerk (Book-Keeping), 2-01.20
Clerk (Correspondence), 2-99.24
Clerk (Cost Accounting), 2-99.18
Clerk (Edging), 2-99.60
Clerk (Finance), 2-99.30
Clerk (Insurance), 2-99.33
Clerk (Legal), 2-99.36
Clerk (Library), 2-99.39
Clerk, Office, General, 2-99.10
Clerk (Personnel), 2-99.27
Clerk (Production Planning), 2-99.48
Clerk (Shipping and Receiving), 2-99.42
Clerk (Statistical), 2-99.15
Clerk (Stock Records), 2-99.51
Clerk (Storeroom), 2-99.54
Clerk (Transportation Booking), 2-99.45
Clerk (Weighing), 2-99.57
Clock and Watch Repairer, 7-41.20
Clock and Watch Repairer, 7-41.15
Cloth and Paper Maker, Abrasive Coated, 8-59.15
Cloth Weaver, Handloom, 7-03.30
Cloth Weaver, Machine Loom (except Jacquard Loom), 7-03.40
Coach, Athlete, 9-61.30
Coach-Body Builder, Wood, 7-79.15
Coachman : see Driver, Animal-Drawn Vehicle (Passenger) (6-42.15)
Coal Fireman, Ship, 6-12.20
Coal-Gas Maker, 8-32.55
Coastal and Inland Waters Fisherman, 4-31.20
Coating-Machine Operator, Paper, 8-35.60
Cocoa-Bean Roaster, 8-29.40
Coffee Blender, 8-29.25
Coffee or Chicory Roaster, 8-29.35
Coffee or Tea Taster, 8-29.15
Cork Winder, Hand, 8-59.86
Cork Winder, Machine, 8-59.83
Coke Burner, 8-32.50
Cold-Rolling-Mill Operator, Metal, 7-33.50
Colour Developer, Photographic, 8-55.20
Comber, Fibre, 7-01.35
Commercial and Industrial Product Designer, 0-Y9.62
Commercial Artist, 0-91.25
Commercial Illustration Photographer, 9-71.30
Commercial Traveller, 3-21.20
Commercial Travellers and Manufacturers’ Agents, 3-2
COMMERCIAL TRAVELLERS AND MANUFACTURERS’ AGENTS, 3-21
Communication Administrator, 1-14.40
Communication Despatcher, Traffic, 6-93.10
Community and Business Services Administrator, 1-15.20
Companion, 9-99.20
Composer, 0-93.40
Composition-Floor Layer (Mastic), 7-99.15
Composition-Tile Floor-Layer, 7-99.20
Composer, 9-01.20
COMPOSERS AND TYPE-SETTERS, 8-01
Composers, Pressmen, Engravers, Bookbinders and Related Workers, 8-0
Compressor (Air) Operator, 8-71.40
Concierge (Apartment House), 9-31.20
Concierge (Hotel), 9-19.70
Concrete Finisher : see Cement Finisher (7-93.20)
Concrete-Mixer Operator, 8-74.65
Concrete-Mixer-Plant Operator, 8-74.70
Condiments and Sauces Cook, 8-25.20
Conditioner (Tobacco), 8-41.40
Conductor, Band and Orchestra, 0-93.45
Conductor (Bus or Tram), 6-91.10
Conductor (Railway), 6-51.15
Conductors and Brakemen, Railway, 6-5
CONDUCTORS AND BRAKEMEN, RAILWAY, 6-51
CONDUCTORS, ROAD TRANSPORT, 6-91
Conductor (Vocal Group), 0-93.50
Confectionery Maker, Sugar and Chocolate, General 8-23.10
ALPHABETICAL INDEX OF OCCUPATIONAL TITLES

Construction Administrator, 1-11.40
Constructional Steel Erector, 7-57.20
Construction Bricklayer, 7-91.15
Construction Stonemason, 7-91.40
Construction Workers Not Elsewhere Classified, 7-99
Container-Filling-Machine Operator, 8-61.20
Continuous-Mill Operator (Metal-Rolling Mill), 7-33.40
Continuous-Still Operator, Chemical (except Petroleum), 8-31.30
Controller, Aircraft Traffic, 6-62.15
Converter-Reactor Operator (except Petroleum), 8-39.15
Converting and Refining, Non-ferrous Metal, Furnace-man, 7-31.35
Cooker (Chemical and Related Processes), 8-32.15
Cooker (Mash), 8-24.30
Cookers, Roasters and Other Heat Treaters, Chemical and Related Processes, 8-32
Cook (except Private Service), 9-12.30
Cook (Fish Preserving), 8-25.10
Cook (Fruit and Vegetable Preserving), 8-25.10
Cook (Meat Preserving), 8-25.10
Cook (Preserving), General, 8-25.10
Cook (Private Service), 9-12.40
Craftsmen and Production-Process Workers Not Elsewhere Classified, 8-5
Crane and Hoist Operators, 8-72
Crane Operator (Bridge or Gantry), 8-72.20
Crane Operator (Jib, Other than Mobile Crane), 8-72.30
Crane Operator (Mobile Crane), 8-72.40
Creasing and Cutting Press Operator (Paper-Box Making), 8-58.30
Creative Engraver, 0-91.40
Creative Painter, 0-91.20
Creative Sculptor, 0-91.35
Critic, 0-92.30
Croceter, Hand, 7-09.35
Crocheting-Machine Operator, 7-09.40
Crops Farmer, General, 4-01.12
Croupier, 9-99.60
Crucible Furnaceman, Metal Melting, 7-31.55
Crude-Oil Treater, 5-99.80
Cruiser, Timber, 4-41.15
Crusher Operator (Chemical and Related Processes), 8-33.20
Crusher Operator (Minerals), 5-21.30
Crushers, Mills and Calenderers, Chemical and Related Processes, 8-33
Crystalliser Operator, Sugar Refining, 8-39.65
Cultureman, Dairy, 8-27.30
Culturist, Oyster, 4-31.80
Cupola Furnaceman, Metal Melting, 7-31.40
Curer (Fish), 8-25.60
Curer (Meat), 8-25.50
Currier, Leather, 8-54.55
Cutlery and Tool Grinder (except Machine Tools), 7-59.55
Cutter and Setter, Mosaic, 7-91.65
Cutter, Clicker, Hand, 7-22.25
Cutter, Clicker, Machine, 7-22.20
Cutter, Flame, Hand, 7-56.45
Cutter, Flame, Machine, 7-56.50
Cutter, Fur, 7-12.40
Cutter, Garments, Leather, 7-15.60
Cutter, Gens, 7-42.30
Cutter, Gloves (except Leather), 7-15.70
Cutter, Gloves, Leather, 7-15.80
Cutter, Jacquard Card, 7-05.30
Cutter, Leather (except Footwear, Gloves and Garments), 7-29.20
Cutter, Meat, 8-26.30
Cutter, Optical Glass, 8-11.55
Cutter, Ready-to-Wear Garments (except Leather), 7-15.30
Cutters, Lasters, Sewers, Footwear and Related Workers, 7-22
Cutter, Stencil, Silk-Screen Printing, 8-09.20
Cutter, Stone Letter, Hand, 8-57.75
Cutter, Veneer, 7-73.35
Cutting and Creasing-Press Operator, Paper-Box Making, 8-58.30
Cutting-Machine Operator (Mine), 5-01.30
Cutting-Machine Operator (Tobacco), 8-41.70
Cyanide Man, Ore Treating, 5-21.60
Cyclist, Motor, 6-41.60
Dairy Cultureman, 8-27.30
Dairy Farmer, 4-01.45
Dairy Pasteuriser, 8-27.20
Dairy Worker, General, 8-27.10
Dairy Workers, 8-27
Dancer, 0-93.30
Deck and Engine-Room Ratings (Ship), Barge Crews and Boatmen, 6-1
Deck Hand, Ordinary Seaman (Ship, Barge, Boat), 6-11.40
Deck Officer, Navigating Officer—see Navigating Officer (Sea) (6-01.30) and Navigating Officer (Inland Waterways, Estuaries and Ports) (6-01.40)
Deck Officers and Pilots (Ship), 6-01
Deck Officers, Engineer Officers and Pilots (Ship), 6-0
Deck Ratings (Ship), Barge Crews and Boatmen, 6-11
Decoration Designer, Interior, 0-91.50
Decorators (Glass and Ceramics), 8-14
Deep-Sea Fisherman, 4-31.15
De-gummer, Silk, 7-06.40
Dehairer and Flesher, Hides, Hand, 8-54.30
Dehairer and Flesher, Hides, Machine, 8-54.35
Dehydrator, Foodstuffs, 8-25.40
Demonstrator, 3-39.30
Dental Prosthesis Maker and Repairman, 7-41.45
Dentist, 0-32.10
Dentists, 0-32
Derrickman, Petroleum and Gas Wells, 5-11.10
Design Copyist, Jacquard Card, 7-05.20
Designer (Industrial and Commercial Products), 0-Y9.62
Designer (Interior Decoration), 0-91.50
Detective, 9-02.20
Developer, Photographic (Black and White), 8-55.30
Developer, Photographic (Colour), 8-55.20

219
Drilling-Machine Operator, Quarry and Mine, 5-01.40
Drilling-Machine Operator, Metal Working, 7-51.25
Drilling-Machine Operator, Metal Working, 7-51.25
Driller, Rotary (Petroleum and Gas Wells), 5-11.20
Driller, Cable (Petroleum and Gas Wells), 5-11.30
Driller, Rotary (Petroleum and Gas Wells), 5-11.20
Driller, Well (except Petroleum and Gas Wells), 5-11.80
Digging-Machine Operator, Trench, 8-74.20
Digester Operator (Paper Pulp), 8-34.30
Digester Operator (Paper Pulp), 8-34.30
Digger, Well, 7-99.75
Dipper (Candle), 8-59.45
Dipper (Ceramics), Hand, 8-14.80
Dipper, Hand, 7-82.40
Direct Lithographic Pressman, 8-02.50
Direct Lithographic Transferer, 8-04.45
Directors, Managers and Working Proprietors, 1-1
Directors, Managers and Working Proprietors, Wholesale and Retail Trade, 1-12
Directors, Managers and Working Proprietors, Banks and Other Financial Institutions, Insurance and Real Estate, 1-13
Directors, Managers and Working Proprietors, Mining and Quarrying, Manufacturing, Construction, Electricity, Gas, Water and Sanitary Services, 1-11
Directors, Managers and Working Proprietors Not Elsewhere Classified, 1-19
Directors, Managers and Working Proprietors, Service Industries, 1-15
Directors, Managers and Working Proprietors, Transport, Storage and Communication, 1-14
Director, Theatrical, 0-93.70
Despatcher (Aircraft), 6-62.20
Despatcher, Communication, Traffic, 6-93.10
Despatcher (Railway), 6-62.30
Despatcher, Road Transport, 6-62.60
Display Artist, 0-91.55
Distiller, Gum Turpentine, Forest, 4-41.65
Distiller, Gum Turpentine, Forest, 4-41.70
Distiller, Wood Turpentine, Forest, 4-41.65
Diver, Sponge and Pearl, 4-31.40
Doll Maker, 8-59.55
Domestic Animals, Animal Scientist, 0-22.80
Donkey, Horse and Mule Farmer, 4-01.57
Doubler, Thread and Yarn, 7-02.30
Dragline Operator, 8-74.30
Draughtsman (Aircraft), 0-XI.28
Draughtsman (Architectural), 0-XI.15
Draughtsman (Electrical), 0-XI.30
Draughtsman, General, 0-XI.10
Draughtsman (Geological), 0-XI.40
Draughtsman (Mechanical), 0-XI.35
Draughtsman (Structural), 0-XI.20
Draughtsmen, 0-X1
Draughtsmen, and Science and Engineering Technicians
Not Elsewhere Classified, 0-X
Drawer, Fibre, 7-01.45
Drawer, Seamless Pipe and Tube, 7-36.30
Drawer, Wire, 7-36.20
Drawer, Wire, Hand, 7-36.20
Drawer, Wire, Machine, 7-36.20
Drawing-Machine Operator, Flat Glass, 8-11.45
Dredge Leverman; see Dredge Operator (8-74.35)
Dredge Operator, 8-74.35
Drier, Metal, 7-39.30
Dressmaker, 7-11.30
Driller, Cable (Petroleum and Gas Wells), 5-11.30
Driller, Rotary (Petroleum and Gas Wells), 5-11.20
Driller (Stone), 8-57.65
Driller, Well (except Petroleum and Gas Wells), 5-11.80
Drilling-Machine Operator, Metal Working, 7-51.25
Drilling-Machine Operator, Quarry and Mine, 5-01.40
Drilling-Machine Setter-Operator, Metal Working, 7-50.55
Driver, Animal-Drawn Vehicle (Freight), 6-42.20
Driver, Animal-Drawn Vehicle (Mine and Quarry), 5-99.40
Driver, Animal-Drawn Vehicle (Passenger), 6-42.15
Driver (Electric or Diesel-Electric Railway Engine), 6-31.30
Driver, Engine, Mine and Quarry, 5-99.20
Driver, Hand-Propelled Vehicle, 6-43.20
Driver (Internal-Combustion Railway Engine), 6-31.50
Driver, Lorry and Van, Heavy, 6-41.40
Driver, Lorry and Van, Light, 6-41.50
Driver, Motor Bus, 6-41.30
Driver, Motor Car, 6-41.20
Driver, Pedalled Vehicle, 6-43.15
Driver, Railway Engine (Electric or Diesel-Electric), 6-31.30
Driver Railway Engine (Internal Combustion), 6-31.50
Driver Railway Engine (Steam), 6-31.15
Drivers and Firemen, Railway Engine, 6-3
Drivers and Firemen, Railway Engine, 6-31
Drivers of Animals and Animal-Drawn Vehicles, 6-42
Drivers of Motorised Vehicles, 6-41
Drivers Propelling Their Vehicles, 6-43
Drivers, Road Transport, 6-4
Driver, Tram, 6-41.15
Driver, Timber Carrier, 8-75.40
Driver, Tricycle: see Driver, Vehicle, Pedalled (6-43.15)
Driver, Trishaw: see Driver, Vehicle, Pedalled (6-43.15)
Driver, Undergound or Elevated Train, 6-31.70
Drop Forger: see Hammersmith (7-34.30)
Drop Hammersmith: see Hammersmith (7-34.30)
Dry Cleaner, Hand, 9-51.40
Dry-Cleaning Machine Operator, 9-51.30
Dry Cleaning Spotter, 9-51.50
Drying-Oven Tender, Paint, 8-32.45
Dyer and Stainer, Leather, 8-54.80
Dyer (Fabric), 7-06.25
Dyer (Garment), 7-06.30
Dyer (Pelt), Hand, 8-54.80
Dyer (Yarn), 7-06.20
Economist, 0-Y4.20
Economists, Actuaries and Statisticians, 0-Y4
Edge Sawyer, Sawmill, 7-73.30
Editor, 0-92.40
Efficiency Engineer, Industrial, 0-02.84
Elect Elected Official, Government, 1-01.20
Electrical and Electronics Fitters, 7-62
Electrical and Electronics Workers Not Elsewhere Classified, 7-69
Electrical Draughtsman, 0-X1
Electrical Draughtsman, 0-X1
Electrical Engineer (Equipment), 0-02.32
Electrical Engineer, General, 0-02.24
Electrical Engineer (Power Generation), 0-02.28
Electrical Engineers: see Engineers (0-02)
Electrical Equipment Engineer, 0-02.32
Electrical Equipment Assembler, 7-69.20
Electrical Equipment Engineer, 0-02.32
Electrical Fitter (Domestic Appliances), 7-62.65
Electrical Fitter (Elevators and Related Equipment), 7-62.50
Electrical Fitter, General, 7-62.10
Electrical Fitter (Instruments), 7-62.35
ALPHABETICAL INDEX OF OCCUPATIONAL TITLES

Engineer, Civil (Railway Construction), 0-02.10
Engineer, Civil (Sanitary), 0-02.16
Engineer, Civil (Soil Mechanics), 0-02.20
Engineer, Civil (Tunnel Construction), 0-02.14
Engineer, Electrical (Equipment), 0-02.32
Engineer, Electrical, General, 0-02.24
Engineer, Electrical, Power Distribution and Transmission, 0-02.30
Engineer, Electrical (Power Generation), 0-02.28
Engineer, Electronics, 0-02.26
Engineer, Flight, 6-21.40
Engineer, Industrial Efficiency, 0-02.84
Engineering Technician, 0-X9.20
Engineer, Marine (Ship), 6-02.20
Engineer, Marine (Superintendent), 6-02.30
Engineer, Mechanical (Aeronautical), 0-02.54
Engineer, Mechanical (Automotive), 0-02.52
Engineer, Mechanical (Boilers and Accessories), 0-02.48
Engineer, Mechanical, General, 0-02.38
Engineer, Mechanical (Heating, Ventilating and Refrigeration), 0-02.50
Engineer, Mechanical (Internal-Combustion Engines)
(except Marine, Aeronautical and Automotive), 0-02.46
Engineer, Mechanical (Machinery and Tools), 0-02.40
Engineer, Mechanical (Marine), 0-02.56
Engineer, Mechanical (Reciprocating Steam Engines)
(except Marine), 0-02.44
Engineer, Mechanical (Turbines) (except Marine and Aeronautical), 0-02.42
Engineer, Mining, General, 0-02.74
Engineer, Mining (Metal), 0-02.76
Engineer, Mining (Other than Metal), 0-02.78
ENGINEER OFFICERS (SHIP), 6-02
Engineer, Petroleum and Natural Gas, 0-02.80
ENGINEERS, 0-02
Engineer, Safety, 0-02.86
Engineer, Ship, Uncertificated: see Engine Mechanic, Ship (6-12.15)
Engineer, Telecommunication; 0-02.34
Engineer, Aircraft (Ship), 6-12.15
ENGINE-ROOM RATINGS, FIREMEN AND OILERS (SHIP), 6-12
Engraver (Creative), 0-91.40
Engraver (Glass), 8-14.20
Engraver, Hand (Metal Dies), 8-04.30
Engraver, Hand (Metal Printing Plates and Rollers), 8-04.20
Engraver, Hand (Wood, Rubber and Linoleum Blocks), 8-04.35
Engraver (Jewellery), 7-43.10
Engraver (Lithographic Stone), 8-04.15
Engraver, Machine (Metal Printing Rollers), 8-04.25
ENGRAVERS, PRINTING (EXCEPT PHOTO-ENGRAVERS), 8-04
Engraving Pantograph Operator, 8-04.40
Enlarger (Photographic), 8-55.50
Envelope and Paper-Bag Maker, Machine, 8-58.40
Equipment Insulator, Refrigeration and Air-Conditioning, 7-94.60
Erector, Airframes, Metal, 7-52.75
Erector and Installer, Machinery, 7-52.70
Erector, Constructional Steel, 7-57.20
Erector, Ship Beam and Frame, 7-57.25
Erector, Wood or Metal Scaffolding, 7-99.85
Etcher (Creative), 0-91.45
Etcher (Glass), 8-14.30
Etcher (Metal Engraving), 8-04.50
Etcher (Photo-Engraving), 8-05.60

Electrical Fitter, 7-62.15
Electrical Fitter (Motor Vehicles), 7-62.55
Electrical Fitter (Office Machinery), 7-62.40
Electrical Fitter (Refrigeration and Air-Conditioning Equipment), 7-62.60
Electrical Fitter (Signalling Systems), 7-62.45
Electrical Fitter (Switchboards), 7-62.25
Electrical Fitter (Switchgear and Control Apparatus), 7-62.50
Electrical Fitter (Transformers), 7-62.20
Electrical Load Dispatcher, Power Station, 7-61.50
Electrical Repairman, 7-61.45
Electrical Switchboard Operator, Power Station, 7-61.55
Electric and Gas Welder, 7-56.10
Electric-Arc Furnaceman, Metal Melting, 7-31.50
Electric-Arc Furnaceman, Steel Refining, 7-31.30
Electric-Arc Welder, Hand, 7-56.25
Electric-Arc Welder, Machine, 7-56.35
Electrician (Aircraft), 6-12.25
Electrician (Building), 7-61.15
Electrician, General, 7-61.10
Electrician (Maintenance), 7-61.40

Electrical Fitter (Motors and Dynamos), 7-62.40
Electrical Fitter (Motor Vehicles), 7-62.55
Electrical Fitter (Office Machinery), 7-62.40
Electrical Fitter (Refrigeration and Air-Conditioning Equipment), 7-62.60
Electrical Fitter (Signalling Systems), 7-62.45
Electrical Fitter (Switchboards), 7-62.25
Electrical Fitter (Switchgear and Control Apparatus), 7-62.50
Electrical Fitter (Transformers), 7-62.20
Electrical Load Dispatcher, Power Station, 7-61.50
Electrical Repairman, 7-61.45
Electrical Switchboard Operator, Power Station, 7-61.55
Electric and Gas Welder, 7-56.10
Electric-Arc Furnaceman, Metal Melting, 7-31.50
Electric-Arc Furnaceman, Steel Refining, 7-31.30
Electric-Arc Welder, Hand, 7-56.25
Electric-Arc Welder, Machine, 7-56.35
Electrician (Aircraft), 6-12.25
Electrician (Building), 7-61.15
Electrician, General, 7-61.10
Electrician (Maintenance), 7-61.40

Electricians, Electrical Repairmen and Related Electrical Workers, 7-61
Electrician (Building), 7-61.55
Electrician (Stage and Studio), 7-61.35
Electrician (Vehicles), 7-61.30
Electricity and Magnetism Physicist, 0-12.60
Electricity, Gas, Water, and Sanitary Services Administrator, 1-11.50
Electric or Diesel-Electric Railway Engine Driver, 6-31.30
Electric or Diesel-Electric Railway Engine Driver Assistant, 6-31.40
Electrode Baking Furnaceman, 8-32.40
Electronic Engineer, 0-02.26
Electronic Equipment Assembler, 7-69.30
Electronic Engineer, 0-02.26
Electronic Physicist, 0-12.70
Electronics Fitter, General, 7-62.70
Electronics Fitter (Industrial Equipment), 7-62.85
Electronics Fitter (Medical Equipment), 7-62.80
Electronics Fitter (Radio and Television Transmitters and Radar Equipment), 7-62.75
Electro-Plater, General, 7-56.10
Electro-Platers, Dip Platers and Related Workers, 7-58
Electrotypier, 8-03.30
Embalmer, 9-81.20
Embalmers and Undertakers, 9-8
EMBALMERS AND UNDERTAKERS, 9-8
Embossing, Book, Hand, 8-06.30
Embroiderer, Hand, 7-16.50
Embroiderer, Machine, 7-16.80
Engine Driver (Mine and Quarry), 5-99.20
Engineer, Agricultural, 0-02.88
Engineer, Ceramics and Glass, 0-02.70
Engineer, Chemical (Chemical Products Other than Petroleum), 0-02.62
Engineer, Chemical, General, 0-02.60
Engineer, Chemical (Petroleum), 0-02.64
Engineer, Chief, Ship, 6-02.15
Engineer, Civil (Airport Construction), 0-02.08
Engineer, Civil (Bridge Construction), 0-02.12
Engineer, Civil (Building Construction), 0-02.04
Engineer, Civil, General, 0-02.02
Engineer, Civil (Highway and Street Construction), 0-02.06
Engineer, Civil (Hydraulic), 0-02.18
Evaporator Operator, 8-32.25
Examiner, Fabrics, 7-09.15
Excavating-Shovel Operator, 8-74.15
Executive Officer, Government, 1-01.60
Extractive Metallurgist, 0-02.66
Extractor Operator, Wood Distillation, Forest, 4-41.60
Extruder Operator, Metal, 7-36.40
Extruding-Machine Operator (Plastics), 8-53.30
Extruding-Machine Operator (Rubber), 8-52.20
Extruding-Press Operator, Clay, 8-12.70
Fabric Dyer, 7-06.25
Fabric Examiner, 7-09.15
Fabric Repairer, 7-09.20
Farm-Equipment Operator (Animal-Driven), 4-11.50
Farm-Equipment Operator (Motor-Driven), 4-11.45
Farmer (Beef Cattle), 4-01.38
Farmer (Coffee), 4-01.32
Farmer (Cotton), 4-01.28
Farmer, General, 4-01.10
Farmer (Goat), 4-01.51
Farmer (Grains and Feed Grasses Other than Rice), 4-01.14
Farmer (Horse, Mule and Donkey), 4-01.57
Farmer (Livestock, General, 4-01.36
Farmer (Pig), 4-01.54
Farmer (Poultry), 4-01.60
Farmer (Rice), 4-01.16
Farmer (Rubber), 4-01.34
Farmers and Farm Managers, 4-0
FARMERS AND FARM MANAGERS, 4-01
Farmer (Sheep), 4-01.48
Farmer (Tobacco), 4-01.26
Farmer (Vegetable), 4-01.20
Farmer-Winemaker, 4-01.24
Farm Hand (Bees), 4-11.35
Farm Hand (Crops), 4-11.15
Farm Hand (Farm Animal), 4-11.30
Farm Hand, General, 4-11.10
Farm Hand (Livestock), 4-11.20
Farm Hand (Silkworm), 4-11.40
Farm Labourer, 4-11.75
Farm Workers Not Elsewhere Classified, 4-1
FARM WORKERS NOT ELSEWHERE CLASSIFIED, 4-1
Feed Grasses and Grains (except Rice), Farmer, 4-01.14
Feller, Logging, 4-41.25
Fellmonger, 8-54.25
Fermenting-Room Man, 8-24.35
Fibre Carder, 7-01.30
Fibre Cleaner, 7-01.20
Fibre Drawer, 7-01.45
Fibre Grader and Classer, 7-01.15
Fibre Lapper, 7-01.40
Fibre Mixer and Blender, 7-01.20
Fibre Picker, 7-01.25
Fibre Preparers, 7-01
Fibre Roller, 7-01.50
Filing Clerk, 2-99.60
Filter-Press Operator, 8-39.25
Filter-Press Operator, 8-39.25
Finance Clerk, 2-99.30
Finished Metal Products (Rolling-Mill Operator), 7-33.30
Finisher, Cement, 7-93.20
Finisher, Concrete: see Cement Finisher (7-93.20)
Finisher, Wood Furniture, 7-79.88
Firebrick Bricklayer, 7-91.30
Fire Fighter (Forest), 4-41.80
Fire Fighter, General, 9-01.10
FIRE FIGHTERS AND RELATED WORKERS, 9-01
Fire Fighters, Policemen, Guards and Related Workers, 9-0
Fireman, Coal (Ship), 6-12.20
Fireman, Oil (Ship), 6-12.30
Fireman (Railway Engine, Steam), 6-31.20
Fireman (Steam Boiler), 8-71.80
Fireman, Steam (Boiler), 8-71.80
Fireman, Steam (Boiler), 8-71.80
Fireman, Steam (Boiler), 8-71.80
Fish Butcher, 8-39.30
Fish Curer, 8-25.60
Fisherman (Deep-Sea), 4-31.15
Fisherman (Inland and Coastal Waters), 4-31.20
Fisherman (Sea), 4-31.60
FISHERMEN AND RELATED WORKERS, 4-31
FISHERMEN AND RELATED WORKERS, 4-31
Fish Hatcher, 4-31.70
Fishing Administrator, 1-19.30
Fishing and Hunting Guide, 4-21.40
Fishing and Hunting Guide, 4-21.40
Fish-Preserving Cook, 8-30.10
Fitter-Assembler (Agricultural Machinery), 7-52.20
Fitter-Assembler (Aircraft-Engines), 7-52.45
Fitter-Assembler (Internal-Combustion Engines) (except Marine and Aircraft Engines), 7-52.50
Fitter-Assembler (Marine Engines), 7-52.55
Fitter-Assembler, Metal Products, General, 7-52.10
Fitter-Assembler (Metal-Working Machine Tools), 7-52.15
Fitter-Assembler (Mining Machinery), 7-52.25
Fitter-Assembler (Precision Instruments), 7-41.50
Fitter-Assembler (Printing Machinery), 7-52.30
Fitter-Assembler (Reciprocating Steam Engines) (except Marine Engines), 7-52.60
FITTER-ASSEMBLERS AND MACHINE ERECTORS (EXCEPT ELECTRICAL AND PRECISION INSTRUMENT FITTER-ASSEMBLERS), 7-52
Fitter-Assembler (Textile Machinery), 7-52.35
Fitter-Assembler (Turbines) (except Aircraft and Marine Turbines), 7-52.60
Fitter-Assembler (Woodworking Machinery), 7-52.40
Fitter, Electrical (Domestic Appliances), 7-62.65
Fitter, Electrical (Elevators and Related Equipment), 7-62.50
Fitter, Electrical, General, 7-62.10
Fitter, Electrical (Instruments), 7-62.35
Fitter, Electrical (Motors and Dynamos), 7-62.15
Fitter, Electrical (Motor Vehicles), 7-62.55
Fitter, Electrical (Office Machinery), 7-62.40
Fitter, Electrical (Refrigeration and Air-Conditioning Equipment), 7-62.60
Fitter, Electrical (Signalling Systems), 7-62.45
Fitter, Electrical (Switchboards), 7-62.25
Fitter, Electrical (Switchgear and Control Apparatus), and 7-62.30
Fitter, Electrical (Transformers), 7-62.20
Fitter, Electronics, General, 7-62.70
Fitter, Electronics (Industrial Equipment), 7-62.85
Fitter, Electronics (Medical Equipment), 7-62.80
Fitter, Electronics (Radio and Television Transmitters and Radar Equipment), 7-62.75
Fitter-Machinist, 7-50.10
<table>
<thead>
<tr>
<th>ALPHABETICAL INDEX OF OCCUPATIONAL TITLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FITTER-MACHINISTS, TOOLMAKERS, AND MACHINE-TOOL SETTERS, 7-50</td>
</tr>
<tr>
<td>Fitter, Sole, 7-22.40</td>
</tr>
<tr>
<td>Flame Cutter, Hand, 7-56.45</td>
</tr>
<tr>
<td>Flame Cutter, Machine, 7-56.50</td>
</tr>
<tr>
<td>Flatbed Pressman, Printing (Letterpress), 8-02.20</td>
</tr>
<tr>
<td>Flat-Glass-Drawing-Machine Operator, 8-11.45</td>
</tr>
<tr>
<td>Flax Farmer, 4-01.18</td>
</tr>
<tr>
<td>Flusher and Dehairer, Hides, Hand, 8-54.30</td>
</tr>
<tr>
<td>Flusher and Dehairer, Hides, Machine, 8-54.35</td>
</tr>
<tr>
<td>Flusher, Pelts, 8-54.70</td>
</tr>
<tr>
<td>Flight Engineer, 6-21.40</td>
</tr>
<tr>
<td>Flight Navigator, 6-21.30</td>
</tr>
<tr>
<td>Floor-Layer (Composition Tile), 7-99.20</td>
</tr>
<tr>
<td>Floor-Layer (Mastic Composition), 7-99.15</td>
</tr>
<tr>
<td>Floor Moulder, Metal Foundry, 7-35.30</td>
</tr>
<tr>
<td>Flotation Man, 5-21.50</td>
</tr>
<tr>
<td>Flower Grower, 4-01.72</td>
</tr>
<tr>
<td>FOOD PROCESSORS NOT ELSEWHERE CLASSIFIED, 8-29</td>
</tr>
<tr>
<td>Foodstuffs Dehydrator, 8-25.40</td>
</tr>
<tr>
<td>Foodstuffs Freezer, 8-25.30</td>
</tr>
<tr>
<td>Footwear Maker, General, 7-21.10</td>
</tr>
<tr>
<td>Footwear Maker, Orthopaedic, 7-21.20</td>
</tr>
<tr>
<td>Footwear Patternmaker, 7-22.15</td>
</tr>
<tr>
<td>Footwear Repairman, 7-21.30</td>
</tr>
<tr>
<td>Footwear Sewer, Machine, 7-22.50</td>
</tr>
<tr>
<td>Forest, Charcoal Burner, 4-41.55</td>
</tr>
<tr>
<td>Forest-Fire Fighter, 4-41.80</td>
</tr>
<tr>
<td>Forestry and Logging Administrator, 1-19.20</td>
</tr>
<tr>
<td>Forest, Wood Distillation, Extractor Operator, 4-41.60</td>
</tr>
<tr>
<td>Forge Master, see Hammersmith (7-34.30)</td>
</tr>
<tr>
<td>Forge Press Operator, 7-34.40</td>
</tr>
<tr>
<td>Formal Service Waiter, 9-21.10</td>
</tr>
<tr>
<td>Former, Fur Felt Hoods, 7-09.55</td>
</tr>
<tr>
<td>Former, Wool Felt Hoods, 7-09.60</td>
</tr>
<tr>
<td>Foundry, Metal Patternmaker, 7-50.25</td>
</tr>
<tr>
<td>Frame and Beam Erector, Ship, 7-57.25</td>
</tr>
<tr>
<td>Freezer, Foodstuffs, 8-25.30</td>
</tr>
<tr>
<td>Freight Driver, Animal-Drawn Vehicle, 6-42.20</td>
</tr>
<tr>
<td>Fruit and Nut Trees, Farmer, 4-01.22</td>
</tr>
<tr>
<td>Fruit and Vegetable Preserving, Cook, 8-25.10</td>
</tr>
<tr>
<td>Grain Press Operator, 8-29.55</td>
</tr>
<tr>
<td>Fuller, Textile, 7-06.50</td>
</tr>
<tr>
<td>Fur-Bearing Animals, Farmer, 4-01.60</td>
</tr>
<tr>
<td>Fur-Bearing Animals, Farm Hand, 4-11.30</td>
</tr>
<tr>
<td>Fur Blocker: see Nailer, Fur (7-12.50)</td>
</tr>
<tr>
<td>Fur Cutter, 7-12.40</td>
</tr>
<tr>
<td>Fur Felt Hood Former, 7-09.55</td>
</tr>
<tr>
<td>Fur-Fibre-Mixing-Machine Operator, 7-12.50</td>
</tr>
<tr>
<td>Fur Grader and Matcher, 7-12.30</td>
</tr>
<tr>
<td>Furnace-Lining Bricklayer, 7-91.30</td>
</tr>
<tr>
<td>Furnace, Bessemer or Thomas (Steel Converting), 7-31.25</td>
</tr>
<tr>
<td>Furnace (Cement), 8-32.35</td>
</tr>
<tr>
<td>Furnace, Electric-Arc (Steel Refining), 7-31.30</td>
</tr>
<tr>
<td>Furnace, Electrode Baking, 8-32.40</td>
</tr>
<tr>
<td>Furnace (Glass Annealing), 8-13.30</td>
</tr>
<tr>
<td>Furnace (Glass Making), 8-13.20</td>
</tr>
<tr>
<td>Furnace, Metal Heating, 7-31.65</td>
</tr>
<tr>
<td>Furnace, Metal Melting (Crucible), 7-31.55</td>
</tr>
<tr>
<td>Furnace, Metal Melting (Cupola), 7-31.40</td>
</tr>
<tr>
<td>Furnace, Metal Melting (Electric-Arc), 7-31.50</td>
</tr>
<tr>
<td>Furnace, Metal Melting (Open Hearth), 7-31.45</td>
</tr>
<tr>
<td>Furnace, Metal Melting (Reverberatory), 7-31.60</td>
</tr>
<tr>
<td>Furnace, Non-Ferrous Metal Converting and Refining, 7-31.35</td>
</tr>
<tr>
<td>Furnace, Open-Hearth (Martin), Steel, 7-31.20</td>
</tr>
<tr>
<td>Furnace, Ore Smelting, Blast Furnace, 7-31.15</td>
</tr>
<tr>
<td>FURNACEMEN, METAL, 7-31</td>
</tr>
<tr>
<td>Furnacemen, Rollers, Drawers, Moulders and Related Metal Making and Treating Workers, 7-3</td>
</tr>
<tr>
<td>Fur Nailer, 7-12.50</td>
</tr>
<tr>
<td>Furniture Finisher, Wood, 7-79.88</td>
</tr>
<tr>
<td>Furniture Maker, Wicker, 8-51.30</td>
</tr>
<tr>
<td>Furniture Upholsterer, 7-14.20</td>
</tr>
<tr>
<td>Fur Patternmaker, 7-12.20</td>
</tr>
<tr>
<td>Fur Products, Sewing-Machine Operator, 7-16.20</td>
</tr>
<tr>
<td>Fur Sewer, Hand, 7-16.20</td>
</tr>
<tr>
<td>Fur Stretch (Dressed Fur): see Nailer, Fur (7-12.50)</td>
</tr>
<tr>
<td>Fur Tailor, 7-12.10</td>
</tr>
<tr>
<td>FUR TAILORS AND RELATED WORKERS, 7-12</td>
</tr>
<tr>
<td>Furnaceman, Bessemer or Thomas (Steel Converting), 7-31.25</td>
</tr>
</tbody>
</table>

| G |
| Galvanizer, 7-58.20 |
| Gantry-Crane Operator, 8-72.20 |
| Gardener, 4-11.65 |
| Gardener, Landscape, 4-01.84 |
| Gardener, Market, 4-01.20 |
| Gardener, Master, 4-01.81 |
| Garment Cutter, Leather, 7-15.60 |
| Garment Cutter, Ready-to-Wear (except Leather), 7-15.50 |
| Garment Dyer, 7-06.30 |
| Garment (Leather) Sewer, Hand, 7-16.40 |
| Garment Marker, 7-15.40 |
| Garment Patternmaker, 7-15.20 |
| Garment Sewer, Hand (except Leather and Fur), 7-16.30 |
| Garment-Sewing-Machine Operator, 7-16.70 |
| Gas and Electric Welder, 7-56.10 |
| Gas, Water, Electricity and Sanitary Services Administrator, 1-11.50 |
| Geoscientist, 8-24.20 |
| Glass and Ceramic Engineer, 0-02.70 |
| GLASS AND CERAMICS WORKERS NOT ELSEWHERE CLASSIFIED, 8-19 |
| Glass Annealing, Furnaceman, 8-13.30 |
| Glass Blower (except Laboratory Apparatus), 8-11.15 |
| Glass Blower (Laboratory Apparatus), 8-11.20 |
| Glass-Blowing-Machine Operator, 8-11.40 |
| Glass Cutter, Optical, 8-11.55 |
| Glass-Drawing-Machine Operator (Flat Glass), 8-11.45 |
| Glass Engraver, 8-14.20 |
| Glass Etcher, 8-14.30 |

| GLASS FORMERS, CUTTERS, GRINDERS AND FINISHERS, 8-11 |
| Glass琅 Lens Moulder, 8-11.30 |
| Glassmaking Furnaceman, 8-13.20 |
| Glass Painter, Hand, 8-14.50 |
| Glass Presser, Hand, 8-11.35 |
| Glass-Pressing-Machine Operator, 8-11.50 |
| Glass Sandblaster, 8-14.40 |
| Glass-Tube Bender, 8-11.25 |
| Glaze Maker, 8-19.60 |
| Glazier, 7-95.20 |
| Glazier (Lead Glass), 7-95.50 |
| Glazier (Plate Glass), 7-95.40 |
| Glazier (Puttyless Skylights), 7-95.30 |
| Glaziers, 7-95 |
| Glazier (Vehicles), 7-95.60 |

223
Glove Cutter (except Leather), 7-15.70
Glove Cutter, Leather, 7-15.80
Glove (Leather) Sewer, Hand, 7-16.40
Glove-Sewing-Machine Operator, 7-16.70
Goat Farmer, 4-01.51
Goldsmith and Silversmith, 7-42.50
Goods Agent, Railway, 6-61.40
Government Administrator, 1-01.50
Government Executive Officer, 1-01.60
Government Official, Elected, 1-01.20
Grab-Bucket Operator, 8-74.25
Grader and Classer, Fibre, 7-01.15
Grader and Matcher, Fur, 7-12.30
Grader (Hides and Skins), 8-54.20
Grader (Pelts), 8-54.65
Grader (Stone), 8-57.15
Grader (Tobacco), 8-41.20
Grader (Wood), 7-79.30
Grain and Feed Grass (except Rice), Farmer, 4-01.14
Grain Miller, 8-21.20
Greaser and Oiler (Motor Vehicles), 8-76.30
Greaser and Oiler (Ship), 6-12.40
Grinder, Cards (Textiles), 7-59.65
Grinder (Cutlery and Tools Other than Machine Tools), 7-59.55
Grinder (Machine Tools), 7-59.50
Grinder-Miller, Chemical and Related Processes, 8-33.30
Grinder, Precision (Optical Elements), 8-11.60
Grinder (Rock and Clay), 8-19.30
Grinder (Stone), 8-57.40
Grinder, Wood (Paper Pulp), 8-34.20
Grinding-Machine Operator, Lenses, 8-11.75
Grinding-Machine Operator (Precision Grinding, Metal Working), 7-51.45
Grinding-Machine Setter-Operator (Precision Grinding, Metal Working), 7-50.75
Grounds Keeper, 4-11.70
Grower, Bulb, 4-01.78
Grower, Flower, 4-01.72
Grower, Seed, 4-01.75
Guard, Police, Private, 9-02.10
Guard, Prison, 9-09.30
Guide, Hunting and Fishing, 4-21.40
Grower, Mule and Donkey Farmer, 4-01.57
Grower, Vegetable, 4-01.78
Grower, Wheat, 4-01.72
Hauler, Hay, 6-40.20
Hauler, Seed, 6-40.20
Hauler, Seed, 6-40.20
Hairdresser-Barber, Men's, 9-41.50
Hairdresser, Women's, 9-41.40
Hammersmith, 7-34.30
Handcarter: see Driver, Vehicle, Hand-Propelled (6-43.20)
Hand-Propelled-Vehicle Driver, 6-43.20
Hardener, Case (Carbonising), 7-32.40
Hardener, Case (Cyaniding), 7-32.40
Hardener, Case (Nitriding), 7-32.40
Hardener, Metal, 7-32.30
Harness and Saddle Makers, 7-23
Harness Maker, Saddlery, 7-23.20
Harpooner, Whale, 4-31.50
Hat and Cap Patternmaker, 7-15.30
Hatcher, Fish, 4-31.70
Hatchery Operator, Poultry, 4-01.42
Hatchery Worker, Poultry, 4-11.25
Hatmakers: see Milliners and Hatmakers (7-13)
Head Cook, 9-12.20
Head Sawyer, Sawmill, 7-73.25
Heating and Ventilating Equipment Operator, 8-71.70
Heating, Ventilating and Refrigerating Engineer, Mechanical, 0-02.50
Heat Physicist, 0-12.30
Hide and Skin Grader, 8-54.20
Hide Flesher and Dehairer, Hand, 8-54.30
Hide Flesher and Dehairer, Machine, 8-54.35
Hide Splitter, 8-54.40
High Climber, Logging, 4-41.20
Highway and Street Construction, Civil Engineer, 0-02.06
Historian, 0-Y9.26
Hoist Operator (Construction), 8-72.60
Hoist Operator (Mine), 8-72.70
Hoisting Equipment, Rigger, General, 8-73.10
Honing-Machine Operator, Metal Working, 7-51.50
Honing-Machine Setter-Operator, Metal Working, 7-50.80
Hood Former, Fur Felt, 7-09.55
Hood Former, Wool Felt, 7-09.60
Horse, Mule and Donkey Farmer, 4-01.57
Horticulturist, 0-23.30
Hosiery Knitter, Power-Driven Machine, 7-04.10
Hostess, Air, 9-19.85
Hot-Dip Machine, Wire Plater, 7-58.40
Hot-Dip Plater, Hand, 7-58.20
Hot-Dip Sheet Plater, Machine, 7-58.30
Hotel Concierge, 9-19.90
Hotel Press Operator: see Forging Press Operator (7-34.40)
Hot Stamper: see Hammersmith (7-34.30)
Housebuilder, General, 7-99.10
Housekeeper (except Private Service), 9-11.20
Housekeeper (Private Service), 9-11.30
Hunting and Fishing Guide, 4-21.40
Hunter, 4-21.20
Hunters and Related Workers, 4-21
Hunters and Related Workers, 4-21
Hunters and Related Workers, 4-21
Hunters and Related Workers, 4-21
Hydraulic Engineer, Civil, 0-02.18
Ice-Cream Maker, 8-27.60
Ice Maker, 8-29.45
Imposer, Printing, 8-01.50
Impregnator, Wood, 7-74.45
Industrial and Commercial Product Designer, 0-Y9.62
Industrial Efficiency Engineer, 0-02.84
Industrial Laboratory Technician, 0-X9.40
Industrial Nurse, 0-41.30
Industrial Specialist, Personnel, 0-Y9.41
Inlay, Marquetry, 7-79.79
Inorganic Chemist, 0-11.40
Inquiry Agent, Private, 9-09.20
Inspector, Railway Transport Service, 6-61.15
Inspector, Road Transport Service, 6-61.20
Inspectors and Supervisors, Transport, 6-61
Inspectors, Supervisors, Traffic Controllers and Dispatchers, Transport, 6-6
| Inspectors, Traffic Controllers and Despatchers, Communication, 6-93 |
| Installer and Erector, Machinery, 7-52.70 |
| INSTALLERS AND REPAIRMEN, TELEPHONE AND TELEGRAPH, 7-64 |
| Installer, Telephone and Telegraph, 7-64.20 |
| Instrumentalist, 0-93.25 |
| INSULATORS, 7-94.40 |
| Insulator (Boilers and Pipes), 7-94.50 |
| Insulator (Buildings), Hand, 7-94.20 |
| Insulator (Buildings), Machine, 7-94.30 |
| Insulator (Refrigeration and Air-Conditioning Equipment), 7-94.60 |
| Insurance Administrator, 1-13.30 |
| Insurance and Real-Estate Salesmen, Salesmen of Securities and Services and Auctioneers, 3-1 |
| Insurance Clerk, 2-99.33 |
| Interior-Decoration Designer, 0-91.50 |
| Internal-Combustion Engines (except Marine, Aeronautical and Automotive), Mechanical Engineer, 0-02.46 |
| Internal-Combustion Engines (except Marine and Aircraft), Fitter-Assembler, 7-52.50 |
| Internal-Combustion Engines (except Marine and Aircraft), Mechanic-Repairman, 7-53.50 |
| Internal-Combustion Engine (Stationary) Operator, 8-71.20 |
| Internal-Combustion Railway-Engine Driver, 6-31.50 |
| Internal-Combustion Railway-Engine Driver, Assistant, 7-51.60 |
| Interpreter, 0-Y9.56 |
| J |
| Jacquard-Card Cutter, 7-05.30 |
| Jacquard-Card Design Copyist, 7-05.20 |
| Jacquard-Loom Fixer, 7-03.70 |
| Jacquard-Loom Weaver, 7-03.45 |
| Janitor, 9-31.30 |
| Jarring or Jolting Machine Moulder, Metal Foundry, 7-35.50 |
| Jeweller, General, 7-42.10 |
| Jewellers, Goldsmiths and Silversmiths, 7-42 |
| Jewellery Engraver, 7-43.10 |
| Jewellery Engravers, 7-43 |
| Jewellery Repairman, 7-42.20 |
| Jigman, Pottery and Porcelain, 8-12.30 |
| Jig Tender, 5-21.40 |
| Joiner (Aircraft), 7-71.45 |
| Joiner (Ship), 7-71.40 |
| Jointer, Electrical Cables, 7-65.50 |
| Judge, 0-81.40 |
| Jurists, 0-8 |
| JURISTS, 0-81 |
| K |
| Keeper, Grounds, 4-11.70 |
| Kilnman (Brick and Tile), 8-13.50 |
| Kilnman (Malt), 8-24.25 |
| Kilnman (Pottery and Porcelain), 8-13.40 |
| Knitter, 7-04.30 |
| Knitter, Hand-Operated Machine, 7-04.20 |
| Knitter, Power-Driven Machine, 7-04.10 |
| Knitter, Power-Driven Machine (Hosiery), 7-04.10 |
| KNITTERS AND KNITTING-MACHINE SETTERS, 7-04 |
| Knitting-Machine Setter, 7-04.40 |

| L |
| Labeller, Machine, 8-61.70 |
| Laboratory Technician, Industrial, 0-X9.40 |
| Laboratory Technician, Research, 0-X9.30 |
| Labourer, Farm, 4-11.75 |
| Labourer, Heavy Physical Work, 8-99.30 |
| Labourer, Light Physical Work, 8-99.20 |
| LABOURERS NOT ELSEWHERE CLASSIFIED, 8-99 |
| LACE Weaver, Machine, 7-03.50 |
| Laminator (Plastics), 8-53.20 |
| Landscape Gardener, 4-01.84 |
| Landscape Planner, 0-23.60 |
| Land Surveyor, 0-03.20 |
| Lapper, Fibre, 7-01.40 |
| Laster, 7-22.45 |
| Lasting-Machine Operator: see Laster (7-22.45) |
| Lathe (Engine-Lathe) Setter-Operator, Metal Working, 7-50.40 |
| Lathe Operator (Metal-Working), 7-51.15 |
| Lathe Operator (Stone Cutting), 8-57.55 |
| Lathe Operator (Stone Polishing), 8-57.60 |
| Lather, 7-92.40 |
| Lathe Setter-Operator, Woodworking, 7-73.65 |
| Lathe (Turret Lathe) Setter-Operator, Metal Working, 7-50.45 |
| Launderer, General, 9-51.10 |
| Launderers, Dry Cleaners and Pressers, 9-5 |
| LAUNDERERS, DRY CLEANERS AND PRESSERS, 9-51 |
| Laundry Washing-Machine Operator, 9-51.20 |
| Lawyer, General, 0-81.10 |
| Lawyer, Floor (Composition Tile), 7-99.20 |
| Lawyer, Floor (Mastic Composition), 7-99.15 |
| Layout Pipe, 7-99.80 |
| Layout Man, Stonework, 8-57.20 |
| Lead Burner, 7-55.80 |
| Lead Glass Glazier, 7-95.50 |
| Leather Currier, 8-54.55 |
| Leather Cutter (except Footwear, Gloves and Garments), 7-29.20 |
| Leather Cutters, Lasters and Sewers (Except Gloves and Garments) and Related Workers, 7-2 |
| Leather Dyer and Stainer, 8-54.60 |
| Leather-Garment Cutter, 7-15.60 |
| Leather-Garment or Glove Sewer, Hand, 7-16.40 |
| Leather-Glove Cutter, 7-15.80 |
| Leather-Product Maker, General, 7-29.10 |
| LEATHER-PRODUCT MAKERS NOT ELSEWHERE CLASSIFIED, 7-29 |
| Leather Sewer, Hand (except Footwear, Gloves and Garments), 7-29.30 |
| Leather Sewer, Machine (except Footwear, Gloves and Garments), 7-29.40 |
| Legal Clerk, 2-99.36 |
| Lens-Grinding-Machine Operator, 8-11.75 |
| Lens-Moulder, Glass, 8-11.30 |
| Lens-Polishing-Machine Operator, 8-11.80 |
| Letter Cutter, Stone, Hand, 8-57.75 |
| Librarian, 0-Y3.10 |
| LIBRARIANS AND ARCHIVISTS, 0-Y3 |
| Library Clerk, 2-99.39 |
| Lift Truck Operator, 8-75.20 |
| Lighthouse Operator, 6-92.30 |
| Light Physicist, 0-12.40 |
| Lightshipman: see 6-92.30 |
| Lineman, Electrical, High Tension, 7-65.20 |
| Lineman, Electrical, Low Tension, 7-65.20 |
| Lineman (Electric Power), 7-65.20 |

225
Moulder (Pit), Metal Foundry, 7-35.40
Moulder (Plate Stripping Machine), Metal Foundry, 7-35.50
MOULDERS AND COREMAKERS, 7-35
Moulder (Squeeze Machine), Metal Foundry, 7-35.50
Moulder (Tyres), 8-52.50
Moulding-Machine Operator, Plastics, 8-53.40
Moulding-Press Operator, Rubber, 8-52.30
Mould Maker, Pottery and Porcelain, 8-12.20
Mule, Horse and Donkey Farmer, 4-01.57
Mould Maker, Pottery and Porcelain, 8-12.20
Moulding-Machine Operator, Plastics, 8-53.40
Moulding-Press Operator, Rubber, 8-52.30
Mould Maker, Pottery and Porcelain, 8-12.20
Mule, Horse and Donkey Farmer, 4-01.57
Musical-Instrument Maker (Metal, Wind), 8-56.25
Musical-Instrument Maker (Stringed), 8-56.15
Musical-Instrument Maker (Wood, Wind), 8-56.20
N
Nailer, Fur, 7-12.50
Natural Gas and Petroleum Engineer, 0-02.80
Naval Architect, 0-02.90
Navigating Officer (Inland Waterways, Estuaries and Ports), 6-01.40
Navigating Officer (Sea), 6-01.30
Net Maker, Hand, 7-09.45
Net Weaver, Machine, 7-03.65
News Photographer, 9-71.40
Newsvendor, 3-32.40
Non-Ferrous Metal-Converting and Refining Furnaceman, 7-31.35
Non-Ordained Religious Worker, 0-71.30
Normaliser, 7-32.20
Notary, 0-41.30
Nurse (Industrial), 4-01.30
Nursemaid, 9-19.60
Nurse (Practical), 0-49.20
Nurse, Professional, General, 0-41.10
Nurse, Professional, Specialised, 0-41.20
Nurse (Public-Health), 0-41.40
Nurseryman, General, 4-01.69
Nursery School Teacher, 0-69.20
Nursery Worker, 4-11.55
Nurses and Midwives, 0-4
NURSES NOT ELSEWHERE CLASSIFIED, 0-49
NURSES, PROFESSIONAL, 0-41
Nut and Fruit Trees Farmer, 4-01.22
O
Occupational Analyst, 0-Y9.47
Official, Elected, Government, 1-01.20
Office Cashier, 2-01.30
Office Clerk, General, 2-09.10
OFFICE-MACHINE OPERATORS, 2-91
Officer, Executive, Government, 1-01.60
Officer, Navigating (Inland Waterways, Estuaries and Ports), 6-01.40
Oil Fireman, Ship, 6-12.30
Oil-Seed Miller, 8-21.50
Oil Fireman, Ship, 6-12.30
Oil Fireman, Ship, 6-12.30
Oil-Seed Miller, 8-21.50
Open-Hearth Furnaceman, Metal Melting, 7-31.45
Open-Hearth (Martin) Furnaceman, Steel, 7-31.20
Operator, Farm Equipment, Animal-Driven, 4-11.50
Operator, Farm Equipment, Motor-Driven, 4-11.45
Operator, Poultry Hatchery, 4-01.42
OPERATORS OF EARTH-MOVING AND OTHER CONSTRUCTION MACHINERY NOT ELSEWHERE CLASSIFIED, 8-74
OPERATORS OF STATIONARY ENGINES AND RELATED EQUIPMENT AND BOILER FIREFLUEMS, 8-71
Operator, X-Ray, Medical, 0-53.40
Optical Element Beveller, 8-11.70
Optical Element Grinder, Precision, 8-11.60
Optical Element Polisher, Precision, 8-11.65
Optical Glass Cutter, 8-11.55
Optical Instrument Maker and Repairman, 7-41.30
Optician, 7-41.35
Optometrist, 0-52.10
OPTOMETRISTS, 0-52
Orchestra and Band Conductor, 0-93.45
Orchestrator, 0-93.55
Ordained Religious Leader, 0-71.20
Ordinary Seaman, Deck Hand (Ship, Barge, Boat), 6-11.40
Ore Smelting, Blast Furnaceman, 7-31.15
Ore Treating, Cyanide Man, 5-21.60
Organic Chemist, 0-11.30
Organ Maker, 8-56.35
Organ Tuner, 8-56.45
Ornamental Bricklayer, 7-91.15
Ornamental Plasterer, 7-92.20
Ornamental Sheet-Metal Worker, 7-54.10
Orthopaedic Appliances Maker and Repairman, 7-41.40
Orthopaedic Footwear Maker, 7-21.20
Osteopath, 0-59.20
Other Professional Technical and Related Workers, 0-Y
Ovens and Kilns, Bricklayer, 7-91.30
Oven Tender, Paint Drying, 8-32.45
Oyster Culturist, 4-31.80
P
Packer, Hand, 8-61.40
Packer, Machine, 8-61.60
Packers, Labellers and Related Workers, 8-6
PACKERS, LABELLERS AND RELATED WORKERS, 8-61
Paint-Drying-Oven Tender, 8-32.45
Painter (Brush), 7-82.20
Painter (Buildings), 7-81.20
Painter (Ceramics), Hand, 8-14.60
Painter (Ceramics), Spray, 8-14.70
Painter (Creative), 0-91.20
Painter (Glass), Hand, 8-14.50
Painters and Paperhangers, 7-8
PAINTERS AND PAPERHANGERS, CONSTRUCTION AND MAINTENANCE, 7-81
PAINTERS (EXCEPT CONSTRUCTION AND MAINTENANCE), 7-82
Painter (Sign), 7-81.40
Painter (Spray), 7-82.30
PAINTERS, SCULPTORS AND RELATED CREATIVE ARTISTS, 0-91
Painter (Structural Steel and Ships' Hulls), 7-81.30
Painting Restorer, 0-91.60
Pantograph Operator, Engraving, 8-04.40
Paper and Cloth Maker, Abrasive-Coated, 8-59.15
Paper and Film Maker, Photographic, 8-59.75
Paper-Bag and Envelope Maker, Machine, 8-58.40
Paper-Box Maker, Hand, 8-58.20
Paper-Box Maker, Machine, 8-58.35
Paper-Box Making, Cutting and Creasing-Press Operator, 8-58.30
<table>
<thead>
<tr>
<th>Occupational Title</th>
<th>Wage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper-Coating-Machine Operator</td>
<td>8-35.60</td>
</tr>
<tr>
<td>Paperhanger</td>
<td>7-81.50</td>
</tr>
<tr>
<td>Paper Maker, Hand</td>
<td>8-35.20</td>
</tr>
<tr>
<td>Paper Makers</td>
<td>8-35</td>
</tr>
<tr>
<td>Paper-Making-Machine Operator (Back End)</td>
<td>8-35.40</td>
</tr>
<tr>
<td>Paper-Making-Machine Operator (Wet End)</td>
<td>8-35.30</td>
</tr>
<tr>
<td>Paper-Pulp Beater Operator</td>
<td>8-34.50</td>
</tr>
<tr>
<td>Paper-Pulp Bleacher Operator</td>
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</tr>
<tr>
<td>Paper-Pulp Digester Operator</td>
<td>8-34.30</td>
</tr>
<tr>
<td>Paper-Pulp Grinder, Wood</td>
<td>8-34.20</td>
</tr>
<tr>
<td>Paper-Supcalender Operator</td>
<td>8-35.50</td>
</tr>
<tr>
<td>Pastouriser, Dairy</td>
<td>8-27.20</td>
</tr>
<tr>
<td>Pastry Baker</td>
<td>8-22.10</td>
</tr>
<tr>
<td>Patent Agent, 0-Y9.59</td>
<td></td>
</tr>
<tr>
<td>Pathologist, Medical, 0-31.50</td>
<td></td>
</tr>
<tr>
<td>Pathologist, Veterinary, 0-22.70</td>
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</tr>
<tr>
<td>Patternmaker (Footwear)</td>
<td>7-22.15</td>
</tr>
<tr>
<td>Patternmaker (Garments)</td>
<td>7-15.20</td>
</tr>
<tr>
<td>Patternmaker (Hats and Caps)</td>
<td>7-15.30</td>
</tr>
<tr>
<td>Patternmaker (Metal), Foundry</td>
<td>7-50.25</td>
</tr>
<tr>
<td>Patternmakers and Cutters (Textile Products)</td>
<td></td>
</tr>
<tr>
<td>Patternmaker (Wood)</td>
<td>7-79.50</td>
</tr>
<tr>
<td>Paver, 7-99.65</td>
<td></td>
</tr>
<tr>
<td>Payroll and Timekeeping Clerk</td>
<td>2-99.21</td>
</tr>
<tr>
<td>Pearl and Sponser, Dive</td>
<td>4-31.40</td>
</tr>
<tr>
<td>Pedal-Cycle Mechanic-Repairman</td>
<td>7-53.80</td>
</tr>
<tr>
<td>Pedalled-Vehicle Driver, 6-43.15</td>
<td></td>
</tr>
<tr>
<td>Pelt Dyer, Hand</td>
<td>8-54.80</td>
</tr>
<tr>
<td>Pelt Fleshner</td>
<td>8-54.70</td>
</tr>
<tr>
<td>Pelt Grader, 8-54.65</td>
<td></td>
</tr>
<tr>
<td>Pelt Plucker and Trimmer, 8-54.75</td>
<td></td>
</tr>
<tr>
<td>Pelt Stretchter</td>
<td>8-54.85</td>
</tr>
<tr>
<td>Pencil Maker</td>
<td>8-59.70</td>
</tr>
<tr>
<td>Personal Maid, 9-19.40</td>
<td></td>
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<tr>
<td>Personal Services Administrator, 1-15.40</td>
<td></td>
</tr>
<tr>
<td>Personnel Clerk, 2-99.27</td>
<td></td>
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<tr>
<td>Personnel Counsellor, Students, 0-Y9.44</td>
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</tr>
<tr>
<td>Personnel Specialist, Industrial, 0-Y9.41</td>
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</tr>
<tr>
<td>Petroleum and Natural Gas Engineer, 0-02.80</td>
<td></td>
</tr>
<tr>
<td>Petroleum Boat Loader, 8-91.30</td>
<td></td>
</tr>
<tr>
<td>Petroleum Chemical Engineer, 0-02.64</td>
<td></td>
</tr>
<tr>
<td>Petroleum Reactor Operator, 8-39.20</td>
<td></td>
</tr>
<tr>
<td>Petroleum Stillman, 8-31.40</td>
<td></td>
</tr>
<tr>
<td>Petroleum Well Drilling, Rigger</td>
<td>8-73.60</td>
</tr>
<tr>
<td>Petrol Refining Treater, 8-39.50</td>
<td></td>
</tr>
<tr>
<td>Petrol-Service-Station Attendant, 3-39.20</td>
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<tr>
<td>Petty Officer, see Boatswain (6-11.15) and Quartermaster, Ship (6-11.20)</td>
<td></td>
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<tr>
<td>Pharmacist</td>
<td>0-51.10</td>
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<tr>
<td>Pharmacists, 0-51</td>
<td></td>
</tr>
<tr>
<td>Pharmacologist, 0-22.50</td>
<td></td>
</tr>
<tr>
<td>Philitologist, 0-Y9.50</td>
<td></td>
</tr>
<tr>
<td>Photo-Engraver, 8-05.10</td>
<td></td>
</tr>
<tr>
<td>PHOTO-ENGRAVERS, 8-05</td>
<td></td>
</tr>
<tr>
<td>Photo-Engraving Eicher, 8-05.60</td>
<td></td>
</tr>
<tr>
<td>Photographer, (Commercial Illustration), 9-71.30</td>
<td></td>
</tr>
<tr>
<td>Photographer (General), 9-71.10</td>
<td></td>
</tr>
<tr>
<td>Photographer (News), 9-71.40</td>
<td></td>
</tr>
<tr>
<td>Photographer (Portrait), 9-71.20</td>
<td></td>
</tr>
<tr>
<td>Photographers and Related Camera Operators, 9-7</td>
<td></td>
</tr>
<tr>
<td>PHOTOGRAPHERS AND RELATED CAMERA OPERATORS, 9-71</td>
<td></td>
</tr>
<tr>
<td>Photographic Black and White Developer, 8-55.30</td>
<td></td>
</tr>
<tr>
<td>Photographic Colour Developer, 8-55.20</td>
<td></td>
</tr>
<tr>
<td>PHOTOGRAPHIC DARK-ROOM WORKERS, 8-55</td>
<td></td>
</tr>
<tr>
<td>Photographing Dark Room Workers, 8-55</td>
<td></td>
</tr>
<tr>
<td>Photographic Dark Room Workers, 8-55.50</td>
<td></td>
</tr>
<tr>
<td>Photographic Film and Paper Maker, 8-59.75</td>
<td></td>
</tr>
<tr>
<td>Photographic Negative Retoucher, Photogravure, 8-05.40</td>
<td></td>
</tr>
<tr>
<td>Photographic Printer, 8-55.40</td>
<td></td>
</tr>
<tr>
<td>Photogravure Retoucher, Photographic Negatives, 8-05.40</td>
<td></td>
</tr>
<tr>
<td>Photo-Mechanical Cameraman, 8-05.30</td>
<td></td>
</tr>
<tr>
<td>Photo-Mechanical Transferer, 8-05.50</td>
<td></td>
</tr>
<tr>
<td>Photo-Type-Setting Machine Operator, 8-01.55</td>
<td></td>
</tr>
<tr>
<td>Photo-Type-Setting Machine-Up, 8-01.60</td>
<td></td>
</tr>
<tr>
<td>Physical Chemist, 0-11.50</td>
<td></td>
</tr>
<tr>
<td>Physical Metallurgist, 0-02.68</td>
<td></td>
</tr>
<tr>
<td>PHYSICAL SCIENTISTS NOT ELSEWHERE CLASSIFIED, 0-19</td>
<td></td>
</tr>
<tr>
<td>Physician, General Practice, 0-31.10</td>
<td></td>
</tr>
<tr>
<td>PHYSICIANS AND SURGEONS, 0-31</td>
<td></td>
</tr>
<tr>
<td>Physicist, 0-12</td>
<td></td>
</tr>
<tr>
<td>Physicist (Atomic), 0-12.80</td>
<td></td>
</tr>
<tr>
<td>Physicist (Electricity and Magnetism), 0-12.60</td>
<td></td>
</tr>
<tr>
<td>Physicist (Electronic), 0-12.70</td>
<td></td>
</tr>
<tr>
<td>Physicist (General), 0-12.10</td>
<td></td>
</tr>
<tr>
<td>Physicist (Heat), 0-12.30</td>
<td></td>
</tr>
<tr>
<td>Physicist (Light), 0-12.40</td>
<td></td>
</tr>
<tr>
<td>Physicist (Mechanics), 0-12.20</td>
<td></td>
</tr>
<tr>
<td>Physicist (Sound), 0-12.50</td>
<td></td>
</tr>
<tr>
<td>PHYSICISTIC, 0-12</td>
<td></td>
</tr>
<tr>
<td>Physiologist, Medical, 0-31.40</td>
<td></td>
</tr>
<tr>
<td>Physiotherapist, 0-53.20</td>
<td></td>
</tr>
<tr>
<td>Piano Maker, 8-56.40</td>
<td></td>
</tr>
<tr>
<td>Piano Tuner, 8-56.50</td>
<td></td>
</tr>
<tr>
<td>Picker, Fibre, 7-01.25</td>
<td></td>
</tr>
<tr>
<td>Pig Farmer, 4-01.54</td>
<td></td>
</tr>
<tr>
<td>Pike-Driver Operator, 8-74.40</td>
<td></td>
</tr>
<tr>
<td>Pilot (Aircraft) General, 6-21.10</td>
<td></td>
</tr>
<tr>
<td>Pilot (Aircraft), Specialised, 6-21.20</td>
<td></td>
</tr>
<tr>
<td>Pilot (Ship), 6-01.50</td>
<td></td>
</tr>
<tr>
<td>Pipe and Boiler Insulator, 7-94.50</td>
<td></td>
</tr>
<tr>
<td>Pipe and Tube Drawer, Seamless, 7-36.30</td>
<td></td>
</tr>
<tr>
<td>Pipe and Tube Fitter, Aircraft, 7-55.70</td>
<td></td>
</tr>
<tr>
<td>Pipe and Tube Roller, Seamless, 7-33.60</td>
<td></td>
</tr>
<tr>
<td>Pipe Fitter, 7-55.40</td>
<td></td>
</tr>
<tr>
<td>Pipe Fitter (Gas Main), see Pipe Fitter (7-55.40)</td>
<td></td>
</tr>
<tr>
<td>Pipe Fitter (Marine), see Pipe Fitter (7-55.40)</td>
<td></td>
</tr>
<tr>
<td>Pipe Fitter (Steam), see Pipe Fitter (7-55.40)</td>
<td></td>
</tr>
<tr>
<td>Pipe Layer, 7-99.80</td>
<td></td>
</tr>
<tr>
<td>Pit Moulder, Metal Foundry, 7-35.40</td>
<td></td>
</tr>
<tr>
<td>Planer Operator, Stone, 8-57.35</td>
<td></td>
</tr>
<tr>
<td>Planing-Machine Operator, Metal Working, 7-51.30</td>
<td></td>
</tr>
<tr>
<td>Planing-Machine Setter-Operator (Metal Working), 7-50.60</td>
<td></td>
</tr>
<tr>
<td>Planing-Machine Setter-Operator (Woodworking), 7-73.50</td>
<td></td>
</tr>
<tr>
<td>Plasterer, General, 7-92.10</td>
<td></td>
</tr>
<tr>
<td>Plasterer (Ornamental), 7-92.20</td>
<td></td>
</tr>
<tr>
<td>Plasterer (Stucco), 7-92.30</td>
<td></td>
</tr>
<tr>
<td>PLASTERERS, 7-92</td>
<td></td>
</tr>
<tr>
<td>Plastic-Extruding-Machine Operator, 8-53.30</td>
<td></td>
</tr>
<tr>
<td>Plastic-Moulding-Machine Operator, 8-53.40</td>
<td></td>
</tr>
<tr>
<td>Plastics Laminate, 8-53.30</td>
<td></td>
</tr>
<tr>
<td>PLASTICS-PRODUCT MAKERS, 8-53</td>
<td></td>
</tr>
<tr>
<td>Plate Bender, Steel, 7-57.35</td>
<td></td>
</tr>
<tr>
<td>Plate Glass Glazier, 7-95.40</td>
<td></td>
</tr>
<tr>
<td>Plate Retoucher, Printing, 8-05.70</td>
<td></td>
</tr>
<tr>
<td>Plater, Hot Dip, Hand, 7-58.20</td>
<td></td>
</tr>
<tr>
<td>Plater, Sheet, Hot Dip, Machine, 7-58.30</td>
<td></td>
</tr>
<tr>
<td>Plater, Ship, 7-57.30</td>
<td></td>
</tr>
<tr>
<td>Plater, Wire, Hot Dip, Machine, 7-58.40</td>
<td></td>
</tr>
<tr>
<td>Plucker and Trimmer, Pelts, 8-54.75</td>
<td></td>
</tr>
<tr>
<td>Plumber, General, 7-55.10</td>
<td></td>
</tr>
<tr>
<td>PLUMBERS AND PIPEFITTERS, 7-55</td>
<td></td>
</tr>
</tbody>
</table>
INTERNATIONAL STANDARD CLASSIFICATION OF OCCUPATIONS

Police Guard, Private, 9-02.10
Policeman, 9-02.10
POLICEMEN AND DETECTIVES, 9-02
Polisher (Gems), 7-42.30
Polisher, Precision (Optical Elements), 8-11.65
Polisher (Stone), Hand, 8-57.50
Polisher (Stone), Machine, 8-57.45
Polishing and Buffing Machine Operator, Metal Working, 7-59.45
Polishing Machine Operator, Lenses, 8-11.80
Political Scientist, 0-Y9.29
Porcelain and Pottery Caster, Hand, 8-12.40
Porcelain and Pottery Die Presser, 8-12.65
Porcelain and Pottery Jiggerman, 8-12.30
Porcelain and Pottery Kilnman, 8-13.40
Porcelain and Pottery Modeller, 8-12.15
Porcelain and Pottery Mould Maker, 8-12.20
Porcelain and Pottery Presser, Hand, 8-12.55
Porcelain and Pottery Thrower, 8-12.25
Porcelain and Pottery Turner, Hand, 8-12.35
Port and Canal Locks, Lock Operator, 6-92.20
Porter, Warehouse, 8-81.60
Portrait Photographer, 9-71.20
Postman, 6-81.10
POSTMEN, 6-81
Postmen and Messengers, 6-8
Pot, 8-12.10
POTTERS AND RELATED CLAY AND ABRASIVE FORMERS, 8-12
Potters, Kilnmen, Glass and Clay Formers and Related Workers, 8-1
Pottery and Porcelain Caster, Hand, 8-12.40
Pottery and Porcelain Die Presser, 8-12.65
Pottery and Porcelain Jiggerman, 8-12.30
Pottery and Porcelain Kilnman, 8-13.40
Pottery and Porcelain Modeller, 8-12.15
Pottery and Porcelain Mould Maker, 8-12.20
Pottery and Porcelain Presser, Hand, 8-12.55
Pottery and Porcelain Thrower, 8-12.25
Pottery and Porcelain Turner, Hand, 8-12.35
Poultry Farmer, 4-01.40
Poultry-Hatchery Operator, 4-01.42
Poultry-Hatchery Worker, 4-11.25
Power Distribution and Transmission, Electrical Engineer, 0-02.30
Power Generation, Electrical Engineer, 0-02.28
Power Hammersmith : see Hammersmith (7-34.30)
Power Press Operator, Metal Working, 7-59.45
Precipitator, 5-21.70
Precision Grinding-Machine Operator, Metal Working, 7-51.45
Precision Grinding-Machine Setter-Operator, Metal Working, 7-50.75
Precision-Instrument Assembler, 7-41.55
Precision-Instrument Fitter-Assembler, 7-41.50
Precision-Instrument Maker and Repairman, 7-41.25
PRECISION-INSTRUMENT MAKERS, WATCH AND CLOCK MAKERS AND REPAIRMEN, 7-41
Precision-Instrument Makers, Watchmakers, Jewellers and Related Workers, 7-4
Precision-Instrument Serviceman, 7-41.60
Precision Polisher, Optical Elements, 8-11.65
Precision Sawyer, Wood, 7-73.15
Preparer, Uppers, 7-22.30
Presser (Brick and Tile), Hand, 8-12.60
Presser (Glass), Hand, 8-11.55
Presser, Hand, 9-51.70
Presser, Machine, 9-51.60
Presser (Pottery and Porcelain), Hand, 8-12.55
Pressing-Machine Operator, Glass, 8-11.50
Pressman (Cylinder Letterpress), 8-02.20
Pressman (Direct Lithographic), 8-02.50
Pressman (Flat-Bed Letterpress), 8-02.20
Pressman (Offset Lithographic), 8-02.40
Pressman (Plate Letterpress), 8-02.20
Pressman (Rotary Letterpress), 8-02.30
Pressman (Rotogravure), 8-02.60
Pressman (Soles), 7-22.35
Pressman (Textile Printing), 8-02.80
Pressman (Wallpaper Printing), 8-02.70
PRESSMEN, PRINTING, 8-02
Press Operator, Filter, 8-39.25
Press Operator, Forging, 7-34.40
Press Operator, Rubber Moulding, 8-52.30
Press (Power) Operator, Metal Working, 7-59.35
Primary School Teacher, 0-69.30
Printer, Block, 8-09.40
Printer, General, 8-01.10
Printer (Photographic), 8-55.40
Printer, Silk-Screen, 8-09.30
Printing, 0-Y9.28
Printing Imposer, 8-01.50
Printing Machinery Fitter-Assembler, 7-52.30
Printing Machinery Mechanic-Repairman, 7-53.30
Printing Maker-Up, 8-01.45
Printing-Plate and Roller Engraver, Hand, 8-04.20
Printing-Plate Retoucher, 8-05.70
Printing-Roller Engraver, Machine, 8-04.25
PRINTING WORKERS NOT ELSEWHERE CLASSIFIED, 8-09
Private Guard, 9-09.30
Private Inquiry Agent, 9-09.20
Private Police Guard, 9-02.10
Private-Service Cook, 9-12.40
Private-Service Housekeeper, 9-11.30
Private-Service Maid, 9-19.30
Private-Service Valet, 9-19.50
Production-Planning Clerk, 2-99.48
PROFESSIONAL MEDICAL WORKERS NOT ELSEWHERE CLASSIFIED, 0-59
Professional Medical Workers Not Elsewhere Classified and Medical Technicians, 0-5
Professional Nurse, General, 0-41.10
Professional Nurse, Specialised, 0-41.20
PROFESSIONAL, TECHNICAL AND RELATED WORKERS NOT ELSEWHERE CLASSIFIED, 0-Y9
Projectionist, Cinema, 7-69.60
Projection Printer: see Enlarger, Photographic (8-55.50)
Proof-Reader, Printing, 2-99.63
Propagator, 4-11.60
PROPRIETORS (WORKING), RETAIL TRADE, 3-02
Proprietors (Working), Wholesale and Retail Trade, 3-0
PROPRIETORS (WORKING) WHOLESALE TRADE, 3-01
Proprietor (Working) Retail Trade, 3-02.20
Proprietor (Working) Wholesale Trade, 3-01.20
Psychologist, 0-Y9.38
Public-Address-Equipment Operator, 7-69.50
Public-Health Nurse, 0-41.40
Publicity Writer, 0-92.70
Pug-Mill Operator, Clay, 8-19.50
Puller, Well, Petroleum and Gas Wells, 5-11.50
Pullman-Car Conductor, 6-51.15
Pulpit Man: see Manipulator, Rolling Mill, Metal (7-33.70)
Pump Operator, 8-71.50
Punched-Card Sorting-Machine Operator, 2-91.50
Punched-Card Tabulating-Machine Operator, 2-91.60
Puttyless-Skylight Glazier, 9-75.30
...
Q
Quarry and Mine, Animal-Drawn Vehicle Driver, 5-99.40
Quarry and Mine Brakeman, 5-99.50
Quarry and Mine Engine Driver, 5-99.20
Quarrying and Mining Administrator, 1-11.20
Quarryman, General, 5-01.20
Quartermaster, Ship, 6-11.20

R
Radio and Television Announcer, 0-93.65
Radio Broadcasting Station Operator, 6-72.15
Radio COMMUNICATION OPERATORS, 6-72
Radio Operator (Aircraft), 6-72.40
Radio Operator (Ship), 6-72.30
Raft Maker, Log, 4-41.40
Railway Brakeman, 6-51.20
Railway Clerk (Specialised): see Railway Despatcher (6-62.30)
Railway Conductor, 6-51.15
Railway Construction, Civil Engineer, 0-02.10
Railway Despatcher, 6-62.30
Railway-Engine Driver (Assistant), Electric or Diesel-Electric, 6-31.40
Railway-Engine Driver (Assistant), Internal-Combustion, 6-31.60
Railway-Engine Driver (Electric or Diesel-Electric), 6-31.30
Railway-Engine Driver (Internal-Combustion), 6-31.50
Railway Station Master, 6-61.30
Railway Switchman: see Railway Shunter (6-62.50)
Railway Traffic Control Tower Operator: see Railway Signalman, (6-62.40)
Railway Transport Service Inspector, 6-61.15
Raiser, Silkworm, 4-01.66
Rayon and Similar Products Spinner, 8-39.45
Reactor-Converter Operator (except Petroleum), 8-39.15
Reactor Operator, Petroleum, 8-39.20
Real-Estate Administrator, 1-13.40
Real-Estate Salesman, 3-11.30
Roofer (Composition), 7-99.30
Roofer (Asphalt and Similar Materials), 7-99.35
Roofer (Wooden Shingles), 7-71.55
Roofer (Slate, Tile and Similar Materials), 7-99.25
Roofer (Metal), 7-54.10
Roofer (Slate, Tile and Similar Materials), 7-99.25
Roofer (Wooden Shingles), 7-71.55
Roofer (Slate, Tile and Similar Materials), 7-99.25
Roofer (Wooden Shingles), 7-71.55
Rope Splicer, 8-73.80

Alphabetical Index of Occupational Titles
Rotary Driller (Petroleum and Gas Wells), 5-11.20
Rotary Drum Fil erer, 8-29.30
Rotary Pressman, Letterpress, 8-02.30
Rotogravure Pressman, 8-02.60
Routing-Machine Setter-Operator, Woodworking, 7-73.60
Rover, Fibre, 7-01.50
Rubber-Calender-Machine Operator, 8-33.60
Rubber-Embossing-Machine Operator, 8-52.20
Rubber Farmer, 4-01.34
Rubber Millman, 8-33.40
Rubber-Moulding-Press Operator, 8-52.30
Rubber-Stamp Maker, 8-59.80
Rubble-Stone Setter, 7-91.55
Saddler, 7-23.30
Safety Engineer, 0-02.86
Sail, Tent and Awning Maker, General, 7-19.10
Salesman (Business Services), 3-11.50
Salesman (Insurance), 3-11.20
Salesman (Real Estate), 3-11.30
Salesman (Retail), 3-31.30
Salesman (Securities), 3-11.40
Salesman (Wholesale), 3-31.20
SALESMEN AND SHOP ASSISTANTS, 3-31
SALESMEN, SHOP ASSISTANTS AND RELATED WORKERS NOT ELSEWHERE CLASSIFIED, 3-39
Sampler, Mine, 5-99.70
Sandblaster, Building Exteriors, 7-99.55
Sanitary Engineer, Civil, 0-02.16
Sanitary Services, Electricity, Gas and Water Administrator, 1-15.40
Sauce and Condiment Cook (Preserving), 8-25.20
Sawing-Machine Operator, Metal, 7-59.40
Saw Repairman and Sharpener, 7-59.60
Sawyer, Edge, Sawmill, 7-73.30
Sawyer, General, Sawmill, 7-73.20
Sawyer, Head, Sawmill, 7-73.25
Sawyers and Woodworking-Machine Setters and Operators, 7-73
Sawyer (Stone), 7-91.40
Sewer, Hand and Machine, General, 7-61.60
Sewer, Hand (Fur), 7-16.20
Sewer, Hand (Garments) (except Leather and Fur), 7-16.30
Sewer, Hand (Leather Garments or Gloves), 7-16.40
Sewer (Leather), Hand (except Footwear, Gloves and Garments), 7-29.30
Sewer (Leather), Machine (except Footwear, Gloves and Garments), 7-29.40
Sewer, Machine (Footwear), 7-22.50
Sewer, Machine (Leather Garments and Gloves), 7-16
Sewer-Machine Operator (Textile and Fur Products, Leather Garments and Gloves), 7-16.70
Shaping-Machine Operator, Metal Working, 7-51.35
Shaping-Machine Setter-Operator, Metal Working, 7-50.65
Shaping-Machine Setter-Operator, Woodworking, 7-73.55
Shapen, Saws, 7-59.60
Sheep Farmer, 4-01.48
Sheet-Metal Marker, 7-54.20
Sheet-Metal Worker (Aircraft), 7-54.10
Sheet-Metal Worker (Ornamental), 7-54.10
Sheet-Metal Worker (Vehicles), 7-54.10
Sheet-Metal Workers, 7-54
Sheet Plater, Hot-Dip, Machine, 7-58.30
Shell-fish Gatherer, 4-31.30
Shipping and Receiving Clerk, 2-99.42
Ship's Beam and Frame Erector, 7-57.25
Ship's Captain (Inland Waterways, Estuaries and Ports), 6-01.20
Ship's Captain (Sea), 6-01.15
Ship's Carpenter, 7-71.35
Ship's Electrician, 7-61.20
Ship's Engine Mechanic, 6-12.15
Ship's Fireman (Coal), 6-12.20
Ship's Fireman (Oil), 6-12.30
Ship's Joiner, 7-71.40
Ship's Master: see Ship's Captain (Sea) (6-01.15) and Ship's Captain (Inland Waterways, Estuaries and Ports) (6-01.20)
ALPHABETICAL INDEX OF OCCUPATIONAL TITLES

Ship's Oiler and Greaser, 6-12.40
Ship's Pilot, 6-01.50
Ship's Plater, 7-57.30
Ship's Quartermaster, 6-11.20
Ship's Radio Operator, 6-72.30
Ship's Rigger, 8-73.40
Ship's Steward (Deck or Cabin), 9-19.80
Ship's Plater, 7-57.25
Shipwright, Wood, 7-71.25
Shoemaker: see Footwear Maker, General (7-21.10)
Shipwright, Metal, 7-57.30
Shipwright, Wood, 7-71.25
Shoe Repairer: see Repairman, Footwear (7-21.30)
Shop Assistant, Retail, 3-31.40
Shot Firer, 5-01.50
Shovel Operator, Excavating, 8-74.15
Shrinker, Textile, 7-06.50
Shunter, Railway, 6-62.50
Shuttle-Car Operator, Mine, 5-99.30
Sign Painter, 7-81.40
Silk De-gummer, 7-06.40
Silk Screen Printer, 8-09.30
Silk Weighter, 7-06.65
Silkworm Raiser, 4-01.66
Silverer, Mirror, 8-11.85
Silversmith, 7-42.50
Silviculturist, 0-23.40
Singer, 0-93.35
Skin and Hide Grader, 8-54.20
Skylight Glazier, Puttyless, 7-95.30
Slater, 8-26.20
Slip Maker, Clay, 8-19.40
Solderer, Hand, 7-59.70
Solderer, Hand, 7-59.70
Sol Fitter, 7-22.40
Solicitor, 0-91.20
Sorter, Wool, 7-01.15
Sorting-Machine Operator, Punched Cards, 2-91.50
Sound Physicist, 0-12.50
Sound-Recording-Equipment Operator, 7-69.40
Specialised Aircraft Pilot, 6-21.20
Specialist, Fire Prevention, 9-01.20
Specialist, Fire Salvage, 9-01.30
Specialist, Industrial Personnel, 0-Y9.41
Specialist, Medical or Surgical, 0-31.30
Spice Miller, 8-21.40
Spindle-Carving-Machine Setter-Operator, Woodwork-
ing, 7-73.70
Spinner (Metal), 7-59.30
Spinner (Rayon and Similar Products), 8-39.45
SPINNERS AND WINDERS, TEXTILE, 7-02
Spinners, Weavers, Knitters, Dyers and Related Workers, 7-0
Spinner (Thread and Yarn), 7-02.20
Splicer, Rope and Cable, 8-73.80
Splitter, Hides, 8-54.40
Splitter, Stone, 5-21.20
Sponge and Pearl Diver, 4-31.40
Spooler: see Winder (Thread and Yarn) (7-02.50)
Sport Bookmaker, 9-99.50
Sporting Equipment Maker, 7-79.70
Sports Official, 9-61.40
Spotter, Dry Cleaning, 9-51.50
Sprayer, Metal, 7-56.65
Spray Painter, 7-82.30
Spray Painter (Ceramics), 8-14.70
Squeeze-Machine Moulder, Metal Foundry, 7-35.50
Stage and Studio Electrician, 7-61.35
Stage and Studio Make-up Man, 9-41.30
Stage and Studio Wardrobe Mistress, 9-99.40
Stage and Studio Carpenter, 7-71.20
Stainer and Dyer, Leather, 8-54.60
Stationary-Engine and Excavating and Lifting-Equipment
Operators and Related Workers, 8-7
Stationary-Engine Operator (Internal-Combustion or
Reciprocating Steam), 8-71.20
Station Master, Railway, 6-61.30
Statistical Clerk, 2-99.15
Statistician, 0-Y4.40
Steam Cleaner (Building Exteriors), 7-99.60
Steam Engine Operator (Stationary and Reciprocating-
Steam Engine), 8-71.20
Steam Railway-Engine Driver, 6-31.15
Steam Railway-Engine Fireman, 6-31.20
Steel Converting, Bessemer or Thomas, Furnaceman, 7-31.25
Steel Erector, Constructional, 7-57.20
Steel Furnaceman, Open-Hearth (Martin), 7-31.20
Steel-Plate Bender, 7-57.35
Steel Worker, Structural, Workshop, 7-57.10
Steeplejacks, 7-93.50
Stencil Cutter (Silk-Screen Printing), 8-09.20
Stenographers and Typists, 2-1
Stenographers and Typists, 2-1
Stenographer-Typist, General, 2-11.10
Stenographer-Typist, Specialised, 2-11.30
Storeroom Clerk, 2-99.51
Stone Carver, Hand, 8-57.70
Stone Carvers and Carvers, 8-57
Stone Carver (Yard), 8-57.25
Stone-Cutting-Lathe Operator, 8-57.55
Stone Driller, 8-57.65
Stone Engraver, Lithographic, 8-04.15
Stone Grader, 8-57.15
Stillman, Petroleum, 8-31.40
Still Operator, Batch-, Chemical (except Petroleum), 8-31.20
Still Operator, Continuous-, Chemical (except Petroleum), 8-31.30
Stock-Records Clerk, 2-99.51
Stone Carver, Hand, 8-57.70
STONE CUTTERS AND CARVERS, 8-57
Stone Carver (Yard), 8-57.25
Stone-Cutting-Lathe Operator, 8-57.55
Stone Driller, 8-57.65
Stone Engraver, Lithographic, 8-04.15
Stone Grader, 8-57.15
Stone Grinder, 8-57.40
Stone Letter Cutter, Hand, 8-57.75
Stone Maker, Artificial, 8-59.20
Stonemason (Construction), 7-91.40
Stonemason (Mine), 7-91.40
Stone-Planer Operator, 8-57.35
Stone Polisher, Hand, 8-57.50
Stone Polisher, Machine, 8-57.45
Stone-Polishing Lathe Operator, 8-57.60
Stone Sawyer, 8-57.30
Stone Setter, 7-91.40
Stone Setter, Rubble, 7-91.55
Stone Splitter, 8-57.20
Stonework Layout Man, 8-57.20
Storage and Warehousing Administrator, 1-14.30
Storeroom Clerk, 2-99.54
Street Vendor, 3-32.20
INTERNATIONAL STANDARD CLASSIFICATION OF OCCUPATIONS

STREET VENDORS, CANVASSERS AND NEWSVENDORS, 3-32

Stretcher, Dressed Fur: see Nailer, Fur (7-12.50)
Stretcher, Pelts, 8-54.85
Stripper (Tobacco), Hand, 8-41.50
Stripper (Tobacco), Machine, 8-41.60
Stripping - Plate - Machine Moulder, Metal Foundry, 7-35.50
Structural Block and Tile Setter, 7-91.15
Structural Draughtsman, 0-X1.20
Structural-Metal Marker, 7-57.05
Structural Metal Plate Riveter, Machine, 7-57.55
Structural Metal Riveter, Hand, 7-57.50
Structural-Metal Riveter, Pneumatic Hammer, 7-57.65
Structural-Steel and Ships' Hull Painter, 7-81.30
Structural-Steel Worker, Workshop, 7-57.10
Stucco Plasterer, 7-92.30
Student Personnel Counsellor, 0-Y9.44
Studio Carpenter, 7-71.20
Sugar and Chocolate Confectionery Maker, General, 8-23.10
Sugar-Refining Carbonation Man, 8-39.60
Sugar-Refining Crystalliser Operator, 8-39.65
Superintendent Engineer (Marine Engineering): see Marine Engineer, Superintendent (6-02.30)
Surgeon, General, 0-31.20
Surgeon, General—see Footwear Maker, Orthopaedic (7-21.20)
Surgical Boot Maker—see Footwear Maker, Orthopaedic
Surgical or Medical Specialist, 0-31.30
Surveyor, General, 0-03.10
Surveyor (Land), 0-03.20
Surveyor (Marine), 0-03.40
Surveyor (Mine), 0-03.30
Surveyors, 0-03
Switchboard Operator, Electrical, Power Station, 7-61.55
Switchboard Operator, Telephone (Private Exchange), 6-71.20
Switchboard Operator, Telephone (Public Service), 6-71.15
Switchman, Railway: see Railway Shunter (6-62.50)

TEACHERS NOT ELSEWHERE CLASSIFIED, 0-69
Teacher, University (Arts), 0-61.20
Teacher, University (Sciences), 0-61.30
Teamster: see Driver, Animal-Drawn Vehicle (Freight), (6-42.20)
Technical Writer, 0-92.80
Technician (Engineering), 0-X9.20
Technician (Industrial Laboratory), 0-X9.40
Technician (Research Laboratory), 0-X9.30
Telecommunication Engineer, 0-02.34
Telegrapher, 6-71.30
Telegraph Installer, 7-64.20
Telegraph Repairman, 7-64.30
TELEPHONE AND TELEGRAPH OPERATORS, 6-71
Telephone Installer, 7-64.20
Telephone Repairman, 7-64.30
Telephone Switchboard Operator (Private Exchange), 6-71.20
Telephone Switchboard Operator (Public Service), 0-Y9.15

TELEPHONE AND TELEGRAPH OPERATORS, 6-71
Teleprinter Operator, 6-71.40
Television and Radio Announcer, 0-93.65
Television Broadcasting Station Operator, 6-72.20
Television-Camera Operator, 9-71.60
Teller, Bank, 2-01.40
Temperer, Metal, 7-32.50
Tent Maker, General, 7-19.10
Terrazzo Worker, 7-93.30
Textile Bleacher, 7-06.15
Textile-Calender-Machine Operator, 8-33.50
Textile Carboniser, 7-06.45
TEXTILE FABRIC AND RELATED PRODUCT MAKERS NOT ELSEWHERE CLASSIFIED, 7-09
Textile Fuller, 7-06.55
Textile Machinery, Fitter-Assembler, 7-52.35
Textile Machinery, Mechanic-Repairman, 7-53.35
Textile Printing, Pressman, 0-02.80
Textile-Product Sewing-Machine Operator, 7-16.70
Textile Shrinker, 7-06.50
Textile Washer, 7-06.35
Textile Radiator, 7-06.60
Tinsmith, 7-54.10
Thread and Yarn Doubler, 7-02.30
Thread and Yarn Spinner, 7-02.20
Thread and Yarn Twister, 7-02.40
Thread and Yarn Winder, 7-02.50
Thresher, Loom, Hand, 7-03.20
Thresher, Loom, Machine, 7-03.25
Thrower, Pottery and Porcelain, 8-12.25
Tile and Block Setter, Structural, 7-91.15
Tile and Brick, Kilnman, 8-13.50
Tile and Brick Moulder, Hand, 8-12.45
Tile and Brick Presser, Hand, 8-12.60
Tile Setter, 7-91.60
Timber-Carrier Driver, 8-75.40
Timber Cruiser, 4-41.15
Timberman, Underground, 5-01.60
Tinsmith, 7-54.10
Tobacco Blender, 8-41.30
Tobacco Conditioner, 8-41.40
Tobacco-Cutting-Machine Operator, 8-41.70
Tobacco Farmer, 4-01.26
Tobacco Grader, 8-41.20
Tobacco-Preparers, 8-41
Tobacco-Preparers and Tobacco-Product Makers, 8-4
ALPHABETICAL INDEX OF OCCUPATIONAL TITLES

Tobacco-Product Makers Not Elsewhere Classified, 8-49
Tobacco Stripper, Hand, 8-41.50
Tobacco Stripper, Machine, 8-41.60
Tool Grinder (except Machine Tools), 7-59.55
Tool Grinder (Machine Tools), 7-59.50
Toolmaker, 7-50.15
Toolmakers, Machinists, Plumbers, Welders, Platers and Related Workers, 7-5
Tooth Maker, Artificial, 8-59.25
Town Planner, 0-01.30
Toxicologist, 0-31.60
Trade (Retail) Administrator, 1-12.30
Trade (Wholesale) Administrator, 1-12.20
Traffic Controller, Aircraft, 6-62.15
Traffic Controllers and Despatchers, Transport, 6-62
Traffic Despatcher, Communication, 6-93.10
Train Driver (Underground or Elevated), 6-31.70
Train Driver, 6-41.15
Tram Driver, 6-41.15
Tram or Bus Conductor, 6-91.10
Transportation Booking Clerk, 2-99.45
Transport Service Inspector (Railway), 6-61.15
Transport Service Inspector (Road), 6-61.20
Trapper, 4-21.30
Traveller, Commercial, 3-21.20
Treater (Petrol Refining), 8-39.50
Tree Tapper, 4-41.50
Trench-Digging-Machine Operator, 8-74.20
Trimmer and Plucker, Pelts, 8-54.75
Truck Operator, Lift Truck, 8-75.20
Truck Operator, Scoop Truck, 8-75.30
Tunica, 7-33.60
Tuner (Organ), 8-56.45
Tuner (Piano), 8-56.50
Tunnel Construction, Civil Engineer, 0-02.14
Turbin and Plucker, Pelts, 8-54.75
Turbine Operator, Electricity Production, 8-71.30
Turner (Pottery and Porcelain), Hand, 8-12.35
Turner, Wood, 7-79.55
Turret-Lathe Setter-Operator, Metal Working, 7-50.45
Twister (Thread and Yarn), 7-02.40
Typist, 2-11.50
Tyre Builder, 8-52.40
Tyre Builders, Vulcanisers and Related Rubber, Product Makers, 8-52
Tyre Moulder, 8-52.50

Umbrella Maker, 7-19.20
Underground or Elevated Train Driver, 6-31.70
Underground Timberman, 5-01.60
Undertaker, 9-81.30
University Teacher (Arts), 0-61.20
University Teachers, 0-61

University Teacher (Arts), 0-61.30
Upholsterer (Furniture), 7-14.20
Upholsterers and Related Workers, 7-14
Upholsterer (Vehicle), 7-14.30
Upper Preparer, 7-22.30

V
Valet, Private Service, 9-19.50
Valuer: see Appraiser (3-11.70)
Van and Lorry Driver, Heavy, 6-41.40
Van and Lorry Driver, Light, 6-41.50
Vegetable Farmer, 4-01.20
Vehicle Electrician, 7-61.30
Vehicle Glazier, 7-95.60
Vehicle Loader, Railway and Road Transport, 8-81.40
Vehicle Upholsterer, 7-14.30
Veneer Applier, 7-79.82
Veneer Cutter, 7-73.35
Ventilating and Heating Equipment Operator, 8-71.70
Vetus, 0-21.10
Veterinarians, 0-21
Veterinary Bacteriologist, 0-22.60
Veterinary Pathologist, 0-22.70
Vocal Group Conductor, 0-93.50
Vulcaniser, Hot Process, 8-52.60

W
Waiter (Formal Service), 9-21.10
Waiter, General, 9-21.10
Waiter (Wine), 9-21.20
Waiters, Bartenders and Related Workers, 9-2
Waiters, BARTENDERS AND RELATED WORKERS, 9-21
Wallpaper Printing, Pressman, 8-02.70
Wardrobe Mistress, Stage and Studio, 9-99.40
Warehouse Porter, 8-81.60
Warehousing and Storage Administrator, 1-14.30
Warner, 7-03.15
Washer, Textile, 7-06.35
Washing-Machine Operator, Laundry, 9-51.20
Watch and Clock Maker, 7-41.15
Watch and Clock Repairer, 7-41.20
Watchman, 9-09.40
Waterproofer, Textile, 7-06.60
Weaver (Carpet), Hand Loom, 7-03.55
Weaver (Carpet), Machine Loom, 7-03.60
Weaver (Cloth), Handloom, 7-03.30
Weaver (Cloth), Machine Looms (except Jacquard Loom), 7-03.40
Weaver, Jacquard Loom, 7-03.45
Weaver (Lace), Machine, 7-03.50
Weaver (Net), Machine, 7-03.65
WEAVERS, LOOM FIXERS AND LOOM PREPARERS, 7-03
Weighter, Silk, 7-06.65
Welder (Electric Arc), Hand, 7-56.25
Welder (Electric Arc), Machine, 7-56.35
Weldor (Gas), 7-56.15
Welder (Gas and Electric), 7-56.10
WELDERS AND FLAME CUTTERS, 7-56
Welder (Thermite), 7-56.40
Well Driller, Petroleum and Gas Wells, 5-11.80
Well Driller (except Petroleum and Gas Wells), 5-11.80
WELL DRILLERS AND RELATED WORKERS, 5-1
WELL DRILLERS AND RELATED WORKERS, 5-11
Well Puller, Petroleum and Gas Wells, 5-11.30
Wet-End Operator, Paper-Making Machine, 8-35.30
<table>
<thead>
<tr>
<th>Occupation</th>
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<tr>
<td>Whale Harpooner</td>
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<tr>
<td>Wheelwright, Wood</td>
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<tr>
<td>Wholesale Salesman</td>
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<tr>
<td>Wholesale-Trade Administrator</td>
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<td>Wholesale-Trade Working Proprietor</td>
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<tr>
<td>Wicker-Furniture Maker</td>
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<tr>
<td>Winder (Coil), Hand</td>
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<tr>
<td>Winder (Coil), Machine</td>
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<tr>
<td>Winder (Thread and Yarn)</td>
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<tr>
<td>Window Cleaner</td>
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<tr>
<td>Winemaker</td>
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<td>Winemaker, Farmer</td>
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<tr>
<td>Wine or Liquor Taster</td>
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<td>Wine Waiter</td>
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<tr>
<td>Wire Drawer, General</td>
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<td>Wire Drawer, Hand</td>
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<td>Wire Drawer, Machine</td>
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<tr>
<td>Wire Spinner and Cable Squeezer, Bridge Building</td>
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<tr>
<td>Women's Hairdresser</td>
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<tr>
<td>Wood Bender</td>
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<tr>
<td>Wood Block Engraver, Hand, Printing</td>
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<tr>
<td>Wood Boatbuilder</td>
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<tr>
<td>Wood Cartwright</td>
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<td>Wood Carver</td>
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<td>Wood Coach-Body Builder</td>
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<td>Wood-Distillation Extractor-Operator, Forest</td>
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<td>Wooden-Furniture Finisher</td>
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<td>Wooden-Model Maker</td>
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<tr>
<td>Wooden-Shingle Rooter</td>
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<td>Wood Grinder (Paper Pulp)</td>
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<td>Wood Impregnator</td>
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<td>Wood Turner</td>
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<td>Wood-Turpentine Distiller, Forest</td>
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<td>Woodworking-Machine Fitter-Assembler</td>
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<td>Wool-Felt-Hood Former</td>
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<td>Wool Sorter</td>
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<td>Workers in Communication Occupations Not Elsewhere Classified</td>
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<td>Workers in Transport and Communication Occupations Not Elsewhere Classified</td>
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