
Training Material Source Book

A guide for trainers in labour-based roadworks



International Labour Organisation
Advisory Support, Information Services, and Training (ASIST)
Nairobi, Kenya

The Employment-Intensive Investment Programme (EIIP) is a sub-programme within the Recovery and Reconstruction Department (EMP/RECON) of the ILO. The EIIP is managed by the Employment Intensive Investment Branch (EMP/INVEST). Its objective, in the context of mainstreaming strategies for poverty alleviation, is to promote the use of local resource based technologies in infrastructure investments in developing countries and to strengthen their capacity to apply such technologies.

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The aim of ASIST Technical Briefs is to spread knowledge about labour-based technology and management amongst policy makers, planners, designers, implementers and trainers.

Training Material Source Book

A guide for trainers in labour-based roadworks

This publication was developed by the ASIST technical team in Nairobi, Kenya

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Produced by the ASIST Information Service with financial support from the Swiss Agency for Development and Cooperation (SDC)

Set in Arial and Century Schoolbook typefaces on an Hewlett-Packard LaserJet 4000TN printer using Microsoft Word for Windows 8.0

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ASIST Working Paper No 1

First published September 1997

Second (Revised) Edition published June 2000

ASIST publications can be obtained from the ASIST Information Service, PO Box 210, Harare, Zimbabwe, tel: +263-4-369824/8, fax: +263-4-369829, email: asist@ilosamat.org.zw, website: <http://www.ilo.org/asist>

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Publisher's note

This is a Working Paper. It has been published with the intention that practitioners in labour-based technology should read it with a critical eye, and should hopefully try to utilise the information provided in it. Readers and users are encouraged to provide feedback to ASIST by sending their comments to:

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Preface

This guide is for trainers who are charged with providing training for labour-based roadworks, or for the development of small-scale contractors. Its purpose is to assist them in selecting and developing appropriate training material.

For new projects and programmes, material is often developed from scratch. However, a lot of training material has already been written over the last few years. This guide lists the currently available training material. The listed material is that considered most generally applicable for training target groups in the three main areas of: 1. Routine and Periodic Maintenance, 2. Construction, and 3. Contracting.

Trainers designing training programmes are therefore advised to study the listed titles carefully in order to make the best use of the material already available. It is also recommended that trainers who intend to develop a new training programme first consult the *ROMAR Trainer Guide, Section A: Training Planning* (see List 3. Contracting), before selecting and writing their own training material

Abbreviations

ASIST	Advisory Support Information Services and Training Project
CTP	Construction Technology Programme
DFID	Department for International Development (was ODA)
DST	Department of Staff Training, Kenya
ILO	International Labour Organisation
IYCB	Improve Your Construction Business
LB	Labour-based
LBM	Labour-based methods
LCU	Labour Construction Unit, Lesotho
MART	Management of Appropriate Technology
MLGH	Ministry of Local Government and Housing
MOPW	Ministry of Public Works, Kenya
MOPWH	Ministry of Public Works and Housing, Kenya
MOT&C	Ministry of Transport and Communications, Kenya
MOWTC	Ministry of Works, Transport and Communication
MRP	Minor Roads Programme, Kenya
ODA	Overseas Development Agency (now DFID)
RARP	Rural Access Roads Programme, Kenya
ROMAR	Road Maintenance and Regravelling
RTC	Roads Training Centre, Botswana
RTU	Roads Training Unit, Botswana
SKAT	Swiss Centre for Appropriate Technology
TRL	Transport Research Laboratory, UK
UNDP	United Nations Development Programme

How to use this guide

1. Decide which main topic area you are interested in, and turn to the appropriate page:

- Routine and Periodic Maintenance Page 7
- Construction Page 12
- Contracting Page 17

2. Decide who your target group are:

Routine and Periodic Maintenance

- Maintenance Engineers/Senior Supervisors
- Maintenance Field Supervisors
- Maintenance Headmen/Gangleaders
- Trainers

Construction

- Engineers/Senior Supervisors/Technicians
- Site Supervisors
- Trainers

Contracting

- Contract Supervisors (Engineers/Senior Technicians)
- Contractors (Owners or their Managers)
- Contractor's Site Supervisors
- Trainers

3. Peruse the Key Notes to identify the titles that interest you.

4. Make a note of their Reference Numbers.

If you do not already have the referenced documents, you can obtain a copy of them from:

ASIST Harare
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Fax +263-4-369829
Email: asist@ilosamat.org.zw or asist@africaonline.co.zw

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Note The Reference Number (Column 2) refers to the document number in the ASIST bibliographic database (ASISTDOC). You can quote this number when ordering publications from ASIST.

TRAINING TOPIC

1 Routine and Periodic Maintenance

OVERVIEW: This table summarises the most relevant titles of available training manuals and training/subject related publications for labour-based maintenance training courses for managers, practitioners and site staff. This material can also be utilised for the technical and operational training aspects of contractor training.

TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Maintenance Engineers and/or Senior Maintenance Supervisors		International course for engineers and managers of labour-based road construction and maintenance programmes	B: General aspects of road construction and maintenance	H	General description of road construction and maintenance in developing countries; importance of roads; maintenance procedures and problems including funding constraints.
	03649	Vols. I + II: Course Notes	M: Maintenance using LBM	H	Contains a maintenance case study. Discusses the general assessment of maintenance requirements and the available options and choice of technology.
	03650	(Lecturers' Notes, see under "Trainers") <i>Beusch, A; de Veen, JJ. 1991. ILO</i>	N: Maintenance Organisation O: Maintenance Management	H	Describes the organisational structure required for force account operations, the necessary staff and their training, incl. the necessary support functions. Deals with the assessment of maintenance requirements on a road basis; identification of maintenance priorities and development of work plans.
	03654	Labour-Based Contract Maintenance Programme, Orientation Course for District Engineers, MOWTC Uganda. CTP 130 <i>Intech Beusch. 1993. ILO</i>	All sections	R	Discusses in general terms the purpose of road maintenance, the mechanisms of road deterioration, the major maintenance systems, and management of LB maintenance including typical forms and procedures. Deals with principles of contract management for maintenance, the required maintenance organisation (specifically for MOWTC Uganda) and finally details the various LB maintenance activities and the associated required planning and reporting system.
	027295	Road Maintenance Manual, Minor Roads Programme, Kenya <i>Intech Associates. 1992. MOPW, Kenya</i>	All sections	TR	This is a manual specifically written for all implementors of the Minor Roads Programme in Kenya. It details the LB maintenance strategy (lengthperson system through force account), operations, activities, organisation and management. It is the only document of it's kind currently available which deals with LB maintenance in great detail, and it covers all essential aspects.
	01022	Maintenance management for district engineers <i>Overseas Road Note 1. TRL. 1981</i>	All sections	TR	A general guide to the management of maintenance operations. Outlines a rational approach that will help maintenance engineers organise and control activities using limited resources.

H = Handouts. Material ready for training, requiring minor adjustments for local conditions

R = Reference. Training material which can be considered to produce project specific training material requiring major adjustments

TR = Training Resource; topic related material (e.g. technical manuals, reports, etc.) which is recommended as a resource base for the preparation of courses and lessons

TG = Training Guides; guidelines for trainers on how to design and conduct training courses and lessons for the particular training topic

01020	Maintenance techniques for district engineers <i>Overseas Road Note 2. TRL. 1985</i>	All sections	TR	Describes maintenance techniques in general with emphasis on planning, and discusses the merits of using labour or equipment-based methods. These publications can be obtained free of charge from the TRL, Overseas Centre, Old Wokingham Road, Crowthorne, RG11 6AU, Berkshire, UK
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TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Maintenance Engineers and/or Senior Maintenance Supervisors (continued)		International Road Maintenance Handbook:	All sections	TR	Although the handbook's target audience are maintenance foremen and supervisors, these four books provide an excellent overview of all practical road maintenance aspects in developing countries, for both labour- and equipment-based operations. These publications can be obtained free of charge from the TRL, Overseas Centre, Old Wokingham Road, Crowthorne, RG11 6AU, Berkshire, UK
	00912	Vol. I: Maintenance of roadside areas and drainage			
	00913	Vol. II: Maintenance of unpaved road			
	00914	Vol. III: Maintenance of paved roads			
	00915	Vol. IV: Maintenance of structures and traffic control devices <i>ODA/TRL. 1994</i>			
Maintenance Field Supervisors		Management and Supervision of LB road construction and maintenance :			This manual was developed as the basic training material for the maintenance courses of Technical Officers/Assistants and Gangleaders of the MLGH in Botswana. The manual covers force account LB maintenance of unpaved and paved roads. These subjects are of a general nature and describe the purpose of maintenance and the choice of technology. They deal with the mechanisms of deterioration and failure of roads, and describe the common maintenance systems. These subjects describe in detail the specific approach to LB maintenance of the Botswana Programme. They cover maintenance management (assessment, priorities, workplans, organisation and reporting); maintenance technology (all routine and periodic activities); and the management of maintenance staff.
	03657	Maintenance training course notes for technical staff of the District Council Road Unit. CTP 137	Sections A, B, C	H	
	03655	Instructors' Manual (see under "Trainers"). CTP 138 <i>Intech Beusch & Co.;</i> <i>Johansen, Rolf. 1992. ILO</i>	Sections D, E, F	R	

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27448	Roads 2000 Works Manual <i>Intech Associates. 1996.</i> <i>MOPWH, Kenya</i>	E: Preparation works using labour techniques	R	Describes the technique to partially rehabilitate earth and gravel roads (minimal rehabilitation) using LBM in order to bring roads to a maintainable standard.
		F: Preparation works using tractor towed equipment and labour	R	As above, but includes the use of tractor towed equipment for the rehabilitation of higher trafficked roads.
		L: Spot Improvement	R	Describes spot improvement activities as a means to partially rehabilitate paved and unpaved roads to a maintainable standard.

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TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Maintenance Field Supervisors (continued)	00912	International Road Maintenance Handbook: Vol. I: Maintenance of roadside areas and drainage	All sections	TR	These handbooks are targeted towards maintenance foremen and supervisors . They provide an excellent overview of all practical road maintenance aspects in developing countries, for both labour- and equipment-based operations.
	00913	Vol. II: Maintenance of unpaved road			These publications can be obtained free of charge from the TRL, Overseas Centre, Old Wokingham Road, Crowthorne, RG11 6AU, Berkshire, UK
	00914	Vol. III: Maintenance of paved roads			
	00915	Vol. IV: Maintenance of structures and traffic control devices <i>ODA/TRL. 1994</i>			
	03749	Inspectors and overseers courses for LB road maintenance. RARP/MRP Manual <i>Minor Roads Programme, MOPW, Kenya. 1987</i> (Syllabus, see under "Trainers") <i>Beusch, A. 1987. Minor Roads Programme, MOPW, Kenya</i>	All sections	R	This manual was specifically developed for the MRP in Kenya. It is very detailed and covers all aspects of maintenance organisation, operations, management and administration. The manual was developed as a workbook with text to be filled in by the course participants. This training material was developed on the basis of the <i>Road Maintenance Manual, Minor Roads Programme, Kenya</i> . Ref. no. 27295 above.
Maintenance Headmen and/or Gangleaders		Management and supervision of LB road construction and maintenance:		H/R	This manual was developed as the basic training material for the maintenance courses of Technical Officers/Assistants and Gangleaders of the MLGH in Botswana. The manual covers force account LB maintenance of unpaved and paved roads.
	03657	Maintenance training course notes for technical staff of the District Council Road Unit. CTP 137 <i>Intech Beusch & Co.; Johnasen, Rolf. 1992. ILO</i>	Sections A, B, C		These subjects are of a general nature and describe the purpose of maintenance and the choice of technology. They deal with the mechanisms of deterioration and failure of roads, and describe the common maintenance systems.

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TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Maintenance Headmen and/or Gangleaders (continued)	27297	Headman's Handbook for Maintenance of Minor and Rural Access Roads/Kitabu cha utunzaji ya barabara kwa wanyapara <i>MOPWH, Kenya. 1991</i>	All sections	R	This handbook was developed along with the MRP Maintenance Manual (Ref. no. 27295) and the course material for Inspectors and Overseers (Ref. no. 03754). It addresses literate and illiterate headmen through simple drawings and short explanations in Kiswahili. It provides guidance for all routine maintenance activities and is structured according to seasonal priorities. It also summarises the common tools and measuring aids used for routine maintenance.
Trainers		International course for engineers and managers of labour-based road construction and maintenance programmes:	Sections B, M, N, and O	TG	Provides additional notes for the lecturers to prepare their lessons, and includes a number of overhead transparencies. Also included are suggested exercises which can easily be adapted to local conditions.
	03651	Vol. III: Lecturers' Notes			
	03652	Vol. IV: Course Curriculum <i>Beusch, A; de Veen, JJ. 1991. ILO</i>			
		Management and Supervision of LB road construction and maintenance: Maintenance course for technical officers, technical assistants & gangleaders	All sections	TG	Provides a detailed syllabus for the two courses "Technical Officers and Assistants" and "Senior Gangleaders". Provides a series of practical "Pedagogical Notes", exercise examples and list of relevant reference literature and additional notes to various subjects. Provides a set of overhead transparencies.
	03655	Instructors' Manual. CTP 138 <i>Intech Beusch & Co.; Johansen, Rolf. 1992. ILO</i>			
	03753	Inspectors and overseers courses for labour based road maintenance, RARP/MRP: Syllabus <i>Beusch, A. 1987. MOT&C, DST, Kenya</i>	All sections	TG	Provides a detailed syllabus for the inspectors and overseers courses. The detailed description of learning objectives could be of particular interest for trainers who have to design maintenance courses.

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TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Trainers (continued)	03863	Trainer's toolbox of training techniques <i>Mason, David. 1995.</i> <i>ILO/ASIST</i>	All sections	TG	This general guide provides a selection of training delivery methods (training methodology) which helps trainers to plan and organise their training.
	03861	Clip Art, diagrams and illustrations (LB road works) <i>Mason, David; Strøm, Ørnulf.</i> <i>1995. ILO/ASIST</i>	All sections	TG	A collection of useful diagrams and illustrations taken for textbooks and manuals on LB roadworks. Trainers can copy these illustrations and use them for the production of their own training material.

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TRAINING TOPIC
2 Construction

OVERVIEW: This table summarises the most relevant titles of available training manuals and training/subject related publications for labour-based construction training courses for managers, practitioners and site staff. This material can also be utilised for the technical and operational training aspects of contractor training.

TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Engineers and/or Senior Supervisors/ Technicians		International course for engineers and managers of labour-based road construction and maintenance programmes	B: General aspects of road construction and maintenance	H	General description of road construction and maintenance in developing countries; importance of roads; maintenance procedures and problems including funding constraints.
	03649	Vols. I + II: Course Notes (Lecturers' Notes, see under "Trainers") <i>Beusch, A; de Veen, JJ. 1991. ILO</i>	E: Inception and planning of LB road projects	H	Background information on pilot project objectives and activities, general planning parameters, managerial arrangements, support arrangements and general technical considerations.
	03650		I: Engineering planning and logistics	H	Basic information on common road identification and selection procedures, design and construction standards, operational and technical planning.
			J: Site organisation and works	H	Detailed discussion of the principles involved in all site relevant aspects for construction and gravelling works.
	00260	Building roads by hand: An introduction to labour-based road construction <i>Antoniou, J. 1990. Longman</i>	All sections	H	This book serves as an introduction to LB road construction (gravel roads only). Although it was originally designed for site supervisory staff, it nevertheless provides an excellent overview of the managerial, technical and organisational principles for engineers who are embarking on LB road construction. The book is written in simple understandable language, and concentrates on the essential issues. It is very well illustrated with plenty of line drawings.
03644	Technical manual, rehabilitation of feeder roads using LB methods, Afghanistan <i>UNDP Office for Project Services, Afghanistan Projects Office. 1993</i>	All sections	H	The manual is aimed at all site personnel, including contractors, involved in LB road rehabilitation. It describes the general methods of road reinstatement, setting out techniques, work organisation, construction activities (also for mountainous terrain), construction of low cost structures, and provides estimating tables for structure work. The Annex provides in addition a set of typical drawings, contract specifications for LB activities and a Bill of Quantities. The manual is written in simple understandable language. It is built up in a modular system (each module is a separate booklet) and is illustrated with many two and three dimensional drawings.	

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27298	Minor Roads Programme. Technical Manual Volume I. <i>Intech Associates. 1992. MOPW, Kenya</i>	All sections	TR	This is a manual specifically written for all implementors of the Minor Roads Programme in Kenya. It describes the LB organisation, activities, technical standards, site planning and reporting for all construction operations of earth and gravel roads using the “ slotting method ”. Although the manual is written specifically for the MRP it provides comprehensive reference material for any LB road construction project.
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TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Engineers and/or Senior Supervisors/ Technicians (continued)	01000	Technical Manual <i>Guthrie, Peter. August 1983. Labour Construction Unit, Lesotho</i>	All chapters	TR	This was written as a field manual for supervisors on site, and for anyone who supervises LB work in the LCU. It is a hand written booklet with lots of two and three dimensional illustrations, easy to understand and well structured. The chapters cover all important subjects; basic mathematics, earthworks, drainage, gravelling, conservation works, simple soil mechanics, briefs on concrete technology, setting out, task work and production, site establishment and standard drawings.
	00162	Guide to tools and equipment, for LB road construction <i>1981. ILO</i>	All sections	TR	A practical guide providing specifications of hand tools, methods for testing, design and manufacturing instructions, and information on correct tool handling and maintenance.
	42107	Expanding LB methods for roadworks in Africa. World Bank Technical Paper No. 347 <i>Stock, Elisabeth A.; de Veen, JJ. 1996. The World Bank</i>	All sections	TR	Presents a number of LB delivery models with their advantages and disadvantages as experienced in Africa over the last 25 years. This paper is very suitable for managers and engineers who are in the process of designing or starting a new project. The various models could be used for training workshops as case studies.
Site Supervisors		Guide to the training of supervisors for LB road construction and maintenance:	All sections, except 15 (Maintenance)	H	This modular training manual is the “classic” training material for LB site supervisors. It is written in a general way and allows adaptation to local conditions and project situations. For construction of the road formation the manual describes in Module 9 the “ slotting method ”. The manual concentrates on the total construction process for new roads, and, for gravelling, describes the use of tractor-trailer combinations as the only hauling method.
	03744 03745	Trainees' manual/Part 1 and 2 (Instructors Manual, see under "Trainers") <i>Karlsson, Lars; de Veen, JJ. 1981. ILO</i>			Each module also details the general learning objectives and has adequate illustrations. The manual can also be used as a good starting point for developing project specific material.

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27351	Manual for the construction of earth roads using labour intensive methods <i>Illi, Walter. 1988. MRP, MOTC, Kenya</i>	All sections	R	This training manual is aimed principally at Site Supervisors but can also be used as reference material for engineers. It describes in great detail the standards adopted, the required site management and administration, the setting out activities for the “ slotting method ”, all earth road construction activities (but gravelling is not included), a brief introduction to practical soil mechanics and concrete technology. The text is supported with good technical drawings.
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TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Site Supervisors (continued)	13519	Manual for gravel road construction <i>LCU, Lesotho</i>	All sections	R	The manual is aimed at all supervisory staff of the LCU. The structure and layout follows the ILO's modular "Guide to the training of supervisors" (Ref. 03744/5). The manual has been adapted to the particular conditions and requirements of the LCU. It is well structured and has many good illustrations but is very voluminous. It covers programme (LCU) details, standards, site planning and reporting, site establishment, work organisation, hand tools, setting out methods, construction and drainage works, structure works, gravelling, simple soil mechanics and concrete technology.
		Roads: Labour-based methods. Course Notes: Senior road foreman course	All subjects	R	These manuals describe soil mechanics, gravel surfacing and concrete technology in relation to LB road construction. They focus on the flat, sandy conditions found in Botswana.
	03554	Subject 1: Soil Mechanics			
	03555	Subject 2: Gravel surfacing			
	03556	Subject 3: Concrete technology <i>Strøm, Ørnulf. 1994. Roads Training Unit, Roads Training Centre, Botswana</i>			
		Roads: Labour-based methods. Course Notes: Road foreman course	All subjects	R	This set of manuals focuses more on the implementation level (road foremen), and describes the subjects: soils, tools and construction methods, road alignment, drainage and setting out methods (using the profile method), and administration management. The use of profiles to set out the vertical alignment is very well described here. The manuals are concentrated versions of the older RTC manuals, and concentrate on the requirements for Botswana.
	03557	Subject 2: Soils, tools and construction methods			
	03558	Subject 3: Road alignment, drainage and setting out methods			
03559	Subject 4: Administration and management <i>Strøm, Ørnulf. 1994. Roads Training Unit, Roads Training Centre, Botswana</i>				

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TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Site Supervisors (continued)	30010	DRIMP: Foreman's manual for construction and maintenance <i>Guthrie, Peter. 1983. Ministry of Works and Supply, Malawi</i>	All sections	R	Like the LCU Technical Manual (Ref. 01000), this manual is hand written with lots of illustrations. The manual was prepared for the training of Foremen (Site Supervisors) and covers all essential topics: setting out, all earth road activities, gravelling, erosion protection work, site organisation and administration, and details on standards. This manual is a good example of how training material can be produced in a simple but effective manner.
	00886	Road project Manggarai: Labour-based road construction. Handbook for instruction courses <i>Hartmann, P. Swiss Centre for Appropriate Technology (SKAT)</i>	All sections	R	This manual describes in simple terms all construction steps of stone paved feeder roads. Particularly interesting are the sections on stone paving and the use of voluntary community labour for earthworks. The manual has many easily readable drawings and pictures which illustrate important aspects of the technology.
Trainers		International course for engineers and managers of labour-based road construction and maintenance programmes:	Section B	TG	Provides additional notes for the lecturers to prepare their lessons, and includes a number of overhead transparencies. Also included are suggested exercises which can easily be adapted to local conditions.
	03651	Vol. III: Lecturers' Notes			
	03652	Vol. IV: Course Curriculum <i>Beusch, A; de Veen, JJ. 1991. ILO</i>			

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		Guide to the training of supervisors for LB road construction and maintenance:	All sections	TG	These two manuals provide an introduction to the <i>Guide to the training of supervisors</i> training material, and explain how to use it. They also give guidelines on how to plan, design and implement a country specific training programme.
03744		Instructor's manual/1: The setting up of training courses. CTP 97			
03745		Instructor's manual/2: How to develop a country/project-specific training course. CTP 98 <i>Karlsson, L.; de Veen, JJ. 1981. ILO</i>			

TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Trainers (continued)	03863	Trainer's toolbox of training techniques <i>Mason, David. 1995. ILO/ASIST</i>	All sections	TG	This general guide provides a selection of training delivery methods (training methodology) which helps trainers to plan and organise their training.
	03861	Clip Art, diagrams and illustrations (LB road works) <i>Mason, David; Strøm, Ørnulf. 1995. ILO/ASIST</i>	All sections	TG	A collection of useful diagrams and illustrations taken for textbooks and manuals on LB roadworks. Trainers can copy these illustrations and use them for the production of their own training material.

H = Handouts. Material ready for training, requiring minor adjustments for local conditions

R = Reference. Training material which can be considered to produce project specific training material requiring major adjustments

TR = Training Resource; topic related material (e.g. technical manuals, reports, etc.) which is recommended as a resource base for the preparation of courses and lessons

TG = Training Guides; guidelines for trainers on how to design and conduct training courses and lessons for the particular training topic

TRAINING TOPIC

3 Contracting

OVERVIEW: This table summarises the most relevant titles of available training manuals and training/subject related publications for labour-based contracting training courses for contract managers (clients), contractors (company owners or representatives), and their site supervisors.

TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Contract Supervisors (Engineers, Senior Technicians)	03654	Labour-Based Contract Maintenance Programme, Orientation Course for District Engineers, MOWTC Uganda. CTP 130 <i>Intech Beusch. 1993. ILO</i>	All sections	R	This document describes in general terms the purpose of road maintenance, the mechanisms of road deterioration, the major maintenance systems, and the management of LB maintenance including typical forms and procedures. It also deals with the principles of contract management for maintenance , the required maintenance organisation (specifically for the MOWTC in Uganda), and finally details the various LB maintenance activities and the associated required planning and reporting system.
	17003	Towards guidelines for LB contracting. A framework document. MART working paper No. 1 <i>MART/ILO. 1996</i>	All sections	R	This paper provides a useful set of checklists for practitioners involved in LB contract work. It covers both the institutional issues and the operational issues of labour-based contracting . It also forms a preparatory stage for the production of a comprehensive manual on enabling small-scale contracting for LB road works.
Contractors (Owners or their Managers)	13726	Road maintenance and regravelling (ROMAR) using LB methods. Handbook and Workbook <i>Andersson, Claes-Axel; Beusch, Andreas; Miles, Derek. 1996. Intermediate Technology Publications</i>	All sections	H	The ROMAR handbook and workbook were specifically written for the training of contractors who would like to enter into road maintenance and regravelling contracts. The material has been developed in a general way and can easily be adapted to local conditions and requirements. It complements the "Improve Your Construction Business" (IYCB) approach to small building contractor development, providing the technical and managerial aspects of LB road regravelling. The handbook discusses all relevant topics of road maintenance and regravelling in theory and with examples, and relates the contract and business management issues to the theory. The workbook enables the user to test his/her understanding of ROMAR and to decide whether he/she has the knowledge, experience and resources to make a success of the business activity. The workbook can also be used by trainers to develop training exercises.
	13727				

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TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Contractors (Owners or their Managers) (continued)	3669/70	Improve Your Construction Business (IYCB) (Handbooks + Workbooks)	All sections	R	The IYCB series has been prepared for the development of small enterprises involved in the construction business , and it complements the ROMAR set. The books are written in the same style as the ROMAR, but are not specifically targeted for road contractors. Most of the examples deal with building works. It is therefore recommended to use these manuals as guidelines for developing country/project specific contractor management material for road works.
	3773/4	Vol. 1: Pricing and bidding			
	3805/6	Vol. 2: Site management			
		Vol. 3: Business management <i>Andersson, Claes-Axel; Miles, Derek; Neale, Richard; Ward, John. ILO</i>			
		For technical matters see references listed under Training Topics 1 & 2			For technical and operational training on LB roadwork methods, the publications listed under Routine Maintenance and Construction above are recommended.
Contractor's Site Supervisors		For technical matters see references listed under Training Topics 1 & 2			For technical and operational training on LB roadwork methods, the publications listed under Routine Maintenance and Construction above are recommended.
Trainers	39147	LB contracting development. Training programme curricula <i>Beusch, Andreas. 1996. Ministry of Works & Supply, Roads Department, Roads Training School, Zambia</i>	All sections	TG	A practical example of a training plan (curricula) for all personnel involved in LB road contracting development programmes. Outlines the approach to planning, the project and training environment, training needs assessment, training programme development, methodology, courses, entry requirements, trial contracts, mentorship, examination and budgeting.
	39146	LB contracting development: Training programme, trial contracts, mentorship, training assessment <i>Beusch, Andreas. 1996. Ministry of Works & Supply, Roads Department, Roads Training School, Zambia</i>	All sections	TG	A practical example of the detailed arrangements for trial contracts (routine maintenance and rehabilitation), mentorship arrangements and training assessment (complements the above curricula).

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TARGET GROUP	REF NO.	TITLES	SECTIONS	USE	KEY NOTES
Trainers (continued)	13761	ROMAR Trainer Guide: Road maintenance and regravelling (ROMAR) using LB methods <i>Beusch, Andreas; Andersson, Claes-Axel. 1996. ILO</i>	All sections	TG	This guide has been specifically written to assist trainers in the planning, design, organisation and implementation process for small-scale contractor training programs. In particular, the guide leads the reader through the required planning steps, the implementation of ROMAR and IYCB-material-based courses. It provides a wide range of practical exercise examples, overhead transparencies, and suggestions for the practical field training.
	03672	Training contractors for results. A guide for trainers and training managers <i>Hernes, Tor; Miles, Derek. 1988. ILO</i>	All chapters	TG	This guide describes the general approach to training design for small-scale contractor development projects. This book is highly recommended to all trainers who are charged with the job of developing a training programme for contractors.
	03615	Contract management training for MOPWH personnel <i>Norconsult. 1994. MOPWH, Kenya.</i>	All sections	TG	This paper outlines a proposed training programme for District Engineers and senior technicians for supervision of regravelling contracts (LB small-scale contractors). The main topics covered are: tender and contract procedures training, and contract supervision training.
	03863	Trainer's toolbox of training techniques <i>Mason, David. 1995. ILO/ASIST</i>	All sections	TG	This general guide provides a selection of training delivery methods (training methodology) which helps trainers to plan and organise their training.
	03861	Clip Art, diagrams and illustrations (LB road works) <i>Mason, David; Strøm, Ørnulf. 1995. ILO/ASIST</i>	All sections	TG	A collection of useful diagrams and illustrations taken for textbooks and manuals on LB roadworks. Trainers can copy these illustrations and use them for the production of their own training material.

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