

The Laws of Zambia

REPUBLIC OF ZAMBIA

THE EXPLOSIVES ACT

CHAPTER 115 OF THE LAWS OF ZAMBIA

CHAPTER 115 THE EXPLOSIVES ACT

THE EXPLOSIVES ACT

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CHAPTER 115

EXPLOSIVES

Act No.
10 of 1974
13 of 1994
14 of 1995

An Act to make provision for regulating control over the manufacture, use, possession, storage, importation, exportation, transportation and destruction of explosives; and to provide for matters incidental thereto or connected therewith.

[7th May, 1974]

1. This Act may be cited as the Explosives Act.

Short title

2. In this Act, unless the context otherwise requires-

Interpretation

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"Deputy Chief Inspector" means the Deputy Chief Inspector of Explosives appointed under sub-section (2) of section *four*;

"authorised explosive" means any such explosive as the Minister may, by statutory instrument, specify from time to time;

"authorised official" means any person not below the rank of superintendent authorised in writing by name or office by the Chief Inspector to impose a summary fine as may be prescribed in any regulations made under this Act;

"authorising officer" means a police officer appointed under subsection (2) of section *twelve*;

"Chief Inspector" means the Chief Inspector of Explosives appointed under sub-section (1) of section *four*;

"explosives" means-

- (a) gunpowder, nitro-glycerine, dynamite, gelignite, gun-cotton, blasting-powder, explosives, fulminate of mercury or of any other metal, and every other substance, whether similar to those herein mentioned or not, which is used or manufactured with a view to producing a practical effect by blasting or explosion;
- (b) any detonating, igniter or safety fuse, electric or non-electric, detonator, percussion cap, fuse igniter, and every adaptation or preparation of any explosive herein defined;
- (c) any other substance which the Minister may from time to time, by statutory instrument, declare to be an explosive;

but shall not include any ammunition, firework or rocket for which a licence to import, possess or deal in is required by any other law;

"explosives factory" means any place licensed under this Act for manufacturing explosives for sale, and includes a mound, building and magazine, and the work carried on therein or thereon for whatsoever purpose;

"holder" means any person appointed by the owner to obtain authority to possess, manufacture, store, transport, deal in, import or export explosives;

"Inspector of Explosives" means an Inspector of Explosives appointed under sub-section (3) of section *four*, and shall include the Chief Inspector of Explosives, the Deputy Chief Inspector of Explosives and a Senior Inspector of Explosives;

"Inspector of Mines" means an Inspector of Mines appointed under sub-section (3) of section *four* and shall include the Chief Inspector of Mines, the Deputy Chief Inspector of Mines and a Senior Inspector of Mines;

"Inspector of Machinery" means an Inspector of Machinery appointed under sub-section (3) of section *four*, and shall include the Chief Inspector of Explosives, the Deputy Chief Inspector of Explosives and a Senior Inspector of Machinery;

"manager" means the person appointed to be or purporting to act as the manager or any person in charge of any mine, explosives factory or works;

"manufacture" includes the making and division of any explosive from or into its component parts by any process, the conversion of an explosive into an explosive of another kind, and the alteration, fitting for use or repair of any explosive;

"mine" has the meaning assigned to the word "mine" when used as a noun in the Mines and Minerals Act; Cap. 213

"owner" includes the occupier of any premises where explosives are manufactured, used, stored or handled; and where such occupier is a body corporate, the accredited representative of such body;

"premises" includes land, road, rail, harbour, river, lake, rail truck, canal, building, structure, ship, boat or any other means of conveyance or transport;

"works" means any place other than a mine or explosives factory where explosives are manufactured, used, stored, transported or handled.

(As amended by Act No. 14 of 1995)

3. Nothing in this Act shall apply to-

Application
Cap. 110

- (a) the manufacture, storage, use, possession, transportation, importation and exportation of explosives by the Zambia Defence Force, the Zambia Police Force and the Zambia Prison Service or any other person authorised under any written law;
- (b) any ammunition for which a licence is required in accordance with the provisions of the Firearms Act;
- (c) any fireworks for which any licence is or may be required under any written law.

4. (1) There shall be appointed a Chief Inspector of Explosives who shall be a public officer, and for the purposes of this Act, the Chief Inspector of Mines shall be the Chief Inspector of Explosives, and shall, subject to the general or special directions of the Minister, exercise and perform the functions conferred or imposed upon the Chief Inspector of Explosives by or under this Act, and shall have overall responsibility for matters concerning safety in the manufacture, possession, use, storage, transportation, importation, exportation and destruction of explosives in the Republic. Appointments

(2) There shall be appointed a Deputy Chief Inspector of Explosives who shall be a public officer and, for the purposes of this Act, the Deputy Chief Inspector of Mines shall be the Deputy Chief Inspector of Explosives, and shall exercise and perform the functions conferred or imposed upon the Assistant Chief Inspector of Explosives by or under this Act and such other functions as are delegated to him by the Chief Inspector.

(3) There shall be appointed such number of Inspectors of Explosives, Inspectors of Mines and Inspectors of Machinery, who shall be public officers, and such number of other public officers as may be necessary for the due and proper administration of this Act.

(4) Where the office of the Chief Inspector is vacant or the Chief Inspector is, owing to absence or inability to act from illness or other cause, unable to exercise and perform the functions of his office, the Deputy Chief Inspector shall exercise and perform the functions of the Chief Inspector during such vacancy, absence or inability.

(5) The Chief Inspector, the Deputy Chief Inspector, an Inspector of Explosives, an Inspector of Mines, an Inspector of Machinery or any other public officer appointed under this Act shall not be liable for anything done or omitted to be done in good faith in the performance or purported performance of any function vested in or delegated to him by or under this Act.

(6) An Inspector of Explosives appointed under sub-section (3) may, if suitably qualified, be appointed an Inspector of Mines, and if so appointed, he shall, for the purposes of this Act, have all the powers conferred by or duties imposed upon an Inspector of Mines by or under this Act.

(As amended by Act No. 14 of 1995)

5. (1) (a) An Inspector of Explosives shall have the power to enter, inspect, examine or conduct an inquiry or test at any hour of the day or night in the whole or any part of an explosives factory, explosives magazine and any place on the surface where explosives are manufactured, transported, handled or stored, for the purpose of determining whether the provisions of this Act and any regulations made thereunder are complied with, and he may issue such directions as he may deem necessary to ensure compliance therewith, or to be necessary or desirable in the interests of safety and health. Powers of Inspectors of Explosives, Mines and machinery

- (b) An Inspector of Mines shall have the power to enter, inspect, examine or conduct an inquiry or test at any hour of the day or night at any place in the Republic where explosives are used, manufactured, transported, handled or stored, for the purpose of determining whether the provisions of this Act and any regulations made thereunder are complied with, and he may issue such directions as he may deem necessary to ensure compliance therewith, or to be necessary or desirable in the interests of safety and health.
- (c) An Inspector of Machinery shall have the power to enter, inspect, examine or conduct an inquiry or test at any hour of the day or night at any place where any machinery or apparatus is used for or is associated with the manufacture of explosives, for the purpose of determining whether the provisions of this Act and any regulations made thereunder are complied with, and he may issue such directions as he may deem necessary to ensure compliance therewith, or to be necessary or desirable in the interests of safety and health.

(2) In exercise of the respective powers contained in paragraphs (a), (b) and (c) of sub-section (1), the Inspector of Explosives, Inspector of Mines and Inspector of Machinery shall also have power-

- (a) to take or remove for the purpose of analysis or test or for use as evidence, samples of any minerals, material or other substance as he may deem necessary:
Provided that where such power is exercised the holder or manager shall be notified of anything so taken or removed;
- (b) to obtain and record statements from witnesses, to appear at or conduct inquiries held regarding accidents, dangerous occurrences and contraventions of any of the provisions of this Act or any regulations made thereunder, to appear at inquests and to call and examine and cross-examine witnesses and to conduct or assist in conducting a prosecution for any offence under this Act or any regulations made thereunder subject, however, to any general or special directions of the Director of Public Prosecutions;
- (c) to take evidence on oath or affirmation, and to administer oaths or affirmations for such purpose, when conducting an inquiry under the provisions of this section;
- (d) to require any person to attend as a witness, to give evidence or to produce any document in his possession or power which relates to any matter connected with an inquiry under the provisions of this section:
Provided that no person shall be compelled to answer any question, or produce any book, record, document or thing which he could not be compelled to answer or produce if he were an accused person or a witness, as the case may be, in criminal proceedings in a court;

- (e) to draw the attention of any holder or manager to any practice not specifically dealt with by or under this Act which appears to be of a dangerous or defective character, and he may issue such orders with regard to the cessation or modification of such practice as he may deem fit and the holder or manager shall forth-with comply therewith; and such orders shall, as soon as practicable thereafter, be confirmed in writing:

Provided that where any direction or order has been issued under this section, it shall be competent for the holder or manager to submit in writing such objections as he may have to the direction or order to the Chief Inspector who may confirm, modify or withdraw the direction or order.

(3) An Inspector of Explosives and an Inspector of Mines shall also have the power to issue, refuse, suspend or cancel any licence, authorisation, sanction or permit for which provision is made by or under this Act, and to give notice thereof to the party affected by such refusal, suspension or cancellation.

6. (1) Any person aggrieved by any refusal, suspension or cancellation made under sub-section (3) of section five (other than a refusal, suspension or cancellation by the Chief Inspector under that sub-section) may appeal in writing, within fourteen days of receiving notice of such refusal, suspension or cancellation, to the Chief Inspector who shall, after considering any written or oral representations which such person may wish to make in that behalf, give his decision thereon.

Appeal against
suspension, refusal or
cancellation

(2) Any person aggrieved by any refusal, suspension or cancellation made by the Chief Inspector under sub-section (3) of section five, or by his decision under sub-section (1), may appeal within fourteen days, in such manner as may be prescribed, to the Minister whose decision, after considering any written or oral representations which such person may wish to make in that behalf, shall be final and shall not be questioned in any court:

Provided that no appeal shall lie against the result of any test or examination which any person may be required to undergo in terms of any regulations made under this Act in order to obtain any licence, authorisation, sanction or permit.

7. (1) No person shall import into or export from or cause to be imported into or exported from the Republic any explosives without the written authority of the Chief Inspector.

Importation and
exportation of
explosives

(2) Any person who contravenes the provisions of sub-section (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding ten thousand penalty units or to imprisonment for a term not exceeding three years, or to both.

(As amended by Act No. 13 of 1994)

8. (1) No person shall manufacture any explosives except in accordance with any regulations made under this Act and the terms and conditions of a licence issued to him for the purpose:

Manufacture of
explosives

Provided that where any person is desirous of making explosives for experimental or trial purposes he shall, before making such explosives, obtain written approval from the Chief Inspector.

(2) Any person contravening the provisions of sub-section (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding fifty thousand penalty units or to imprisonment not exceeding five years or to both, and the explosives in respect of which the contravention has taken place shall be seized by the Chief Inspector and thereafter destroyed.

(As amended by Acts No. 13 of 1994 and 14 of 1995)

9. (1) The manager of an explosives factory shall make special rules not inconsistent with this Act or any regulations made thereunder for controlling the processes and procedures and for the maintenance of order and discipline and the prevention of accidents at the explosives factory, and such rules shall be approved by the Minister prior to their enforcement.

Special rules for
explosives factories

(2) If the Minister considers any such rule to be unreasonable, unnecessary or otherwise undesirable, he shall disallow it or require it to be altered and his decision thereon shall be final.

(3) Special rules approved by the Minister shall have the same force and effect as any regulations made under this Act.

(4) It shall be the duty of the manager to ensure that every person in the explosives factory for whose guidance or safety the special rules are made or who may be affected thereby is supplied with a copy of such rules, and that such person has duly acknowledged receipt thereof.

10. (1) In every explosives factory, the explosives manufacturing and storage areas and so much of the land surrounding them as may be shown on the official site plan and as the Chief Inspector may direct shall be fenced, and such areas shall be known as danger areas.

Powers of search in
explosives factories

(2) For the purpose of ensuring that a person entering or about to enter any danger area does not possess any smoking or combustible material or any article designed or adapted to produce a naked flame or spark or any other article which may be dangerous to persons or property in such area, it shall be the duty of the manager of an explosives factory to employ a sufficient number of persons competent to carry out a search of the person so entering or about to enter the danger area.

(3) The search shall be carried out in the presence of at least one other person employed under sub-section (2), and in so doing the person making the search shall look for any smoking or combustible material or any article designed or adapted to produce a naked flame or spark or any other article or thing which may be dangerous to persons or property in any danger area.

(4) Any person who wilfully obstructs, resists or refuses to be searched by a person duly authorised to carry out a search in exercise of any power conferred upon such person shall be guilty of an offence and shall be liable on conviction to a fine not exceeding twenty five thousand penalty units or to a term not exceeding two years and six months or to both.

(As amended by Acts No. 13 of 1994 and 14 of 1995)

11. (1) For the purpose of this section, "officer" means a police officer of or above the rank of Assistant Inspector, Grade I, an Inspector of Explosives or an Inspector of Mines.

Powers of search for explosives unlawfully possessed

(2) An officer may, without warrant, stop, search and detain any vehicle in or upon which there is reason to suspect that explosives are being unlawfully conveyed and may also stop, search or cause to be searched and detain any person who may reasonably be suspected of unlawfully conveying explosives.

(3) An officer may, without warrant, enter, with or without assistance, and using force for that purpose if necessary, any place or premises in which he has reason to suspect that any explosive is being unlawfully manufactured or kept, and may search or cause to be searched such place or premises and any person found therein.

(4) Where, as a result of any search made under the provisions of this section, any explosive is found and no valid permit, licence, authorisation or sanction is produced by any person in respect thereof, the officer concerned may seize such explosive, and he shall thereupon dispose of it in such manner as the Chief Inspector may direct.

(5) Any person who wilfully obstructs or resists any officer in the lawful exercise of any power conferred upon, or in the lawful execution of any duty imposed upon, such officer by this section shall be guilty of an offence and shall be liable on conviction to a fine not exceeding twenty five thousand penalty units or to imprisonment not exceeding two and a half years or to both.

(As amended by Acts No. 13 of 1994 and 14 of 1995)

12. (1) For the purpose of this section, "building or other premises" shall not include any building or premises used as a dwelling-house or as a recreation hall, theatre or other similar place of entertainment.

Authorisation of and entry to and search of premises where explosives are stored or used

(2) The Inspector-General of Police may, by *Gazette* notice, appoint by name or office any police officer of or above the rank of Assistant Inspector, Grade I, to be an authorising officer for the purposes of this section in respect of such area as the Inspector-General may, by the same or by any other *Gazette* notice, define.

(3) An authorising officer appointed under sub-section (2) may issue a written authorisation, subject to such conditions, if any, as he may in his discretion endorse thereon, to such person or persons as he may in his absolute discretion deem fit to search for explosives.

(4) Any person authorised under the provisions of sub-section (3) may, subject to the conditions of his authorisation, enter any building or other premises where he has reason to believe that explosives are stored or used and to search or cause to be searched any person or property found in such building or premises.

(5) Without prejudice to the generality of the provisions of sub-section (4), the conditions which may be endorsed upon any authorisation issued thereunder may relate to any or all of the following matters:

- (a) the date upon which or the dates between which entry and search may be made;
- (b) the hours between which entry and search may be made;
- (c) the particular building or other premises concerned.

(6) Any person entering or conducting a search in any building or other premises under the provisions of this section shall produce his written authorisation to any person in or about such building or premises, who may wish to confirm the authority of such person.

(7) Any person who wilfully obstructs or resists any authorised person in the lawful exercise of any of the powers conferred by the provisions of this section shall be guilty of an offence and shall be liable on conviction to a fine not exceeding twenty five thousand penalty units or to imprisonment for a term not exceeding two and a half years or to both.

(As amended by Acts No. 13 of 1994 and 14 of 1995)

13. (1) Every person having in his possession or under his control any explosive shall take all precautions which, having regard to the purpose for which such explosive is lawfully used, are reasonable, to ensure that such explosive is not lost or stolen or is not at any time available to any person not lawfully entitled to possess or use such explosive.

Precautions against
loss of explosives

(2) Any person who-

- (a) fails to comply with any of the provisions of sub-section (1); or
- (b) is or was in possession of any explosive and refuses or fails on demand made by the officer referred to in sub-section (1) of section *eleven* or by any authorised person to give a true account of the location or disposal of such explosive or to produce any relevant licence, authorisation, sanction or permit issued to him;

shall be guilty of an offence and shall be liable on conviction to a fine not exceeding twenty five thousand penalty units or to imprisonment for a term not exceeding two and a half years or to both.

(3) In any prosecution for an offence under sub-section (2), the onus shall lie on the accused to prove that he took all reasonable precautions required to be taken under sub-section (1).

(As amended by Acts No. 13 of 1994 and 14 of 1995)

14. (1) No person shall without the permission of the holder take away or cause to be taken away any explosives while they are in transit or from any place where they are stored or used, and no person shall be in possession of explosives except as provided for in this Act and in any regulations made thereunder.

No taking away of explosives without permission

(2) Any person contravening any of the provisions of sub-section (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding fifty thousand penalty units or to imprisonment for a term not exceeding five years or to both.

(As amended by Acts No. 13 of 1994 and 14 of 1995)

15. (1) No person shall secrete or otherwise hide or abandon any explosives.

Unlawful secretion of explosives

(2) Any person contravening the provisions of sub-section (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding fifty thousand penalty units or to imprisonment for a term not exceeding five years or to both.

(As amended by Act No. 13 of 1994 and 14 of 1995)

16. Nothing in this Act shall apply to the possession or conveyance of any explosive taken as a sample for the purposes of carrying out the provisions of this Act or any regulations made thereunder:

Possession or conveyance of explosives

Provided that the quantity of such explosive is not more than is reasonably necessary for the purposes aforesaid and the sample is conveyed and stored with all due precaution.

17. (1) Where an Inspector of Explosives or an Inspector of Mines is of the opinion that an explosive, because of its condition or the circumstances in which it is found, could constitute a danger to persons or property, he may declare such explosive to be unsafe and shall thereafter take possession thereof and destroy or cause to be destroyed such unsafe explosive.

Destruction of explosives

(2) Any person who wilfully obstructs or resists the Inspector of Explosives or the Inspector of Mines in any of the powers conferred by the provisions of sub-section (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding twenty five thousand penalty units or to a term of imprisonment not exceeding two and a half years or to both.

(As amended by Acts No. 13 of 1994 and 14 of 1995).

18. (1) The Minister may, by statutory instrument, make regulations for the better carrying into effect of this Act.

Regulations

(2) In particular, and without prejudice to the generality of the power conferred by sub-section (1), regulations made thereunder may provide for-

- (a) the regulation of the importation, exportation and transportation of explosives, by inland waterways, rail and road;
- (b) the regulation of the storage and use of explosives;
- (c) the regulation of the construction of explosives factories and magazines;
- (d) the regulation of all sales and possession of explosives; or direction made under this Act, and prescribing procedures for dealing summarily with such contravention or failure to comply with any order given or direction made and to impose summary fines therefor.

19. (1) No person shall obstruct an Inspector of Explosives, Inspector of Mines or Inspector of Machinery in the performance of his duties under this Act.

Obstructing Inspectors

(2) If any person wilfully delays any of the Inspectors referred to in sub-section (1) in the exercise of any power conferred upon him by or under this Act, or fails to comply with any order made under this Act or any regulation made thereunder or fails to produce any licence, authorisation, sanction or permit, notice or document which he is required by or in pursuance of this Act to produce, or conceals or prevents, or attempts to conceal or prevent, a person appearing before or being examined by such Inspector, that person shall be deemed to have obstructed such Inspector in the performance of his duties under this Act.

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(3) Any person who contravenes the provisions of sub-section (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding twenty five thousand penalty units or to a term of imprisonment not exceeding two and a half years or to both.

(As amended by Acts No. 13 of 1994 and 14 of 1995)

20. Notwithstanding anything to the contrary contained in the Factories Act, the provisions of that Act shall not apply to an explosives factory.

Factories Act not to
apply to an explosives
factory.
Cap. 441

21. The Explosives Act is hereby repealed.

Repeal of Cap. 102

SUBSIDIARY LEGISLATION

EXPLOSIVES

THE EXPLOSIVES REGULATIONS

ARRANGEMENT OF REGULATIONS

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PRELIMINARY AND GENERAL

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MANUFACTURE OF EXPLOSIVES

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TRANSPORTATION OF EXPLOSIVES BY INLAND
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STORAGE OF EXPLOSIVES

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IMPORTATION, EXPORTATION, SALE PURCHASE ACQUISITION

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13 of 1994

PART I PRELIMINARY AND GENERALPART I

PRELIMINARY AND GENERAL

101. These Regulations may be cited as the Explosives Regulations.

Title

102. In these Regulations, unless the context otherwise requires-

Interpretation

"ammonium nitrate" means ammonium nitrate containing less than ten per centum inert material as a diluent;

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"approval" means written approval of the Chief Inspector;

"approved" means approved in writing by the Chief Inspector;

"blasting agent" has the meaning assigned thereto in the First Schedule;

"blasting licence holder" means a person who holds a valid blasting licence issued in Zambia in accordance with the provisions of these Regulations;

"charged up area" has the meaning assigned thereto in regulation 833;

"competent person" means any person who, in relation to any duty or function, has had adequate training and experience so as to enable him to perform such duty or function without avoidable danger to himself or to any other person;

"danger area" has the meaning assigned thereto in regulation 208;

"danger building" has the meaning assigned thereto in regulation 214;

"dangerous goods" has the meaning assigned thereto in the Inland Waters Shipping (Dangerous Goods) Regulations and in the Railways (Handling and Transportation of Explosives and other Dangerous Goods) Regulations;

Cap. 466
Cap. 453

"hang-up" means a blockage of an ore or waste pass, chute or draw-point by rock or other material;

"hole" means any hole drilled in rock for the purpose of containing explosives;

"magazine" means any building or structure licensed, authorised or sanctioned under these Regulations for the storage of explosives;

"misfired hole" means a hole in which the explosives or any portion thereof have failed to explode;

"nitro-compound explosives" has the meaning assigned thereto in the First Schedule;

"on site" means at any mine or works;

"open cast working" means any working beneath the original surface of the ground excluding underground but not including any trench, pit or any other like working;

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"precharged area" means any part of a mine or works in which precharged holes are located;

"precharged hole" means a hole charged with explosives which is not to be detonated during the shift in which it is charged;

"primary blasting" means the act of detonating holes charged with explosives for the purpose of fragmenting virgin ground at any mine or works;

"public service vehicle" has the meaning assigned thereto in section *two* of the Roads and Road Traffic Act; Cap. 464

"rail truck load" means the maximum permitted quantity of explosives which may be transported in an approved rail truck;

"re-entry period" means the period of time specified by the manager during which no person shall enter any working place after any primary or secondary blast has been detonated therein;

"road" has the meaning assigned to that word in section *two* of the Roads and Road Traffic Act; Cap. 464

"road vehicle" means any vehicle capable of and designed for being used on any road;

"safe loading bay" means a duly approved bay where explosives are loaded or unloaded into or out of any rail truck approved for transporting explosives;

"secondary blasting" means any blast other than a primary blast and shall include the fragmenting of large rocks, the blasting of hang-ups, sockets or hitches and the reblasting of misfired holes and any blasting to make a place safe;

"socket" means a hole or part of a hole remaining after being charged with explosives and detonated which is not known to be a misfired hole;

"special explosives train" has the meaning assigned thereto in regulation 362;

"underground" means any working beneath the surface of the ground access to which is by means of a ramp, adit, raise, shaft, tunnel or winze, but does not include open cast workings;

"vessel" includes every description of water craft used or capable of being used as a means of transportation on water.

103. (1) Every operation involving explosives at any mine, explosives factory or works shall be under the control, supervision and direction of a holder who shall be appointed by the owner. Duties of owner and appointment of holder

(2) Every owner shall at the holder's request provide the necessary means to the holder for observing and enforcing the provisions of these Regulations and any owner who refuses or fails to do so shall be guilty of an offence.

(3) No owner shall appoint himself to be the holder except with the prior approval of the Chief Inspector.

(4) The owner shall not appoint any person to be the holder unless such person is suitably qualified or has had adequate experience acceptable to the Chief Inspector in the capacity to which he is to be appointed and such person shall be readily available to control, at all times, any operation involving explosives undertaken at any mine, explosives factory or works at which he is so appointed:

Provided that, with the prior approval of the Chief Inspector, a person may be appointed to be the holder if the operation involving explosives can be safely undertaken by another person working under such holder, who is suitably qualified or experienced but in such an event the holder shall not be relieved of his responsibilities under these Regulations.

(5) Where an owner is absent from the Republic he shall appoint some other person to be his representative during such absence and such other person shall be deemed to be the owner for the purpose of these Regulations.

(6) Any appointment made in accordance with this regulation may be cancelled at any time by the owner.

(7) A copy of every appointment and cancellation made in accordance with this regulation shall forthwith be forwarded to the Chief Inspector.

104. Every holder shall take all reasonable steps to ensure that the provisions of these Regulations are observed and enforced and any holder who fails to do so is guilty of an offence: Holder to enforce Regulations

Provided that this regulation shall not apply where the holder can prove that he took all reasonable steps for the observance and enforcement of these Regulations.

105. (1) The holder may appoint in writing one competent person to assist him in the control, supervision and direction of any operation involving explosives at the mine, explosives factory or works and such person shall have the same responsibilities under these Regulations as the holder and the letter of appointment shall specify the responsibilities of such person, but such appointment shall not be taken to relieve the holder of his personal responsibilities under these Regulations.

Appointment of person to assist holder

(2) Where, owing to absence or inability to act from illness or other cause, the holder is unable to exercise and perform the duties of his office for any period in excess of three days, the person appointed to assist him in accordance with sub-regulation (1) shall immediately assume all the responsibilities and duties of the holder who shall then be relieved of his personal responsibility under these Regulations:

Provided that, if the holder is absent from the mine, explosives factory or works, such person shall not carry out the duties of the holder for more than three months.

(3) Where no person has been appointed in accordance with sub-regulation (1), and the holder, owing to absence or inability to act from illness or other cause, is unable to exercise and perform the duties of his office for any period in excess of three days, such holder shall appoint a competent person to act as holder during the period of absence and thereupon all the responsibilities and duties of the holder shall devolve upon the person so acting as holder:

Provided that, if the holder is absent from the mine, explosives factory or works, such person shall not carry out the duties of the holder for more than three months.

106. (1) The holder may, in addition to any person appointed by him in accordance with sub-regulations (1) and (3) of regulation 105, appoint in writing such other competent persons as he may deem necessary to assist him in the control, supervision or direction of any operation involving explosives at the mine, explosives factory or works; any person so appointed shall have the same responsibilities for the mine, explosives factory or works under his control, supervision or direction as the holder has under these Regulations, but any such appointment shall not be taken to relieve the holder of his personal responsibilities under these Regulations.

Appointment of other persons to assist holder

(2) The Chief Inspector may require the appointment of more than one competent person under sub-regulation (1) if, in his opinion, it is necessary so to do.

107. (1) A copy of every appointment made in accordance with regulation 105 or 106 shall forthwith be forwarded to the Chief Inspector.

Notice of appointments and cancellations

(2) An appointment made in accordance with regulation 105 or 106 may at any time be cancelled by the holder.

(3) A copy of every cancellation made in accordance with sub-regulation (2) shall forthwith be forwarded to the Chief Inspector.

(4) Every letter of appointment referred to in regulation 103, 105 or 106 shall be countersigned by the person so appointed signifying his acceptance of the appointment, and no appointment shall be effective until so countersigned and dated.

108. (1) Where the competent person appointed in terms of sub-regulation (1) of regulation 106 is of the status of superintendent such competent person may, if he has been specifically so authorised in his letter of appointment, appoint in writing, within the limits of his professional competency, one or more persons who are suitably qualified or have had adequate and suitable experience in the capacity to which they are appointed to assist him in the control, supervision and direction of any operation involving explosives in the mine, explosives factory or works under his control, supervision or direction, and every such person shall have the same responsibility under these Regulations as the competent person who appointed him but only to the extent specified in his letter of appointment; any such appointment shall not relieve the competent person making the appointment of his personal responsibilities under these Regulations.

Appointments of other competent persons

(2) A copy of every letter of appointment made in accordance with sub-regulation (1) shall be kept at the office of the person making such appointment.

(3) Every letter of appointment made in accordance with sub-regulation (1) shall be countersigned and dated by the person so appointed signifying his acceptance of the appointment, and no appointment shall be effective until so countersigned and dated.

109. (1) The holder shall maintain a record of any disciplinary action taken under section *seven* of the Act and shall forthwith forward a copy of such record to the Chief Inspector.

Record and reporting of breaches of Regulations

(2) Any breach of these Regulations which has not been dealt with under section *seven* of the Act shall be reported in writing by the holder to the Chief Inspector not later than the fifteenth day of the month following the month during which the breach took place.

110. Any person who fails to comply with the directions issued by an Inspector of Explosives, Inspector of Mines or an Inspector of Machinery and any person who knowingly furnishes or causes any other person to furnish any false particular in any account, survey, statement or report called for by such an Inspector under these Regulations shall be guilty of an offence.

Failure to comply with Inspector's directions

111. (1) Where any person admits to an Inspector of Explosives, Inspector of Mines or Inspector of Machinery or to an authorised official that he has contravened any of these Regulations, such person shall sign an admission of the contravention in question in the Form 17 in the Third Schedule and thereupon such admission shall be irrevocable.

Summary penalties

(2) After obtaining admission of the contravention referred to in sub-regulation (1), the Inspector concerned may impose a fine upon such person in a sum not exceeding five hundred penalty units in respect of each of the contraventions for which such admission has been signed.

(3) After obtaining admission out of the contravention referred to in sub-regulation (1), the authorised official may impose a fine on such person in a sum not exceeding one hundred penalty units in respect of each of the contraventions for which such admission has been signed:

Provided that-

- (i) the authorised official cannot impose a fine upon himself;
- (ii) the authorised official imposing the fine shall forward to the Chief Inspector a true copy of the admission together with an endorsement thereon duly signed by him showing the amount of the fine so imposed;
- (iii) the Chief Inspector may at any time by a written notice to any authorised official, withdraw the authority of such official to impose a fine under this sub-regulation;
- (iv) the authorised official shall not have power to impose a fine where the contravention results in the death of or serious bodily injury to any person.

(4) The Inspector or authorised official shall, on receiving payment of any summary fine imposed under sub-regulation (2) or (3), as the case may be, give a receipt therefor in the Form 18 in the Third Schedule.

(5) Any person who has been given time to pay any fine imposed under sub-regulation (2) or (3) may authorise the holder to deduct the amount of such fine from any wages due or which may become due to him; such authorisation shall be made on the Form 18 in the Third Schedule.

(6) The holder after deducting the amount of the fine due shall give a receipt in the Form 18 in the Third Schedule, and shall remit such amount to the Chief Inspector who shall pay such amount into the general revenues of the Republic.

(7) The payment of a fine in respect of any contravention shall operate as a bar to any further proceedings being brought in respect of or arising from such contravention against any person who has paid the fine.

(8) Any fine imposed under sub-regulation (2) or (3) shall, in the event of non-payment, be treated and recoverable, for all intents and purposes, as a civil debt.

(As amended by Act No. 13 of 1994)

112. Any person who notices, knows or learns about any danger or anything which is dangerous or is likely to be or become dangerous or cause danger of any kind to any person or anything at a mine or explosives factory or during any operation involving explosives at a works, shall either remove, remedy or repair such danger or thing immediately upon his noticing, knowing or learning about the same, and if he is unable to do so on account of lack of knowledge thereabout or for any other reason, he shall forthwith report the matter to a person in authority who shall take immediate steps to rectify the same.

Persons observing, knowing or hearing of danger

113. No person shall-

Illegal acts

- (a) fail to observe any order given to him under these Regulations or in the interests of safety or health;
- (b) ignore, damage, deface or remove any sign, notice, barricade, warning flag or other measure provided for the safety of any person:
Provided that such measures may be removed for the purposes of maintenance or repair after suitable precautions have been taken;
- (c) omit to do any act which it is his duty to do in accordance with the provisions of these Regulations;
- (d) omit to do any act, the omission of which endangers or is likely to endanger the safety or health of any person;
- (e) commit any act which endangers or is likely to endanger the safety or health of any person.

114. A copy of the Act and of these Regulations shall be issued to each employee who, in the opinion of the holder, is required by virtue of his employment to have specific knowledge of them and for such issue the employee shall sign a receipt which shall be retained by the holder.

Copies of Regulations to be supplied where applicable

115. (1) Every person engaged in the use, storage, manufacture, transportation or handling of explosives, and those engaged in charging or blasting operations shall take all due precautions for the prevention of an accident or incident by fire, explosion or concussion and for preventing any unauthorised person from having access to explosives, charged up areas or precharged areas.

Precautions when using, storing, etc., explosives

(2) No person shall smoke or have a naked light or allow any person subordinate to him to smoke or have a naked light in any place where such smoking or light could constitute a fire hazard or danger to any explosives.

116. (1) Where any mine or explosives factory is to be closed down for an indefinite period, or permanently, the manager or holder shall give at least one month's written notice of such intention to close down to the Chief Inspector.

Closure of mine, factory or works

(2) All explosives shall be removed from any mine or explosives factory which has closed down and shall be disposed of in such manner and within such time as may be approved by the Chief Inspector.

(3) Where any works closes down for an indefinite period, or permanently, the holder shall cause all explosives to be removed from such works and shall within fourteen days give a written notice of such removal to the Chief Inspector.

117. The electrical wiring in any licensed magazine, danger building, mixing house and any building used for the storage of ammonium nitrate or blasting agents shall conform to the requirements of Central African Standard Number CC1 of 1996. Electrical wiring

118. (1) Every licensed magazine, danger building, mixing house and any building used for the storage of blasting agents shall be provided with a lightning protection system in accordance with Central African Standard Number CC2 of 1967. Lightning protection system

(2) Such system shall be thoroughly examined and tested at least once a year not earlier than the 1st July nor later than the 30th September. The results and dates of such examinations and tests shall be recorded in the magazine register by the competent person carrying out such examinations and tests.

119. (1) On the approach of a thunderstorm within the vicinity of any loading operation involving explosives, into or out of any vessel, road vehicle, rail truck, aircraft, conveyance, magazine or safe loading bay, it shall be the responsibility of the blasting licence holder in charge of such operation, or where a more senior official is in charge, such official shall decide whether or not such thunderstorm constitutes a danger to such operation, but all of the above mentioned operations shall cease when the interval of time between the lightning-flash and the thunder-clap becomes less than ten seconds. Thunderstorms and loading operations

(2) If in the event of either of the above mentioned persons deciding that such thunderstorm constitutes a danger to such operation, such operation shall immediately cease and all persons shall be withdrawn to a safe place:

Provided that before any withdrawal takes place, such person shall ensure that any explosives are adequately protected against any possibility of being affected by water.

120. On the approach of or during a thunderstorm, the blasting licence holder in charge of any charging or blasting operation on the surface shall suspend such operation and no person shall remain or be caused or be permitted to remain within any area where he may be injured by the accidental detonation of explosives. Thunderstorms and blasting operations

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- 121.** The manager or holder of any mine or works shall ensure that adequate precautions are taken, as far as is reasonably practicable, to prevent, where electric detonators are used underground, the accidental detonation of any explosives.
- Precautions when using electric detonators underground
- 122.** (1) Where any vessel, road vehicle or rail truck is transporting electric detonators, such detonators shall only be carried in unopened boxes of origin in an explosives compartment constructed of steel or sheet metal lined internally with wood and, where such compartment is not constructed of steel or sheet metal, in an approved metal container.
- Radio transmitters and carrying of electric detonators
- (2) Where any vessel, road vehicle or train carrying electric detonators is equipped with a radio transmitter, no transmission shall take place from such transmitter when such detonators are being loaded into or unloaded from the compartment or container required to be provided by sub-regulation (1).
- 123.** When electric detonators are being conveyed through any shaft, the use of any radio transmitter in such shaft shall be prohibited.
- Conveyance of electric detonators
- 124.** The manager shall ensure, where any charging or blasting operation is being carried out involving the use of electric detonators, that radio transmitters shall only be operated outside those distances shown in the Fourth Schedule when such detonators are in the charging or blasting area.
- Radio transmission when electric detonators are being charged and blasted
- 125.** Any magazine or box in which electric detonators are stored shall only be located outside of those distances set out in the Fourth Schedule.
- Safety distances for magazines and boxes when storing electric detonators
- 126.** Every person at any mine or explosives factory and every person engaged in operations involving explosives at a works shall behave in an orderly manner.
- Orderly behaviour
- 127.** Radio transmitters shall not be used underground at any mine or works except with the prior approval of the Chief Inspector.
- Prohibition against radio transmitters underground
- 128.** If any person at an explosives factory or that part of a works where explosives are being used complains to the person in charge of his working place or any other official that such working place is dangerous, such person in charge or other official shall take immediate steps consistent with safety to confirm such danger, and then if it is so confirmed, take immediate steps to rectify such danger or prevent access to such working place.
- Complaints by persons

129. (1) No person who has been pronounced medically unfit or who, in the opinion of any official or other responsible person, is in any other condition which may render or be likely to render him incapable of ensuring the safety and welfare of himself or any other person shall be or be allowed to be in or about any part of a works where operations involving explosives are being carried out.

Persons to be fit

(2) No person shall take, consume or have in his possession any intoxicating liquor while he is in or on that part of any works where operations involving explosives are being carried on unless he has received the prior permission of the manager or holder:

Provided that where any intoxicating liquor is in transit and is not removed from the vehicle in which it is being transported this sub-regulation shall not apply.

130. (1) The holder at any works shall ensure that, on the form prescribed in sub-regulation (5), he shall give notice of any accident caused by or on account of the presence of explosives specified in sub-regulation (2) and that an inspector shall be immediately informed, by the quickest means available, of any such accident.

Reporting of accidents
at works

(2) The accidents of which notice is required to be given are those-

- (a) involving the death of any person;
- (b) in which the injuries sustained by any person are so serious that it is possible that they may prove fatal.

(3) In the case of death, the holder shall ensure that the police are notified immediately by the quickest means possible.

(4) The holder shall ensure that, on the form prescribed in sub-regulation (5), notice is given to the Chief Inspector of any accident caused by or on account of the presence of explosives in which any person injured thereby is incapacitated from performing his usual work for more than three days, excluding the day of the accident but including weekends or public holidays.

(5) The notice required to be given by sub-regulation (2) or (4) shall be in the Form 19 as set out in the Third Schedule; the completed form shall be despatched so as to arrive at the office of the Chief Inspector not later than twenty-one days from the date of the accident.

131. (1) In addition to the requirements of sub-regulation (3) of regulation 130, where any injury results in the death of any person after notice has been given in accordance with regulation 130, or when any injury of which no notice was given results in the death of the injured person, the holder shall cause notice thereof to be given to the Chief Inspector.

Injury resulting in death

(2) Where any injury results in the death of any person within twenty-four hours of the occurrence of the accident causing the injury, the place where the accident occurred shall not be disturbed or altered before the arrival of, or without the consent of, an Inspector of Explosives unless such interference is unavoidable to prevent further accidents, to remove dead bodies or to rescue persons from danger:

Provided that this regulation shall not apply to any place where any delay would seriously affect the safe working of the works, or if the inspector fails to visit the place within three days of such inspector being informed of the occurrence of such death.

132. Whether or not personal injury is caused by the accidental ignition or detonation of explosives or any accident involving explosives the holder at any works shall ensure that such accident is reported to the Chief Inspector within twenty-four hours of its occurrence and that such report, if not made in writing, is forthwith confirmed in writing.

Accidental ignition of explosives at works

133. Notwithstanding the provisions of these Regulations an Inspector of Explosives may, if he deems fit, issue free of charge any licence, authorisation or sanction to replace a licence, authorisation or sanction which has been lost, destroyed or damaged.

Free replacement licence, authorisation or sanction

134. The Minister may, from time to time, exempt from the operation of these Regulations or from any provisions thereof any mine, explosives factory or works or part thereof for such period and under such conditions as he may think fit.

Minister's power to exempt

135. Whenever the circumstances at any mine, explosives factory or works are such as to render any provisions of these Regulations inapplicable or unduly onerous to such mine, explosives factory or works, or whenever it is necessary for the purpose of carrying out experiments or tests as to the expediency of any regulation or proposed regulation, the Chief Inspector may grant written exemption from such provisions under such conditions as he may determine.

Chief Inspector's power to exempt

136. (1) The Explosives Regulations, Chapter 102 of the Revised Edition, are hereby revoked.

Revocation and saving

(2) Notwithstanding the provisions of sub-regulation (1), any exemption, rule, notice, instruction, prohibition, authority, permission, certificate or document made, issued, given or granted and any other action taken, under any provision of any regulation revoked by sub-regulation (1), shall be deemed to have been made, issued, given, granted or taken under these Regulations unless specifically cancelled in writing by the Chief Inspector.

137. Except where otherwise provided in the Act or in these Regulations, any person who contravenes, aids or abets the contravention of any of these Regulations or fails to comply with any order given or direction made under the Act shall be guilty of an offence and shall be liable on conviction to a fine not exceeding four thousand penalty units or to imprisonment for a term not exceeding twelve months, or to both.

Penalties

(As amended by Act No. 13 of 1994)

PART II MANUFACTURE OF EXPLOSIVESPART II

MANUFACTURE OF EXPLOSIVES

201. (1) No explosives shall be manufactured except in accordance with the regulations contained in this Part.

Prohibition of
manufacture

(2) For the avoidance of doubt, it is hereby declared that-

- (a) Appendix 1 hereto comprises regulations applicable to the manufacture of all classes of explosives for sale commercially;
- (b) notwithstanding the provisions of Appendix 1, Appendix 2 hereto comprises regulations applicable to the manufacture of blasting agents for sale commercially;
- (c) Appendix 3 hereto comprises regulations applicable to the manufacture of blasting agents on site;
- (d) Appendix 4 hereto comprises regulations applicable to the storage of ammonium nitrate;
- (e) Appendix 5 hereto comprises regulations applicable to the manufacture of all explosives.

202. (1) Every licence to manufacture explosives for sale commercially shall be issued by the Chief Inspector in the Form 3 set out in the Third Schedule, and he may, at the time of issuing such licence, impose such conditions as he may deem fit.

Licence to
manufacture
explosives

(2) Every licence to manufacture any blasting agent on site shall be issued by the Chief Inspector in the Form 4 set out in the Third Schedule, and he may, at the time of issuing such licence, impose such conditions as he may deem fit.

(3) It shall be an offence under these Regulations to manufacture explosives without a licence.

The Laws of Zambia

(4) Any licence issued in accordance with sub-regulation (1) or (2) shall not be transferable.

(5) The fee payable in respect of such licences shall be as follows:

- (a) in the case of a licence specified in sub-regulation (1), one thousand fee units;
- (b) in the case of a licence specified in sub-regulation (2), one hundred fee units.

(6) The duplicate or a photostat copy of any licence issued in accordance with this regulation shall be posted in the office of the holder or manager behind glass or other suitable transparent material in such a position as to be at all times clearly visible.

(As amended by Act No. 13 of 1994)

203. An explosives factory may be established and maintained only in accordance with the provisions of the Act and the Regulations made thereunder. Establishment of an explosives factory

204. (1) Detailed plans, specifications and site plans of any proposed explosives factory shall be submitted in duplicate to the Chief Inspector for his approval before any construction of any such proposed explosives factory is commenced or carried out. Plans, specifications and site plans

(2) Where any alteration, modification, addition or extension of an explosives factory is necessary, detailed plans of such alteration, modification, addition or extension shall be submitted in duplicate to the Chief Inspector for his approval before any such alteration, modification, addition or extension is commenced or carried out.

205. The tables of distances set out in the Second and Fourth Schedules shall form the basis on which any application to establish an explosives factory may be considered. Tables of distances

206. (1) When an explosives factory has been constructed in accordance with the plans approved by the Chief Inspector he may issue a licence to manufacture explosives in the Form 3 set out in the Third Schedule. Conditions of issue of licence

(2) The conditions prescribed on the licence to manufacture shall be duly observed and the manufacture or any work connected with such manufacture shall not be carried on except in accordance with such conditions:

Provided that the Chief Inspector may make any change in such conditions if he deems such change to be necessary or desirable.

207 (1) The manager shall, in accordance with the requirements of section *ten* of the Act, make special rules which shall not be inconsistent with these Regulations and shall provide for-

Special rules

- (a) the processes and procedures undertaken in the explosives factory;
- (b) the safety and proper discipline of every person employed in such explosives factory; and
- (c) the measures or precautions to be taken for the prevention of accidents.

(2) Such special rules shall be submitted to the Minister for his approval and if he considers any special rule to be unreasonable, unnecessary or otherwise undesirable he shall disallow it or require it to be altered.

(3) Special rules approved by the Minister shall have the same force and effect as these Regulations, and any person who contravenes or fails to comply with any such special rule shall be guilty of an offence under these Regulations.

(4) A copy of such special rules shall be issued to each employee who in the opinion of the manager is required by virtue of his employment to have specific knowledge of them and for such issue the employee shall sign a receipt which shall be retained by the manager.

Appendix I

208. In every explosives factory the explosives manufacturing and storage areas and so much of the land surrounding as shall be shown on the official factory site plan shall be fenced and every such area shall be known as a danger area.

Fencing of manufacturing and storage areas

209. The manager shall provide sufficient and suitable fencing around every danger area and such fencing shall be constructed to the following specifications:

Specifications of fencing

- (a) fence posts shall be of steel or concrete;
- (b) the mesh of such fence shall be of a suitable size and be of a substantial gauge;
- (c) the fence shall be a minimum of two point five metres in height;
- (d) an approved padlock or lever type lock shall be used to secure the entry gate.

210. (1) The manager shall provide sufficient number of suitably trained persons to act as searchers at every entrance to any danger area: Provision of and offences by searchers

Provided that if in accordance with the Protected Places and Areas Act the President or the Minister requires other or further steps to be taken the manager shall take such other or further steps as may be required by the President or the Minister. Cap. 125

(2) Any person employed as a searcher by the manager at any explosives factory who during his period of duty-

- (a) disobeys any instruction or order given to him by a person in authority or fails to carry out any duty allotted to him; or
- (b) leaves his post or the area assigned to him without the permission of a person in authority; or
- (c) permits any unauthorised person to enter any danger area;

shall be guilty of an offence under these Regulations.

211. (1) Entrance into any danger area shall be only through a gate specified by the manager and any person entering or whilst in any danger area shall submit to being searched by the persons appointed by the manager to be searchers in accordance with sub-regulation (1) of regulation 210. Entrances to danger areas

(2) Any vehicle, trolley, tractor or other receptacle entering any danger area may be searched by the searchers.

(3) A record shall be kept of every person, vehicle, trolley, tractor or other receptacle, entering or leaving any danger area together with the time of entry and the time of departure.

212. The following acts and each of them shall constitute an offence under these Regulations, that is to say:

Conditions to be observed in danger area

- (a) any person refusing to submit to or permit any search as required by sub-regulation (1) or (2) of regulation 211 shall be guilty of an offence against these Regulations, and such person shall not be allowed to enter into any danger area;
- (b) any person within any danger area who fails to comply promptly with any lawful order given to him by any person in authority shall be guilty of an offence against these Regulations;
- (c) no person shall be or be allowed to remain in any part of any danger area who has been pronounced medically unfit or who in the opinion of a responsible official of the factory is in any other condition which may render or be likely to render him incapable of ensuring the safety and welfare of himself or any other person;
- (d) no person shall take or attempt to take intoxicating liquor or drugs into any danger area or, while under the influence of intoxicating liquor or drugs, enter or attempt to enter such danger area and any person who may have entered such danger area or is found in such danger area in a state of intoxication or under the influence of drugs shall be apprehended immediately by the manager or any person appointed by the manager and such person shall be deemed to be guilty of an offence against these Regulations:

Provided that alcohol used for authorised purposes may be taken into any danger area;

- (e) no person shall smoke nor shall any person take or attempt to take any smoking material or any article designed or adapted to produce a naked flame or spark into any danger area except as allowed by the special rules made under the Act or these Regulations;
- (f) any unauthorised person found within any danger area shall be guilty of an offence under these Regulations.

213. Every search made in accordance with sub-regulation (1) of regulation 211 shall be made in the following manner, that is to say:

Manner of searching

- (a) the search shall only be made by a searcher appointed by the manager;
- (b) the search shall be made in the presence of not less than one other person;
- (c) in making the search the searcher shall cause to the person being searched no more inconvenience than may be necessary for the purpose of making an efficient search;
- (d) the searcher shall search for, besides explosives, any article designed or adapted to produce a naked flame or spark, by handling the clothing of the person being searched, including the inside of any pockets, and if after so doing, he has reason to believe or suspect that any such article is in the possession of such person, examine such clothing;
- (e) for the purposes of this regulation, the searcher shall be entitled to search every other article which such person possesses at the time of the search.

214. (1) In every danger area any building used for or associated with the manufacture of explosives shall be shown on the official factory site plan and each such building shall be known as a danger building. Authorisation of danger buildings

(2) Every danger building in any explosives factory shall be authorised for the function specified in the Form 13 set out in the Third Schedule, and the Chief Inspector may, at the time of such authorisation, impose such conditions as he may deem fit.

(3) The authorisation for any danger building shall show-

- (a) the quantity of explosives or other materials permitted to be or to remain in such building;
- (b) the operations to be carried on therein;
- (c) the maximum number of persons permitted therein at any one time.

(4) Every danger building shall be identified by the code number assigned to it on the official factory site plan and such identification shall be displayed on the outside of the building, close to the door, in a conspicuous place and position.

(5) Every danger building shall only be used in accordance with the authorisation referred to in sub-regulation (2).

(6) Every danger building shall be maintained in good order.

(7) The fee in respect of the said authorisation shall be one hundred fee units.

(As amended by Act No. 13 of 1994)

215. Inside every danger building there shall at all times be affixed in a conspicuous place and position- Documents to be exhibited in danger building

- (a) the duplicate or a photostat copy of the original of the authorisation for such building;
- (b) a copy of the special rules which apply to such building;
- (c) a copy of any other conditions which the Chief Inspector may require;
- (d) a list of tools and implements permitted therein.

<p>216. Every danger building shall comply with the following requirements:</p> <ul style="list-style-type: none">(a) the walls and roof shall be constructed of approved materials;(b) the floor shall be constructed of impermeable materials;(c) the walls shall have a smooth finish;(d) any window therein shall be constructed of approved materials;(e) the table of distances set out in the Second Schedule shall be adhered to;(f) all doors shall open outwards and shall be so placed that the number of persons permitted to be in such danger building by the authorisation can leave the building without hindrance in the event of an emergency;(g) the interior and benches, shelves and fittings therein, other than machinery, shall be so constructed or so lined, covered or treated as to prevent- <ul style="list-style-type: none">(i) the exposure of any iron or steel which may be a danger to explosives;(ii) the detachment of any iron, steel, grit or similar material.	<p>Specifications for danger buildings</p>
<p>217. (1) Every tool and implement used in any danger building shall be made of or effectively covered with non-sparking material or any other approved material.</p> <p>(2) No tools other than those shown on the list required under paragraph (a) of regulation 215 shall be permitted in any danger building.</p>	<p>Permitted tools in danger buildings</p>
<p>218. (1) The interior, benches, shelves and fittings of any danger building and all movable articles therein shall be kept clean and free from explosives, ingredients, grit and any other extraneous matter or material.</p> <p>(2) No charcoal, whether ground or otherwise, oiled cotton, oiled rags, oiled waste, or any articles whatever liable to spontaneous ignition shall be taken into any danger building except for the purpose of immediate supply and work, or for immediate use in such building, and upon the cessation of such work or use shall be removed forthwith.</p>	<p>Danger buildings to be kept clean</p>
<p>219. Every empty bag or carton shall be shaken out and every trolley or other receptacle shall be examined to ensure that it is free from foreign matter before being filled with explosives or ingredients.</p>	<p>Foreign matter in danger buildings</p>
<p>220. Passageways of adequate size shall be provided to all means of ingress to and egress from any danger building and to any platform, stairway, door or porch within such danger building. All such passageways and every platform, stairway, door or porch shall be kept clear.</p>	<p>Provision of passageways</p>

- 221.** Nothing shall be placed on or near any pipe or surface used for heating in any danger building. Prevention of danger from heat
- 222.** Any explosives or ingredients spilled or dropped and all waste explosives or waste material or article contaminated with explosives shall be deposited in a suitable place or receptacle and disposed of in such manner as shall be specified by the manager. Spilled explosives
- 223.** (1) Every ingredient in course of manufacture into explosives that either by itself is possessed of explosive properties, or that when mixed with any other ingredient or article also present in any danger building is capable of forming an explosive mixture, or an explosive compound, shall be removed with all due diligence from such building as soon as the authorised process connected with those ingredients that is carried on in such building is completed, and all finished explosives shall with all due diligence be removed to a factory magazine or sent away immediately from the factory, and such explosives and ingredients shall be loaded and unloaded with all due diligence. Examination and removal of ingredients
- (2) Wherever danger may arise from foreign matter being present with the explosives or any ingredient thereof, all ingredients to be made or mixed into explosives shall, before being so made or mixed, be carefully examined, sifted, or otherwise treated for the purpose of removing therefrom or excluding, so far as is practicable, all such dangerous foreign matter.
- 224.** (1) Any floor of a danger building required to be kept clean in accordance with sub-regulation (1) of regulation 218 shall be termed a clean floor and all such clean floors shall be clearly marked with a red line at every place where persons can gain access to such clean floor. Clean floors
- (2) Before stepping onto any clean floor in any danger building all persons shall remove their footwear or don authorised clean footwear or overshoes.
- 225.** Any vehicle, truck, or other receptacle in which explosives, or the partly mixed ingredients thereof, are conveyed, shall be constructed without any exposed iron or steel in the interior thereof, and shall contain only the explosives and ingredients, and shall be closed or otherwise properly covered over; and the explosives and ingredients shall be so conveyed with all due diligence, and with such precautions and in such manner as will sufficiently guard against any accidental ignition or explosion. Specifications for vehicles and receptacles
- 226.** Before any danger building is left unattended for more than one hour, a person appointed by the manager under sub-regulation (1) of regulation 106 shall carry out a thorough inspection, and he shall ensure that all machinery has been stopped, that all ventilating and heating apparatus is in a safe condition and that all lights have been extinguished; and he shall record that such inspection has been carried out. Such record shall at all times be readily available for inspection. Inspection of danger buildings

227. In any danger building the person appointed to be in charge of any plant, machine or apparatus shall-

Duties of person in charge of danger building

- (a) before commencing work and after any break during its use inspect such plant, machine or apparatus under his charge;
- (b) where any defect is found, not start such plant, machine or apparatus, and if the defect is found after it has been started, such plant, machine or apparatus shall be stopped forthwith. In either of the above events, the person in charge shall immediately inform his superior and no such plant, machine or apparatus shall be restarted until such defect has been remedied.

228. Before repairs are done to or in any danger building, such building shall, so far as is practicable, be cleaned by the removal of all explosives and ingredients thereof, whether mixed or otherwise, and, if necessary, by the thorough washing out of the building to or in which repairs are required; such building after being so cleaned, and a certificate of clearance has been issued, shall not be deemed to be a danger building within the meaning of these Regulations until explosives or the ingredients thereof are again taken into such building:

Repairs to or in danger buildings

Provided that this regulation shall not apply to such routine repairs as may be specified by the manager.

229. Explosives shall not be exposed unnecessarily to the direct rays of the sun.

Explosives to be protected from sun

Appendix 2

230. In every explosives factory the mixing houses used for the preparation and the buildings used for the storage of blasting agents shall comply with the safety distances for danger buildings set out in the Second Schedule.

Mixing houses for blasting agents to comply with tables of distances

231. Every mixing house shall-

Specifications for mixing houses

- (a) be of non-combustible construction;
- (b) have a floor compatible with ammonium nitrate;
- (c) be adequately ventilated;
- (d) be so arranged that stocks of unprocessed ammonium nitrate and processed blasting agents are physically separated from each other and from the area or areas in which mixing or packaging operations are conducted.

- 232.** Every mixing plant in a mixing house shall-
- Specifications for mixing plant
- (a) be so designed as to minimise the possibility of frictional heating, compaction and confinement;
 - (b) have its frame and all other parts electrically bonded together and be earthed;
 - (c) have all bearings and gears protected against accumulations of product dust;
 - (d) be constructed of materials compatible with ammonium nitrate;
 - (e) be constructed so as to prevent the spillage of any ammonium nitrate or blasting agent during mixing operations.
- 233.** Tanks in which fuel oil or other carbonaceous fuels are stored shall be physically separated from the area or areas in which mixing or packaging operations are conducted and a shut-off valve shall be provided immediately adjacent to such tank in the lead off pipe from such tank.
- 234.** Any tank used to store fuel oil shall-
- Fuel tanks to be separated from mixing operations
- (a) be buried; or
 - (b) be equipped with a sump below it capable of containing the complete contents of such tank if such tank should rupture.
- 235.** No fuel oil with a flash-point lower than fifty-two degrees celsius shall be used in the manufacture of any blasting agents.
- Fuel tanks to be buried
- 236.** Crude oil and crankcase oil shall not be used in the manufacture of any blasting agent.
- Prohibited materials
- 237.** Every plant used for the packaging of any blasting agent shall be constructed of materials compatible with ammonium nitrate.
- Materials to be compatible
- 238.** The floors and equipment of every mixing house shall, as far as is reasonably practicable, be kept clean.
- Floors of mixing house to be kept clean
- 239.** Bags which previously contained ammonium nitrate may be used for containing processed blasting agents:
- Re-use of bags

Provided that-

- (i) they are undamaged;
- (ii) they are contained within an outer bag or a container;
- (iii) such outer bag or container is labelled as to its content and weight.

- 240.** Bags which previously contained ammonium nitrate and are damaged shall not be re-used for containing processed blasting agents but shall be burnt or buried. Damaged bags prohibited
- 241.** No flame cutting or any welding operation shall be carried out in any mixing house when ammonium nitrate or blasting agents are contained therein and before any such operation is carried out such mixing house or part thereof shall be washed free of ammonium nitrate or blasting agents. Welding in mixing house prohibited
- 242.** The amount of ammonium nitrate permitted to be taken into any mixing house for processing into a blasting agent shall be sufficient in quantity for immediate mixing; the storage of ammonium nitrate in any mixing house is prohibited. Storage prohibited in mixing house
- 243.** After any processed blasting agent has been packaged it shall be removed forthwith to a blasting agent storage building or a magazine or removed from the factory. Blasting agent to be stored
- 244.** Any trolley or tractor used to convey ammonium nitrate to or processed blasting agents from any mixing house shall be of a type approved by the Chief Inspector and every such trolley or tractor shall be kept clean and maintained in good working order. Trolley to be approved
- 245.** (1) Processed blasting agents may be stored in either a magazine or a blasting agent storage building. Storage of blasting agents
- (2) Blasting agents shall only be stored in any magazine in accordance with the conditions of the licence for such magazine.
- 246.** Every storage building used for the storage of blasting agents shall-
- (a) be a one-storey construction;
 - (b) not have a basement;
 - (c) be constructed of non-combustible or fire resistant material;
 - (d) be adequately ventilated.
- Specification of storage buildings
- 247.** Every storage building used for the storage of blasting agents shall-
- (a) be licensed in accordance with sub-regulation (1) of regulation 532;
 - (b) be fenced in accordance with regulation 209;
 - (c) be equipped in accordance with paragraphs (a), (e) and (f) of regulation 535;
 - (d) be kept clean and maintained in good order.
- Storage buildings to be licensed

The Laws of Zambia

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| 248. Every storage building used for the storage of blasting agents shall when blasting agents are contained therein be kept securely locked or be under the supervision of a competent person. | Storage buildings to be kept locked |
| 249. No cultivation, shrubs or weeds liable to cause danger from fire shall be permitted within ten metres of any mixing house or blasting agent storage building. | No cultivation, shrubs or weeds |

Appendix 3

- | | |
|---|---|
| 250. The mixing of ammonium nitrate and fuel oil by the pouring of fuel oil into holes containing ammonium nitrate shall not, at any time, be permitted. | Prohibited mixing |
| 251. All blasting agents manufactured on site shall be used or destroyed on the same day they are manufactured. | Blasting agents used or destroyed on day of manufacture |
| 252. No equipment shall be used for the manufacture of blasting agents on site unless the design and materials used in the construction of such equipment have been approved by the Chief Inspector. | Equipment of approved design |
| 253. (1) When ingredients are mixed by hand, the implements used shall be of wood or non-sparking materials. | Hand mixing |
| (2) Immediately following use, all implements and mixing containers shall be thoroughly washed. | |
| 254. Smoking within a distance of four metres of any mixing operation shall be prohibited. | Prohibition against smoking |
| 255. The manufacture of blasting agents on site shall be carried out under the direct supervision of a blasting licence holder. | Supervision in manufacture |
| 256. The provisions of regulations 233, 234, 235, 236, 239, 240 and 241 shall also apply to the manufacture of blasting agents on site: | Additional requirements |

Provided that regulations 233 and 234 shall not apply to any fuel oil contained in any mobile mixing plant.

257. The manufacture of blasting agents underground is prohibited.

Prohibition of
manufacture
underground

Appendix 4

258. Ammonium nitrate stored at any mine, explosives factory or works shall only be stored in accordance with the regulations contained in this Appendix.

Storage of ammonium
nitrate

259. Any building used for the storage of ammonium nitrate shall-

- (a) be constructed of non-combustible or fire resistant materials;
- (b) be kept well ventilated;
- (c) have a floor constructed of impermeable material;
- (d) not have any covered drain in the floor.

Requirements for
storage of ammonium
nitrate

260. Ammonium nitrate in bags in any building shall be stacked-

- (a) in amounts not exceeding seventy-five tonnes;
- (b) so that every bag is not less than seven hundred and fifty millimetres from the walls;
- (c) so as to leave aisles between stacks of at least seven hundred and fifty millimetres width;
- (d) not less than nine hundred millimetres from the eaves or beams of the roof overhead;
- (e) on the concrete floor or other approved material.

Stacking of bags

261. Every building in which ammonium nitrate is stored shall be kept clean.

Cleanliness

262. (1) Any spilled ammonium nitrate shall be cleaned up promptly and disposed of.

Spilled ammonium
nitrate

(2) Spilled ammonium nitrate may be used in the manufacture of blasting agents if it is thoroughly sifted and examined for extraneous materials before use.

(3) Spilled ammonium nitrate shall not be used for the manufacture of nitro-compound explosives.

263. Smoking and open flames shall not be permitted in any building used for the storage of ammonium nitrate.

Prohibition against
smoking

The Laws of Zambia

264. Ammonium nitrate shall be separated, so as to prevent any possible contamination, from any other material by an approved type of wall.

Separation of ammonium nitrate

265. (1) Any building used for the storage of ammonium nitrate excepting a magazine shall be provided with-

Provisions against fires

(a) fire hydrants capable of delivering sufficient water to flood such building;

(b) adequate hose capable of being extended to any part of such building.

(2) Fire hydrants and hose provided in accordance with sub-regulation (1) shall be positioned externally to the building.

Appendix 5

266. (1) On the approach of a thunderstorm within the vicinity of an explosives factory it shall be the responsibility of the manager or a person appointed by him under sub-regulation (1) or (2) of regulation 105 to decide whether or not such thunderstorm constitutes a danger to such factory.

Thunderstorms approaching explosives factory

(2) In the event of either of the persons mentioned in sub-regulation (1) deciding that such thunderstorm does constitute a danger, all operations shall cease and all persons shall be withdrawn to a safe place.

267. Any destruction of explosives at an explosives factory shall only be carried out in a manner approved by the Chief Inspector.

Destruction of explosives

268. The testing of any explosive at an explosives factory shall only be carried out by such methods as may be approved by the Chief Inspector who shall, in the case of new explosives, be notified of the results of such tests.

Testing of explosives

269. No person under the apparent age of eighteen years shall be employed in an explosives factory.

Persons under eighteen years

270. (1) Every container used for the packaging of explosives shall be of a type approved by the Chief Inspector.

Explosives containers

(2) Every outer container in which explosives other than blasting agents are packed shall be marked with the following, that is to say:

- (a) the word "Explosives";
- (b) the name of the explosive;
- (c) the size of the explosive;
- (d) the class of explosive;
- (e) the manufacturer's batch number;
- (f) the date of manufacture; and
- (g) the name of the manufacturer.

(3) The information required to be marked in accordance with sub-regulation (2) shall be presented in such a manner that it can be readily seen and easily understood.

271. (1) The manager shall render a monthly return in a form approved by the Chief Inspector. Monthly returns of explosives

(2) The holder of a licence to manufacture blasting agents on site shall render a monthly return of blasting agents in the Form 21 set out in the Third Schedule.

(3) Such monthly return shall be rendered to the Chief Inspector on or before the fifteenth day of the month following that to which it relates.

272. (1) No cultivation, shrubs or weeds liable to cause danger from fire shall be permitted within twenty-five metres of any danger building or within any danger area. No cultivation, shrubs or weeds

(2) No accumulation of inflammable materials shall be permitted within twenty-five metres of any danger building or within any danger area.

273. At strategic points throughout the explosives factory, danger area or any place where blasting agents are manufactured on site there shall be placed adequate, suitable and effective means for extinguishing fires. Effective means for fire-fighting

274. The manager or holder shall ensure that all fire-fighting equipment provided in accordance with regulation 273 is inspected at intervals not exceeding ninety days by a competent person and shall arrange for the regular discharge and refilling of each fire extinguisher or for any other suitable means necessary to maintain such extinguishers in good working order.

Inspection of
fire-fighting equipment

275. The manager or holder shall ensure that adequate arrangements are made to establish and maintain a proper organisation of persons for extinguishing fire and such arrangements shall include regular fire drills which shall be held at intervals not exceeding one month.

Organisation and fire
drills

276. In any explosives factory, whenever a fire or spontaneous combustion occurs which cannot be immediately brought under control, all persons shall be withdrawn from any place where they may be endangered and no person shall be permitted to enter any such place except for the extreme purpose of extinguishing any fire therein until such time as safe conditions have been restored:

Withdrawals of
persons

Provided that no person shall at any time attempt to extinguish an uncontrolled fire in which nitro-compound explosives are burning.

277. The manager shall lay down a procedure to be adopted in case of fire and he shall ensure that all persons are familiar with the procedure for the specific location in which they work.

Fire procedure

278. The manager shall ensure that a conveniently located first-aid station is established within the factory area, which shall be-

Provision and
requirements for
first-aid station

- (a) of adequate size and easily accessible;
- (b) used only for work connected with first-aid and have a red cross clearly marked on the door;
- (c) equipped with a self-draining sink, soap, towels, nail brush, and a constant supply of drinking water and hot and cold running water;
- (d) equipped with an operative telephone and have adequate lighting and ventilation;
- (e) kept clean and properly maintained and all interior surfaces shall be so constructed as to achieve this requirement;
- (f) provided with an adequate number of stretchers with at least two blankets for each stretcher, a suitable table, benches, chairs and suitable clothes for use by first-aid attendants;
- (g) provided with an adequate supply of dressings for the first-aid treatment of all accidents, burns and other injuries likely to occur and such dressings shall be maintained in good condition and be readily available at all times for use;
- (h) provided with sanitary conveniences near such first-aid station.

279. The manager shall ensure that there is appointed a sufficient number of competent persons to be in charge of the first-aid station at all times when individuals are at work. Such persons shall-

Appointment of competent first-aid persons

- (a) be readily available at all times when on duty;
- (b) be the holders of a valid certificate in first-aid granted by a recognised society approved by the Chief Inspector;
- (c) record in a book provided for the purpose, particulars of each case treated, specifying the date and time, the name of the person, the nature of the injury or illness, the treatment given and the name of the person administering treatment.

280. (1) At suitable places throughout the factory canisters shall be provided, clearly marked with a red cross and maintained in good condition.

Provision for first-aid canisters

(2) Each canister shall contain the following, that is to say:

- (a) a stretcher and two blankets;
- (b) a first-aid box of a type and the contents thereof approved by the Chief Inspector.

(3) Each canister shall be regularly examined by a competent person and any shortage in the contents replenished forthwith.

281. The manager shall ensure that suitable transport is provided to convey any person, who becomes sick or injured whilst at work, to hospital or to his home, and that such transport is kept readily available for use.

Transport to be provided

282. (1) The manager of an explosives factory shall take suitable precautions to ensure that any person employed at a factory who receives any injury or who becomes sick shall without delay receive the necessary first-aid treatment or medical attention.

Manager to ensure injured or sick persons treated without delay

(2) The manager shall lay down a procedure for the reporting of accidents.

283. Any person who is injured in an accident in an explosives factory shall report such accident as soon as possible, if he is able to do so, to his immediate superior who shall ensure that the relevant procedure in case of such accident as laid down by the manager is complied with.

Reporting of accidents

284. (1) The manager shall ensure that, in the form prescribed in sub-regulation (5), he shall give notice of any accident in the factory specified in sub-regulation (2) and that an Inspector of Explosives, Inspector of Mines or an Inspector of Machinery shall be informed forthwith of any such accident.

Notification of accidents

(2) The accidents of which notice is required to be given are those-

- (a) involving the death of any person;
- (b) in which any person becomes unconscious either from heat-stroke, heat exhaustion, electric shock, the inhalation of poisonous fumes or the inhalation of any poisonous gas;
- (c) in which the injuries sustained by any person are so serious that it is possible that they may prove fatal.

(3) In the case of death, the manager shall ensure that the police are notified forthwith.

(4) The manager shall ensure that, in the form prescribed in sub-regulation (5), notice is given to the Chief Inspector of any accident in which any person injured is incapacitated from performing his usual work for more than three days, excluding the day of the accident but including week-ends or public holidays.

(5) The notice required to be given by sub-regulations (2) and (4) shall be in the Form 19 as set out in the Third Schedule; the completed form shall be despatched so as to arrive at the office of the Chief Inspector within twenty-one days of the date of the accident.

285. (1) In addition to the requirements of sub-regulation (3) of regulation 284 where any injury results in the death of any person after notice has been given in accordance with regulation 284, or where any slight injury of which no notice was given results in the death of the injured person, the manager shall cause notice thereof to be given to the Chief Inspector.

Injury resulting in death

(2) Where any injury results in the death of any person within twenty-four hours of the occurrence of the accident causing the injury, the place where the accident occurred shall not be disturbed or altered before the arrival of, or without the consent of, an Inspector of Explosives, Inspector of Mines or Inspector of Machinery unless such interference is unavoidable to prevent further accidents, to remove dead bodies or to rescue persons from danger:

Provided that this regulation shall not apply to any place where any delay would seriously affect the safe working of the factory, or if the Inspector of Explosives, Inspector of Mines or Inspector of Machinery fails to visit the place within three days after such Inspector has been informed of the occurrence of such death.

286. (1) Whether personal injury is sustained or not by any occurrence specified in sub-regulation (2), the manager of an explosives factory shall ensure that any such occurrence is reported to the Chief Inspector within twenty-four hours and forthwith confirmed in writing.

Danger occurrences to
be reported

(2) The occurrences which are required to be reported under sub-regulation (1) are specified hereunder:

- (a) the failure of any machine whereby the safety of any person has been or may be endangered;
- (b) the accidental ignition or detonation of explosives or ingredients thereof and any accident due to explosives;
- (c) any incidence of spontaneous combustion in stockpiled ingredients;
- (d) any case of fire;
- (e) any incidence of the flooding of a substantial part of an explosives factory;
- (f) accidental explosion or large fire due to the ignition of dust, gas, inflammable liquids or vapour;
- (g) the explosion of any receiver or container used for the storage at a pressure greater than atmosphere of any gas or mixture of gases, or any liquid or solid resulting from the compression of gas, including the explosion of steam boilers or steam receivers;
- (h) any electrical short circuit or failure of electrical machinery resulting from the malfunction of any protective device and attended by explosion or fire;
- (i) any electrical shock or burn to a person resulting in such person receiving medical treatment in consequence thereof;
- (j) the finding of any dangerous matter extraneous to the manufacturing process.

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287. The manager shall ensure that sufficient suitable protective clothing and equipment is provided where the nature of any operation is such that persons are required to be protected.

Provision for protective clothing and equipment

288. Every person shall at all times wear any protective clothing or equipment issued to him in accordance with regulation 287 when such clothing or equipment is required to be worn.

Wearing of protective clothing and equipment

289. (1) The manager shall cause such steps to be taken as are necessary to ensure that adequate ventilation is supplied to all parts of the explosives factory where the safety and health of any person may be endangered by exposure to conditions arising from excessive amounts of toxic gas or fumes, harmful dust or harmful temperatures.

Provision of adequate ventilation

(2) The Chief Inspector may, by Gazette notice, prescribe the following:

- (a) any gas or fume which he may deem to be toxic and the maximum permissible amount of such gas or fume content in the general body of the air; and
- (b) the maximum permissible amount of harmful dust content in the general body of the air.

PART III TRANSPORTATION OF EXPLOSIVES BY INLAND WATERWAY, ROAD, RAIL
AND AIRPART III

TRANSPORTATION OF EXPLOSIVES BY
INLAND WATERWAY, ROAD, RAIL AND AIR

301. Any vessel transporting explosives on inland waters shall comply fully with the requirements of the Inland Waters Shipping Act and the regulations made thereunder.

Compliance with Inland Waters Shipping Act. Cap. 466

302. In addition to the provisions of regulation 301, the other regulations contained in this Part shall also apply to any vessel transporting explosives on inland waters.

Regulations to apply to vessels transporting explosives

303. Where at any time the transportation of explosives by vessel is required to be undertaken, then any person wishing to do so shall furnish to the Chief Inspector full details of the vessel and details of the amount and type of explosives to be transported and the manner in which such explosives are to be transported.

Chief Inspector to approve the transportation of explosives by vessel

304. (1) Any owner or master of a vessel wishing to construct a magazine in such vessel shall prior to so doing submit details in writing, together with plans in duplicate to the Chief Inspector for his approval giving particulars of the following, that is to say:

Magazine in a vessel

- (a) the position in the vessel where such magazine is to be constructed;
- (b) specific details of the magazine;
- (c) the class and quantity of explosives required to be stored.

(2) Any owner or master of a vessel having a magazine wishing to modify or extend such magazine shall, before undertaking such modification or extension, obtain the prior approval of the Chief Inspector.

305. (1) In any vessel, any magazine approved by the Chief Inspector to be used for the storage of more than five cases of twenty-five kilograms of nitro-compounds or blasting agents or for more than fifteen thousand detonators shall be referred to in these Regulations as a "licensed magazine". The licence for such magazine shall be in the Form 9 set out in the Third Schedule and shall specify the nature and maximum amount of explosives which may be stored and may contain such other special conditions as the Chief Inspector may impose.

Licensed magazine in a vessel

(2) The fee payable on the issue of such licence shall be five hundred fee units.

(As amended by Act No. 13 of 1994)

306. (1) The duplicate or a photostat copy of the original of any licence issued in respect of any magazine shall be posted in such magazine behind glass or other suitable transparent material in such a position that it is, at all times, clearly visible.

Licence to be posted in magazine

(2) The Chief Inspector, or an inspector, may at any time cancel any licence if-

- (a) the holder of such licence has been convicted of any offence in relation to the storage or use of explosives;
- (b) any conditions of such licence have not been complied with.

307. (1) The transportation of explosives in any vessel transporting inflammable liquids or other dangerous goods is strictly prohibited.

Transportation of explosives with inflammable goods and dangerous cargoes prohibited. Cap. 466

(2) The transportation of explosives in any vessel propelled by an engine powered by an inflammable liquid is prohibited unless such vessel conforms to the requirements of the Inland Waters Shipping (Construction of Vessels) Regulations.

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- 308.** The engine of any vessel having a tonnage of thirty tonnes or less used for the transportation of explosives shall be a diesel engine. Vessel less than thirty tonnes to be propelled by diesel engine
- 309.** Any vessel transporting electric detonators shall comply with the requirements of regulation 122. Requirement for vessel transporting electric detonators
- 310.** The hold in any vessel transporting explosives shall be watertight and where this is not possible any explosives transported in such hold shall be effectively protected against any possibility of becoming affected by water. Hold to be watertight
- 311.** (1) Every vessel transporting explosives shall at all times be under the charge of a competent person and such a person shall be deemed to be competent if he holds a certificate of competency required for the class of vessel under his charge as is specified in the First Schedule to the Inland Waters Shipping (Masters and Crews) Regulations. Vessel in charge of competent person
Cap. 466
- (2) The competent person in charge of any such vessel shall, when any incident occurs which could cause the explosives to become a danger to persons or property or could in any way affect such explosives, forthwith inform an Inspector of Explosives.
- 312.** No explosives shall at any time be transported on the deck of any vessel. No explosives on deck
- 313.** Nitro-compound explosives, blasting agents and detonating fuses may be conveyed together in the same hold but none of them shall be conveyed together with any other explosives: Types of explosives which may be conveyed together
- Provided that where any person requires to transport only small quantities of different explosives, such explosives may be transported together in the same hold, and the Inspector of Explosives issuing the permit to purchase such explosives shall specify the conditions under which they may be transported together.
- 314.** No person shall smoke within thirty metres of where explosives are being loaded into or unloaded from any vessel or within four metres of any vessel loaded with explosives, and no person engaged in the loading or unloading of explosives into or from any vessel shall carry matches or any other means of producing ignition or wear boots or shoes with steel or iron heels, tips or exposed nails of any kind. Prohibition of smoking
- 315.** In any vessel transporting explosives, the carrying of non-dangerous goods in the same hold as explosives is permitted: Carrying explosives with non-dangerous goods

Provided that the explosives are adequately insulated from such non-dangerous goods.

316. In any hold in any vessel transporting explosives, such explosives shall be positioned so as not to be affected by any heat given off by any engine or by the exhaust pipe or ducting of such engine or any other source of heat.

Position of explosives in relation to engine or exhaust pipe

317. Any vessel having a magazine shall only carry explosives of the class and quantity for which such magazine has been licensed.

Magazine requirement

318. (1) Explosives shall only be transported in any vessel in sound unopened boxes of origin or other closed containers of a type approved by the Chief Inspector.

Containers for explosives

(2) The method of transporting detonators shall prior to their being transported, be approved by the Chief Inspector.

319. Any vessel transporting ammonium nitrate where the load to be transported is in excess of seventy-five tonnes shall transport such ammonium nitrate only in batches of seventy-five tonnes or less and each such batch shall be insulated, compartmentalised or isolated from any other batch.

Limitation on quantity of ammonium nitrate

320. Without exception the loading or unloading of explosives shall not be carried out between the hours of sunset and sunrise.

Time for loading and unloading

321. The competent person referred to in regulation 311 shall, immediately before allowing any explosives to be hoisted by a lifting appliance or lifting gear, cause such lifting appliance or lifting gear to be tested and proved to be in safe working order.

Testing for lifting appliance

322. If during loading or unloading operations into or out of any vessel any explosive is found to have escaped from any package in which it is contained or to be spilled, such explosive shall forthwith be carefully collected and repacked and such col

Repacking

lecting and repacking shall only be done by a blasting licence holder.

323. Any loading or unloading of explosives at any place into or out of a vessel shall be under the direct supervision of a blasting licence holder.

Supervision

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- 324.** Any vessel transporting explosives shall proceed by the quickest and safest route and, when any such vessel is involved in an accident or incident, the Chief Inspector shall be informed by the quickest possible means and no person shall move any such vessel or meddle with such explosives until an inspector has examined such vessel or explosives. Route
- 325.** Unloading shall be deemed to have been completed when the explosives have been landed at or deposited upon any quay, jetty, wharf or landing stage. When unloading complete
- 326.** The competent person referred to in regulation 311 shall be liable for any breach of any of the foregoing regulations. Liability of competent person
- 327.** The Port Officer shall cause any explosives landed at or deposited upon any quay, jetty, wharf or landing stage to be removed immediately to a magazine or other safe storage place under such conditions as he may deem necessary, pending their removal therefrom by a consignee. Liability of Port Officer
- 328.** Nothing in these Regulations shall preclude any vehicle used for the transportation of explosives from satisfying the requirements of the Roads and Road Traffic Act and the regulations made thereunder. Compliance with the provisions of the Roads and Road Traffic Act. Cap. 464
- 329.** These Regulations shall apply to every road vehicle transporting explosives by road within the Republic other than at a mine or works. Regulations for road vehicles
- 330.** Unless an inspector otherwise directs, all explosives transported by road shall be conveyed by the most direct route and by the quickest and safest means: Route
- Provided that this regulation need not apply within any city or town where an alternative route, not being the most direct, passes through areas of lesser population density, in which case such alternative route shall be used, and it shall be lawful for any local authority to prescribe the route to be used within its area of jurisdiction.
- 331.** When being transported in any road vehicle or convoy of road vehicles, explosives shall- Blasting licence holder in charge and no transportation in hours of darkness
- (a) be in the direct charge of a blasting license holder who shall take all due care of the operation;
 - (b) not be transported during the hours of darkness except with the prior permission of an Inspector of Explosives and under such conditions as he may prescribe.

332. No person shall convey or cause to be conveyed or allow any subordinate to convey explosives in any public service vehicle. Public service vehicles

333. (1) Only the driver, the blasting licence holder in charge and such other persons as may be necessary for the purposes of loading or unloading may be carried in any vehicle transporting explosives. Limitation of persons on explosives road vehicles

(2) No person shall be carried in any compartment containing explosives.

334. Under no circumstances shall any explosives be conveyed by a pack animal, bicycle, motor-bicycle or any three-wheeled form of mechanical transport unless such means of transport is approved by an Inspector of Explosives. Prohibition of conveyance by certain means

335. No articulated road vehicle shall be authorised for transporting explosives after the promulgation of these Regulations. No articulated vehicles

336. Explosives shall not be conveyed in any trailer attached to a road vehicle. No trailers

337. (1) The stopping or parking of any road vehicle transporting explosives in any city, town or village is prohibited: Prohibition against stopping and parking

Provided that the prohibition shall not apply to any case where a vehicle is stopped-

- (i) to avoid an accident;
- (ii) to comply with a traffic sign;
- (iii) to obey a direction lawfully given by some person; or
- (iv) due to some cause beyond the control of the driver.

(2) The parking of any vehicle transporting explosives in any city, town or village is permitted:

Provided that such vehicle is parked off the public road and at a reasonable and safe distance from any inhabited building and in the charge of a blasting licence holder and when parked overnight the police are notified of the place where such vehicle is parked.

338. Where any vehicle transporting explosives is involved in an accident-

Procedure for vehicles
involved in accidents
Cap. 466

- (a) such vehicle shall not continue its journey until the explosives and the vehicle have been examined by an Inspector of Explosives or the blasting licence holder who shall decide whether or not it is safe in all respects for the vehicle to continue the journey;
- (b) the vehicle shall be kept under guard until it is in a condition to resume its journey;
- (c) such accident shall in any event be reported to the nearest Inspector of Explosives forthwith;
- (d) the driver shall immediately place the red triangular reflector in the position required by the Roads and Road Traffic Act.

339. Every road vehicle used for the transporting of more than five cases of twenty-five kilograms of nitro-compounds blasting agents or more than fifteen thousand detonators shall, for the purpose of these Regulations, require an authorisation as hereinafter mentioned and shall, after such authorisation has been obtained, be treated as an authorised vehicle. The authorisation for such vehicle shall be in the Form 5 set out in the Third Schedule and shall specify the nature and maximum amounts of explosives which may be transported at any one time and shall contain such other conditions as the Chief Inspector may impose, and the fee payable for such authorisation shall be one hundred fee units:

Authorised vehicles

Provided that, where explosives in excess of five cases of twenty-five kilograms are to be transported, the Chief Inspector may permit the transportation of such explosives in a vehicle and he may, in such a case, impose such conditions as he may deem fit.

(As amended by Act No. 13 of 1994)

340. Every authorised vehicle used for transporting explosives shall-

Authorised vehicle
requirements

- (a) be of a sound construction and free from any patent defect, and shall be maintained in good working order;
- (b) be propelled by a diesel engine;
- (c) be provided with one fire extinguisher inside the cab mounted on a suitable carrier or holder so that it is at all times readily available for use. The extinguisher shall be of nine kilogram capacity and of an approved type and shall be inspected at intervals not exceeding ninety days by a competent person who shall be responsible for ensuring that such extinguisher is in good working order;
- (d) have the driving cab separated from the body of the vehicle by a clear space of at least one hundred and fifty millimetres:

Provided that, where the body of the road vehicle is built directly onto the driving cab, a fire-proof bulkhead shall be provided across the full width of the body at least one hundred and fifty millimetres from the cab and to the height to which the explosives may be loaded;

- (e) have the compartment in which the explosives are conveyed totally enclosed, covered with sheet metal and lined internally with wood which has been so treated as to render it non-inflammable, or with asbestos or other approved material;
- (f) have the compartment containing explosives adequately ventilated;
- (g) have no openings except the doors, which shall fit closely, and such other openings as may be required to comply with paragraph (f);
- (h) when persons are required to be transported for the purposes of loading or unloading, have a suitably constructed separate compartment for the conveyance of such persons;
- (i) have a "NO SMOKING" sign displayed in the cab and in any separate compartment provided in accordance with paragraph (h);
- (j) have the exhaust pipe so fitted and directed that neither the pipe nor the exhaust gases pass under any part of the compartment used for carrying explosives;
- (k) have adequate bonding provided between the chassis and the body so as to maintain a complete circuit between such chassis and body and two earthing chains shall be provided and maintained between the chassis and the ground, one at the front and one at the rear, and these shall be adequately bonded to the chassis;
- (l) have a red flag at least four hundred and fifty millimetres square at each corner so as to be distinctly visible from the front and rear and when such vehicle is empty the flags shall not be flown:

Provided that this paragraph shall not apply to the transportation of blasting agents;

- (m) have on the two sides, the front and the rear so as to be distinctly visible from the front, rear and sides, a sign bearing the words "DANGER-EXPLOSIVES" in red paint on a white background and on the rear a sign bearing the figure and words "50 km per hour" and when such road vehicle is transporting blasting agents or is empty the words "DANGER-EXPLOSIVES" shall not be visible;
- (n) have a quick action cut-off fitted to the fuel line in a readily accessible position;
- (o) only transport electric detonators in compliance with the requirements of regulation 122;
- (p) have an isolating switch in the electrical circuit adjacent to the battery in a

- 341.** Explosives shall only be transported in an authorised vehicle in sound unopened boxes of origin or other closed approved containers. Only unopened boxes or approved containers in authorised vehicles
- 342.** Every road vehicle used for transporting five cases of twenty-five kilograms of nitro-compounds or blasting agents or less or fifteen thousand detonators or less shall-
- (a) be propelled by a diesel engine, excepting that an inspector may, under such conditions as he may prescribe, allow the transportation of explosives in a vehicle propelled by any other type of engine;
 - (b) not be a private motor car:
Provided that any person authorised in accordance with sections *twelve* and *thirteen* of the Act may carry reasonable quantities of explosives in a private motor car in accordance with his duties;
 - (c) be provided with one fire extinguisher of an approved type inside the cab mounted on a suitable carrier or holder so that it is readily available for use at any time;
 - (d) if the body is not completely enclosed, not be loaded with explosives to a height greater than the sides or back of the vehicle and have such explosives completely covered with painted cloth, tarpaulin or other similar protective material and such material shall be lashed down so as to effectively protect the explosives from displacement whilst the vehicle is in motion;
 - (e) be of sound construction and free from patent defect;
 - (f) comply with the requirements of regulation 122.
- 343.** Any explosives transported in any road vehicle shall be effectively protected against displacement. Explosives to be effectively protected
- 344.** No fuel shall be carried in or on any road vehicle in which explosives are being transported except in the fuel tank, nor shall any other material be carried in the compartment in which explosives are deposited. Fuel only to be carried in fuel tank
- 345.** Nitro-compound explosives, blasting agents and detonating fuses may be conveyed together in the road vehicle but none of them shall be conveyed together with any other type of explosives: Conveyance of different types of explosives

Provided that where any person purchases only small quantities of different types of explosives, such explosives may be transported together and the Inspector of Explosives or Inspector of Mines issuing the permit to purchase such explosives shall specify the conditions under which they may be transported together.

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- 346.** When explosives are being loaded into or unloaded from any road vehicle the engine of such vehicle shall be switched off and due care shall be taken by the person in charge to ensure that no person other than those persons assisting him in loading or unloading shall have access to such explosives. Engine switched off during loading and unloading
- 347.** No person shall smoke within thirty metres of where explosives are being loaded or unloaded from any road vehicle or within four metres of any vehicle loaded with explosives. Prohibition against smoking
- 348.** No person engaged in the loading or unloading of explosives into or from any road vehicle shall carry matches or any other means of producing ignition or wear boots or shoes with steel or iron heels, tips or exposed nails of any kind. Prohibition on matches, means of ignition, steel or iron heels or exposed nails
- 349.** No explosives shall be carried in the cab of any road vehicle. Explosives not to be carried in cab
- 350.** The interior of the explosives compartment of any road vehicle transporting explosives shall be kept clean and in good order. Explosives compartment to be clean
- 351.** Every road vehicle transporting explosives shall, immediately upon arrival at its destination, be unloaded forthwith into an approved place of storage, vessel or rail truck or be used immediately. Vehicle upon arrival at destination to be unloaded
- 352.** On the approach of and during a thunderstorm any road vehicle transporting explosives shall be halted off the highway at least five hundred metres from any inhabited building. Thunderstorm during transportation
- 353.** Where two or more road vehicles transporting explosives are travelling in convoy they shall maintain a distance of at least fifty metres from each other. Convoys
- 354.** Where any road vehicle transporting explosives approaches a traffic sign indicating that low gear ought to be engaged or any sign giving warning of a steep descent, the driver shall bring such vehicle to a complete standstill and thereafter engage low gear before proceeding further. When to engage low gear
- 355.** Any rail truck used for the transportation of explosives, and any locomotive used to pull or push such rail truck or train on any railway system within the Republic shall comply fully with the requirements of any Act relating to such system and all regulations made thereunder. Compliance with relevant Railway Act

- 356.** The following regulations shall apply to every rail truck transporting explosives within the Republic from the time when-
- Rail trucks to which Regulations apply
- (a) any such truck first enters the Republic until the explosives are unloaded from such truck, or such truck leaves the Republic;
 - (b) any such truck leaves an explosives factory or licensed magazine until the explosives are unloaded from such truck or such truck leaves the Republic.
- 357.** No rail truck shall be loaded with explosives other than as specified hereunder:
- Types of explosives loaded in rail truck
- (a) nitro-compound explosives, blasting agents and detonating fuses may be transported together excepting that the nitro-compound explosive known as mastermix shall not be transported together with any other type of explosives;
 - (b) detonators and capped fuses shall not be transported together with any other type of explosives;
 - (c) explosives of any other type when required to be transported shall be transported under such conditions as an Inspector of Explosives shall prescribe.
- 358.** (1) Every rail truck containing explosives consigned to the holder of an open permit to purchase, acquire and possess explosives shall only be consigned to such holder and shall not contain explosives consigned to any other person or destination, and such holder shall ensure that, when he possesses sufficiently large storage facilities, such explosives are, as far as is reasonably practicable, ordered in full rail truck loads only.
- Explosives permits
- (2) Any rail truck containing explosives consigned to holders of permits to purchase, acquire and possess explosives may, when the quantities are small, be consigned to several different holders and destinations:
- Provided that the explosives loaded into such rail truck shall be loaded in such order that such explosives can be unloaded by the consignees without the removal of explosives for other consignees.
- 359.** Explosives may be conveyed by rail as follows, that is to say:
- Types of train
- (a) by special explosives train; or
 - (b) by ordinary goods train.
- 360.** When explosives are being transported in any train, the conveyance of any passenger is strictly prohibited in such train.
- Prohibition on passengers

361. The maximum permissible weight of explosives contained in any train shall be as is specified hereunder: Maximum weight

- (a) not more than three hundred and fifty tonnes in any special explosives train; and
- (b) not more than one hundred and twenty tonnes in any ordinary goods train.

362. In any special explosives train, at least two bogies or three short rail trucks loaded with non-dangerous goods shall be placed between the locomotive and the first rail truck containing explosives, and at least two bogies or three short rail trucks either empty or loaded with non-dangerous goods shall be placed between the van at the rear and the last rail truck containing explosives. Special explosives trains shall be limited to a maximum load of eighty-two axles and shall not be double-headed. Positioning of rail trucks in special explosives train

363. In any ordinary goods train, rail trucks containing explosives shall be placed as near the centre of the train as possible and the first and last rail trucks containing explosives shall be separated from the rest of the general goods rail trucks by at least two bogies or three short rail trucks which may contain non-dangerous goods to the front of the first rail truck containing explosives and at least two bogies or three short rail trucks which may contain non-dangerous goods to the rear of the last rail truck containing explosives. Positioning of rail trucks in ordinary explosives train

364. In any train, rail trucks containing explosives shall be separated from other rail trucks containing dangerous goods by at least one bogie or two short rail trucks containing non-dangerous goods: Positioning of dangerous goods

Provided that any rail truck containing non-dangerous goods such as lime, heavy machinery, projecting timber, rails, telegraph poles or any other similar materials shall, within the context of these Regulations, be considered to be dangerous goods.

365. Any rail tanker, or any truck loaded with inflammable liquid drums, whether full or empty, shall not be conveyed in any special explosives train. Prohibition against conveyance of flammable goods

366. Every train containing electric detonators shall comply with the requirements of regulation 122. Electric detonators

367. (1) Any rail truck containing explosives other than detonators or capped fuses shall have a label clearly visible on the outside of such truck bearing the word "EXPLOSIVES". Labels on rail trucks

(2) Any rail truck containing detonators or capped fuses shall have a label clearly visible on the outside of such truck bearing the word "DETONATORS".

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(3) Any explosives rail truck, whether loaded or empty, shall be labelled as to its condition.

(4) Any rail truck containing explosives shall, except during loading and unloading operations, be kept locked with an approved type lock.

368. A railways official finding any explosives rail truck not labelled in accordance with regulation 367 shall not permit such rail truck to proceed until such time as he has himself labelled it or caused it to be labelled.

Responsibility of railways official for labels

369. Every rail truck used for the conveyance of explosives shall be of a type approved by the Chief Inspector.

Rail truck to be approved

370. A special explosives train shall transport the explosives anywhere in the Republic but only by the most direct and quick route available at the material time.

Route

371. No explosives rail truck containing explosives shall be permitted to stand in any city or town siding or adjacent to any city or town centres or any other place where it could be a danger to life or property except during brief halts.

Prohibition against stopping of rail trucks and trains

372. (1) Any special explosives train containing ten or more rail trucks containing explosives shall run at a speed not exceeding thirty-two kilometres per hour.

Limitation on speed

(2) Any train transporting explosives shall be accompanied by a competent person whose duty it shall be to ensure that the maximum allowable speed referred to in sub-regulation (1) is not exceeded.

373. The shunting of any explosives train or any truck containing explosives shall be carried out in the safest possible manner and such shunting shall be kept to the absolute minimum. Loose shunting and fly shunting of any explosives rail truck is strictly prohibited.

Shunting

374. If any defect is found in any rail truck containing explosives, the matter shall be reported immediately to the railway authority concerned and the truck shall not be permitted to proceed until such defect has been remedied:

Reporting of defective braking mechanism

Provided that in any operation to rectify such defect no welding shall be permitted.

375. No rail truck containing explosives shall, at any time, be unloaded at any place other than a magazine except in an emergency.

Unloading of rail trucks

376. When any rail truck containing explosives reaches its final destination it shall be taken into a magazine area where it shall be unloaded as quickly as possible.

Unloading at final destination

377. Where no magazine area is available, rail trucks containing explosives shall be taken into a safe loading bay approved by the Chief Inspector and shall be unloaded as quickly as possible.

Safe loading bay

378. A safe loading bay shall, for the purpose of these Regulations, be deemed to be a magazine and regulations applicable to any magazine shall apply to any safe storage bay:

Definition of safe storage bay

Provided that, where it is impracticable to conform to any requirement of any regulation applying to a magazine, the Chief Inspector may grant exemption from such requirement upon such conditions as he may deem fit to impose.

379. Where any rail truck containing explosives in any safe loading bay cannot be unloaded immediately owing to its contents being destined for several different consignees, or where the truck is partially unloaded but not completely unloaded, such truck shall be kept locked at all times when loading operations are not being undertaken.

Standing in safe loading bay

380. Where, at any time, any rail truck containing explosives is being unloaded, such unloading shall be under the supervision of a blasting licence holder although the key of the lock required to be provided in accordance with regulation 367 may be in the possession of a suitably competent person who is not a blasting licence holder.

Unloading under supervision of blasting licence holder

381. The suitably competent person specified in regulation 380 shall not at any time open, or cause to be opened, any truck containing explosives unless a blasting licence holder is present or unless an officer referred to in section *eleven* of the Act, in the lawful execution of his duties, orders such person to open such truck.

Rail truck only to be opened in presence of blasting licence holder

382. Where any rail truck containing explosives comes under the jurisdiction of a railway authority such railway authority shall ensure that no rail truck containing explosives is at any time left unguarded.

Railway authority responsible for effective distribution scheme

383. Where any rail truck containing explosives has been positioned adjacent to any magazine or in a safe loading bay for unloading, both vacuum and hand brakes shall be applied immediately and a stop block or similar appliance placed across the rails beneath the wheels of such rail truck before the locomotive is permitted to disconnect and move away.

Vacuum and parking brakes and stop block when unloading

384. If at any time during the transportation of explosives by rail any rail truck containing explosives is involved in an accident or incident the Chief Inspector or an Inspector of Explosives shall be notified of the accident or incident forthwith, and if they deem or either of them deems it to be necessary, any rail truck so involved shall not be moved until it has been examined by an Inspector of Explosives who shall direct whether or not such truck may continue its journey, and such direction shall be followed.

Notification of
accidents and
incidents to rail trucks

385. (1) It shall be the responsibility of the manager of any explosives factory to ensure that every rail truck loaded with explosives shall not leave the factory until such time as the retaining timbers are installed in the doorways, the doors are locked and the truck is sealed.

Illegal acts

(2) It shall be the responsibility of the manager of any explosives factory to ensure that the person responsible for loading the explosives shall also record in a book provided for the purpose-

- (a) the number of the truck; and
- (b) whether or not timbers and/or locks were found when he received the empty truck.

(3) It shall be the responsibility of the holder receiving any truck containing explosives to ensure that the competent person appointed by him to be in charge of unloading any such truck shall report to him forthwith-

- (a) any such truck, by number, which is not locked and sealed;
- (b) any such truck, by number, in which the retaining timbers are not installed.

(4) The holder shall, by the quickest means possible, forward the details of such report to the Chief Inspector.

(5) It shall be the responsibility of the holder to ensure that any empty explosives rail truck leaving his premises shall have the retaining timbers in the truck and the doors locked.

(6) The manager of any railway authority shall ensure that any person in charge of any train containing loaded or empty explosives rail trucks that such trucks shall at all times be locked and in the event of any such truck being found unlocked report such truck, by number, to the Chief Inspector.

(7) The manager of any explosives factory shall ensure that sufficient and suitable locks, keys and seals are available at all times and that such locks and keys are issued against the signature of any person required to receive such locks or keys.

(8) The manager of any explosives factory shall ensure that there is available at all times a sufficient quantity of retaining timbers.

386. No person shall negligently or wilfully drive any locomotive pushing or pulling any rail truck containing explosives in such a manner as to endanger the safety of any person or premises.

Restrictions on rail trucks containing explosives

387. No person shall smoke within thirty metres of where explosives are being loaded into or unloaded from any rail truck or within four metres of any rail truck loaded with explosives.

Prohibition on smoking

388. No person shall carry any explosives in an aircraft registered in the Republic except with the prior permission of the Director of Civil Aviation and the Chief Inspector and subject to such conditions as they or either of them may deem fit to impose.

Prohibition on explosives in aircraft

389. Where an aircraft conveying explosives is involved in an accident or incident the Chief Inspector shall be informed of the accident or the incident, as the case may be, by the quickest means possible, and no person shall, without the prior authority of an Inspector of Explosives, move any such aircraft, or touch or meddle with the explosives lying therein.

Information about aircraft accidents

PART IV TRANSPORTATION OF EXPLOSIVES AT ANY MINE OR WORKSPART IV

TRANSPORTATION OF EXPLOSIVES AT ANY MINE OR WORKS

401. (1) At any mine or works, explosives may be transported from any licensed magazine to an authorised magazine or box, sanctioned magazine or storage box or from any such magazine or box to the work place by-

Permitted types of conveyance for transportation of explosives at any mine or works

- (a) any rubber tyred vehicle propelled by a diesel engine;
- (b) any vehicle running on rails whether propelled by a locomotive or by hand;
- (c) any conveyance attached to any winding plant or any approved lifting appliance;

- (d) any lift:

Provided that every such vehicle or conveyance shall be of sound construction, suitable material, adequate strength and free from any patent defect, be maintained in good working order, and of a type approved by the Chief Inspector.

(2) Where at any mine or works the scale of operations requiring explosives is in the opinion of the Chief Inspector of a large magnitude he may, if he deems it necessary, require that the transportation of explosives on the surface shall only be permitted in an authorised road vehicle equipped in accordance with regulation 340 or in a rail truck approved in accordance with regulation 369.

402. When transporting explosives every rubber tyred vehicle shall-

Requirements of
rubber tyred vehicles

- (a) have the compartments in which explosives are carried lined internally with wood which has been rendered non-inflammable or with such other material as may be approved by the Chief Inspector;
- (b) have a red flashing light clearly visible for at least sixty metres;
- (c) have a klaxon, siren, hooter or automatically operated bell;
- (d) where explosives are carried in the bucket of such vehicles, be provided with a mechanical device for locking such bucket in the carrying position.

403. When transporting explosives every vehicle running on rails shall-

Requirements for
vehicles running on
rails

- (a) have the compartments in which explosives are carried lined internally with wood which has been rendered non-inflammable or with such other material as may be approved by the Chief Inspector;
- (b) have the compartments in which explosives are carried suitably covered;
- (c) be separated from the locomotive and any other vehicle not containing explosives by one empty vehicle or a tow-bar not less than two point five metres in length.

404. Any vehicle used exclusively for transporting explosives shall be painted a distinctive red colour and a notice specifying the quantity of explosives which may be transported in such vehicle shall be suitably displayed on such vehicle.

Painting of vehicles
used exclusively for
explosives

405. Any explosives shall only be transported in any vehicle or conveyance in sound unopened boxes or bags of origin or in approved closed containers and in such a manner that such box, bag or container shall not project above the level of the lowest rim of the compartment thereof:

Transportation in
vehicles and
conveyances only in
unopened boxes and
approved containers

Provided that during charging operations from any vehicle it shall be permissible to carry one opened box or bag in the compartment and where ammonium nitrate blasting agents are contained within a loading machine mounted on a vehicle such blasting agents may be contained within such loading machine whilst the vehicle is in motion.

- 406.** The maximum permitted speed of- Limitation on speed for various conveyances
- (a) any locomotive pushing or pulling any vehicle containing explosives shall not be greater than thirty-two kilometres per hour on the surface or twelve kilometres per hour underground;
 - (b) any rubber tyred vehicle conveying explosives shall not be greater than fifty kilometres per hour on the surface or sixteen kilometres per hour underground;
 - (c) any conveyance operated by winding plant conveying explosives shall not exceed the speed specified by the manager.
- 407.** Any vehicle approved in accordance with these Regulations for the transportation of explosives may be used for the transportation of other materials if the compartment in which explosives are carried is thoroughly washed out before such explosives are loaded and immediately after such explosives have been unloaded. Use of approved vehicles for other materials
- 408.** Explosives in transit, other than when in transit in a shaft or winze, shall at all times be under the direct supervision of a blasting licence holder. Explosives in transit under a blasting licence holder
- 409.** No person other than the onsetter or cage tender and his crew shall travel in any conveyance in any shaft or winze together with explosives: Onsetter or cage tender and crew only to travel

Provided that this regulation need not apply to the transportation of fuse igniters.

PART V STORAGE OF EXPLOSIVESPART V

STORAGE OF EXPLOSIVES

- 501.** No person shall store explosives anywhere within the Republic otherwise than in accordance with these Regulations. Application
- 502.** The storage of any explosive shall be permitted only in the following places: Permitted storage places
- (a) on the surface in-
 - (i) a licensed magazine;
 - (ii) an authorised magazine;
 - (iii) an authorised box;

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- (iv) a safe loading bay in accordance with regulation 379;
- (b) underground in-

- (i) a sanctioned magazine;

- (ii) an underground box.

503. Where any container of origin containing explosives has been damaged in transit such container shall be repaired or replaced before being placed into any magazine or box.

Damaged containers to be repaired

504. The storage of any material in any magazine or box, other than the type of explosives for which such magazine or box is licensed, authorised or sanctioned, is prohibited.

Storage of other materials prohibited

505. (1) No person shall smoke or take any naked light into a magazine area or within four metres of any magazine or box.

Naked light, matches or smoking prohibited

(2) No person shall take or attempt to take any smoking material or any article designed or adapted to produce a naked flame into any magazine area or magazine.

506. No cultivation, shrubs or grass liable to cause danger from fire shall be permitted within a distance of twenty-five metres from any magazine.

Cultivation

507. All electric wiring in any magazine shall conform to the requirements of regulation 117.

Electrical wiring

508. Every switch and fuse of any lighting circuit of any magazine shall be installed in a fire-proof cabinet on the outside of the building, and any such fuse shall not exceed ten amperes capacity.

Electrical switches and fuses

509. The horizontal distance from any magazine to any overhead power line carrying an electric current at a voltage exceeding two hundred and fifty volts shall not be less than the distance between two adjacent pylons or poles of such power line plus six metres.

Power lines

510. No container of explosives shall be opened in the storage chamber of any magazine, but such container may be opened, and reclosed if necessary, by a blasting licence holder outside of such magazine or in any lobby thereto:

Opening of containers

Provided that this regulation shall not apply to any magazine at an explosives factory.

511. Whenever it is necessary to carry out any repair to any magazine, all details thereof shall be reported to the Chief Inspector who may approve such repair subject to such conditions as he may see fit to impose. Repairs to magazines

512. The interior of every magazine and box shall be kept clean and dry at all times. Magazines and boxes to be kept clean

513. (1) Whenever any explosives have been found to show signs of dampness or exudation or it is seen or suspected that any explosives have deteriorated, such explosives shall not be used but shall be separated from other explosives in the magazine and all details thereof shall forthwith be reported to the Chief Inspector. Deterioration of explosives

(2) Where any container of explosives has become damp or in any other way defective so as to render the transportation or storage of such container hazardous, the explosives shall be repacked in a sound container in accordance with regulation 510.

(3) Explosives in any damaged container shall not be issued from any magazine.

514. An Inspector of Explosives may order the destruction of any explosives which he considers to be unsafe for storage or use and the holder shall be responsible for such destruction which shall be carried out by a blasting licence holder and no compensation shall be paid therefor. Destruction by order

515. (1) No unauthorised person shall loiter or shall be permitted to loiter in the vicinity of any magazine or box and the holder of the licence, authorisation or sanction appertaining to such magazine or box or any employee of the holder or any public officer appointed under section *four* of the Act may order such person to leave the vicinity of such magazine or box and any such person who fails to comply with such orders shall be guilty of an offence. Loitering prohibited

(2) No unauthorised person shall enter or be permitted to enter any magazine or fenced area thereof.

516. (1) The holder shall ensure that there is appointed in writing one or more competent persons to be the key holder of any licensed magazine, authorised magazine, authorised box or sanctioned magazine and each such appointee shall countersign and date the appointment signifying his acceptance: Responsibility for magazines and boxes

Provided that, where the scale of operations is so small that it would be unduly onerous for the holder to appoint such key holder, this sub-regulation shall not apply and in such case he himself may be the key holder.

(2) The key of any magazine or authorised box shall be in the possession of the key holder only for such time as it is required to be used and when not so in his possession shall be kept securely locked in a safe place as determined by the holder.

(3) There shall be kept in every magazine or authorised box a register showing the following:

- (a) the current stock of explosives;
- (b) the quantities of explosives issued and received;
- (c) the dates of all such issues and receipts;
- (d) the person to whom such issues were made or from whom such explosives were received;
- (e) the name of the key holder who issued or received such explosives; and such register shall be open to inspection at all times by an Inspector of Explosives or an authorised officer or any other public officer appointed under section *four* of the Act to inspect explosives magazines.

(4) One key holder shall be responsible for the issue, receipt and storage of all explosives in any licensed magazine, authorised magazine, sanctioned magazine or authorised box and for the accurate maintenance of each register and upkeep of such magazine or box:

Provided that where a system of shift working is in operation a key holder on each shift shall be responsible for the issue, receipt and storage of all explosives in any such magazine or box and the accurate maintenance of each register and the upkeep of such magazine or box.

(5) No person may be appointed responsible for the issue, receipt and storage of explosives in any magazine unless such person is the holder of a blasting licence:

Provided that if any person prior to the coming into force of these Regulations has been a key holder though not possessing a blasting licence, he may continue to be such a key holder at the discretion of the Chief Inspector.

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(6) The key holder responsible for any magazine or box shall ensure that any person working at or in such magazine or near such box does so in a safe manner and any person who fails to obey any lawful order given in the interest of safety by the key holder shall be guilty of an offence.

517. Every magazine and box shall be kept securely locked except during the issue or receipt of explosives or when it is necessary to comply with regulation 518. Magazines and boxes to be kept locked

518. Every magazine and box shall be opened without let or hindrance to inspection by an Inspector of Explosives or an authorised officer or any other public officer appointed under section *four* of the Act to inspect any explosives magazine or box. Inspection

519. (1) Nitro-compound explosives and detonating fuses may be stored together in one magazine and blasting agents may be stored with such explosives: Nitro-compound explosives, detonating fuses and blasting agents may be stored together

Provided that the conditions of the licence, authorisation or sanctions are strictly complied with.

(2) Nitro-compound explosives and detonating fuses may be stored together in one box but shall not be stored with any other explosives in such box.

520. Detonators and blasting initiators may be stored together but shall not be stored with any other explosives. Detonators stored apart

521. Only those explosives which are described on the licence, authorisation or sanction issued in respect of any magazine or box shall be stored in such magazine or box. Limitations on contents of magazines and boxes

522. (1) The duplicate or a photostat copy of the original of the licence, authorisation or sanction issued in respect of any magazine shall be posted in such magazine behind glass or other suitable transparent material in such a position as to be at all times clearly visible. Exhibition and cancellation of licences, authorisations and sanctions

(2) The duplicate or a photostat copy of the original of the authorisation issued in respect of any box shall be affixed at all times to the inside of the lid of such box.

(3) An Inspector of Explosives may at any time cancel any licence, authorisation or sanction if-

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- (a) the holder of such licence, authorisation or sanction has been convicted of any offence in relation to the storage or use of explosives; or
- (b) the conditions of such licence, authorisation or sanction have not been complied with.

(4) Any person aggrieved by any cancellation of a licence, authorisation or sanction may appeal against such cancellation in the manner prescribed in section six of the Act.

523. No person shall erect any magazine anywhere in the Republic in an area controlled by a local authority without first obtaining written permission from such authority. The original or photostat copy of such permission shall be forwarded to the Chief Inspector with the information required under regulation 525.

Permission of local authority

524. (1) The safety distances of any licensed magazine, authorised magazine or authorised box shall conform to the requirements specified in the Second Schedule.

Safety distances

(2) The safety distances of any licensed magazine, authorised magazine or authorised box containing electric detonators shall conform to the requirements specified in the Fourth Schedule.

525. (1) Detailed plans, specifications and site plans of any magazine including the fencing required by regulation 527 shall be submitted in duplicate to the Chief Inspector for his approval before the construction of such magazine is commenced.

Plans to be approved

(2) Modifications or extensions to any existing magazine shall only take place after the prior approval of the Chief Inspector has been obtained.

526. Every licensed magazine shall be protected by a mound completely surrounding it which may be either an earth embankment, or, with the prior approval of the Chief Inspector, an earth-filled wall and every such embankment or wall shall be maintained in good condition and shall comply with the following specifications, that is to say:

Mounds

- (a) earth embankments shall be-
 - (i) at least as high as the eaves of the roof of the building;
 - (ii) at least one metre broad at the top and have their exterior slope at the natural angle of repose of earth;

- (ii) at a distance of not more than one metre from the building at ground level;
- (b) earth-filled walls shall-
 - (i) be at least as high as the eaves of the roof of the building;
 - (ii) be at least one metre broad at the top;
 - (iii) consist of facings of corrugated iron sheets or other suitable material which shall slope towards the top of the wall, be tied together by mild steel tie bars of not less than ten millimetres diameter and the space between the facings filled with earth;
 - (iv) be at a distance of not more than one metre from the building at ground level;
- (c) all metallic parts of any mound shall be connected to the lightning protection system required to be provided by regulation 118:

Provided that, where any such magazine by virtue of its position is naturally protected by the surrounding terrain, the Chief Inspector may grant exemption from the whole or part of this regulation.

527. Each licensed magazine and authorised magazine and as much of the surrounding land as the Chief Inspector may direct shall be fenced, and each such fence shall be constructed to the following specifications, that is to say: Fencing

- (a) fence posts shall be of steel or concrete;
- (b) the wire mesh of such fence shall be of a substantial gauge;
- (c) the fence shall be a minimum of two point five metres in height;
- (d) a padlock of substantial size or a lever type lock shall be used to secure the entry gate.

528. Every fence surrounding a magazine area shall display a notice on the entry gate bearing the words "DANGER, EXPLOSIVES MAGAZINE" and "UNAUTHORISED PERSONS PROHIBITED" and "NO SMOKING" painted in red on a white background and every notice so displayed shall be maintained in good condition. Warning notices

529. In every fenced area enclosing any magazine, the number of persons authorised to enter such area shall be kept to the absolute minimum, and an authorised person within the meaning of this regulation shall be a person authorised by the holder, who has business to do with the explosives stored therein or with the maintenance of any magazine therein. Persons entering fenced areas

530. The holder of any licensed magazine or authorised magazine shall inform the Chief Inspector by the quickest means possible of the construction or proposed construction of any new building, new road, new power line or any other new works which reduces any safety distance applicable to such magazine.

New construction

531. At the discretion of the Chief Inspector or at the request of the Zambia Police Force and upon instructions in writing to that effect, security guards may be required to be on duty at any magazine day and night as long as there are explosives stored therein.

Security guards

532. (1) Any magazine on the surface used for storage of more than five cases of twenty-five kilograms of nitro-compounds or blasting agents or for more than fifteen thousand detonators shall be referred to in these Regulations as a licensed magazine. The licence for such magazine shall be in the Form 9 set out in the Third Schedule and shall specify the nature and maximum amount of explosives that may be stored therein and may contain such other special conditions as the Chief Inspector may impose. No explosives shall, except with the written permission of the Chief Inspector, be stored to a greater amount or quantity than the licence specifies, and it shall be the duty of the holder to ensure that the conditions as stipulated on the licence and the requirements of these Regulations relating to such storage are complied with.

Licensed magazines:
General conditions

(2) The fee payable in respect of such licence shall be five hundred fee units.

(As amended by Act No. 13 of 1994)

533. (1) Every licensed magazine shall be a substantial building of which the roof, walls and floor have been made properly secure against unlawful entry, and "properly secure" in this context means that such building is either under permanent supervision by a security guard or that it is of such construction that in an unguarded state it is considered by the Chief Inspector to be by virtue of its construction secure.

Licensed magazine to
be a substantial
building

(2) Where the roof, walls or floor include reinforcing, such reinforcing shall be connected to the lightning protection system required to be provided by regulation 118.

534. Except with the prior approval of the Chief Inspector and under such conditions as he may impose, every licensed magazine shall-

Licensed magazine:
Construction
requirements

- (a) have its walls constructed of burnt brick, masonry, concrete blocks or concrete and the interior surface of every such wall shall be smooth finished with cement plaster;
- (b) not have any windows;
- (c) have the floor constructed of impermeable material and such floor shall be at least one hundred and fifty millimetres above ground level and, where such magazine is licensed for more than one thousand cases of twenty-five kilograms of explosives and explosives are to be loaded into or unloaded from any road vehicle or rail truck, the floor of such magazine shall be so arranged that it is level with the floor of any such vehicle or truck;
- (d) have the roof constructed of wood or steel principals covered with asbestos roofing sheets or other approved materials;
- (e) have a ceiling constructed of heat insulating and non-inflammable material with adequate ventilation above it or a wire mesh of substantial gauge;
- (f) where any magazine is licensed for the storage of more than one thousand cases of twenty-five kilograms of explosives, have two separate chambers, namely, a storage chamber and an entrance lobby through which alone access can be had to the storage chamber;
- (g) have, at the entrance, a door or double doors, opening outwards, made of steel lined with timber on the inside or made of stout timber faced with steel on the outside and, where the hinges are bolted to the door, have the nuts on the inside and be equipped with two locks of a type approved by the Chief Inspector;
- (h) have adequate drainage to conduct water away from the magazine;
- (i) have no exposed iron or steel on the inside excepting the wire mesh ceiling permitted to be installed under paragraph (e);
- (j) have adequate ventilation.

535. Except with the prior approval of the Chief Inspector and under such conditions as he may impose, every licensed magazine shall be equipped with-

Licensed magazine:
Equipment
requirements

- (a) where necessary, partitions and shelves made of timber with all nails and screws countersunk with no exposed metal fittings except of non-sparking material;

- (b) duck boards or runners of wood or other approved material upon which the cases or cartons of explosives shall be stored:

Provided that where the explosives to be stored are blasting agents in bags or sacks such explosives may be stacked with the bottom layer placed directly onto the floor;

- (c) a maximum celsius thermometer which shall hang inside the magazine and readings shall be taken and recorded as the occasion demands;
- (d) at least two fire extinguishers of an approved type which shall be kept in a readily accessible position outside such magazine and maintained in good working order;
- (e) soft brushes and brooms with no metal fittings;
- (f) at least one hand lamp or light of an approved type;
- (g) sufficient tools necessary for opening cases or cartons of explosives which shall only be made of wood, copper, brass or other non-sparking materials, except that a screwdriver made of iron or steel may be kept in such magazine when wooden cases are to be opened as provided for in regulation 816.

536. Explosives stored in any licensed magazine shall be-

Licensed magazine:
Manner of storing
explosives

- (a) stored on the duck boards, runners or shelves required to be provided in accordance with paragraphs (a) and (b) of regulation 535;
- (b) stacked only to a height of not more than one point eight three metres and such height shall be delineated by a red line painted along each of the walls of the storage chamber;
- (c) when first received into such magazine, clearly stamped with the date of receipt;
- (d) stacked in such manner that the date of receipt and the date of manufacture are clearly visible;
- (e) issued in rotation, that is to say, where explosives are of the same type and size, those stamped with the earliest date of manufacture shall be issued first;
- (f) issued only upon production of a written order signed by a person authorised by the holder to make such order.

537. All doors, ventilators and all other metal fittings of a licensed magazine, including any reinforcing within the walls, floor and ceiling shall be effectively bonded to the lightning protection system required to be provided in accordance with regulation 118.

Licensed magazine:
Lightning protection

538. The lightning protection system required to be provided by regulation 118 shall be thoroughly examined and tested at least once a year not earlier than the 1st July and not later than the 30th September by a competent person. The results and dates of such examination and test shall be recorded in the magazine register by the competent person carrying out such examination and test.

Licensed magazine:
Inspection of lightning
protection system

539. (1) Any magazine on the surface used for the storage of five cases each of twenty-five kilograms or less of nitro-compounds or blasting agents or fifteen thousand detonators or less shall be referred to in these Regulations as an authorised magazine. The authorisation for such magazine shall be in the Form 10 set out in the Third Schedule, and shall specify the nature and maximum amount of explosives which may be stored and may contain such other special conditions as the Chief Inspector may impose. No explosives shall, except with the written permission of the Chief Inspector, be stored to a greater amount or quantity than the authorisation specifies, and it shall be the duty of the holder to ensure that the conditions as stipulated on the authorisation and the provisions of these Regulations relating to such storage are complied with.

Authorised magazines:
General conditions

(2) Any authorised magazine may be either portable or static.

(3) Any person intending to construct an authorised magazine shall apply in writing to the Chief Inspector for specifications and plans of such magazine and he shall, together with such application, submit two site plans for approval.

(4) When any portable authorised magazine is required to be moved to a new site, site plans in duplicate of such new site shall be submitted and approved before such move takes place.

(5) The requirements under paragraphs (b), (d) and (e) of regulation 535 and paragraphs (c), (d) and (e) of regulation 536 shall apply to any authorised magazines:

Provided that only one approved type fire extinguisher shall be required.

(6) The fee payable in respect of such authorisation shall be two hundred fee units.

(As amended by Act No. 13 of 1994)

540. (1) Any magazine on the surface used for the storage of two cases of twenty-five kilograms of nitro-compounds or blasting agents or less or five hundred detonators or less shall be referred to in these Regulations as an authorised box. The authorisation for such box shall be in the Form 12 set out in the Third Schedule, and shall specify the nature and maximum amount of explosives which may be stored and it may contain such other special conditions as the Chief Inspector may impose. No explosives shall, except with the written permission of the Chief Inspector, be stored to a greater amount or quantity than the authorisation specifies, and it shall be the duty of the holder to ensure that the conditions as stipulated on the authorisation and the provisions of these Regulations relating to such storage are complied with.

Authorised boxes:
General conditions

(2) Any person intending to construct an authorised box shall apply in writing to the Chief Inspector for specifications and plans of such box.

(3) Under no circumstances shall any authorised box containing explosives be situated in any building used as a dwelling-house.

(4) The fee payable in respect of such authorisation shall be fifty fee units.

(As amended by Act No. 13 of 1994)

541. The total quantities of explosives that may be stored underground at any mine or works shall not exceed seventy-two hours' probable consumption for nitro-compounds and blasting agents and six days' probable consumption for detonators and such explosives shall only be stored in magazines or boxes.

Storage of explosives underground

542. (1) Any magazine underground used for the storage of fifty cases each of twenty-five kilograms or less of nitro-compounds or blasting agents or twenty thousand detonators or less shall be referred to in these Regulations as a sanctioned magazine. The sanction for such magazine shall be in the Form 11 set out in the Third Schedule, and shall specify the nature and maximum amount of explosives which may be stored and it may contain such other special conditions as the Chief Inspector may impose. No explosives shall, except with the written permission of the Chief Inspector, be stored to a greater amount or quantity than the sanction specifies, and it shall be the duty of the holder to ensure that the conditions as stipulated on such sanction and the provisions of these Regulations relating to such storage are complied with:

Sanctioned magazines: General conditions

Provided that a magazine for storage of explosives in excess of the maximum quantity specified in this sub-regulation may be sanctioned by the Chief Inspector.

(2) A sanctioned magazine shall be-

- (a) situated in dry competent ground;
- (b) situated at least four metres from any place in which persons regularly work or travel;
- (c) provided with a floor of impermeable material with provision for suitable drainage;
- (d) provided with a wall, where necessary, of concrete, concrete blocks or bricks at least one hundred and fifty millimetres in thickness;
- (e) provided with a substantial door of wood or of steel lined with wood or other approved material fitted with an approved lock and a notice bearing the words "DANGER, EXPLOSIVES MAGAZINE, NO SMOKING" painted on the outside;

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- (f) provided with shelves of wood with all nails and screws countersunk and there shall be no exposed metal fittings except of non-sparking materials;
- (g) provided with adequate ventilation, which shall either be a through current of air or a compressed air line of not less than twenty-five millimetres inside diameter;
- (h) provided with a fire extinguisher of an approved type hung on a bracket outside the magazine.

(3) Explosives stored in any sanctioned magazine shall be-

- (a) stored on shelves;
- (b) when first received into the magazine clearly marked with the date of receipt as well as the stamped date required under paragraph (c) of regulation 536;
- (c) stored in such a manner that the marked dates are clearly visible;
- (d) issued in rotation, that is to say, where explosives are of the same type and size, those stamped with the earliest date of manufacture shall be issued first;
- (e) be removed only from such magazine in such quantities as are required for immediate use:

Provided that explosives for only one day's use may be removed for storing in underground storage boxes.

(4) The fee payable in respect of such sanction shall be fifty fee units.

(As amended by Act No. 13 of 1994)

- 543.** Any underground box used for the storage of explosives shall-
- (a) not be used to store more than two cases of twenty-five kilograms of nitro-compounds or blasting agents or five hundred detonators;
 - (b) be of sound construction and if constructed of steel be lined with wood or other approved material so that there is no exposed metal on the inside;
 - (c) be equipped with an approved type of lock;
 - (d) be kept at a safe distance from any blasting operation in a dry and secluded place and in good repair and condition;
 - (e) be painted red and each box shall be labelled according to its contents and shall be numbered;
 - (f) only contain one type of explosive to each box.
- Underground storage boxes: General conditions
- 544.** Not more than six boxes of explosives shall be grouped together in any one place and any box containing detonators shall be positioned at least ten metres away from any box containing any other explosives.
- Location of underground storage boxes
- 545.** A register showing the number, class of contents and position of each underground box shall be kept by the holder.
- Register of underground storage boxes
- 546.** (1) Explosives issued for use shall be used within six months from the date of manufacture thereof and the detonators and blasting initiators may be stored for such periods of time as the Chief Inspector may determine.
- Explosives to be used within six months
- (2) The holder shall ensure that any explosives not issued for use or issued for use but not used within six months of the date of manufacture thereof, or any other time specified for their use but not used within such time, shall be reported to the Chief Inspector, who may, after inspection thereof, permit the issue or use of such explosives under such conditions as he may impose.
- (3) For the purpose of this regulation the date of manufacture is the date required to be stamped on any case or carton in accordance with sub-regulation (2) (f) of regulation 270.
- 547.** Where any magazine or authorised box is not required to be used for the storage of explosives for an indefinite period, or permanently, the holder shall cause all explosives to be removed from such magazine or box and shall give written notice of the removal thereof to the Chief Inspector within fourteen days of such removal.
- Notification of closure of magazine

PART VI IMPORTATION, EXPORTATION, SALE, PURCHASE OR ACQUISITIONPART VI

IMPORTATION, EXPORTATION, SALE, PURCHASE OR ACQUISITION

- 601.** No person shall import, export, purchase, sell, acquire or be in possession of explosives otherwise than in accordance with these Regulations. Application
- 602.** No person shall import into or export from or cause to be imported into or exported from the Republic any explosives without the written authority of the Chief Inspector. Importation and exportation to be authorised
- 603.** The transportation of any explosives from a place outside of the Republic through the Republic directly to another place outside of the Republic shall not be deemed to be importation or exportation, but any such explosives in transit shall only be of a type approved by the Chief Inspector and these Regulations and any special conditions the Chief Inspector may deem fit to impose shall apply to all such explosives in transit. Explosives in transit through the Republic
- 604.** No permit to purchase, acquire and possess explosives shall be issued to any person under the apparent age of twenty-one years. Persons under twenty-one years
- 605.** (1) Before any explosives may be purchased, acquired or possessed by any person, such person shall make an application to an Inspector of Explosives in the Form 1 set out in the Third Schedule. Permit to purchase, acquire and possess: Procedure
- (2) Upon receipt of an application to purchase, acquire or possess explosives the Inspector of Explosives receiving such application shall satisfy himself that the person making such application either-
- (a) holds a valid licence or authorisation to store explosives; or
 - (b) presents a letter from the holder of a valid licence or authorisation to store explosives stating that he has permission to store the explosives for which he is applying in such holder's magazine or box; or
 - (c) is a blasting licence holder or employs a blasting licence holder and that the explosives for which application is being made will be used, and if not used, destroyed on the day such explosives are purchased, acquired or possessed and such person shall have the same responsibilities as a holder has under these Regulations.
- (3) Having satisfied himself that the person making the application is a fit person to purchase, acquire and possess explosives, the Inspector of Explosives shall issue a permit to purchase, acquire or possess explosives in the Form 2 set out in the Third Schedule.

(4) The original of the permit shall be sent to the supplier of the explosives and such supplier shall not supply any such explosives until he has such original in his possession and such original shall be retained by him for a period of twelve months from the date of issue of the permit.

(5) The duplicate and the triplicate of the permit shall be given or sent to the applicant.

(6) The applicant, or such competent person as he may authorise in his place, shall produce such duplicate to the person who is to supply such explosives and upon receiving such explosives such applicant or competent person shall retain in his possession such duplicate during the time he is transporting such explosives.

(7) When the explosives have been stored in a magazine or box or have been used on the day of purchase the applicant shall send the triplicate of the permit to the Chief Inspector forthwith.

(8) No further application to purchase, acquire or possess explosives will be considered from any applicant who fails to return the triplicate to the Chief Inspector.

606. (1) The Chief Inspector may, at his discretion, issue to the holder of a licensed magazine an open permit in writing to purchase, acquire or possess explosives.

Open permits: General conditions

(2) Every holder of an open permit to purchase, acquire or possess explosives shall, where practicable, order such explosives in full rail truck units only.

(3) The holder of such permit shall render monthly explosives returns to the Chief Inspector on or before the fifteenth day of the month following that to which they relate.

(4) Such returns shall be rendered in the Forms 20, 21 and 22 set out in the Third Schedule.

(5) The Chief Inspector may, at any time, revoke such permit.

607. Any person employed by a holder may have in his possession explosives to which any permit to purchase, acquire or possess or any licence, authorisation or sanction issued to such holder relates:

Employee may possess explosives

Provided that he has possession of the explosives in the course of his employment and he is deemed competent by the holder to use, handle, store, manufacture or transport such explosives in accordance with these Regulations.

PART VII UNLAWFUL POSSESSION, HIDING AND ABANDONING OF EXPLOSIVESPART VII

UNLAWFUL POSSESSION, HIDING AND ABANDONING OF EXPLOSIVES

701. The holder shall report forthwith in writing any theft, attempted theft or loss of any explosives held by him under any permit, licence, authorisation or sanction to the following persons, namely:

Theft or loss of explosives to be reported

- (a) the senior police officer of the district in which such theft, attempted theft or loss occurred; and
- (b) the Chief Inspector.

702. No person shall bury, submerge or otherwise secrete or abandon any explosives, nor shall any person store or leave explosives unattended in such a manner or for such a period that it is possible for unauthorised persons to have access thereto.

Secretion and abandonment of explosives

703. No person shall break or force or tamper with any lock of any magazine, box or rail truck containing explosives without the written permission of the holder or an officer specified in section *eleven* of the Act.

Tampering with locks of magazines and storage boxes

704. No person shall take away or attempt to take away from any mine, explosives factory or works any explosives without the written permission of the holder.

Explosives not to be taken away

PART VIII USE OF EXPLOSIVESPART VIII

USE OF EXPLOSIVES

801. No person shall use any explosives otherwise than in accordance with these Regulations, or except for the purposes and at the places specified in any permit issued in respect thereof.

Application

802. No person shall, unless he is the holder of a blasting licence issued in accordance with these Regulations, cap a fuse with a detonator, make a primer, press home, tamp or fire any charge or conduct any blasting operation:

Blasting licence holder to carry out blasting

Provided that the holder of a blasting licence may be assisted in any of the aforementioned operations by one or more reliable persons, who are not themselves the holders of a blasting licence, acting under his direct supervision, and in that event such holder shall take all reasonable precautions to prevent any accident occurring to any such persons through their ignorance, inexperience or recklessness.

803. No person shall conduct any blasting operation on the surface at any mine, explosives factory or works between the hours of sunset and sunrise except for the purpose of blasting a hang-up at any ore or waste bin, grizzly or crusher.

Blasting operations at night

804. (1) An Inspector of Mines may, after examination and at his discretion, issue a blasting licence in the Form 7 set out in the Third Schedule, to a person experienced in the use and handling of explosives, and such licence may be endorsed by the Inspector with any special restriction as to the purpose, place or period of use, and a copy of every such licence shall be retained in the office of the Chief Inspector.

Blasting licence

(2) A person shall be considered to be experienced in the use and handling of explosives when upon a written application to the Chief Inspector he can prove that he has completed satisfactorily a course of training and has gained the necessary experience in the use and handling of explosives to the satisfaction of the Chief Inspector.

(3) Any applicant for a blasting licence shall have reached the apparent age of twenty-one years.

(4) Any application for a blasting licence, which shall be made in the Form 6 set out in the Third Schedule, together with two recent photographs of the applicant and his National Registration Card shall be submitted to the Inspector of Mines who is to carry out the examination of such applicant.

(5) Any applicant who is required to submit to an examination for a blasting licence shall pay, in respect of such examination, a fee of twenty fee units.

(6) Upon the issue of a blasting licence the licensee shall pay a fee of thirty fee units and be issued with a licence in the Form 7 set out in the Third Schedule.

(7) An Inspector of Mines shall give a receipt of any applicant making a payment required under sub-regulation (5) which shall be made in the Form 8 set out in the Third Schedule.

(8) Every fee received under this regulation shall be paid into the general revenues of the Republic by the Inspector of Mines issuing the licence.

(9) Any blasting licence issued under this regulation shall remain in force for a period of five years from the date of issue and may be renewed for such further periods as the Inspector of Mines may think necessary but not exceeding five years and under restrictions as the Inspector of Mines may endorse thereon.

(As amended by S.I. No. 72 of 1979 and Act No. 13 of 1994)

805. (1) If at any time the holder of a blasting licence shall, in the opinion of his employer, be guilty of an act of negligence, or of a contravention of these Regulations or has a disability rendering him unfit to conduct blasting operations, such employer shall immediately suspend the holder of such licence from conducting blasting operations and shall forthwith report any such suspension to the Chief Inspector for such action as the Chief Inspector may consider necessary.

Suspension of blasting licence

(2) Any person aggrieved by any decision given by the Chief Inspector may appeal against such decision and any such appeal shall be made in the manner prescribed in section six of the Act.

806. (1) If at any time the holder of a blasting licence shall, in the opinion of an Inspector of Explosives, be guilty of an act of negligence or of a contravention of these Regulations or has a disability rendering him unfit to conduct blasting operations such Inspector may immediately suspend or cancel such licence. In the event of suspension or cancellation such holder of the blasting licence shall have the right to appeal from such decision to the Chief Inspector who may take such action thereon as he may consider necessary.

Cancellation of blasting licence

(2) Any person aggrieved by any decision given by the Chief Inspector may appeal against such decision and any such appeal shall be made in the manner prescribed in section six of the Act.

807. (1) Upon the engagement of any employee to carry out work for which a blasting licence is required under these Regulations or upon any employee obtaining a blasting licence, his employer shall call in and take charge of such employee's licence during the period of his employment on such work.

Employer to retain blasting licence

(2) Upon the termination of such employment the employer shall return the blasting licence to the licensee.

(3) In the event of the death of the holder of a blasting licence the employer shall forthwith return the licence to the Chief Inspector.

(4) In the event of a suspension imposed in accordance with regulations 805 and 806 or a cancellation imposed in accordance with regulation 806, the licence shall be returned to the Chief Inspector who shall retain it for the period for which the licence is suspended and during the period of the determination of any appeal.

(5) After the period of suspension has terminated or in the event of an appeal a decision is made in favour of the licensee the Chief Inspector shall return the licence to the employer.

808. It shall be an offence for any person to transfer or accept transference of any blasting licence. Blasting licence not transferable

809. A blasting licence shall not be valid until- Blasting licence to be signed

- (a) the licensee has signed his name or, if illiterate, has impressed his thumbprint thereon;
- (b) the licence has been endorsed with the official stamp and seal of the Ministry of Mines and signed by the Inspector of Mines who examined the licensee; and
- (c) the National Registration Number of the licensee has been recorded thereon.

810. (1) The loss of any blasting licence shall, as soon as possible after the discovery of such loss, be reported to the Chief Inspector by the licensee or the employer, as the case may be. Replacement of blasting licence

(2) The Chief Inspector may, after calling for a written statement with regard to the circumstances in which the loss occurred, issue a replacement of any blasting licence if satisfactory evidence of identification has been produced by the licensee, and the fee in respect of such replacement shall be thirty fee units.

(As amended by Act No. 13 of 1994)

811. (1) No person shall fasten any detonator to safety fuse except by means of approved crimping pliers or a crimping machine supplied by the holder for that purpose. Fastening detonator to fuse

(2) A detonator when fastened to safety fuse by these approved means shall within the meaning of these Regulations be termed a capped fuse.

812. (1) Any capped fuse, detonating fuse or electric detonator shall be inserted into a blasting cartridge in an approved manner and shall be securely fastened to such blasting cartridge by means of string or any other means approved by the Chief Inspector so that such capped fuse, detonating fuse or electric detonator cannot be inadvertently withdrawn from the blasting cartridge: Primer cartridges

Provided that, where such capped fuse or electric detonator and a blasting cartridge is being used to fire a secondary blast on a grizzly, the capped fuse or electric detonator shall not be securely fastened to the blasting cartridge but the fuse of such capped fuse or the wire of such electric detonator may be draped around or secured to the grizzly so as to ensure, as far as is reasonably practicable, that should the blasting cartridge move for any reason whatsoever from its position then such capped fuse or electric detonator will be separated from such blasting cartridge.

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(2) Any capped fuse, detonating fuse or electric detonator inserted into a blasting cartridge in the manner specified in sub-regulation (1) shall within the meaning of these Regulations be termed a primer cartridge.

813. Any primer cartridge used to fire a "bomb" comprised of blasting cartridges attached to a stick used to position such bomb shall have the primer cartridge securely placed in the middle of such bomb in such a manner that it will be, as far as is reasonably practicable, protected from contact with rock or other material during the period when such bomb is being placed in position.

Position of primer cartridge

814. No person shall prepare more primer cartridges than are required for immediate use and under no circumstances shall any primer cartridge be stored.

Primer cartridges not to be stored

815. (1) No person shall charge any hole with any explosive that has been blown out of a hole or any loose explosive discovered in any rock pile subsequent to a blast.

Blown out explosives not to be used again

(2) No person shall charge any hole with any explosive that has been washed out or scraped out of a hole.

(3) No person shall use for any purpose whatsoever any explosive which, in the opinion of a blasting licence holder or an Inspector of Explosives, is in a deteriorated state.

(4) Any person finding any explosive of any description whatsoever lying about shall immediately report such find to the holder of a blasting licence, who shall collect such explosive, examine it as to its condition which if he finds it to be good shall convey it or cause it to be conveyed to a place of storage but if he finds it to be in a deteriorated state he shall take the necessary action specified in sub-regulation (5).

(5) The discovery of deteriorated explosives shall be reported to the shiftboss or a more senior official forthwith who shall decide the manner in which it shall be destroyed.

816. No person shall use or allow any subordinate to use any implement except made of or from wood or non-sparking material when opening cases containing explosives except that when lids of wooden cases are screwed down an iron screwdriver may be used to withdraw the screws but for no other purpose.

Opening cases of explosives

817. No person shall break or cut any blasting cartridge, nor shall he, except when preparing a cartridge for the insertion of a detonator or detonating fuse, open, interfere with or remove the wrapper around any such cartridge.

Wrappers not to be removed

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818. No person shall charge or attempt to charge any hole which is not of sufficient size to admit freely the explosives together with any fuse if used into any such hole and neither shall he hit nor forcibly press nor ram any explosives into any hole.

Explosives not to be forced into holes

819. No person shall remove explosives from any hole unless such person is the holder of a blasting licence:

Explosives not to be removed from holes

Provided that a person undergoing a course of training prior to being examined for a blasting licence may remove such explosives but only under the direct supervision of the holder of a blasting licence, who is responsible for such person during his training.

820. No person shall use as tamping any material other than water, fine sand or clay unless such material has been approved by the Chief Inspector.

Tamping

821. No person shall, except with the prior written approval of the Chief Inspector and subject to such conditions as he may deem fit to impose, insert tamping between blasting cartridges or space load or deck charge any hole.

No tamping between cartridges

822. No person shall use any implement except one made of or from wood or other approved material when charging or tamping holes.

Tamping rods

823. No person shall remove the tamping from any hole except for the purpose of treating misfires in accordance with sub-regulation (1) (c) of regulation 837.

Tamping not to be removed

824. (1) Any plug used for the plugging of sockets or misfired holes shall be of a type approved by the Chief Inspector.

Plugs

(2) No person other than the holder of a blasting licence shall remove the plug from a socket or a misfired hole:

Provided that a person undergoing a course of training necessary prior to being examined for a blasting licence may remove such plug but only under the direct supervision of the holder of a blasting licence, who is responsible for such person during his training.

825. No person shall pump out any misfired hole containing an electric detonator:

Pumping of misfired holes containing electric detonators prohibited

Provided that, in operations at the sinking face of a shaft where an inert wax primer is placed at the bottom of a charged hole, such charge including the primer may be pumped out.

826. No person shall-

Distance of drilling
from misfired holes

- (a) in any development end or similar confined space, drill any hole or permit such hole to be drilled so as to approach within three metres of any hole containing explosives or any misfired hole;
- (b) in any stope, bench or open cast face drill any hole or permit such hole to be drilled so as to approach within two metres of any hole containing explosives or any misfired hole.

827. (1) No person shall deepen or allow any subordinate to deepen any hole that has at any time contained explosives nor allow it to be used for any other purpose whatsoever:

Deepening of holes
that have contained
explosives forbidden

Provided that any such hole may be recharged and blasted after it has been left to cool for at least four hours or else thoroughly washed out with water.

(2) No person shall deepen or cause or permit any subordinate to deepen any hole which has been partially drilled until he has ascertained by personal examination that such hole does not contain explosives.

828. No person shall drill or cause or permit any subordinate to drill any hole within one hundred and fifty millimetres of any socket or allow such hole to be pitched so as to approach within one hundred and fifty millimetres of any such socket.

Distance of drilling
from sockets

829. No person shall drill any hole unless the exact position and direction of such hole has been pointed out and where possible marked with chalk or other suitable material by the person in charge, and no person shall deviate from such position

Marking of position of
holes

830. No person other than the person in charge or an official in the course of his duties shall remain or be permitted to remain in a position where his safety may be endangered whilst any misfire or hole containing explosives is being rendered safe:

Making safe misfired
holes

Provided that the person in charge may be assisted in rendering a misfired hole or a hole containing explosives safe by one or more reliable persons who are not the holders of blasting licences acting under his direct supervision and the person in charge shall take all reasonable precautions to prevent any accident occurring to such persons through their ignorance, inexperience or carelessness, and such reliable persons shall include any person undergoing a course of training prior to being examined for a blasting licence.

831. (1) The manager of any mine or works shall cause a schedule of times to be arranged during which all primary blasting in any part of a mine or works shall take place and he shall ensure that any blasting in one part shall not expose any person to danger in any other part. No alteration or amendment to such schedule shall be made less than one hour or more than twenty-four hours before the commencement of the first shift to which such alteration or amendment applies:

Primary blasting
schedules

Provided that, in case of an emergency in order to prevent danger to life or property, such manager may temporarily alter or amend such schedule and he shall ensure that every official and person in charge concerned is notified of such alteration or amendment.

(2) The mine captain or more senior official in charge of any section of the mine or works shall arrange within the period scheduled for his section the specific times at which primary blasting shall take place in each working place or group of working places in his section, and no person shall carry out any primary blasting except at such times:

Provided that, in case of an emergency in order to prevent danger to life or property, such mine captain or official may alter or amend those specific times within the period scheduled for his section, in which case he shall ensure that every person concerned is notified of any such alteration or amendment.

(3) The schedules required by sub-regulations (1) and (2) shall be so arranged as to prevent any person, as far as is reasonably practicable, being exposed to any danger from such blast from flying debris, dust or fumes and shall be posted on the surface where they can be easily seen before the commencement of the shift by every person concerned.

(4) After primary blasting has taken place no person shall enter, or cause or permit any subordinate to enter, any part of the mine or works where he might be endangered as a result of such blast until after the expiry of the re-entry period as prescribed in the schedule required by virtue of sub-regulation (6).

(5) If, in the opinion of the Chief Inspector, any re-entry period is insufficient for the removal of dust or fumes which might occur, there shall be substituted such longer period as he may in writing require.

(6) A schedule showing the re-entry periods for the different parts of the mine or works shall be posted on the surface where it can easily be seen at any time by every person concerned.

(7) The manager shall ensure that a clock is placed immediately adjacent to the schedules required to be posted by sub-regulation (3) so that any person concerned with such schedules can, before commencing work, synchronise his watch with the time shown by such clock and each such clock shall be maintained in good working order whenever such schedules are in force.

832. (1) Where secondary blasting operations at a mine or works are deemed to be necessary, the manager shall ensure that there is in force a scheme for the systematic control of all such secondary blasting and such scheme shall ensure that any such secondary blasting in any part of the mine or works shall not expose any person to danger in any other part.

Control of secondary blasting

(2) A schedule showing the re-entry period after secondary blasting in any part of the mine or works shall be posted on the surface where it can be easily seen at any time by every person concerned.

(3) No person shall enter or cause or permit a subordinate to enter any place where secondary blasting has occurred until the expiry of the re-entry period scheduled for that place.

(4) If, in the opinion of the Chief Inspector, any re-entry period is insufficient for the removal of dust or fumes which might occur, there shall be substituted such re-entry period as he may in writing require.

833. A blasting licence holder shall-

Duties of blasting licence holder

- (a) satisfy himself that before charging any drill hole with explosives such drill hole is clean;
- (b) during any charging operation be responsible for the safety of any person assisting him in such operation, and all other persons not engaged in assisting him shall be removed by him to a safe place so as to ensure that such persons are not endangered by such operation excepting that a shiftboss or more senior official in the course of his duties may remain;
- (c) charge any holes to be blasted at primary blasting time only within a reasonable time before blasting and, if such charged holes for any reason whatsoever are to be left unattended before being blasted, shall cause all entrances to that place where such holes are situated-
 - (i) to be effectively barricaded and each such barricade shall be clearly marked "CHARGED UP AREA, NO ENTRY" so as to prevent any person inadvertently entering such place; or

- (ii) to be effectively guarded;
- (d) prepare any charges for secondary blasting only in accordance with these Regulations and such charges shall be blasted immediately after they have been prepared and shall at no time be left unattended;
- (e) before blasting any charges cause all entrances to the place or places where such charges are to be blasted or places where the safety of persons may be endangered by such blasting to be effectively guarded either by means of the erection of suitable barricades and notices or, when this is not practicable, by the placing of persons to act as guards so as to prevent inadvertent access to such place or places whilst such charges are being blasted, excepting that, at any mine or works where the primary blasting schedule referred to in regulation 831 requires that such mine or works or any part thereof be cleared of persons so as to ensure that no person shall avoidably be exposed to any danger from such blast from flying debris, dust or fumes or any other cause arising from such primary blast, the placing of guards need not apply to such mine or works or such part thereof;
- (f) when he is required by any of these Regulations to place guards ensure that such guards fully understand their duties as specified in regulation 851;
- (g) when ready to blast any charged hole and before blasting such hole shall himself at least three minutes before blasting such hole give or cause his assistants to give due warning in every direction by means of the accepted warning system and by shouting "Fire" or "Cheesa" and shall satisfy himself by personal examination that no person except those assisting him in blasting operations shall remain where he might be exposed to danger from such blasting operations and shall take all reasonable precautions to safeguard his assistants from any accident due to such blasting operation;
- (h) except in the case of blasting by means of electricity or where the number of holes being blasted renders it impracticable to do so, count, in conjunction with at least one other person, the number of shots exploding, and unless both he and such other person are certain that all the shots have exploded shall not enter or allow any person to enter the place in which such shots have been blasted until the expiration of thirty minutes from the time of the fuses being lit or until after the re-entry period scheduled for that place has expired whichever is the greater;
- (i) before blasting any explosive charge not contained in a hole, cover such charge completely with mud, clay or other suitable material excepting that this shall not apply when an explosive charge affixed to the end of a pole is positioned for the purpose of blasting a hang-up or any other similar operation;
- (j) in the case of primary or secondary blasting by means of electricity and where no explosion has occurred, remove and isolate the connections to the source of electricity and wait three minutes before entering the place where the charges are positioned:

Provided that where electrical means are used to ignite safety fuse, igniter cord or other similar slow burning fuses then such waiting period shall be extended to thirty minutes;
- (k) report to the person relieving him from duty and to his immediate superior the following:
 - (i) any misfired hole in his working place;

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- (ii) any area charged up that has been treated by him in accordance with paragraph (c);
- (iii) that all unused explosives issued to him have been returned to safe storage excepting those explosives which are permitted to be left unstored and unattended in accordance with sub-regulation (5) of regulation 840;
- (l) ensure that any explosives taken into a working place for use in charging and blasting operations shall, prior to being used, be kept in a safe place at a reasonable distance from any drilling or other operation so as to ensure that such explosives are not exposed to hazard from such operation;
- (m) not enter, or permit or instruct any subordinate to enter, a place where charges have been blasted until the fumes and dust caused by the blast shall have been dispelled;
- (n) not approach, or permit or instruct any subordinate or other person to approach, a place where a misfired charge is known or suspected to have occurred for at least thirty minutes from the time of lighting the fuses;
- (o) ensure that the operation of capping fuses shall be done at a safe place;
- (p) keep in authorised boxes, underground storage boxes, sound unopened boxes of origin or approved containers all explosives issued to him until such explosives are required for use;
- (q) keep all authorised boxes or underground storage boxes under his charge locked and keep the keys on his person whilst at work and only unlock such boxes for the purpose of placing explosives therein or removing the same therefrom;
- (r) not permit any implements, tools or any other material to be placed in any authorised box or underground storage box whether such box contains explosives or not;
- (s) not permit any explosives or flammable material to be left lying about in close proximity to any magazine, authorised box or underground storage box.

834. When blasting by means of electricity, the blasting licence holder shall- Electrical blasting

- (a) after he has connected the blasting cable to the detonator wires of any charge and before making the connection between the blasting cable and the source of electricity, ensure that all persons have been removed to a place of safety;
- (b) disconnect the blasting cable from the source of electricity before making any examination of the blasting circuit;
- (c) only use a blasting cable approved in accordance with regulation 835 which is in good order and of sufficient length to provide for the firing of the charge from a safe distance and ensure that the blasting cable shall not be in contact with any other electrical cable or electrical apparatus;
- (d) carry with him at all times whilst he is at work the operating handle or key of the exploder, or, if such handle or key cannot be removed or some other type of blasting apparatus is used, carry with him the key of the locking arrangement for securing the exploder or other blasting apparatus against unauthorised use, or, when the exploder is sufficiently small to be carried in the pocket, always carry such exploder in his pocket except when it is in use to initiate a charge;
- (e) connect the blasting cable to the detonator wires of any charge only after he has completed all blasting preparations;
- (f) not at any time apply any electrical test to the blasting circuit until all approaches to the area in which such test is to take place are guarded and all persons are removed from such area;
- (g) not apply any electrical test to the blasting circuit except through the blasting cable and from a place of safety;
- (h) not connect the blasting cable to the terminals of the exploder or other blasting apparatus until immediately before blasting or attempting to blast the charge;
- (i) immediately after blasting or attempting to blast a charge disconnect both leads of the blasting cable from the exploder or other blasting apparatus and there and then-
 - (i) remove the operating handle or key of the exploder; or
 - (ii) secure the locking arrangement of the blasting apparatus and remove the key.

835. (1) Every blasting cable shall be readily identifiable as follows: Blasting cables

- (a) twin twisted flex having one green sheath and one yellow sheath; or
- (b) a multi-core sheath having green and yellow markings on the sheath.

(2) Blasting cable shall not be used for any other purpose than blasting.

(3) Current from telephone, signalling or lighting circuits or from any source other than an approved blasting apparatus shall not be used in blasting circuits.

836. (1) At any mine or works the following provisions shall apply, that is to say:

Duties of person in charge

- (a) any person who is employed where rock drilling and blasting operations are being carried out, or who is employed in any other operation where danger may arise from the presence of any explosive, shall be under the supervision of a competent person, who for the purpose of these Regulations shall be referred to as the person in charge;
- (b) such person in charge shall be the holder of a blasting licence valid for the operation for which he is responsible.

(2) Every working place where drilling and blasting operations are being carried out or in any operation at any such place where danger may arise from explosives shall be under the direct supervision of a person in charge.

(3) Within the meaning of these Regulations any person who is the holder of a blasting licence may be appointed a person in charge.

(4) The person in charge shall be the first person to enter each working place assigned to him and the immediate approaches thereto and he shall examine and make safe or cause to be made safe each such working place and the immediate approaches thereto before permitting any work to take place, and shall ensure that the provisions of these Regulations are observed by any person in such working place and the immediate approaches thereto whether such person is under his personal supervision or not.

(5) A shiftboss or more senior official being the holder of a blasting licence may, in the execution of his duty, enter any working place before the person in charge:

Provided that where he observes anything that is unsafe he shall immediately take such precautions as may be necessary to prevent any person entering until such time as he has either made the place safe or informed the person in charge of the unsafe condition.

(6) Whilst making safe any working place and the approaches thereto the person in charge shall be responsible for the safe disposition of his subordinates in suitable and safe places.

(7) Notwithstanding the provisions of sub-regulation (4), the person in charge may be accompanied by one or more persons to assist him in making safe such working place and any other person working in it, and he shall be responsible for the safety of any person assisting him in such operation.

(8) In his examination for making his working place safe in accordance with sub-regulation (4) the person in charge shall-

- (a) satisfy himself that there is adequate ventilation;
- (b) thoroughly wash down, or where no water is available scrape down, and ensure by physical examination that the roof, walls and face of such working place and approaches thereto are free from all loose rock which may cause danger;
- (c) plug any misfired hole or hole that may have misfired that is visible with an approved socket plug and mark such misfired hole or hole that may have misfired with a white or other suitably coloured circle:

Provided that, where the requirements of paragraphs (b) and (c) can only be partially complied with because of the presence of rock from a blast in such working place, then he shall comply with these requirements as he is able and when, by virtue of the rock being lashed, the walls and face are increasingly exposed, he shall, from time to time, take steps to further comply with such paragraphs;

- (d) ensure the adequacy of any support, barricade and platform within such working place and the approaches thereto;
- (e) take such other measures as may be necessary to ensure the safety and health of any person who may work therein or pass therethrough.

(9) The person in charge having made safe in accordance with sub-regulation (8) shall, during the time that any person is working in any working place under his charge, take all reasonable precautions for the safety of any such person present in such working place, and such precautions as he may take shall continue for as long as he allows any person to remain in the working place or until he is relieved of responsibility by another person in charge.

(10) Any person in charge taking over responsibility for any working place shall re-examine it and take any necessary action in accordance with sub-regulation (8).

(11) No person except the person in charge, shiftboss or more senior official shall enter any working place until such person has received definite instructions or permission to do so from the person in charge or more senior official for the time being responsible for the safety of such working place.

(12) No person in charge shall take charge of more working places or persons than he can supervise efficiently or take charge of working places so scattered that he cannot examine them all within a period of one hour without undue exertion.

837. (1) The person in charge before the commencement of any drilling operation in any working place assigned to him and before marking any hole to be drilled therein shall himself- Preparation of face

- (a) thoroughly clean down and carefully examine the whole of the working face to be drilled for sockets and holes, finished and unfinished, and misfired holes or holes that may have misfired:

Provided that, where such drilling is confined to the drilling of an eyebolt hole for a scraper or for a similar holdfast for mechanical operations, the area to be examined may be confined to an area of one metre radius around such hole;

- (b) thoroughly wash out all sockets and holes, finished or unfinished, by means of water under adequate pressure, applied through a blowpipe of a pattern approved by the Chief Inspector, or, where water under pressure is not available, scrape them out by means of a scraper made of material approved by the Chief Inspector after which he shall plug them with approved socket plugs excepting that in any face having an inclination less than forty-five degrees to the horizontal sockets which cannot be satisfactorily plugged may remain unplugged;
- (c) treat any misfired hole or hole that may have misfired by one of the following prescribed means:
 - (i) carefully wash out any tamping from such hole by means of water under adequate pressure or water with compressed air under adequate pressure applied through a blowpipe of a design and material approved by the Chief Inspector for the purpose or, where water is not available, withdraw the tamping by using a scraper of a design and material approved by the Chief Inspector for the purpose and then reprime, retamp and reblast;
 - (ii) where any such hole is six metres in length or shorter, carefully wash out any tamping and the explosives from such hole by means of water under adequate pressure or water with compressed air under adequate pressure applied through a blowpipe of a design and material approved by the Chief Inspector for the purpose and, having satisfied himself that such hole is clean, plug it with an approved plug:

Provided that-

- A. where any misfired hole or hole that may have misfired is longer than six metres the washing out of such hole by the method specified in paragraph (c) (ii) is strictly prohibited; and

- B. the treatment of any misfired hole or hole that may have misfired as specified in paragraph (c) (ii) shall apply to all types of explosives excepting blasting agents as defined in the First Schedule, and any such hole containing blasting agents shall only be treated in a manner approved by the Chief Inspector;
- (d) in the case of a sinking shaft in addition to the requirements of paragraphs (a), (b) and (c), make a sketch showing the position of every misfired hole and socket and such sketch shall be kept at the shaft office for at least seven days and his immediate superior or any other more senior official shall satisfy himself by personal inspection that the requirements of this regulation are being complied with.

(2) Having complied with the requirements of sub-regulation (1) the person in charge shall then, and then only, clearly mark and where this is not possible point out the position of each hole to be drilled and he shall be directly responsible throughout drilling operations, during the whole time he is in charge of such working place, for ensuring that the position and direction of every hole drilled complies with the requirements of paragraphs (a) and (b) of regulation 826 and of regulations 827 and 828.

838. (1) The manager shall ensure that when a connection is to be made between two places underground that before the distance between the two places becomes less than ten metres all persons having any responsibility whatsoever for either such place shall be made aware that a connection is to be made.

Connection between
two places

(2) When a connection is to be made between two places underground and before the distance between the two places becomes less than ten metres the official having overall responsibility for both such places shall ensure that all work in one such place shall cease and the connection shall be made from the other place and before any advance in this place continues the person in charge shall examine the place where work has ceased and make it safe in accordance with the requirements of regulations 836 and 837 and shall then barricade or cause to be barricaded all entrances to such place so as to prevent inadvertent access. The results of such examination shall be recorded in a book kept for the purpose, signed by the person in charge and countersigned by his shiftboss:

Provided that if one such place is inaccessible and an examination as required to be made by this sub-regulation is not possible the manager shall cause such precautions, as he may deem necessary, to be taken so as to ensure the safety of all persons making such connection.

839. (1) Where any whistle or other device capable of giving audible warning is installed at any place where regular secondary blasting occurs such device shall be activated immediately before any charge is blasted.

Provision for whistles

(2) No whistle or other device once activated for the purpose of giving warning of a blast shall be turned off until, in the case of-

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- (a) blasting by fuse all the shots have exploded or if not the requirements of regulation 833 (h) have been observed;
- (b) blasting by electricity all the shots have exploded or if not the requirements of regulation 833 (j) have been observed.

(3) The only person who may activate or turn off any whistle or other device shall be the blasting licence holder who is responsible for blasting the charge.

(4) This regulation shall in no way relieve a blasting licence holder of his obligation to cause all entrances to places where charges are to be blasted to be effectively guarded.

840. (1) The practice of pre-charging underground shall only be permitted with the prior approval of the Chief Inspector and under such conditions as he may prescribe. Pre-charging

(2) All entrances to pre-charged areas underground shall be barricaded off and notices displayed at all barriers so placed bearing the legend "DANGER, PRE-CHARGED AREA, NO SMOKING".

(3) No person shall smoke or carry a naked light except for the purpose of initiating charges in any pre-charged area.

(4) No person excepting those persons engaged in the charging of any hole and priming or detonation of any precharged hole and officials in the course of their duties shall enter a pre-charged area except with the authorisation of the shiftboss.

(5) Explosives may be left unstored and unattended within the barriers of a pre-charged area when in the opinion of the shiftboss it is impracticable or unduly onerous to return such explosives to safe storage:

Provided that such procedure shall only be permitted when charging operations have to be interrupted in order to clear the area of persons so as to comply with a primary blasting schedule.

841. (1) No pre-charged hole shall contain any explosives within two metres of the collar of such hole excepting that this shall not apply to any detonating fuse or to any primer used to detonate such hole. Charging of pre-charged holes

(2) Any primer used to detonate any pre-charged hole shall only be inserted immediately before blasting.

842. (1) Every pre-charged hole shall be securely plugged with an approved plug.

Pre-charged holes to be plugged

(2) Any pre-charged hole where detonating fuse forms a part of the charge shall have the free end of such detonating fuse neatly coiled and inserted into such pre-charged hole before the approved plug is inserted.

843. No person shall remove any plug or detonating fuse from a pre-charged hole except for the purpose of blasting such pre-charged hole:

Plugs not to be removed

Provided that an Inspector of Mines or an official in the course of his duties may remove such plug for the purpose of inspection.

844. Every shiftboss shall cause every pre-charged area within his section to be inspected at least once in each shift so as to ensure that any hole which has become unplugged permitting the detonating fuse to extrude shall have such fuse recoiled, re-inserted and such hole replugged.

Inspection of pre-charged holes

845. (1) The overdrill portion plus one metre above such portion of any hole drilled for the purpose of primary blasting in any open cast working shall not contain explosives other than blasting agents.

Holes in open cast workings

(2) In any open cast working any hole drilled for the purpose of primary blasting where more than one primer or booster is to be used to initiate the charge shall-

- (a) when loaded with a continuous charge have two lines of detonating fuse to the top primer or booster and one of these lines shall extend to the bottom primer or booster;
- (b) when loaded with decked charges have two lines of detonating fuse each line passing through each primer or booster in each deck.

(3) In any open cast working or quarry the tamping material introduced into any hole shall be poured loosely into such hole and shall not be mechanically tamped.

846. (1) Nitro-compound explosives, blasting agents or detonating fuses shall not be stored or carried with detonators or capped fuse, and primer cartridges shall be carried separately from any other type of explosive.

Storage and transportation of explosives

(2) No person shall carry or allow any subordinate to carry any explosives except under the direct supervision of a blasting licence holder.

(3) No person shall carry any explosives to their place of storage or from such place of storage to the place where they are to be used except in sound unopened boxes of origin or other approved containers but any unused explosives may be returned to a place of storage in opened boxes:

Provided that on level ground explosives may be carried from their place of storage to the place where they are to be used in opened boxes.

(4) No person shall carry or allow any subordinate to carry any naked light whilst carrying explosives but may be accompanied at a safe distance by another person carrying such a light.

(5) No person shall smoke or allow a subordinate to smoke within four metres of any explosives.

(6) No person shall have a naked light or allow a subordinate to have a naked light within four metres of any explosives except for the purpose of initiating a charge.

847. A blasting licence holder conducting any charging operation using a blasting agent shall take all reasonable precautions to ensure that any blasting agent in his charge, prior to being charged, is effectively protected against any possibility of becoming affected by water.

Protection of blasting agents

848. A blasting licence holder using pneumatic equipment to charge any hole with a blasting agent shall-

Pneumatic charging

- (a) prior to charging such hole-
 - (i) ensure that such equipment is clean and in good working order;
 - (ii) blow out the compressed air supply line so as to remove any moisture in such line;
 - (iii) ensure that no oil lubricating bottle is connected into such line;
 - (iv) ensure that the earthing wire of such equipment is properly connected to earth and not connected to any water or compressed air pipe, rail or any other electrical earthing system;
 - (v) ensure that the charging hose is free from kinks and in good working order;
- (b) during the charging of such hole-

- (i) stop all charging immediately if the presence of static electricity or any stray current is detected and remedy or cause to be remedied such condition before resuming such charging operations;
- (ii) ensure that any person involved in charging operations shall earth himself by placing his bare hands on the ground or sidewall before handling any explosives, detonators or primers;
- (c) after charging such hole-
 - (i) discharge any blasting agent remaining in such equipment into a bag and return such bag to a magazine or box;
 - (ii) thoroughly wash such equipment.

849. Any pneumatic equipment used to charge any hole with blasting agents shall be of a type approved by the Chief Inspector. Pneumatic equipment to be approved

850. Any hose connected to any pneumatic equipment being the hose used for the charging of any hole with blasting agents shall have a resistance of not less than sixteen thousand ohms per metre run and a resistance not more than one hundred megohms for its total length. Resistance to hoses

851. (1) When a blasting licence holder is required to place any person to act as a guard when he is conducting any blasting operation he shall personally ensure that each such person is- Duties of guards

- (a) placed in the position he is to guard;
- (b) instructed that he shall not leave such position until instructed to do so by the blasting licence holder himself;
- (c) instructed not to permit any person to pass him;
- (d) to count, where practicable, the number of shots exploded;
- (e) instructed to comply with regulation 833 (g).

(2) Every person placed to act as a guard in accordance with sub-regulation (1) shall fully comply with the requirements of such sub-regulation.

852. No welding machine shall be operated within ten metres of any electric detonator or circuit containing such a detonator. Prohibition, welding machine and electric detonators

PART IX MACHINERYPART IX

MACHINERY

901. The regulations contained in this Part shall apply to the Application

use, maintenance and inspection of any machinery or part thereof, used for or associated with the manufacture, in an explosives factory, of explosives for sale commercially.

902. In this Part and in all other Parts subsequent thereto, unless the context otherwise requires- Interpretation

"lifting appliance" means a crab winch, gin wheel or similar equipment used for raising or lowering, and a hoist, crane, sheer legs, excavator, drag line, pile driver, aerial cable way or overhead runway;

"lifting gear" means a chain sling, rope sling, pulley block or similar gear and a ring, link, hook, plate clamp, swivel or eye bolt;

"machinery" means every kind of mechanical or electrical appliance or part thereof and includes any conveyor and lifting appliance.

903. All parts and working gear, whether fixed or movable, including the anchoring and fixing appliances of all machinery and apparatus used as, or forming part of any equipment and all foundations in or to which any such appliances are anchored or fixed shall be of good construction, suitable material, adequate strength and free from patent defect and shall be maintained in good working order. Suitability of machines

904. (1) Efficient guards shall be provided for such parts of machinery and electrical apparatus as may be a source of danger to persons. Provision of guards

(2) The manager shall ensure that guards are kept in position and properly maintained:

Provided that when such guard is temporarily removed for the purpose of repairs proper precautions shall be taken for the safety of persons and on the completion of such repairs the guard shall be securely replaced.

905. (1) The manager shall ensure that all machinery shall be in the charge of a competent person. Charge of machinery

(2) No person having charge of any machinery which is required to be constantly supervised shall for any reason whatsoever absent himself or cease to have continual supervision of such machinery during the time for which he is in charge unless he is replaced by another competent person.

906. (1) Where it is necessary to stop and start belt-driven machinery without interfering with the speed of the prime mover a suitable appliance for the purpose shall be permanently fitted. Precautions for belt-driven machinery

(2) Where machinery is in motion the shipping and unshipping of driving belts is forbidden, except that the customary shifting of light belts on the coned pulley of machine tools for the purpose of altering the working speed may be permitted.

907. No person in close proximity to any moving machinery shall wear or be permitted to wear loose outer clothing, and long hair shall be suitably protected. No loose clothing or long hair near machinery

908. The manager shall ensure that suitable goggles, face masks or screens are provided to protect the eyes of operators, and of any other person in the immediate vicinity, and these shall be used by such persons when- Provision of goggles, face masks or screens

- (a) grinding surfaces of metal, stone, concrete or similar materials by means of a power-driven wheel or disc; or
- (b) chipping or scaling painted or corroded metal surfaces or mechanically wire-brushing such surfaces; or
- (c) welding or cutting metals by means of an electrical, oxy-acetylene or similar process; or
- (d) treating stone, metal, concrete, slag or similar materials where danger to the eyes may arise.

909. No machine shall be started if by so doing any person is likely to be exposed to danger unless adequate warning has been given that such machine is about to be started. Precautions when machinery started

910. (1) No person shall cross any moving conveyor except at an authorised crossing place. Crossing or riding on conveyors

(2) No person shall ride on any moving conveyor.

- 911.** The manager shall ensure that every lifting appliance on which the operator travels shall be fitted with an effective audible warning device. Audible warning device for lifting appliance
- 912.** No lifting appliance shall be used-
- (a) on a soft or uneven surface, or on a slope, in circumstances in which the stability of the appliance is likely to be affected unless adequate precautions are taken to ensure its stability; nor
 - (b) unless it is securely anchored or adequately weighted by suitable ballast properly placed on the structure so as to ensure its stability. Stability of lifting appliance
- 913.** Where the stability of a lifting appliance is ensured by means of removable weights a diagram or notice indicating the position and the amount of such weights shall be affixed where it can readily be seen. Ballasting diagram for lifting apparatus
- 914.** On every stage, gantry or other place where a lifting appliance having a travelling or slewing motion is used, an unobstructed passageway not less than six hundred millimetres wide shall be maintained between the nearest part of the appliance at any time in the course of its movement and the guard rails, fencing or any nearby structures: Passageway to be provided
- Provided that if at any time it is impracticable to maintain such a passageway all reasonable steps shall be taken to prevent the access of any person to the place where the lifting appliance is in motion and obstructing free passage.
- 915.** No lifting appliance shall be erected except under the supervision of a competent person. Erection of lifting appliances
- 916.** Except for rope blocks with a safe working load of nine hundred kilograms or less, every lifting appliance shall have plainly marked thereon its safe working load or loads and an identification mark. Safe loads and identification marks
- 917.** Any lifting appliance so constructed that the safe working load may be varied by the raising or lowering of a jib shall have either an automatic indicator of safe working loads or a table indicating the safe working loads. Automatic indicator or tables
- 918.** Any drum or pulley round which the chain or wire rope of any lifting appliance is carried shall be of suitable diameter and construction for the chain or rope used thereon. Provision for chain or wire rope

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- 919.** Any chain or rope which terminates at the drum of any lifting appliance shall be properly secured thereto and at least three turns of such chain or rope shall remain on the drum in every operating position of such appliance, except where the design of such appliance permits less than three turns. Securing of chain or rope
- 920.** No load shall be left suspended from any lifting appliance which is unattended and which may be a danger to any person. No suspension from unattended appliance
- 921.** Every lifting appliance shall be provided with an efficient brake or brakes or other such safety device which will prevent the fall of the load when suspended and by which the load can be effectively controlled. Efficient brakes to hold load
- 922.** The controls of any lifting appliance shall be suitably placed and so constructed as to prevent accidental or inadvertent operation of such controls. Suitable controls
- 923.** No person shall be raised, lowered or carried by any lifting appliance except on the driver's platform. Persons not to ride except on platform
- 924.** (1) Power-driven mobile cranes shall be so constructed as to hold without overturning a sustained load, in weight not less than 1.5 times the safe working loads for ordinary lifting duty when the crane is standing on level ground. Safety factor for lifting appliance
- (2) Cranes used for grabbing duties shall be so constructed as to hold without overturning a sustained load, in weight not less than 1.975 times the safe working loads of the crane for ordinary lifting duty when the crane is standing on level ground.
- 925.** No lifting appliance or any part thereof shall be loaded beyond the safe working load: No appliance to be loaded beyond safe load
- Provided that for the purpose of making tests of any such appliance the safe working load may be exceeded by such amount as a competent person appointed to carry out the tests may authorise.
- 926.** Any lifting appliance and all plant or gear used for anchoring or fixing such appliance shall, as far as the construction permits, be inspected for defects by a competent person before use. Inspection before use
- 927.** No lifting appliance shall be operated otherwise than by a person competent to operate that appliance, or by a person under the direct supervision of a competent person for the purpose of training. Competent person only to operate lifting appliance

928. Any signal given for the movement or stopping of any lifting appliance shall be distinctive in character and such that the person to whom it is given is able to see or hear the signal distinctly.

Distinct signals to be given

929. Any platform used for the operation of a lifting appliance shall be-

Provisions for platform

- (a) of sufficient area for all persons required to work thereon to do so in safety;
- (b) close planked or plated;
- (c) provided with safe means of access; and
- (d) provided with guard-rails and toe-boards.

930. (1) No rail track on which a travelling lifting appliance moves shall be used unless it is of good construction, suitable material, adequate strength, free from patent defect and maintained in good condition.

Suitability of track upon which lifting appliance moves

(2) Any overhead track upon which a travelling lifting appliance moves shall be provided with effective stops at its ends.

931. Every power-operated travelling lifting appliance shall have effective brakes fitted to the travelling mechanism.

Brakes on travelling mechanism of lifting appliance

932. No person shall work on or near, or order any other person to work on or near, any wheel track of any travelling lifting appliance in any place where he would be liable to sustain injury by the passage of such lifting appliance unless adequate precautions are taken to ensure his safety.

No person to work on lifting appliance

933. Every part of a load shall be adequately secured whilst being raised or lowered by any lifting appliance.

Load to be secured

934. Any container used for raising or lowering material shall be so designed as to prevent spillage:

Containers to be designed to prevent spillage

Provided that this regulation shall not apply to a grab, shovel or similar excavating equipment if adequate precautions are taken to ensure the safety of persons.

935. The manager shall ensure that there is maintained a record showing the condition and location of all lifting appliances with a safe working load in excess of nine hundred kilograms.

Record to be kept

936. The following provisions shall apply to all lifting gear:

Provisions for all lifting gear

- (a) no lifting gear shall be used unless it is of good construction, sound material, adequate strength, free from patent defect and maintained in good condition;
- (b) there shall be posted at the store in which such lifting gear is kept, and at other prominent and convenient places where lifting gear is regularly used, a table showing the safe working loads-
 - (i) of every size and kind of lifting gear in use; and
 - (ii) of every multiple sling at different angles of the sling legs;
- (c) the safe working loads of all lifting gear shall be that determined by a competent person;
- (d) no lifting gear shall be used for any load exceeding the safe working load, except for the purpose of making tests;
- (e) all lifting gear shall be visually examined before use;
- (f) no lifting gear which is defective shall be used;
- (g) no vegetable fibre rope shall be exposed to any acid, oil or grease and if any such rope has been so exposed it shall be destroyed forthwith;
- (h) no artificial fibre ropes shall be used where there is a danger of damage to the rope by heat, acid, oil or grease.

937. Any hook used in connection with any lifting appliance shall be of good construction, suitable material, adequate strength, free from patent defect and shall be properly maintained, and be provided with an efficient device to prevent the displacement of the sling or load from such hook if specifically required by an Inspector of Machinery.

Provisions for hooks

938. (1) An Inspector of Machinery may direct that any wrought iron chains of lifting gear in use shall be annealed or otherwise treated by heat at such specified intervals as he considers necessary.

Annealing of chains and lifting gear

(2) The manager shall ensure that a record is kept of such annealing or treatment.

939. (1) No chain shall be taken into use for the first time unless it has been examined and tested by a competent person.

Testing of chains, and examination of wire rope slings

(2) No wire rope sling with a safe working load exceeding nine hundred kilograms shall be taken into use for the first time unless it has been thoroughly examined by a competent person.

(3) The manager shall ensure that a record is kept of such examinations and testing.

940. When any platform, gangway, run or stair becomes slippery, appropriate steps shall be taken to remedy such defect as soon as is reasonably practicable. Platforms, etc., becoming slippery

941. No person shall use or permit or instruct any other person to use any vegetable or synthetic fibre rope which has been exposed to any process or substance which has or could have impaired its efficiency. Any rope so exposed shall be destroyed forthwith. Use of impaired rope prohibited

PART X STEAM BOILERS, STEAM CONTAINERS AND STEAM AND AIR RECEIVERSPART X

STEAM BOILERS, STEAM CONTAINERS AND STEAM AND AIR RECEIVERS

1001. The regulations contained in this Part shall apply to the installation, maintenance and inspection of steam boilers, steam containers and steam and air receivers or any part thereof used for or associated with the manufacture in an explosives factory of explosives for sale commercially. Application

1002. In this Part and in all other Parts subsequent thereto, unless the context otherwise requires- Interpretation

"air receiver" means-

- (a) any vessel, other than a pipe coil or an accessory, fitting or part of a compressor, for containing compressed air and connected to air compressing plant;
- (b) any vessel for containing compressed air or compressed exhaust gases and used for the purpose of starting an internal combustion engine;
- (c) any vessel in which any liquid is stored and forced from it by compressed air; and
- (d) any fixed or portable vessel, not being part of a spraying pistol, used for the purpose of spraying by means of compressed air any paint, varnish, lacquer or similar material;

"authorised working pressure" means, in the case of air receivers, steam boilers and steam containers, that pressure specified by an Inspector of Machinery which is entered in the records maintained for such plant;

"boiler" means any apparatus for the continuous generation of steam at a pressure greater than that of the atmosphere, and includes super-heaters, economisers and steam accumulators;

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"steam container" means any vessel, other than a steam pipe or coil, constructed with a permanent outlet into the atmosphere, or into a space where the pressure is not greater than that of the atmosphere, and through which steam is passed at or approximately at or below atmospheric pressure for the purpose of heating, boiling, drying, evaporating or other similar purposes;

"steam receiver" means any vessel or apparatus, other than a steam boiler, steam container, steam pipe or coil, or any part of a prime mover, used for containing steam under pressure greater than that of the atmosphere.

1003. Every air receiver, boiler or steam container, the foundations for such plant and the installations referred to in this Part shall be of good construction, sound material, adequate strength, free from patent defect and maintained in good condition. Standards of construction

1004. (1) Before the first installation of any boiler the manager shall ensure that full maker's specifications and drawings of such boiler are submitted to the Chief Inspector for his approval. Requirements for boilers

(2) No boiler shall be encased during erection, and when erected no boiler shall be used until it has been examined and tested to the satisfaction of an Inspector of Machinery; from the result of this examination and test the inspector shall specify the authorised working pressure, and shall enter such authorised working pressure in the boiler record book.

(3) (a) Every boiler shall be provided with a plate upon which is marked in clearly visible characters the year of first examination and the authorised working pressure at which such boiler may be worked.

(b) The plate required by paragraph (a) shall be securely fixed to the boiler in a suitable position.

(4) The maximum continuous steaming rate of any boiler, in kilograms of steam per hour, shall be specified by an Inspector of Machinery and such specification shall be based on the maker's specification; such rate may be exceeded only with the written permission of an Inspector of Machinery and subject to such conditions as he may impose.

(5) Safe access must be provided and maintained to every point where a boiler safety device is installed.

1005. (1) Every boiler shall be provided with one or more reliable safety valves, and the loading of such safety valves shall be such that at least one will lift when the authorised working pressure in such boiler is exceeded; the loading of such safety valves and the aggregate area available for the discharge of steam shall be such as to prevent an accumulation of steam pressure in the boiler greater than ten per centum above the authorised working pressure:

Safety valves for
boilers

Provided that one such safety valve shall be sufficient for any super-heater or economiser that can be isolated from its boiler.

(2) Every safety valve shall be constructed and installed so that-

- (a) it can be easily freed from its seat at any time by lifting gear worked by hand from some accessible place, and shall be free to rotate on its seat; these arrangements shall be free from steam danger;
- (b) where directly loaded by springs, the compression nuts shall abut against metal stops or washers at the working load compression to prevent such safety valve being loaded to beyond the authorised maximum working pressure; adequate precautions shall be taken to ensure that the load settings of such safety valve cannot be altered by an unauthorised person;
- (c) where loaded by a weight or spring action on a lever, the load shall act only at the extreme end of such lever.

(3) Every safety valve shall be so installed that-

- (a) it is mounted on or as near as possible to the boiler shell;
- (b) no stop valve is placed between the safety valve and the boiler which it serves;
- (c) no person is exposed to danger from the discharge of such valve; and
- (d) such safety valve is fitted with a suitable drain.

1006. (1) At any point at which steam is taken from a boiler a stop valve shall be provided as close as is practicable to the point of draw-off.

Provision of stop
valves

(2) Where any boiler delivers its steam into a range or main common to other boilers a non-return valve shall be fitted in such manner that any accidental reversal of flow shall be prevented.

1007. (1) Every boiler shall have connected to the steam space one or more reliable pressure gauges which shall be so installed that any gauge may be changed while the boiler is in service.

Pressure gauges for
boilers

(2) The dial of every pressure gauge shall be calibrated in bars and shall have a range greater than the authorised working pressure of the boiler by not less than twenty per centum and not more than one hundred per centum.

(3) The authorised working pressure of the boiler shall be marked with a red line on the dial of the pressure gauge.

(4) Suitable arrangements shall be made to ensure that the element of any pressure gauge is not subjected to live steam.

(5) Every boiler shall be provided with a suitable attachment to enable an Inspector of Machinery to affix a pressure gauge for the purpose of carrying out pressure tests.

1008. (1) Every boiler shall be provided with two independent means of feed water supply.

Feed water

(2) Where the feed apparatus is an injector, a second means of feeding consisting of a power or hand pump shall be fitted.

(3) For the purpose of this regulation, two or more such boilers combined for joint working shall be regarded as one boiler.

(4) Where a multiple pump supply system is in use sufficient capacity shall always be maintained to ensure a safe steaming rate.

(5) The capacity of these means of supply shall be such that in the event of failure of any one means of supply the feed water requirements of the boiler can still be met:

Provided that one reliable means of feed water supply shall suffice for any boiler having a total volume of ninety litres or less for the combined steam and water spaces.

(6) Where the feed delivery pipe enters a boiler such pipe shall be provided with a self acting non-return valve and a stop valve; the stop valve shall be fitted between the non-return valve and the boiler, and these two valves may have a common body.

1009. (1) Every boiler shall be provided with two or more reliable water level indicators, one of which shall be a glass water level gauge: Water levels

Provided that one glass water level gauge shall suffice for any boiler having a total volume of ninety litres or less for the combined steam and water spaces.

(2) Fusible plugs shall be fitted to any fire-tube boiler:

Provided that an Inspector of Machinery may give written exemption from this requirement.

(3) Every glass water level gauge shall be efficiently guarded in such manner so as not to obstruct the reading of such gauge; any isolating cock must be of such type that it can clearly be seen whether it is in the open or closed position.

(4) The lowest safe water level for every stationary boiler shall be at least seventy-five millimetres above the highest part of the flue passing round or through such boiler.

(5) Every boiler shall be provided with some means, independent of visual observation, whereby any deficiency of water is made known.

1010. (1) Every boiler shall be provided with one or more blow down valves effectively placed. Blow down valves

(2) Every joint between a boiler and a blow down valve shall be flanged, and where such flanges are not integral with the pipe or valve they shall not be fastened by means of screw threads alone.

(3) No pipe between any boiler and blow down valve shall be in contact with any masonry or any supporting structure in such manner that it will be subjected to dangerous stress by the relative movement of various parts of such boiler.

(4) The discharge from a blow down valve shall be conducted by means of a pipe into an open tank, drain or sump fitted with adequate vents so situated and guarded as to prevent danger to persons.

(5) A blow down valve of two or more boilers shall not discharge into a common pipe.

(6) Adequate safety measures shall be taken to ensure the safety of any person working on the piping system of any blow down valve between such valve and any tank, drain or sump.

(7) Any key used to operate any main blow down valve shall be so constructed that it cannot be removed while such valve is in the open position.

1011. No pipe or fitting shall be screwed directly into the shell of any boiler:

Pipes and fittings not to be screwed into shell

Provided that an Inspector of Machinery may give written exemption from this requirement.

1012. (1) Any steam receiver not so constructed as to withstand with safety the authorised working pressure of the boiler or the maximum pressure which can be obtained in the pipe connecting such receiver with any other source of supply of steam shall be fitted with-

Steam receiver modification

- (a) a steam reducing valve or other automatic appliance to prevent its own authorised working pressure being exceeded;
- (b) a suitable safety valve so adjusted as to permit the steam to escape as soon as the authorised working pressure of such receiver is exceeded, or a suitable automatic appliance for cutting off the supply of steam of such receiver, as soon as the authorised working pressure is exceeded;
- (c) an accurate pressure gauge which shall indicate the steam pressure in bars;
- (d) a suitable stop valve; and
- (e) a plate bearing a distinctive identification number which shall be clearly visible.

(2) Every safety valve and pressure gauge required by sub-regulation (1) shall be fitted either on the steam receiver or on the supply pipe between the receiver and any reducing valve or other appliance provided to prevent the authorised working pressure being exceeded.

(3) For the purpose of paragraphs (a), (b), (c) and (d) of sub-regulation (1) any set of receivers supplied with steam through a single pipe and forming part of a single unit may be treated as one receiver and further, for the purpose of paragraphs (a), (b) and (c) of sub-regulation (1), any other set of receivers supplied with steam through a single pipe may be treated as one such receiver:

Provided that this sub-regulation shall not apply to any set of receivers unless the reducing valve, or other such appliance provided to prevent the authorised working pressure being exceeded, is fitted on such single pipe.

(4) Every steam receiver and its fittings shall be properly maintained and shall be thoroughly examined by an Inspector of Machinery, so far as its construction permits, at intervals not exceeding three years.

(5) A record of the result of every examination of a receiver, containing such particulars as the Chief Inspector may from time to time require, shall be kept and made readily available for inspection at all times.

(6) Every steam container shall be properly maintained so as to ensure that the permanent outlet to atmosphere is kept open and free from obstruction at all times.

1013. Every boiler shall be blown down continuously or with sufficient frequency so as to ensure that no dangerous amount of sludge or dissolved salts is allowed to accumulate. Blowing down of
boilers

1014. No persons shall enter or be permitted to enter any part of a boiler which has been opened for cleaning, repairs or examination until the person in charge of such work has satisfied himself that it is safe to do so; before giving permission the person in charge shall ensure that- Conditions before
cleaning boilers

- (a) any pipe through which steam or water might enter such boiler has been disconnected or effectively isolated therefrom and, where valves are used to achieve such isolation, that they have been closed and securely locked;
- (b) all reasonable precautions have been taken to safeguard any person working in the boiler or its flues against any danger from grease, dust and falling objects.

1015. (1) Every boiler in service or on standby for emergency generation shall at intervals not exceeding two years be thoroughly examined internally and externally as far as is practicable by an Inspector of Machinery and before being put back into service shall be hydraulically tested in the presence of such inspector. Examination of boilers

(2) If the examination of any boiler cannot otherwise be properly executed, any parts, or the whole, of the masonry or casing shall be removed if an Inspector of Machinery deems this to be necessary.

(3) If at any time it is necessary to remove the masonry or casing of any boiler for the purpose of major renewal or repairs and this work reveals parts of such boiler which would otherwise be inaccessible, an Inspector of Machinery shall be notified before any such masonry or casing is replaced.

1016. (1) Any boiler having an authorised working pressure of less than five bars shall be hydraulically tested to double such pressure.

Examination of
hydraulic pressure

(2) Any boiler having an authorised working pressure of five bars or more shall be hydraulically tested to not more than 1.2 times such pressure plus four bars.

(3) No masonry or casing of any boiler may be replaced before the prescribed examination and test by hydraulic pressure has been carried out except with the permission of an Inspector of Machinery.

1017. (1) If an examination reveals that any boiler can no longer be worked safely at the authorised working pressure originally specified and the manager considers it inadvisable to have the necessary repairs made, an Inspector of Machinery may specify a lower working pressure and such lower pressure shall be recorded in the boiler record book.

Reduction of
maximum working
pressure

(2) If on examination any boiler is found to be in a dangerous condition, an Inspector of Machinery may order such boiler to be shut down and such boiler shall not be used again until such time as it has been examined by an Inspector of Machinery and he is satisfied that such boiler is safe to operate.

1018. (1) A record shall be kept for every boiler installed at any mine which shall contain the following particulars:

Record of particulars
and information on
boilers

- (a) the country of origin, date of manufacture and name of maker;
- (b) the technical description and history;
- (c) the location and official number;
- (d) the authorised working pressure in bars;
- (e) the dates on which the boiler is cleaned or examined and the condition of such boiler at the times of such examinations;

- (f) the dates on which the boiler is hydraulically tested, the test pressure applied and the result of the test; and
- (g) details of any repair made to the boiler or its fittings.

(2) (a) Every entry in a boiler record book shall be signed by the person responsible for carrying out the work therein described.

- (b) If no work is carried out on any boiler in the course of any calendar month, an entry to that effect shall be made.

(3) The manager shall ensure that notice is given to the Chief Inspector when any-

- (a) major repairs or any design or structural alterations are to be executed to any boiler;
- (b) part of any boiler is damaged so as to affect its authorised working pressure;
- (c) boiler is being disposed of;
- (d) boiler is moved from one location to another; and
- (e) boiler is out of commission for more than three months.

1019. Every evaporator shall be fitted with at least one suitable safety valve which shall be so loaded that it will lift when the authorised working pressure of such evaporator is exceeded.

Safety valves for evaporators

1020. The provisions of sub-regulations (1) and (2) of regulation 1004 and regulation 1008 shall not apply to evaporators operated above atmospheric pressure.

Regulations not applicable to evaporators

1021. Every air receiver shall have marked upon it so as to be clearly visible the year of manufacture, the serial number and the authorised working pressure.

Particulars to be shown on air receivers

1022. No air receiver shall be used at a mine until it has been examined and tested to the satisfaction of an Inspector of Machinery; from the result of this examination and test the inspector shall fix the working pressure:

Examination and testing of air receivers

Provided that any air receiver on a self-propelled vehicle shall be exempt from this regulation if the manager ensures that such receiver is properly maintained and there is in force a scheme for the systematic examination and inspection of such receiver.

1023. Every air receiver shall be so mounted that the shell is visible for external inspection at all times, and provision must be made for free expansion of the shell under all conditions of temperature.

Mounting of air receivers

1024. (1) Every air receiver shall have at least one reliable safety valve which shall be so loaded that it will lift when the authorised working pressure is exceeded; the area available for discharge of air shall be such as to prevent accumulation of pressure greater than ten per centum above the authorised working pressure.

Safety valves for air receivers

(2) Adequate precautions shall be taken to ensure that the load setting of every safety valve cannot be altered by any unauthorised person.

(3) When directly loaded by springs the compression nuts shall abut against metal stops or washers at the working load compression, or be positively locked in position.

(4) No stop valve shall be placed between any safety valve and any receiver which it serves.

(5) When loaded by a weight or spring acting on a lever the load shall act only at the extreme end of such lever.

(6) Every safety valve shall be so constructed that it shall be free to rotate on its seat.

(7) Every air compressor, except one which discharges into an air receiver and cannot be closed off therefrom, shall be provided with a pressure relief valve or other automatic device capable of preventing an accumulation of pressure greater than that for which such air compressor was designed or ten per centum above the pressure for which the system into which the air compressor discharges was designed, whichever is the lesser pressure.

1025. (1) Every air receiver shall have at least one reliable pressure gauge so connected that it may be changed when the receiver is in use.

Pressure gauges for air receivers

(2) The dial of every pressure gauge shall be calibrated in bars and shall have a range greater than the authorised working pressure of such receiver by not less than twenty per centum and not more than one hundred per centum.

1026. (1) Every air receiver shall be provided with at least one drain valve which shall be so arranged that persons operating it are not exposed to danger from the discharge from such drain valve.

Drain valves

(2) Every air receiver shall be drained with sufficient frequency to ensure that no dangerous amount of water or sludge is allowed to accumulate.

(3) Every air compressor, air receiver, inter-cooler and their connections to air compressors shall, as far as is practicable, be kept clean and free from water, and from carbonised oil and other material liable to ignition.

1027. No pipe, plug or fitting shall be screwed directly into the shell of any air receiver.

Pads

1028. Every air receiver shall be-

Examination of air receivers

- (a) examined internally by a competent person at intervals not exceeding twelve months and shall be tested by hydraulic pressure to the satisfaction of an Inspector of Machinery at intervals not exceeding two years; the pressure applied during such test shall be 1.5 times the authorised working pressure;
- (b) provided with a suitable manhole, handhole or other means which will allow the interior to be thoroughly cleaned and inspected:

Provided that, if it is so constructed that the internal surface cannot be thoroughly examined, a suitable hydraulic test of the receiver shall be carried out instead of the internal examination.

1029. The results of any examination and test referred to in regulation 1028 shall be suitably recorded and the record signed by the competent person making such examination and test.

Record of examinations and tests

1030. (1) Thermometers or pyrometers, the indications of which can be clearly read, and fusible plugs shall be fitted close to the outlet valves or discharge ports of all positive displacement air compressors having a rating exceeding seven cubic metres of free air per minute.

Fittings of thermometers and pyrometers

(2) Thermometers or pyrometers, the indications of which can be clearly read, shall be fitted to the discharge pipes of all other compressors having a rating exceeding seven cubic metres of free air per minute.

(3) The maximum temperature allowed shall be indicated by a red mark on the scale of each such thermometer or pyrometer.

1031. The provisions of regulations 1021 to 1030 inclusive shall not apply to any portable gas cylinder or working cylinder of any engine. Exemption for gas cylinders

PART XI LIFTSPART XI

LIFTS

1101. The following regulations shall apply to the use, maintenance and inspection of any lift and any part thereof used for or associated with the manufacture, in an explosives factory, of explosives for sale commercially. Application

1102. No lift installation shall be used until such use has been authorised by the Chief Inspector and a Certificate of Permission issued; such certificate shall be mounted behind glass in the lift car. Certificate of Permission

1103. Every lift installation and every part thereof shall be of good construction, suitable material, adequate strength, free from patent defect and shall be properly maintained. Suitability of lift installation

1104. (1) The manager shall ensure that a competent person is appointed to examine carefully- Appointment of competent person to examine installation

(a) at least once in each week at intervals not exceeding ten days, the motor, guides and all drums, sheaves and safety appliances of each lift;

(b) at least once in every thirty days at intervals not exceeding forty-five days, the entire lift installation and all fittings and appliances in connection therewith.

(2) The competent person appointed in accordance with sub-regulation (1) shall make a report of the result of any test, examination or inspection which shall, as soon as is practicable, be entered in a register kept for this purpose and such register shall be kept at a suitable place; each entry shall be signed by such competent person.

1105. (1) Every lift shaft shall be effectively protected by gates so as to prevent, when such gates are closed, any person falling down such lift shaft or coming into contact with any moving part in such lift shaft. Provision of gates

(2) Every gate provided in accordance with sub-regulation (1) shall be equipped with an efficient interlocking or other device to ensure that such gate cannot be opened except when the conveyance is at the landing and to ensure that the conveyance cannot be moved away from the landing until such gate is closed.

1106. Except for testing or maintenance, no person shall ride upon the platform of any lift authorised for the carriage of goods or material only, and there shall be a legible notice clearly displayed on such platform so stating. When persons forbidden to ride

1107. In every lift installation efficient devices shall be provided and maintained which will support the conveyance together with its safe working load in the event of failure of the ropes or any other part of such installation. Failure of ropes

1108. In every lift installation efficient automatic devices shall be provided and maintained which shall ensure that the platform or conveyance does not overrun the highest or lowest point to which it is for the time being constructed to travel. Overrun devices

1109. Every lift installation used for carrying persons shall be provided with a conveyance which is so constructed as to prevent any person carried from falling out or being trapped between any part of such lift or from being struck by articles or material falling down the lift shaft. Construction of conveyance

1110. (1) No rope shall be used for supporting a lift or counterweight unless it is of good quality and manufacture and of adequate strength and free from any defect. Ropes

(2) Any such rope shall be made of wire, and the gauge of the wires used in the construction thereof shall be suited to the diameter of the sheaves and drum.

(3) No rope shall be used for supporting a lift conveyance or counterweight when the breaking load at any point therein has become reduced to less than five times the maximum working load, the supporting effect of the other rope, if any, being ignored:

Provided always that in the case of any lift in which such conveyance or counterweight is suspended by more than two ropes fitted with appliances for equally distributing the load, a minimum factor of safety of 10 shall be allowed on the aggregate strength of all ropes, but no rope shall have a lower factor of safety than 3, with respect to the maximum working load.

(4) Every lift car operated by ropes shall be suspended by at least two ropes, each of which shall have independent connection with the car or with the special connection bracket hinged thereto; each set of counterweights shall likewise be suspended by two ropes.

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1111. (1) In the case of any lift where no part of the rope is rigidly fixed to the drum, the construction shall be such that there shall be no dangerous slipping of the ropes on the drum under any possible working condition, the safety of the apparatus to be judged by an Inspector of Machinery.

Fixing of ropes to drum

(2) When the lifting and counterweight ropes are rigidly fixed to the drum there shall be at least one full turn of rope on the drum when they have run the limit.

1112. In every lift the drum, engine or motor shall be provided with an adequate brake which shall be kept in proper working order.

Brakes

1113. A clear space of not less than one metre shall be provided between the bottom of the lift shaft and the lowest point of the underside of the lift car when the car is at its lowest landing and between the top of the lift car and the underside of the overhead grating or floor when the car is at its top landing and also between the top of the counterweight and the underside of the sheave or beams when the lift car is at its lowest landing; in the case of lifts which run at a speed greater than one hundred metres per minute, the clear space at the top or bottom shall not be less than 1.5 metres.

Underrun and overrun clear space

1114. No lift shall be used whilst repairs are being effected in the lift shaft.

Not to be used during repairs

PART XII BUILDINGS AND CONSTRUCTIONPART XII

BUILDINGS AND CONSTRUCTION

1201. The regulations contained in this Part shall apply to any building or structure and to the construction operations of any such building or structure or any part thereof and to the demolition of any such building or structure or any part thereof used for or associated with the manufacture, in an explosives factory, of explosives for sale commercially.

Application

1202. In this Part and in all other Parts subsequent thereto, unless the context otherwise requires-

Interpretation

"construction work" means any building operations or work of engineering construction;

"ladder scaffold" means a scaffold with a working platform which is supported directly or by means of a crutch or bracket on a rung or rungs of a ladder;

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"scaffold" means any temporary structure on or from which persons perform work in connection with any construction work, and any temporary structure which enables persons to obtain access to or which enables materials to be taken to any place at which such work is performed;

"suspended scaffold" means a scaffold suspended by means of ropes or chains which is capable of being lowered or raised by such ropes or chains but does not include a boatswain's chair or such similar appliance;

"trestle scaffold" means a scaffold in which the supports for the platform are step-ladders, tripods or similar movable contrivances;

"working platform" means that part of a scaffold or cradle upon which persons stand or sit for the purpose of work.

1203. All material and equipment used in building and engineering construction shall be of good construction, suitable material, adequate strength, free from patent defect and shall be properly maintained. Standard of construction

1204. (1) All material used for any scaffold shall be inspected and found satisfactory by a competent person on every occasion before being put or taken into use. Scaffold, inspection and erection

(2) No scaffold or suspended scaffold shall be erected, or be substantially added to or be altered or be dismantled, otherwise than under the immediate supervision of a competent person and so far as possible by persons possessing adequate experience of such work.

1205. The manager shall ensure that every scaffold in use, together with all fittings and connections, shall be examined at least once a week by a competent person. Frequency of inspections

1206. (1) No skip, bucket, basket, boatswain's chair or similar equipment shall be used in place of a suspended scaffold, except in special circumstances where the work to be performed therefrom is of such short duration as to make the use of a suspended scaffold unreasonable or where the use of a suspended scaffold is not reasonably practicable; such equipment shall only then be used under the supervision of a competent person, and suitable measures shall be taken to prevent spinning or tipping and to prevent any occupant from falling therefrom. Skips, buckets, boatswain's chair, etc.

(2) No skip, bucket or basket shall be used in place of a suspended scaffold unless it is at least 1.1 metres deep.

1207. (1) No trestle scaffold shall be used- Trestle scaffolds

- (a) if it is constructed with more than three tiers; or
- (b) if it has a working platform more than five metres above the ground floor or other surface upon which it is erected.

(2) No trestle scaffold shall be erected on a scaffold platform unless-

- (a) the width of such platform is such as to leave sufficient clear space for the transport of material; and
- (b) the trestles or uprights are firmly attached to such platform and adequately braced to prevent displacement.

(3) No trestle scaffold shall be erected on a suspended scaffold.

1208. (1) Every ladder scaffold shall be of adequate strength and used only for light work. Ladder scaffolds

(2) No ladder scaffold shall be erected on any suspended scaffold.

1209. (1) No scaffold or suspended scaffold shall be over-loaded

No overloading of scaffolds

and material shall not be kept thereon unless needed within a reasonable time.

(2) No crane shall be installed on any scaffold unless a competent person has satisfied himself as to the strength and stability of such scaffold.

(3) Any material being transferred on or to a scaffold or suspended scaffold shall be moved or deposited without causing any violent shock.

1210. Any working platform from which any person is liable to fall more than two metres shall be-

Provisions for
platforms

- (a) closely boarded, planked or plated;
- (b) at least four hundred and sixty millimetres wide if the platform is used as a footing only and not for the deposit of any material thereon;
- (c) at least one metre wide if the platform is to be used for the deposit of material thereon; and
- (d) at least 1.2 metres wide if the platform is to be used for the support of any higher platform.

1211. (1) Suitable measures, such as provision of adequate bevelled pieces, shall be taken to reduce to a minimum the risk of tripping and to facilitate the movement of barrows where boards or planks which form part of a working platform, gangway or run overlap each other or are not of reasonably uniform thickness where they meet each other, or owing to warping or for some other reason do not provide an even surface.

Planking guard-rails
and toe-boards on
platforms

(2) Every side of any working platform or working place, being a side from which a person is liable to fall a distance of more than two metres, shall be provided with-

- (a) rails of adequate strength, one being a hand-rail at a height of at least 1.1 metres above such platform or place, and a second being a knee-rail at a height of at least six hundred millimetres above such platform or place;
- (b) toe-boards up to a sufficient height, being in no case less than one hundred and fifty millimetres, and so placed as to prevent so far as possible the fall of any person, material or tool from such platform or place.

(3) A clear passageway at least four hundred and sixty millimetres wide shall be left between one side of any working platform and any fixed construction or deposited material.

1212. Every accessible opening in any roof or floor of a building or structure, or in any working platform for a lift, shaft or stairway, or for the hoisting of materials, or for access by workmen or for any other purpose during any construction work shall, until it becomes necessary to remove any fencing in order to complete the permanent structure or enclosure, be provided with a guard-rail and toe-board constructed in accordance with sub-regulation (2) of regulation 1211 or with a covering to prevent the fall of any person, material or tool through the opening, except when access is required for any person or for the movement of any material, and then only if adequate precautions are taken for the safety of any person working in the immediate vicinity thereof.

Openings left in roofs
or floors

1213. Where any person is employed in connection with any construction work on the sloping surface of any roof structure, ground or material from or down which, taking into account the inclination of the slope, the nature of the surface or material and the state of the weather, a person is liable to fall a vertical distance of more than two metres, there shall be provided where practicable and appropriate-

Working on sloping surfaces

- (a) sufficient and suitable ladders or crawling boards which shall be secured as soon as practicable; and
- (b) a suitable working platform fitted with suitable guard-rails.

1214. Where any person has to pass over or work on any roof through which he may fall, suitable and sufficient ladders, duck ladders, crawling boards or other means for facilitating his safe passage or safe working conditions shall be provided and used.

Protection for persons on roof

1215. (1) No gangway, run or working platform shall be used for the passage of materials unless it affords a clear passageway which is adequate width for the passage of any material without the removal of any guard-rail or toe-board, and in any case is not less than seven hundred millimetres wide.

Gangways and runs

(2) No gangway or run shall be used if its slope exceeds one vertical to three horizontal.

(3) Where the slope of any gangway or run renders additional footholds necessary, and in every case where the slope exceeds one vertical to four horizontal, there shall be provided proper stepping laths which shall be-

- (a) placed at suitable intervals; and
- (b) the full width of such gangway or run, except that they may be interrupted over a width of not more than one hundred millimetres to facilitate the movement of barrows.

1216. Any gangway, staircase, working place or exit from any building from which a person is liable to fall a distance of more than two metres shall be provided with a suitable guard-rail, of adequate strength and to a height at least 1.1 metres above such gangway, staircase, working place or exit.

Guard-rails for gangways, etc.

1217. Every platform, gangway, staircase and working place shall be kept free from any unnecessary obstruction, projection or material, and from any rubbish, projecting nail or any substance likely to cause any person to slip.

Platforms, etc., to be unobstructed

1218. All demolition work and any operation incidental thereto shall be placed under the supervision of a competent person experienced in demolition operations, and such person shall have charge of such work during the whole time such work is being carried out.

Competent person to be in charge of demolition

- 1219.** Before any demolition work is commenced and also during the progress of such work-
- Precautions to be taken during demolitions
- (a) no electric cable or apparatus (other than any cable or apparatus used for the operation) which is liable to be a source of danger shall remain electrically charged;
 - (b) all practicable steps shall be taken to prevent danger to any person from the-
 - (i) risk of fire or explosion through accumulated gas or vapour; and
 - (ii) risk of flooding from water mains, sewers or culverts;
 - (c) precautions shall be taken to prevent, as far as is practicable, any accidental collapse of such demolition work or other operation which may endanger persons.
- 1220.** No floor, roof or other part of any building shall be overloaded with debris or material in such a manner as to render it unsafe.
- No over-loading of floors, etc.
- 1221.** Before any steelwork or ironwork is cut or released, precautions shall be taken, so far as is practicable, to avoid danger from any sudden twist, spring or collapse of such steelwork or ironwork.
- Removing steelwork
- 1222.** When, in any construction work, a scaffold or working place remains as part of the completed structure, so as to become an established working place, it shall be-
- When any working place becomes permanent, provisions for safety
- (a) provided with a safe means of access and egress;
 - (b) so constructed as to provide a safe working place for every person employed thereat.

PART XIII ELECTRICITYPART XIII

ELECTRICITY

- 1301.** The regulations contained in this Part shall apply to the generation, transformation, distribution and use of electrical energy for or associated with the manufacture, in an explosives factory, of explosives for sale commercially.
- Application
- 1302.** In this Part and in all other Parts subsequent thereto, unless the context otherwise requires-
- Interpretation

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"blasting cable" means any cable or conductor used to supply current from a blasting box or other device for electrical blasting;

"circuit" means an electrical circuit forming a system or branch of a system;

"circuit breaker" means a device for making and breaking an electrical circuit and fitted with some suitable means for automatically breaking the circuit under abnormal conditions;

"conductor" means an electrical conductor connected to an electrical system;

"danger" means danger to health or danger to life or limb from shock, burn or other injury to persons, or from fire attendant upon the generation, transformation, distribution or use of electrical energy;

"dead" means at or about zero electrical potential and disconnected from any live electrical system;

"earthed" means connected to the general mass of earth in such manner as will ensure at all times an immediate discharge of electrical energy without danger;

"electrical apparatus" includes electrical cables and conductors and any part of any machinery, apparatus or appliance in which conductors are used;

"electrical power" does not include electricity used in a portable safety lamp, shot-firing apparatus, signalling apparatus or a telephone;

"flexible cable" means any cable or cord which is designed to be movable while in use;

"isolator" means a device, not fitted with automatic protective means, for making and breaking an electrical circuit;

"live" means electrically charged;

"main substation" means a substation in which any system voltage exceeds medium voltage;

"metallic covering" means in relation to any electric cable or conductor any metallic covering, armouring, sheath or pipe through which any conductor passes;

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"mobile apparatus" means any electrical apparatus which is designed to be moved whilst working, and includes locomotives, cranes, bucket shovels, welding machines and similar apparatus;

"portable apparatus" means any electrical apparatus which is designed to be hand-held whilst working, and includes power drills, inspection lamps, testing equipment, welding electrode holders and similar apparatus;

"substation" means an assemblage of electrical switch-gear, including any necessary housing, for the control of electrical power, in which any system voltage does not exceed medium voltage;

"system" means an electrical system in which all the conductors and apparatus are electrically connected to a common source of electromotive force;

"voltage" means a difference of electrical potential between any two conductors, or between a conductor and earth and is classified as follows:

- (a) "extra high voltage" means a voltage normally exceeding 3,000 volts;
- (b) "high voltage" means a voltage normally exceeding 650 volts, and not exceeding 3,000 volts;
- (c) "medium voltage" means a voltage normally exceeding 250 volts, and not exceeding 650 volts;
- (d) "low voltage" means a voltage normally not exceeding 250 volts.

1303. (1) Electrical apparatus shall not be installed where electrical apparatus is not already installed, unless the manager has served on the Chief Inspector notice of the intention so to do in such form as may be specified by the Chief Inspector, and has received from the Chief Inspector written authorisation for such installation.

Notice of introduction
of electricity

(2) Nothing in this regulation shall apply-

- (a) to the installation of electrical apparatus in which the installation of such apparatus was lawful before the 1st June, 1971; or
- (b) to the installation of telephone and signalling apparatus, or blasting cables.

1304. Subject to those Regulations (which shall prevail in case of conflict), the installation of any electric cable, switch-gear transformer and electrical apparatus of any kind at any mine shall conform to the Central African Standard Safety Code for the Electrical Wiring of Premises.

Installation

1305. Where there is installed electrical apparatus operating at a voltage in excess of medium voltage, there shall be kept- Plans and diagrams to be kept

- (a) at the office, plans or distribution diagrams showing the general electrical arrangement for all such apparatus as far as is reasonably possible;
- (b) at each main substation accurate distribution diagrams showing the electrical arrangement of each main circuit immediately associated with the substation's switch-gear:

Provided that in a main substation having no more than three main circuits, adequate labelling of the switchgear shall suffice.

1306. (1) There shall be provided in relation to every electrical circuit effective means suitably placed for cutting off the supply of electricity from that circuit, as may be necessary to prevent danger and, without prejudice to the generality of the aforesaid, for cutting off the supply from any flexible cable at the apparatus by which it is connected to a fixed cable. Main switchgear for controlling the supply of electricity

(2) There shall be provided in relation to every electrical circuit effective means for cutting off the supply of electricity automatically from such circuit in the event of any fault occurring in any part of such circuit.

(3) There shall be provided such effective means of preventing the automatic making live of any electrical circuit or electrical apparatus as may be necessary to prevent danger; this shall not preclude the use of autoreclosers on overhead lines.

(4) There shall be provided in relation to every electrical motor an efficient means whereby the supply of electricity can be entirely cut off from such motor, such means being located so as to be readily available to the operator; wherever such motors are remotely controlled and there is a likelihood of damage to the control cable the means adopted shall include an isolator mounted on or adjacent to the motor.

1307. (1) No inflammable or explosive material shall be placed in dangerous proximity to any electrical apparatus. Housing of apparatus

(2) Any parts of electrical apparatus which require attention and any handle for the operation of such electrical apparatus shall be so placed that there is a safe means of access thereto.

(3) Any such handle shall be kept free of obstruction and conveniently placed for operation.

(4) Every electricity generating plant and all main substation equipment shall be adequately fenced off or enclosed and notices prohibiting unauthorised persons from entering shall be placed at all designed places of ingress; when such plant or equipment is unattended by an authorised person, all designed places of ingress shall be kept closed and locked to prevent unlawful access.

1308. (1) No electrical apparatus shall be used unless it is of sufficient power or capacity to avoid dangerous overloading, and is protected against any danger arising out of such use. Suitability of apparatus

(2) Wherever there may exist any risk of ignition, by electrical sparking, of any gas or other inflammable or explosive substance, the design, construction and method of installation of any electrical apparatus shall be approved by the Chief Inspector.

1309. (1) All electrical apparatus and every conductor shall be so selected, arranged, installed, protected, maintained and worked so as to prevent danger so far as is reasonably practicable. Protection of person and apparatus

(2) Any person doing any work which may result in damage to any electrical apparatus shall take such action as may be appropriate to protect such electrical apparatus from damage.

1310. (1) The manager shall ensure that there is in force a scheme for the systematic inspection, examination and testing of all electrical apparatus. Inspection, examination and testing of apparatus

(2) Such inspection, examination and testing shall ensure, as far as is practicable, the safety of persons.

(3) Wherever necessary, to prevent danger-

(a) electrical apparatus shall be kept clean, dry and clear of obstruction;

(b) electrical apparatus shall carry an effective means of identification.

1311. No person shall wilfully damage any electrical apparatus or without proper authority operate, interfere with, remove or render useless any electrical apparatus, but in an emergency any person may operate electrical apparatus in order to cut off the supply. No person to wilfully damage apparatus

1312. (1) All material used for the purpose of insulating any conductor shall be suitable, having regard to the degree of insulation and mechanical strength required and the conditions of temperature and moisture to which it is likely to be subjected, and to any means provided for its protection. Insulation

(2) Every conductor, forming part of any electrical system, shall be kept efficiently insulated from earth:

Provided that-

- (i) in the case of any system with polyphase supply all neutral points in that supply shall be connected to earth; and
- (ii) in the case of any electrical distribution system with single phase or direct current supply, the mid-voltage point or one pole shall be connected to earth.

(3) In relation to every electrical system, efficient means shall be provided to ensure that, as far as is practicable, wherever any dangerous defect arises in the insulation of the system, the supply of electricity to this fault is automatically cut off.

1313. (1) There shall be connected to earth, in such manner as will ensure immediate electrical discharge without danger- Earthing

- (a) every metallic covering of any cable;
- (b) every outer conductor of any concentric cable;
- (c) every metallic part of any covering or container of or mounting for any other electrical apparatus; and
- (d) every metallic handle for the operation of any electrical apparatus:

Provided that the provisions of this sub-regulation shall not apply to any lamp-holder or to any electrical apparatus having approved double-insulation.

(2) Without prejudice to the generality of sub-regulation (1), any earthing conductor installed for the purpose thereof shall have a conductivity throughout, including any joint, not less than 0.5 that of the conductor having the greatest current carrying capacity in relation to which it is provided; the equivalent copper cross section area shall, however, not be less than 2.5 square millimetres and need not exceed seventy square millimetres.

(3) Subject to the preceding provisions of this regulation and to the provisions of regulation 1315, the metallic covering of any cable may be used as an earthing conductor.

(4) No switch, fuse or circuit breaker shall be placed in any earthing conductor; this shall not preclude the use of an isolator in the neutral conductors of alternators or transformers.

(5) Where two or more earth plates are used for the purposes of this regulation, adequate precautions shall be taken to ensure that no dangerous potential exists between such earth plates.

1314. (1) The provisions of this regulation shall apply to all electric cables, other than- Cables

- (a) flexible cables for portable apparatus;
- (b) telephone and signalling apparatus;
- (c) blasting cables.

(2) Every conductor in any cable to which this regulation applies, except an earthed outer conductor of a concentric cable or a metallic covering of a cable used as an earthing conductor in accordance with the provisions of sub-regulation (3) of regulation 1313, shall be covered with insulation material.

(3) Every cable to which this regulation applies shall be protected from mechanical damage and supported at such intervals and in such manner as to prevent damage thereto or danger therefrom.

(4) Every cable to which this regulation applies and which is used for transmitting electricity at a voltage exceeding 250 volts shall be a cable protected by a metallic covering containing all the conductors forming part of that electrical system at that place:

Provided that this sub-regulation shall not apply to phase cables which are otherwise adequately protected.

(5) In the case of every cable to which this regulation applies and which is protected by a metallic covering, that covering shall be electrically continuous throughout, and where necessary, having regard to its position, protected against corrosion.

(6) Every single-core cable and every core of a twin or multicore cable of flexible cord shall have an indelible means of identification.

1315. (1) All flexible cable shall be adequately protected against mechanical damage and shall be of an approved specification. Flexible cables

(2) No single-core flexible cable shall be used for supplying portable or mobile apparatus other than trolley-wire locomotives or welding electrode holders; each conductor in a flexible cable shall be covered with insulating material and such conductor and insulating material shall be adequately protected from damage.

(3) A metallic covering provided to protect a flexible cable from damage shall not be used as the sole earthing conductor in respect of such cable or any apparatus connected thereto, unless such cable is of an approved specification.

(4) No flexible cable by which electricity is supplied at a voltage exceeding 32 volts shall be connected to any electrical apparatus except by means of a properly constructed connector.

(5) All flexible cable in use shall be examined by a competent person at least once in each week, and any cable used with portable apparatus shall be examined immediately before use by the person authorised to use the apparatus; if any such cable is found damaged or defective it shall be repaired forthwith, or taken out of service, and such cable shall not be further used until it has been effectively repaired.

1316. (1) Every blasting cable shall be readily identifiable as follows: Blasting cables

(a) twin twisted flex shall have one yellow sheath and one green sheath;

(b) a multi-core sheath shall have green and yellow markings on the sheath.

(2) Blasting cables shall not be used for any other purpose than blasting.

(3) Current from telephone, signalling or lighting circuits or from any source other than a blasting box, or other blasting device approved for blasting, shall not be used in blasting circuits.

(4) Adequate precautions shall be taken to prevent cables or conductors used in blasting circuits from coming into contact with other cables or electrical apparatus, other than an approved blasting box, or other device approved for blasting.

1317. (1) All parts of switchgear and of electrical connections shall be of sufficient mechanical strength and current carrying capacity to prevent danger.

Switchgear and
electrical joints and
connections

(2) All live parts of any switchgear and connections shall be so enclosed or otherwise protected as to prevent danger to persons accidentally coming into contact therewith, or danger from a deposit thereon of dust, water or other matter.

(3) The material insulating any conductor in any cable shall be efficiently protected at any point at which that conductor is connected to other apparatus where its insulating property might be diminished.

(4) Wherever any cable protected by a metallic covering is connected to other apparatus such metallic covering shall be securely attached to that apparatus.

(5) Every joint in any cable shall be-

- (a) made in such a manner as to be mechanically and electrically sound;
- (b) such that the resistance of the jointed conductor shall not exceed that of a similar continuous and unjointed conductor;
- (c) such that the insulation thereof is not less effective than the insulation of the cable core and shall be protected against moisture.

1318. The following notices shall be exhibited at suitable places within electrical generating stations, main substations and elsewhere as may be necessary to minimise danger:

Notices

- (a) a notice prohibiting unauthorised persons from operating or interfering with installed electrical apparatus;
- (b) a notice containing directions upon the procedure in case of fire; and
- (c) a notice containing directions for the treatment of persons suffering from electric shock.

1319. (1) Any person doing any work with or on any electrical apparatus, which may make such apparatus a source of danger to persons, shall take adequate precautions to ensure the safety of such persons.

Precautions and
offences

(2) Any person neglecting to maintain or inspect or carry out work on electrical apparatus as instructed by a competent and more senior official shall be guilty of an offence.

(3) No person shall be instructed to carry out any duty on any electrical apparatus, for which technical knowledge and experience are necessary to avoid danger, except under such a degree of supervision as may be appropriate having regard to the nature of the work and the knowledge and experience of the person concerned.

(4) No person shall commence any work upon any conductor, or in proximity to any exposed conductor, being in either case a conductor in a circuit in which the voltage exceeds 32 volts A.C. or 50 volts D.C., until he has ensured that such conductor has been made dead, and has taken steps, by earthing or other adequate means, to ensure that it will remain dead until he is satisfied that it is safe to restore the current:

Provided that the provisions of this sub-regulation shall not apply to-

- (i) the cleaning of commutators and slip-rings in a circuit in which the voltage does not exceed 650 volts;
- (ii) welding equipment of an approved type;
- (iii) the replacement of incandescent lamps or fluorescent tubes in light fittings or elsewhere, in conditions such that this replacement may be effected without danger;
- (iv) any work on electrical apparatus which due to the location of such apparatus cannot be made dead, in which case, whilst this work is being performed, at least two competent persons shall be present throughout the operation;
- (v) the live testing of electrical apparatus, in which case suitable equipment shall be used.

(5) No person, whose duties include the operation of any mobile or portable apparatus supplied with electricity by means of a flexible cable, shall at any time either leave that apparatus while it is working, or leave the working place, except for the purpose of cutting off the supply of electricity to the cable, without ensuring that the cable has been made dead, unless his instructions expressly authorise him to do so.

(6) A person, whose duties include the operation during his shift of any electrical apparatus supplied with electricity by means of a flexible cable, shall ensure, before using that cable during that shift, that so much of it as is accessible is examined, and that any further parts which subsequently become accessible are also then examined, and he shall not use any cable which is found to be damaged or defective.

1320. Whenever any electrical apparatus is in use there shall be a competent person to operate such apparatus available or readily available on call.

Competent person to be available

PART XIV PETROL AND FUEL OIL STORAGEPART XIV

PETROL AND FUEL OIL STORAGE

1401. The regulations contained in this Part shall apply to the use and storage of petrol and fuel oil in any factory or part thereof used for or associated with the manufacture of explosives for sale commercially.

Application

1402. In this Part and all other Parts subsequent thereto, unless the context otherwise requires-

Interpretation

"mobile container" means any container mounted on wheels, tracks or skids, whether self-propelled or otherwise, used for the conveyance of fuel oil;

"portable container" means any container which when filled with fuel can be easily carried.

1403. No person shall replenish any self-propelled vehicle with petrol or fuel oil except at a filling station approved by the manager:

Vehicles to be replenished at filling stations

Provided that such replenishing may be done elsewhere from a suitably equipped mobile container approved in writing by the Chief Inspector or in an emergency a small quantity of petrol or fuel oil sufficient to enable the vehicle to be driven to a filling station may be taken to it in a portable container.

1404. (1) No petrol or fuel oil shall be stored in bulk in quantities in excess of two thousand litres in any tank above or below ground except with the prior written approval of the Chief Inspector and the maximum capacity he will admit shall not exceed thirteen thousand litres.

Quantities of fuel which may be stored

(2) No petrol shall be stored in drums in excess of a total of two hundred litres in any building or other place except with the prior written approval of the Chief Inspector.

1405. The manager shall ensure that every filling station-

Fuel storage tanks

- (a) is constructed of non-flammable material;
- (b) is provided with not less than two means of egress;
- (c) is ventilated by a flow of air sufficient to dilute and render harmless all gases emitted during filling operations;
- (d) has a concrete floor;
- (e) is kept provided with suitable equipment located in suitable positions for extinguishing fires;
- (f) between the hours of sunset and sunrise be equipped with suitable electric lighting for use when persons work therein and the bulbs and tubes used for such lighting shall be adequately protected.

1406. Every storage tank provided at any filling station for the purpose of containing petrol or fuel oil shall be- Suitable storage tanks

- (a) substantially constructed and not liable to leak;
- (b) equipped with a vent pipe not exceeding fifty millimetres in diameter suitably protected by two non-corrodable wire gauze diaphragms fixed to each tank and each such vent pipe shall be carried to the open air at least three metres above ground level but not within three metres of any door, window, chimney or exhaust pipe;
- (c) where such container or tank is placed below the surface of the ground, and is under a building, covered with reinforced concrete to a thickness of not less than one hundred and sixty millimetres and be wholly below the level of the lowest floor of any such building and filled only from outside such building through oil tight pipes fitted with screwed caps or valves;
- (d) electrically earthed, the resistance not to exceed five ohms.

1407. (1) Every fixed metal pipe in any filling station or associated with any storage tank shall be so placed that they will not be liable to be damaged. Placing of metal pipe

(2) Every pipe used for the purpose of refuelling shall be electrically earthed, the resistance not to exceed five ohms.

1408. No person shall take any petrol or fuel oil from any storage tank or container at any filling station or elsewhere while any engine is running at any such place. Conditions for taking petrol or fuel

1409. Every container used for transporting petrol or fuel oil shall be of suitable construction, leakproof and provided with positive locking devices. Suitable containers

1410. (1) During all petrol and fuel oil transfer operations the mobile container shall be effectively earthed. Mobile containers to be earthed

(2) Any flexible hose used for transferring petrol or fuel oil shall be of an anti-static type and such hose shall be suitably inscribed to this effect.

1411. (1) Where any petrol or fuel oil is spilled in any place it shall be removed forthwith and if in the process of removing such petrol or fuel oil any material is contaminated such material shall be placed where the material can be safely destroyed. Removal of contaminated material

(2) Every person spilling any petrol or fuel oil on any engine or vehicle shall forthwith wipe it up or cause it to be wiped up.

The Laws of Zambia

1412. (1) No person shall smoke or use any naked light in any filling station or at any other place where petrol and fuel oil is stored and notices shall be posted to this effect at all such places.

No smoking or naked lights

(2) Notwithstanding the requirement of sub-regulation (1), no person shall smoke at any other place where any engine or vehicle is being replenished with petrol or fuel oil.

1413. The manager shall ensure that each filling station or other place where petrol or fuel oil is stored is in the charge of a competent person.

Competent person to be in charge of storage and filling stations

PART XV TRANSPORT AND TRAMMING BY VEHICLES

TRANSPORT AND TRAMMING BY VEHICLES

1501. The regulations contained in this Part shall apply to the use, maintenance and inspection of vehicles used for transporting or tramping explosives or any other materials used in or associated with the manufacture of explosives for sale commercially.

Application

1502. In this Part and in all other Parts subsequent thereto, unless the context otherwise requires-

Interpretation

"diesel engine" means an internal combustion engine powered by fuel oil;

"portable fire extinguisher" means an efficient and suitable fire extinguisher of such size and weight that it can be readily handled by an individual;

"vehicle" means any vehicle having wheels, tracks or skids self-propelled or otherwise which does not run on a track or rails.

1503. Every self-propelled vehicle shall be provided with-

Specification for
vehicles

- (a) (i) an efficient braking system having two means of operation one of which can be applied by direct mechanical action; or
- (ii) two efficient braking systems, each having a separate means of operation, and so constructed that the failure on the part of the one shall not affect the effectiveness of the other; the same brake shoes operating within or upon the braking surface of the vehicle may be used when operating either of the two braking systems;
- (b) means for giving adequate audible warnings;
- (c) a safe driving position for the driver;
- (d) adequate lighting, which shall be used when such vehicle is operating between the hours of sunset and sunrise as prescribed hereunder:
 - (i) in the case of a vehicle which travels regularly in a forward direction, two white headlights affixed to the front capable of illuminating the way ahead for a distance of at least thirty metres and a suitable reflector or red light affixed to the rear in such manner as to be visible directly from the rear; or
 - (ii) in the case of a vehicle which may travel regularly in either direction, two white headlights affixed to the front and two to the rear of the unit, each set capable of illuminating the way ahead for at least thirty metres, and a suitable reflector or red light affixed to the front and the rear in such manner as to be clearly visible:

Provided that any self-propelled vehicle operated by compressed air shall be exempt from the provisions of paragraphs (a), (b) and (d).

1504. It shall be the duty of the driver in charge of any self-propelled vehicle to ensure that-

Driver to ensure that
vehicle has necessary
safety requirements

- (a) the brakes are in good working order;
- (b) the warning signals and lights are in good working order, and, in the event of them not being in good working order or not being affixed, he shall not move such vehicle except to the nearest place where repairs can be effected; and
- (c) such vehicle is not moved when the brakes are not in good working order:

Provided that where only one of the braking systems specified in regulation 1503 is out of order, the driver may move such vehicle to the nearest place where repairs can be effected to the defective system, but where both such systems are defective, then such vehicle may only be towed to the workshop by another vehicle connected to the defective unit by means of a rigid towing bar.

1505. (1) Every self-propelled vehicle excluding private motor cars shall be equipped with a portable fire extinguisher which shall be readily accessible to the driver when the vehicle is in use.

Fire extinguishers

The Laws of Zambia

(2) It shall be the duty of the driver of any self-propelled vehicle to ensure that the portable fire extinguisher required in accordance with sub-regulation (1) is affixed to the vehicle and if not so affixed he shall forthwith notify his immediate superior.

1506. Where the speed of any self-propelled vehicle may be limited for any reason an operative speed indicator shall be provided and maintained unless the speed of such vehicle is governed mechanically in such manner that the limited speed cannot be exceeded. Speed indicator

1507. The driver of any self-propelled vehicle shall not leave his vehicle unattended other than at a place where it is normally kept when not in use unless he has taken all reasonable precautions to ensure that it cannot inadvertently be set in motion. Vehicle not to be left unattended

1508. (1) The manager shall take all reasonable precautions to ensure that every vehicle in use has a reasonably unobstructed view in the direction of travel or he shall make arrangements to ensure that when this is not so, especially when such vehicle reverses, that the driver is guided by suitable signals given by a person authorised to give such signals. Drivers to have unobstructed view

(2) No driver shall move his vehicle when his view is obstructed unless or until he receives a suitable signal as is required to be given in accordance with sub-regulation (1).

(3) No person, being a person authorised to give signals in accordance with sub-regulation (1), shall give any signal until he has satisfied himself that it is safe for the vehicle to be signalled to move.

1509. Every vehicle and each of its accessories shall so far as is practicable be of non-flammable materials so as to minimise the risk of fire. Vehicle to be of non-flammable material

1510. (1) The manager shall ensure that there is in force a scheme for the systematic inspection, examination and testing of all self-propelled vehicles in use. Scheme for inspection of vehicles

(2) The self-propelled vehicles required to be inspected in accordance with sub-regulation (1) are-

- (a) those owned by the explosives factory;
- (b) those not owned by the explosives factory but operated by the explosives factory; and
- (c) those not owned by the explosives factory but operated by a contractor:

Provided that this regulation shall not apply to any vehicle owned and operated by any railway authority.

(3) The inspections, examinations and tests referred to in this regulation shall be such as to ensure that the external parts of the engine or motor, the condition and operation of all controls, safety devices and signal arrangements are in all respects in proper working order.

1511. Every self-propelled vehicle which is required to be examined in accordance with regulation 1510 shall be so examined in a suitable workshop which shall- Workshops

- (a) be constructed of non-flammable material;
- (b) be provided with not less than two means of egress;
- (c) be ventilated by a current of air sufficient to dilute and render harmless the exhaust gases emitted while the engine is being run therein;
- (d) have a concrete floor;
- (e) be equipped with suitable means of inspecting the vehicle from below;
- (f) be kept provided with suitable equipment located in suitable positions for extinguishing fires;
- (g) between the hours of sunset and sunrise on the surface be equipped with suitable electric lighting for use when persons are working therein and the bulbs or tubes used shall be adequately protected.

1512. The manager shall ensure that every self-propelled diesel unit shall be so constructed and maintained that- Control of gases

- (a) air entering the engine is cleaned;
- (b) the emission of flames or sparks is prevented.

1513. No person shall-

Offences in connection with vehicles

- (a) wilfully damage or interfere with or order any other person to damage or interfere with any vehicle or part thereof; or
- (b) neglect to inspect or maintain any vehicle which he is required to inspect or maintain under the provisions of these Regulations; or
- (c) get on or off any vehicle whilst it is in motion, except those persons directly engaged in shunting operations on the surface; or
- (d) ride in or on any vehicle unless authorised to do so and then only in such position so as not to endanger himself or any other person; or
- (e) drive or operate any vehicle unless he is competent to do so and has been so authorised in writing by his shiftboss, foreman or more senior official; or
- (f) negligently or wilfully drive or operate or cause to be driven or operated any vehicle in such manner as to endanger the safety or health of any person.

1514. No person shall ride in or on any vehicle unless suitable and adequate accommodation has been provided for this purpose. No riding unless accommodation

PART XVI HEALTH, SAFETY AND WELFAREPART XVI

HEALTH, SAFETY AND WELFARE

- 1601.** The regulations contained in this Part shall apply to any explosives factory. Application
- 1602.** The manager shall ensure that any effluent water discharged from any treatment or other process is so discharged as to comply with the provisions of the Water Act. Effluent water.
Cap. 198
- 1603.** All inflammable material shall be stored in a suitable manner and at a safe distance from any explosives magazine, box or danger area. Flammable materials
- 1604.** Any welding or other operation which might create a fire hazard shall not be carried out anywhere unless adequate precautions have first been taken. Welding operations
- 1605.** The manager shall ensure that there is provided sufficient and suitable latrine accommodation and all such latrine accommodation shall be well ventilated, well lit and kept in a clean condition. Latrine accommodation
- 1606.** (1) The manager shall render monthly labour returns to the Chief Inspector on or before the fifteenth day of the month following that to which they relate. Labour returns
- (2) Such returns shall be submitted on the Forms set out in the Third Schedule.
- (3) (a) Separate returns shall be rendered in respect of-
- (i) all persons directly employed;
 - (ii) all persons (if any) employed by contractors who are under contract.
- (b) On or before the third day of every month, such contractors shall submit to the manager a return providing all the information required for the completion of Form 23 in respect of persons employed by them during the preceding month in terms of their contract.
- (c) A list of such contractors by name shall accompany each monthly return submitted in pursuance of paragraph (a) (ii) or be written on the reverse side of the return.

1607. (1) There shall be provided suitable change house accommodation proportionate in size to the number of persons employed in the danger areas: Change house accommodation

Provided that, when at any time there is insufficient accommodation for the number of persons employed, the Chief Inspector may, upon written application, after having duly considered the circumstances, grant an exemption from the provisions of this sub-regulation specifying any conditions he may wish to impose.

(2) The change house accommodation shall have-

- (a) sufficient lockers, cupboards or other suitable accommodation capable of being locked so as to enable every person employed to store his clothes separately;
- (b) adequate facilities for bathing;
- (c) adequate facilities for washing and drying clothes; and
- (d) suitable latrine accommodation.

(3) Every person in any danger area working with explosives or any associated operation which brings him into contact with explosives shall use the facilities provided for bathing and changing.

(4) The Chief Inspector may require that change house accommodation be provided for any persons employed if, in his opinion, this is warranted by the nature of their work.

(5) The change house accommodation provided for danger areas shall be situated conveniently to such areas, except that, when this is not convenient or possible, persons who are required to use such accommodation shall be provided with transport to reach such accommodation.

1608. (1) The protective clothing provided by the manager in accordance with regulation 287 shall be the personal responsibility of the person to whom such clothing is issued. Responsibility for protective clothing

(2) The person to whom the clothing is issued shall ensure that before entering any danger area such clothing is clean and, if it is not, then he shall not enter until such time as he has exchanged such dirty clothing.

(3) The manager shall ensure that spare clean clothing is made available to any person requiring to exchange clothing in accordance with sub-regulation (2).

1609. (1) The protective equipment provided by the manager in accordance with regulation 287 shall be the personal responsibility of the person to whom such equipment is issued. Responsibility for protective equipment

(2) Every such item of equipment shall only be used for the purpose for which it is provided.

1610. (1) Persons working in any danger area shall only be permitted to take into such area a handkerchief and papers with notes or instructions excepting where such persons are checkers of stock or supervisors a pen or pencil, notebook and rubber. Permitted articles in danger areas

(2) No person shall take into a danger area any other loose article.

1611. (1) Save as is provided in sub-regulation (2), no person shall employ in any danger area a youth under the apparent age of eighteen years. Employment of persons

(2) The provisions of sub-regulation (1) shall not apply to the employment of any male for the purposes of apprenticeship or other systematic vocational training provided under adequate supervision by competent persons.

(3) The manager shall ensure that a register is kept in which the following entries shall be made and retained therein from the date of engagement up to twelve months after the date on which employment ceases:

- (a) the name of every person employed at the explosives factory together with some positive means of identification;
- (b) the dates of engagement and termination of employment of each such person;
- (c) in the case of the death of any such person, the date, place and (as far as can be ascertained) the cause of death;
- (d) in the case of each person who is employed in a danger area and who is less than twenty years old-
 - (i) his date of birth, duly certified wherever possible; and
 - (ii) the date on which he was employed in the danger area in the undertaking for the first time.

The Laws of Zambia

FIRST SCHEDULE

THE EXPLOSIVES ACT

(Section 2)

THE EXPLOSIVES REGULATIONS

(Regulations 102 and 837)

CLASSES OF EXPLOSIVES

Explosives shall for the purpose of these Regulations be divided into the following classes:

Class 1-Gunpowder

Class 2-Blasting Agents

Class 3-Nitro-compounds

Class 4-Chlorate Mixtures

Class 5-Fulminates

Class 6-Detonators

The Laws of Zambia

Class 7-Blasting Initiators

In accordance with section *two* of the Explosives Act any explosive included in the list approved by the Minister and published in the *Gazette* is an "authorised explosive". The current list is in the Fifth Schedule. Explosives not included in the current list shall be approved prior to inclusion in such list.

New explosives will be classified, in accordance with the definitions set out hereunder:

- Class 1. The term gunpowder includes blasting powder and means exclusively gunpowder ordinarily so called, consisting of an intimate mixture of saltpetre (potassium nitrate), sulphur and charcoal, such saltpetre not containing as an impurity perchlorate of potash in greater quantity than one per centum.
- Class 2. Blasting agent means any nitrate mixture which, when used for blasting purposes, cannot be normally detonated without the use of a nitro-compound primer or booster.
- Class 3. Nitro-compound means any chemical compound or mechanically mixed preparation that consists wholly or partly of nitro-glycerine, or of some other liquid nitro-compound, which is used for blasting purposes and shall include any other compound or mixture used for such purpose being of a similar sensitivity.
- Class 4. The term chlorate mixture means any explosive containing a chlorate.
- Class 5. Fulminate means any chemical compound or mechanical mixture that by reason of its great susceptibility to detonation is suitable for employment in any appliance for initiating detonation.
- Class 6. Detonator means a device enclosing a sensitive explosive and prepared so as to be used for initiating the detonation of less sensitive explosives and shall include any other explosive device of similar sensitivity to the standard plain detonator.
- Class 7. Blasting initiator means any fuse or device used in the ignition of a plain detonator.

SECOND SCHEDULE

THE EXPLOSIVES REGULATIONS

(Regulations 205, 216, 230 and 524)

SAFETY DISTANCES FROM MAGAZINES (IN METRES)

The Laws of Zambia

<i>Quantity (kg)</i>	<i>Cases (of 25 kg) (a)</i>	<i>To and between To another Magazine (b)</i>	<i>Danger Buildings (c)</i>	<i>To Public Places (d)</i>	<i>To Inhabited Buildings</i>
100	4	11	21	30	31
200	8	14	27	30	50
300	12	16	31	34	67
400	16	18	36	41	83
500	20	19	41	48	97
600	24	20	44	54	111
700	28	21	48	60	122
800	32	22	51	65	133
900	36	23	53	70	142
1 000	40	24	56	75	150
2 000	80	29	88	116	230
3 000	120	34	110	142	285
4 000	160	39	124	164	325
5 000	200	42	135	182	361
6 000	240	44	145	188	385
7 000	280	47	154	212	417
8 000	320	49	162	221	437
9 000	360	50	169	229	456
10 000	400	51	175	235	472
20 000	800	62	226	302	598
30 000	1 200	72	256	347	693
40 000	1 600	82	282	380	760
50 000	2 000	88	304	410	820
60 000	2 400	95	324	438	870
70 000	2 800	100	342	460	914
80 000	3 200	104	358	480	954
90 000	3 600	108	372	498	985
100 000	4 000	111	386	516	1016
110 000	4 400	112	402	538	1 054
120 000	4 800	114	416	556	1 078
130 000	5 200	117	430	567	1 108
140 000	5 600	119	443	582	1 138
150 000	6 000	122	456	596	1 166
160 000	6 400	126	468	609	1 193
170 000	6 800	128	481	622	1 219
180 000	7 200	130	491	635	1 245
190 000	7 600	132	500	646	1 267
200 000	8 000	134	509	656	1 292
210 000	8 400	136	516	665	1 312
220 000	8 800	139	522	672	1 330
230 000	9 200	142	526	682	1 356
240 000	9 600	146	530	690	1 377
250 000	10 000	148	533	694	1 398

(a) Distance between a magazine and any other magazine.

(b) Distance between a magazine and a danger building and distance between a danger building and another danger building.

(c) Distance between a magazine and any railway, airport, canal, dock, jetty, market place, public recreation ground, public highway or private road.

(d) Distance between a magazine and any dwelling-house, shop, government or public office, church, school, hospital, theatre, factory, petrol or diesel storage tank, or any building or works used for the storage of flammable material.

The distance between two magazines or a magazine and a danger building shall be the shortest distance between the nearest walls of such building.

THIRD SCHEDULE

The Laws of Zambia

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 605 (1))

APPLICATION FOR A PERMIT TO PURCHASE, ACQUIRE AND POSSESS EXPLOSIVES

Chief Inspector of Mines
P.O. Box 1006
Kitwe

Please issue a permit to purchase, acquire and possess the following explosives:

SUPPLIER:
TITLE OF HOLDER:
PURCHASER:
ADDRESS:

			FOR OFFICE USE ONLY
DESCRIPTION	QUANTITY	MAGAZINE CAPACITY	MAGAZINE BOX NOS
Nitro-compound (cases)			
Cordtext (cases)			
Blasting Agents (cases/bags)			
Detonators and Capped Fuses (No.)			
Safety Fuse (cases)			
Igniter Cord (cases)			
Persons who will use the explosives:			Issued by
NAME	BLASTING LICENCE NO.		
			DATE STAMP

The Laws of Zambia

Intended use of explosives

at

Authorised Vehicle No. MVA

I undertake to return the completed triplicate copy of any permit issued against this application upon receipt of the explosives, and understand that no further permit will be issued until the triplicate has been received by the Mines Safety Department.

Date

To be completed in BLOCK CAPITALS

.....

Signature of Holder/Deputy

.....

Name

Notes: (1) Where more than one permit is required against this application please indicate overleaf together with any other special requirements.

Notes: (2) Where applicant proposes to transport the explosives in any vehicle other than an authorised vehicle please give details of the vehicle.

Explosives File.

REPUBLIC OF ZAMBIA
THE EXPLOSIVES REGULATIONS

(Regulation 605 (3))

PERMIT TO PURCHASE, ACQUIRE AND POSSESS EXPLOSIVES

SUPPLIER:

PERMISSION is hereby granted to
of

(title of holder)

to purchase, acquire and possess the following explosives:

DESCRIPTION	QUANTITY	MAGAZINE CAPACITY	MAGAZINE BOX NOS
Nitro-compounds (cases)			
Cordtex (cases)			
Blasting Agents (bags/cases)			
Detonators and Capped Fuses (cases)			
Safety Fuse (cases)			
Igniter Cord (cases)			

Intended use of explosives

at

Authorised Vehicle No. MVA

Other Conditions

.....
Inspector of Explosives

DEPARTMENTAL STAMP

The Chief Inspector of Mines
Mines Safety Department
P.O. Box 1006
Kitwe

The explosives purchased on this permit were stored in Magazine/Box

No. on, 19.....

.....
Holder.....
*Name, block capitals***Original:** Supplier**Duplicate:** Purchaser**Triplicate:** Explosives File**Quadruplicate:** Permit Register

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 202 (1))

LICENCE TO MANUFACTURE EXPLOSIVES IN A FACTORY

(Not transferable)

OWNER:

LICENCE is hereby granted to the Manager.....to manufacture explosives of the classes set out herein and subject to such special conditions as are set out hereunder:

CLASSES OF EXPLOSIVES:

PREMISES AT WHICH EXPLOSIVES ARE TO BE MANUFACTURED:

SPECIAL CONDITIONS:

FEE PAID 1000 fee units

This licence is renewable annually on the first day of January.

.....
Chief Inspector of Explosives

DEPARTMENTAL STAMP

Original: Holder

Duplicate: Displayed behind glass at premises

Triplicate: Explosives File

Quadruplicate: Magazine Register

(As amended by Act No. 13 of 1994)

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 202 (2))

LICENCE TO MANUFACTURE BLASTING AGENTS

(Not transferable)

OWNER:

LICENCE is hereby granted to (holder) to manufacture blasting agents of the classes set out herein and subject to such special conditions as are set out hereunder, such blasting agents not being for sale commercially:

CLASSES OF BLASTING AGENTS:

SITE AT WHICH EXPLOSIVES ARE TO BE MANUFACTURED:

SPECIAL CONDITIONS:

FEE PAID 100 fee units

This licence is renewable annually on the first day of January.

.....
Chief Inspector of Explosives

DEPARTMENTAL STAMP

Original: Holder

Duplicate: Displayed behind glass at site

Triplicate: Explosives File

Quadruplicate: Magazine Register

(As amended by Act No. 13 of 1994)

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 339)

AUTHORISATION OF A MOTOR VEHICLE FOR THE TRANSPORTATION OF EXPLOSIVES

REGISTERED OWNER OF VEHICLE:

AUTHORITY is hereby granted to the registered owner to use the vehicle hereinafter described for the purpose of transporting explosives:

DESCRIPTION OF VEHICLE:

MOTOR VEHICLE REGISTRATION NO.

MAXIMUM QUANTITY OF EXPLOSIVES
PERMITTED TO BE CARRIED:

DETONATORS
NITRO-COMPOUND (cases)
BLASTING AGENTS
(cases/bags)

SPECIAL CONDITIONS:

.....
Chief Inspector of Explosives

DEPARTMENTAL STAMP

FEE PAID 100 fee units

NOTE: This authorisation does not exempt the owner from satisfying the requirements of the Roads and Road Traffic Act (Cap. 464) or the insurer.

Failure to maintain the above vehicle in accordance with the requirements of the Explosives Regulations may result in the suspension or cancellation of this authorisation.

The duplicate of this authorisation shall be carried in the vehicle to which it refers at all times.

Original: Owner

Duplicate: To be carried in vehicle

Triplicate: Explosives File

Quadruplicate: Magazine Register

(As amended by Act No. 13 of 1994)

FORM 6

REPUBLIC OF ZAMBIA
THE EXPLOSIVES REGULATIONS
(Regulation 804 (4))

B.L.No.....
Type AMO/OP/SO/WSO
Receipt No.
Issued by
Date
FOR OFFICE USE ONLY

APPLICATION FOR A BLASTING LICENCE

TYPE of licence required

- * ALL MINING OPERATIONS
- * OPEN PIT ONLY
- * SURFACE ONLY
- * WELL-SINKING ONLY

Name of Applicant:

Apparent Age:

years

National Registration No.

.....
Signature of Applicant

TRAINING

Course of Training in Blasting Operations:

Shifts

EXPERIENCE

Assistant with Primary and Secondary Blasting Operations

Shifts

General Mining Operations

Shifts

OTHER RELEVANT INFORMATION:

Professional Qualifications:

Foreign Blasting Licences held
(to be produced at examination)

Mining Experience gained outside the Republic

STATEMENT OF EMPLOYER:

To the best of my knowledge and belief, the information given above is correct and the applicant is a responsible person competent to carry out blasting operations in accordance with the Explosives Regulations.

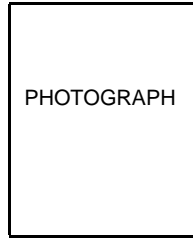
Date

.....
Holder/Deputy

* Delete whichever is not applicable

FORM 7

REPUBLIC OF ZAMBIA
THE EXPLOSIVES REGULATIONS
(Regulation 804 (1) and (6))
BLASTING LICENCE
(Not transferable)



No.

This is to certify that-

.....
(Surname BLOCK CAPITALS)
.....
.....

(Other names)

is licensed to conduct blasting operations
of the following category:

.....
Signature of Inspector of Mines
.....

Signature
of Licensee

National Registration

Number of Licensee/...../.....

Issued at.....

Date of Issue

LICENCE FEE 30 fee units

Right thumb-
print of licensee
if illiterate



(As amended by Act No. 13 of 1994)

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 804 (7))

BLASTING LICENCE EXAMINATION FEE

Received from
of

Blasting Licence No. issued/not issued*.
LICENCE FEE 20 fee units

.....
Inspector of Mines

DEPARTMENTAL STAMP

If applicant is not successful state reasons below:

*Delete whichever is not applicable

Original: To applicant

Duplicate: To be retained in this book

(As amended by Act No. 13 of 1994)

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulations 305 (1) and 532 (1))

LICENCE FOR AN EXPLOSIVES MAGAZINE

(Not transferable)

OWNER:

LICENCE is hereby granted to (holder) to use the building hereinafter described for the storage of explosives in such quantities and subject to such special conditions as are set out below:

DESCRIPTION:

LOCATION:

MAXIMUM QUANTITY OF EXPLOSIVES PERMITTED
TO BE STORED:

DETONATORS
NITRO-COMPOUND
(cases) or
BLASTING AGENTS
(cases/bags)

SPECIAL CONDITIONS:

FEE PAID 500 fee units

.....
Chief Inspector of Mines

DEPARTMENTAL STAMP

Original: Holder

Duplicate: Displayed behind glass in magazine

Triplicate: Explosives File

Quadruplicate: Magazine Register

(As amended by Act No. 13 of 1994)

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 539 (1))

AUTHORISATION FOR AN EXPLOSIVES MAGAZINE

(Not transferable)

OWNER:

AUTHORISATION is hereby granted to (holder) to use the static or portable magazine hereinafter described for the storage of explosives in such quantities and subject to such special conditions as are set out below:

DESCRIPTION:

LOCATION:

MAXIMUM QUANTITY OF EXPLOSIVES PERMITTED
TO BE STORED:

DETONATORS
NITRO-COMPOUND
(cases) or
BLASTING AGENTS
(cases/bags)

SPECIAL CONDITIONS:

FEE PAID 200 fee units

.....
Chief Inspector of Mines

DEPARTMENTAL STAMP

Original: Holder

Duplicate: Displayed behind glass in magazine

Triplicate: Explosives File

Quadruplicate: Magazine Register

(As amended by Act No. 13 of 1994)

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 542 (1))

SANCTION FOR AN UNDERGROUND EXPLOSIVES MAGAZINE

(Not transferable)

OWNER:

SANCTION is hereby granted to (holder) to use the underground magazine hereinafter described for the storage of explosives in such quantities and subject to such special conditions as are set out below:

DESCRIPTION:

LOCATION:

MAXIMUM QUANTITY OF EXPLOSIVES PERMITTED
TO BE STORED:

DETONATORS
NITRO-COMPOUND
(cases) or
BLASTING AGENTS
(cases/bags)

SPECIAL CONDITIONS:

FEE PAID 50 fee units

.....
Chief Inspector of Mines

DEPARTMENTAL STAMP

Original: Holder

Duplicate: Displayed behind glass in magazine

Triplicate: Explosives File

Quadruplicate: Magazine Register

(As amended by Act No. 13 of 1994)

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 540 (1))

AUTHORISATION FOR AN EXPLOSIVES STORAGE BOX

(Not transferable)

OWNER:

AUTHORISATION is hereby granted to (holder) to store and convey explosives in the box hereinafter described in such quantities and subject to such special conditions as are set out below:

DESCRIPTION:

LOCATION:

MAXIMUM QUANTITY OF EXPLOSIVES PERMITTED
TO BE STORED:

500 DETONATORS
2 cases NITRO-COMPOUND
or
2 cases/bags BLASTING
AGENTS

SPECIAL CONDITIONS:

FEE PAID 50 fee units

.....
Chief Inspector of Mines

DEPARTMENTAL STAMP

Original: Holder

Duplicate: Displayed behind glass in box

Triplicate: Explosives File

Quadruplicate: Magazine Register

(As amended by Act No. 13 of 1994)

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 214 (2))

AUTHORISATION FOR A DANGER BUILDING

(Not transferable)

OWNER:

AUTHORISATION is hereby granted to the Manager to use the building hereinafter described for the manufacture of explosives subject to the conditions set out below:

INDIVIDUAL NAME OF BUILDING:

DANGER BUILDING NO.:

MAXIMUM QUANTITY OF EXPLOSIVES PERMITTED
IN BUILDING AT ANY ONE TIME (In kg.):

MAXIMUM NUMBER OF PERSONS PERMITTED IN
BUILDING AT ANY ONE TIME:

AUTHORISED OPERATIONS:

FEE PAID 100 fee units

.....
Chief Inspector of Mines

DEPARTMENTAL STAMP

Original: Manager

Duplicate: Displayed behind glass in danger building

Triplicate: Explosives File

Quadruplicate: Magazine Register

(As amended by Act No. 13 of 1994)

REPUBLIC OF ZAMBIA

CERTIFICATE OF IDENTITY APPOINTMENT

This is to certify that:

duly appointed in accordance with section 83 of the Mines and Minerals Act (Cap. 213) and section 5 of the Explosives Act is:

and

Signature

Chief Inspector of Mines/Explosives

Signature

Bearer

PHOTOGRAPH

(Reverse)

In accordance with regulation 301 of the Mining Regulations (Cap. 213) and section 5 of the Explosives Act this certificate empowers the bearer to enter, examine and inspect, by day or night, without let or hindrance, any mine or part thereof and any place where explosives are used, manufactured, transported, handled or stored within the Republic.

Further, as an officer appointed under section 12 of the Explosives Act, he may, without warrant, stop, search and detain any vehicle or person suspected of unlawfully conveying explosives and may enter, without restraint, using force if necessary, any place or premises where explosives may be unlawfully manufactured or kept.

REPUBLIC OF ZAMBIA

CERTIFICATE OF IDENTITY APPOINTMENT

This is to certify that:

duly appointed in accordance with section 83 of the Mines and Minerals Act (Cap. 213)
and section 4 of the Explosives
Act is:

and

Signature

Chief Inspector of Mines/Explosives

Signature

Bearer

PHOTOGRAPH

(Reverse)

In accordance with regulation 301 of the Mining Regulations (Cap. 213) and section 5 of the Explosives Act this certificate empowers the bearer to enter, examine and inspect, by day or night, without let or hindrance, any mine or part thereof and any place where explosives are manufactured, for the purpose of inspecting any machinery or part thereof used for or associated with the manufacture of explosives.

REPUBLIC OF ZAMBIA

CERTIFICATE OF IDENTITY APPOINTMENT

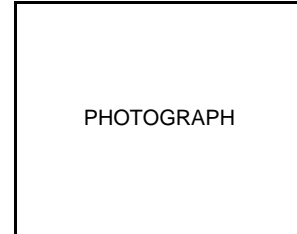
This is to certify that:

duly appointed in accordance with section 83 of the Mines and Minerals Act (Cap. 213)
and section 4 of the Explosives
Act is:

and

Signature
Chief Inspector of Mines/Explosives

Signature
Bearer



(Reverse)

In accordance with section 83 of the Mines and Minerals Act (Cap. 213) this certificate empowers the bearer to enter, at all reasonable times, any mine or part thereof for the purpose of carrying out the duties assigned to him, as an authorised officer, by the said Act and further in accordance with section 4 of the Explosives Act the bearer may enter, at all reasonable times, any place where explosives are used, manufactured, transported, handled or stored for the purpose of carrying out any duty as may be, from time to time, assigned to him by the Chief Inspector.

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 111 (1))

ADMISSION OF CONTRAVENTION

I,, of,
admit that I have committed a contravention of Explosives Regulation(s) in that

This day of, 19.....,
at

Signed

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 111 (2))

AUTHORISATION TO HOLDER

I,, No,
having admitted contravening Explosives Regulation
hereby authorise the Manager of or his
lawful deputy to deduct the sum of kwacha (K.....)
from the wages due to me for the month of, 19.....,
being the amount of a fine imposed by

Inspector/Official

This day of, 19.....,
at

Signed
(Contravener)

Duplicate RECEIVED on behalf of the Government of the Republic of Zambia the sum

copy only } of kwacha being the amount of the above fine.

..... Date
Inspector/Official

Original: Manager

Duplicate: Offender, upon payment of fine

Triplicate: Retained in book

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulations 130 (5) and 284 (5))

ACCIDENT REPORT

Name of Factory or Works

The Chief Inspector
P.O. Box 1006
Kitwe

Number of Accident (1)

*Fatal/Non-fatal

NOTICE is hereby given of an accident, the details of which are:

Name of injured person Factory/Works No.

Nature of employment

Date of accident Time hrs

Place of accident

If not employed by the factory or works state name of actual employer

Nature and extent of injury

Cause of accident

CLASSIFICATION (Place an "X" against number applicable):

Electricity	..	..	..	..	1	
Moving Machinery	..	..	..	..	2	
Handling Tools	..	..	..	..	3	
Nails and Splinters	..	..	..	..	4	
Handling Material		..	..	..	5	
Men Falling	..	..	..	..	6	
Transport:						
Explosives	..	..	..	..	7 (a)	
Men and Material	..	..	..	..	7 (b)	
Burns:						
Chemical	..	..	..	..	8 (a)	
Heat	..	..	..	..	8 (b)	
Fall of Material	..	..	..	..	9	
Explosives:						
During blasting operations	..	..	..	..	10 (a)	
During manufacture	..	..	..	..	10 (b)	
Other	..	..	..	..	10 (c)	
Gassing	..	..	..	..	11	
Other causes (specify)	..	..	..	..	12	

The Laws of Zambia

(1) Accidents should be numbered 1/73; 2/73, etc.

(2) Where two or more persons are injured as a result of one accident, these should be numbered 1A/73; 1B/73, etc.

* Delete word not applicable.

.....
Signature of Manager or Holder

MONTHLY RETURN OF EXPLOSIVES-NITRO-COMPOUNDS

HOLDER.....

	Ammon Gelignite (cases)	Ammon Dynamite (cases)	Waterproof Dynamite (cases)	Pentagel (cases)	
Stock previous month end					
Receipts ex Kafironda					
Receipts other					
TOTAL					
Less stock this month end					
TOTAL					
Less sold or destroyed					
Used in operations					

DETAILS OF PURCHASES FROM OTHER SOURCES, SOLD OR DESTROYED

Permit No.	Quantities	Type

Date

Signature

THE EXPLOSIVES REGULATIONS

(Regulations 271 (2) and 606 (4))

MONTHLY RETURN OF EXPLOSIVES-BLASTING AGENTS

HOLDER.....

	Anfex (bags 25 kg)	Sinex (cases 25 kg)	Blasting Agents* (bags 25 kg)	Iremite (cases 25 kg)	(cases 25 kg)
Stock previous month end					
Receipts ex Kafironda					
Receipts other					
TOTAL					
Less stock this month end					
TOTAL					
Less sold or destroyed					
Used in operations					

* Give number of bags of Ammonium Nitrate used to manufacture Blasting Agents

DETAILS OF PURCHASES FROM OTHER SOURCES, SOLD OR DESTROYED

Permit No.	Quantities	Type

Date

Signature

THE EXPLOSIVES REGULATIONS

(Regulation 606 (4))

MONTHLY RETURN OF EXPLOSIVES-DETONATORS AND BLASTING IN

HOLDER.....

	Plain Detonators (number)	Electric Detonators (number)	Detonating Relays (number)	Safety Fuses (metres÷100)	(m)
Stock previous month end					
Receipts ex Kafironda					
Receipts other					
TOTAL					
Less stock this month end					
TOTAL					
Less sold or destroyed					
Used in operations					

DETAILS OF PURCHASES FROM OTHER SOURCES, SOLD OR DESTROYED

Permit No.	Quantities	Type

Date
Signature

REPUBLIC OF ZAMBIA

THE EXPLOSIVES REGULATIONS

(Regulation 1606)

MONTHLY LABOUR RETURN

KAFIRONDA FACTORY

MONTH, 19.....

* DIRECT LABOUR/CONTRACTORS

Average number of employees at work each working day	
Average number of casual labourers employed each working day	
Average number of casual labourers employed each working day	
Total manshifts worked including Sundays and Holidays. .	
Total man hours worked (including overtime, Sundays and Holidays)	

* Strike out whichever is not applicable

Date, 19.....

.....
Signature of Manager

FOURTH SCHEDULE

THE EXPLOSIVES REGULATIONS

(Regulations 124, 125, 205 and 524 (2))

TABLE I

The Laws of Zambia

Distances for National AM Broadcast Transmitters in 0.5 to 1.6 MHz range.

<i>Transmitter Power kilowatts (1)</i>	<i>Minimum Distance metres</i>
Up to 4	230
5	260
10	370
25	600
50	850
100	1 200
500	2 700

The Laws of Zambia

TABLE II

Distances for Transmitters from 1.6 MHz to 30 MHz when a loop configuration is used in a blasting circuit.

<i>Transmitter Power kilowatts (1)</i>	<i>Minimum Distance metres</i>
0.1	230
0.5	520
10.	730
50.	1 700
50.	5 200
5000.	16 800

(1) Power delivered to antenna.

TABLE III

Distances for Mobile Communication, Amateur and other Transmitters

Transmitter Power (1)	MF 1 to 4 MHz	HF 4 to 35 MHz	VHF (2) 35 to 87.5 MHz	10
Watts	Minimum Distance in Metres			
10	12	30	12	
50	27	68	27	
250	60	145	60	
1 000	120	300	125	
5 000	290	530	300	

Minimum distance of approach with 5 watt portables in 3 metres

(1) Power delivered to antenna.

(2) The frequency range 87.5 MHz to 100 MHz is normally allocated to FM Broadcast Transmitters.

The Laws of Zambia

TABLE IV

Distances for National TV Broadcast Transmitters

Effective Radiated Power kilowatts	41MHz to 68 MHz	174 MHz to 223 MHz
	Minimum Distance in Metres	
Up to 1	300	230
10	550	400
78	900	650
100	980	700
500	1 500	1 000

FIFTH SCHEDULE

THE EXPLOSIVES ACT

(Section 2)

AUTHORISED EXPLOSIVES

The Laws of Zambia

- Class 1. Gunpowder
NIL
- Class 2. Blasting Agents
Anba
Anfex
Iregel
Iremite
Sinex
- Class 3. Nitro-compounds
Ammon Dynamite
Ammon Dynamite Waterproof
Ammon Gelignite
Collodion Cotton
Cordtex
Dynagel
Nitro Cellulose
Nitro-compound Slurries
Nitro Cotton
Penaerythritol Tetranite (PETN)
Pentagel
Pentalite
Rocktex
- Class 4. Chlorate Mixtures
NIL
- Class 5. Fulminates
NIL
- Class 6. Detonators
Capped Fuses
Cordtex Detonating Relays
Electric Detonators
Electric Primered Detonators
Plain Detonators
- Class 7. Blasting Initiators
Delay Ignitercord Igniters
Electric Current Indicators (policemen)
Electric Ignitercord Igniters
Fuse Igniters
Ignitercord
Ignitercord Connectors
Safety Fuse