

THE MINING ACT

REGULATIONS
(under section 99)

The Mining Regulations, 1947

L.N. 230/61
155/63
277/68
71/74
272/74
392/74
127/79
30/82
118/84
119/84
32E/88

See also

L.N. 430/88
56/99
89D/2004
L.N. 345/77

The Mining (Safety and Health) Regulations, 1977

ORDERS

(under regulation 50 of the Mining Regulations, 1961)

(Omitted)

THE MINING ACT

REGULATIONS
(under section 99)

THE MINING REGULATIONS, 1947

*(Made by the Governor in Executive Council on the 7th day of
September, 1947)*

L.N. 230/61
Amends:
L.N. 155/63
277/68
71/74
272/74
392/74
127/79
30/82
118/84
119/84
32E/88

1. These Regulations may be cited as the Mining Regulations, 1947.
2. Wherever reference is made in these Regulations to a company and its memorandum and articles of association, such reference shall include—

See also
L.N. 430/88
56/99
89D/2004

- (a) a corporation incorporated in this Island by statute, and the statute by which it was incorporated; and
- (b) a company or corporation created outside this Island, and the charter, statute, regulations or other instruments creating such company or corporation and defining its constitution and powers.

Prospecting Rights

3.—(1) An application for a prospecting right or for any renewal thereof shall be made to the Commissioner in the form set out as Form 1 in the First Schedule.

First
Schedule.
Form 1.

(2) There shall be forwarded with such application the appropriate fee specified in the Second Schedule.

Second
Schedule.

(3) A prospecting right or any renewal thereof shall be in the form set out as Form 2 in the First Schedule.

Form 2.

(4) Before granting a prospecting right to an applicant the Commissioner may require such applicant to attend at a time and place to be notified and to be examined as to the provisions of the Act and of these Regulations.

(5) Where the applicant for a prospecting right is applying as an agent for a person there shall be forwarded with the application an undertaking in the form set out as Form 3 in the First Schedule.

Form 3.

4. The holder of a prospecting right shall within one week of the grant thereof lodge with the Commissioner for the purposes of section 13 of the Act the sum of twenty-five thousand dollars, or such other sum as the Commissioner may in any particular case specify, or give security therefor with one surety.

5. Where a prospecting right is granted to an individual as agent for a person and that individual is in the employ of that person, then if such individual leaves the employ of that person, that person shall thereupon notify the Commissioner of such fact and as from the date of receipt of such notification such prospecting right shall terminate unless that person otherwise requests in such notification.

6. Where the Commissioner calls upon the holder of a prospecting right to show cause why his right should not be revoked under section 20 of the Act, the Commissioner shall forward to the last known address of such holder a notice in the form set out as Form 4 in the First Schedule specifying the contravention complained of and the time, place and manner in which cause is to be shown.

Form 4.

7. Where a prospecting right is terminated for any reason the holder thereof shall surrender to the Commissioner such prospecting right.

8. The holder of a prospecting right shall in the months of January and July of each year make a return to the Commissioner of his prospecting operations, showing the lands upon which he prospected, the nature of his prospecting operations, the places (if any) in which he has found minerals and the quality and quantity of any minerals so found, and the excavations made in the course of such prospecting operations and the action taken to secure such excavations from causing injury to humans or livestock.

Exclusive Prospecting Licences

9.—(1) The area the subject of an application for an exclusive prospecting licence shall, unless the Minister otherwise permits in any special circumstances, be rectangular in shape and shall comprise not more than eighteen metric squares, on the 1/50,000 topographical map of Jamaica.

(2) Before application is made for a licence a temporary beacon shall be erected at the north-west corner of the area and such beacon shall be known as the location beacon.

(3) For the purpose of erecting a location beacon the intending applicant may clear the area around such beacon to a distance of not more than three metres.

(4) The application for a licence shall be made within 14 days (or such extended period as the Minister may permit) of the erection of the location beacon, and if not made within such period the intending applicant shall forthwith remove such beacon or if he fails to do so the Commissioner may cause it to be removed.

10.—(1) An application for a licence shall be made to the Minister through the Commissioner in triplicate, and in the form set out as Form 5 in the First Schedule. Form 5.

(2) There shall be forwarded with such application—

- (a) the appropriate fee specified in the Second Schedule; Second Schedule.
- (b) a sketch plan in quadruplicate on a reasonable scale showing to the satisfaction of the Commissioner the following details—
 - (i) the main topographical features in and about the area applied for in such a manner as will enable the boundaries to be identified on the ground;
 - (ii) the location beacon;
 - (iii) an approximate estimate square kilometers of the area applied for;
 - (iv) such other information as will enable the area to be delineated on the general map of the district in which the area applied for is situated.

(3) A licence shall be in the form set out as Form 6 in the First Schedule, and if granted subject to any conditions, such conditions shall be endorsed thereon. Form 6.

11. Upon receipt of an application for a licence the Commissioner shall cause a notice setting out the main particulars of such application to be published at the expense of the applicant once in the *Gazette* and once in a daily newspaper circulating in Jamaica and shall give notice of the particulars of such application to any person who to his knowledge has any interest in the area contained in such application.

12. The holder of a licence shall within one week of the grant thereof lodge with the Commissioner the sum of twenty thousand dollars or

such other sum as the Commissioner may in any particular case specify, or give security therefor with one surety for the purposes of section 13 of the Act.

13.—(1) The holder of a licence shall, if required by the Commissioner, cause all boundaries of the area of his licence to be permanently beacons or demarcated in accordance with the written directions of the Commissioner, and shall, if required by the Commissioner, cause a survey of the area to be made in strict conformity with the requirements of the regulations made under the Land Surveyors Act and at the expense of the applicant and to the satisfaction of the Commissioner.

(2) Within fourteen days of the grant of a licence, the holder thereof shall forthwith paint clearly on an iron plate securely bolted to every beacon on the side facing the area the subject of such licence, his name and the official number of such licence.

(3) The holder of a licence shall during the period of such licence—

- (a) maintain his beacons in good condition and in proper position;
- (b) keep clearly painted on such beacons the particulars required by paragraph (2); and
- (c) keep cut and cleared of vegetation all or any of the boundaries specified by the Commissioner for a distance of not less than three metres from the beacons defining such boundaries.

14. The expenditure of the holder of a licence for prospecting alone shall be at the rate of not less than five thousand dollars per square kilometer or part thereof for each year of the licence:

Provided that the Minister may suspend or reduce the obligation for such expenditure for such time as he may think fit.

15.—(1) Subject to paragraph (3) the Commissioner may permit the grouping of areas held under licences for the fulfilment of obligations and may at any time revoke such permit.

(2) Where grouping of licences is permitted the sum of the prospecting obligations under such licences may be performed on some part of the area grouped.

(3) The grouping of licences may be permitted on the following conditions—

- (a) application for such grouping shall be in respect of a year ending 31st December and shall be made before 15th December in the previous year;
- (b) the total area in respect of which grouping may be permitted shall not exceed fifty metric squares;
- (c) permission to include in the same group lode and alluvial prospecting shall not be granted;
- (d) the obligations for a group shall be calculated on the area of each licence in the group on the 1st January and no allowance shall be made in respect of any licence expiring before the 31st December;
- (e) if the obligations of the group are not fulfilled by 31st December none of the constituent licences shall be renewable;
- (f) the transfer of a constituent licence shall not affect or reduce the obligation for the group.

16.—(1) Application for the renewal of a licence shall be lodged with the Commissioner not later than two months before the date of expiration of such licence, and shall be in the form set out as Form 7 in the First Schedule. Form 7.

(2) There shall be forwarded with such application the appropriate fee specified in the Second Schedule.

(3) When a licence holder who has so applied has, up to and including the date on which his licence is due to expire, not received any notification of the allowance or disallowance of his application he may continue his operations until he receives such notification.

(4) Where such application is allowed the licence shall be renewed as from the date of expiry, and the fact and particulars of such renewal shall be endorsed on the original licence.

17. Where the Minister calls upon the holder of a licence to show cause why his licence should not be revoked under section 28 of the Act, the Commissioner shall forward to the last known address of such holder a notice in the form set out as Form 8 in the First Schedule specifying the contravention complained of and the time, place and manner in which cause is to be shown; and the Commissioner shall thereafter submit his recommendations to the Minister. Form 8.

18. Where a licence is terminated for any reason the holder thereof shall surrender to the Commissioner such licence.

Form 9.

19. When the holder of a licence desires to transfer his licence or interest or any part or share therein he shall apply for the consent of the Minister in the form set out as Form 9 in the First Schedule and shall forward with such application the appropriate fee specified in the Second Schedule, and if such application is granted the consent of the Minister shall be endorsed thereon.

Form 10.

20. Where the holder of a licence desires to surrender it he shall apply for the consent of the Minister in the form set out as Form 10 in the First Schedule and shall forward with such application the appropriate fee specified in the Second Schedule and the licence, and if such application is granted the fact of such surrender shall be endorsed thereon.

Form 11.

21. The certificate to be furnished to the Commissioner under section 29(1) of the Act by the holder of the licence on the termination of the licence shall be in the form set out as Form 11 in the First Schedule.

Mining Leases

Form 12.

22.—(1) Subject to the provisions of regulations 60-62 (inclusive) an application for a mining lease shall be made to the Minister through the Commissioner in triplicate and in the form set out as Form 12 in the First Schedule.

(2) There shall be forwarded with such application—

- (a) the appropriate fee specified in the Second Schedule;
- (b) a sketch plan in quadruplicate on a reasonable scale showing to the satisfaction of the Commissioner the following details—
 - (i) the main topographical features in and about the area applied for in such a manner as will enable the boundaries to be identified on the ground;
 - (ii) the location beacon;
 - (iii) an approximate estimate in square kilometers of the area applied for;
 - (iv) such other information as will enable the area to be delineated on the general map of the district in which the area applied for is situated.

Form 13.

(3) When permission to mine is given under section 32 of the Act it shall be in the form set out as Form 13 in the First Schedule.

(4) A mining lease shall be in the form set out as Form 14 in the First Schedule, and if granted subject to any conditions, such conditions shall be endorsed thereon. Form 14.

23. Before an application is made for a mining lease the applicant shall mark out the area over which he desires a lease in the manner specified in paragraph (2) of regulation 9.

24. Upon receipt of an application for a mining lease the Commissioner may notify the applicant to the effect that he requires the area included in such lease to be surveyed and thereupon the applicant shall cause such area to be surveyed by a surveyor approved by the Commissioner and shall forward to the Commissioner to be attached to such application a survey plan.

25.—(1) Upon receipt of an application for a mining lease the Commissioner shall cause a notice setting out the main particulars of such application to be published at the expense of the applicant once in the *Gazette* and once in a daily newspaper circulating in Jamaica and shall give notice of the particulars of such application to any person who to his knowledge has any interest in the area contained in such application.

(2) No mining lease shall be granted until at least three weeks have expired after the publication of the notice in the *Gazette* as required under paragraph (1).

(3) The provisions of this regulation shall not apply where the applicant is the owner of all the lands comprised in the area of the application.

26. The holder of a mining lease shall within one week of the grant thereof lodge with the Commissioner the sum of fifty thousand dollars or such other sum as the Commissioner may in any particular case specify, or give security therefore with one surety, for the purposes of section 13 of the Act.

27.—(1) Upon the grant of a mining lease the holder thereof shall, if required by the Commissioner, cause all the boundaries of his area to be permanently beaconed or demarcated in accordance with the written directions of the Commissioner and shall paint clearly on an iron plate securely bolted to every beacon on the side facing the area the subject of such lease his name and the official number of such lease.

(2) The holder of a mining lease shall during the period of such lease—

- (a) maintain his beacons in good condition and proper position;
- (b) keep clearly painted on such beacons the particulars required by paragraph (1); and
- (c) keep cut and cleared of vegetation all or any of the boundaries specified by the Commissioner for a distance of not less than three metres from the beacons defining such boundaries.

28.—(1) Subject to the provisions of paragraph (3) the Commissioner may permit the grouping of areas held under mining leases for the fulfilment of obligations and may at any time revoke such permit.

(2) When grouping of mining leases is permitted the sum of the working obligations on such mining leases may be performed on some part of the area grouped.

(3) The grouping of mining leases may be permitted on the following conditions—

- (a) the minerals specified in the leases shall be the same or minerals which occur associated therewith;
- (b) permission to include in the same group lode and alluvial leases shall not be granted;
- (c) the transfer of a constituent lease shall not reduce the obligation of the group.

29. Where the holder of a mining lease desires to transfer his lease or interest or any part or share therein he shall apply for the consent of the Minister through the Commissioner in the form set out as Form 9 in the First Schedule and shall forward with such application the appropriate fee specified in the Second Schedule and if such application is granted the consent of the Minister shall be endorsed thereon.

Form 9.

Second
Schedule.

30. Where the holder of a mining lease desires to surrender it he shall apply for the consent of the Minister through the Commissioner in the form set out as Form 10 in the First Schedule and shall forward with such application the appropriate fee specified in the Second Schedule and the mining lease, and if such application is granted the consent of the Minister shall be endorsed thereon.

Form 10.

31.—(1) Application for the renewal of a mining lease shall be lodged with the Commissioner not later than six months before the date of the expiration of such lease and shall be in the form set out as Form 15 in the First Schedule. Form 15.

(2) There shall be forwarded with such application the appropriate fee specified in the Second Schedule.

(3) Where the holder of a mining lease who has so applied has, up to and including the date on which his lease is due to expire, not received any notification of the allowance or disallowance of his application, he may continue his operations until he receives such notification.

32. Where the holder of a mining lease commits any contravention of the provisions of the Act, or of any requirement thereunder or of any conditions of the lease, the Commissioner may give to the holder of such lease notice in the form set out as Form 16 in the First Schedule. Form 16.

33. Where a mining lease is terminated for any reason the holder thereof shall surrender it to the Commissioner.

34. Where the holder of a mining lease is desirous on the termination of such lease of removing any plant, machinery, engines or tools on the land the subject of the lease then he shall give notice of such desire to the Commissioner in the form set out as Form 17 in the First Schedule. Form 17.

35. Where the holder of a mining lease is desirous on the termination of such lease of applying to the Commissioner for leave to enter the land comprised in the lease and treat or remove any tailings or stone stacked or dumped by him on the surface of such land he shall apply to the Commissioner in the form set out as Form 18 in the First Schedule and if such application is granted the consent of the Commissioner shall be endorsed thereon. Form 18.

Water Rights

36. [*Deleted by L.N. 89D/2004.*]

General

37.—(1) The following returns and reports of operations shall be made to the Commissioner—

- (i) by every holder of a licence who is producing minerals, and every mining lessee on or before the 14th day of each month complete returns covering the operations of the previous month in such form as the Commissioner may require showing the amount of minerals won, dispatched and on hand, and such other particulars as the Commissioner may desire;
- (ii) by every holder of a licence and every mining lessee in January and July—a written statement setting forth—
 - (a) the name of the holder or lessee;
 - (b) the date and number of the licence or lease;
 - (c) any change which may have been made in the appointment of the attorney, and, in the case of a company, in the officers of the company, during the preceding six months;
 - (d) any change of address of the lessee, holder, attorney or officers;
 - (e) the nature of the operations being conducted on the area of the licence or lease;
 - (f) the average number of persons employed on the area in mining or prospecting during the preceding six months;
 - (g) the amount paid in wages to persons actually engaged in mining or prospecting operations on the area of the licence or lease, or in supervising such operations during the preceding six months;

- (h) the nature and value of any machinery or plant brought on to or removed from the area since the previous return;
- (i) the kind, quantity and quality of minerals obtained during the preceding six months and the manner in which they have been disposed of;
- (j) the particulars of any death or serious accidents which may have occurred amongst the employees during the preceding six months;
- (k) the amount expended in the Island due to prospecting or mining;
- (l) any further particulars that the Commissioner may call for.

(2) The returns required by this regulation shall be signed and certified to be correct—

- (a) in the case of an individual holder of a licence or mining lessee resident in the Island, by the holder or lessee;
- (b) in the case of an individual holder of a licence or mining lessee not so resident, or in the case of a company, body of persons or partnership having its head office out of the Island, by the resident attorney of the holder, lessee, company, body of persons or partnership;
- (c) in the case of a company, body of persons or partnership having its head office in the Island, by the manager or secretary of the company, body of persons or partnership.

38. In the case of opencast mining the Commissioner may determine by notice in writing the angle of slope to be maintained in any mine working so as to ensure the safety thereof and he may also for the same purpose require stepped benches to be cut on the face of the mine.

39.—(1) Save as is otherwise in these Regulations specifically provided, all royalties shall be payable on demand to the Commissioner,

who may, if so requested and after payment has been made issue a permit to export the mineral on which royalty has been paid.

Form 22.

(2) Such export permit shall be in the form set out as Form 22 in the First Schedule.

Form 22A.

(3) Every application for a permit to export any mineral shall be in the form set out as Form 22A in the First Schedule.

40.—(1) In this regulation—

“quarterly period” means a period of three consecutive months commencing on the 1st day of January, or the 1st day of April, or the 1st day of July, or the 1st day of October, in any year;

“tonne” in relation to bauxite or laterite means a metric tonne as specified in the Weights and Measures Act (1,000 kilograms) after deducting the moisture content of the ore.

(2) The rate of royalty payable on all bauxite and laterite mined in Jamaica on and after the 1st day of January, 1984, shall be fifty cents in the currency of the United States of America, per tonne or any other rate specified by the Minister, being a rate mutually agreed by the Government and the relevant mining lessee.

(3) The royalty payable on the total amount of bauxite and laterite mined in Jamaica by any holder of a mining lease in any quarterly period shall be paid at the end of that quarterly period.

(4) The Commissioner shall not issue to any holder of a mining lease a permit to export bauxite or laterite or alumina during any quarterly period unless the royalty payable on the total amount of bauxite or laterite which such holder disposed of in the manner described in sub-paragraphs (b), (c) and (d) of paragraph (5) during the last preceding quarterly period but one has paid.

(5) A permit to export bauxite or laterite or alumina shall be in the form set out as Form 22 in the First Schedule with the words “on which royalty has been paid” omitted therefrom.

(6) Every holder of a mining lease for bauxite or laterite shall, in respect of each quarterly period, make to the Commissioner a return in writing showing—

- (a) the amount of bauxite or laterite mined in Jamaica by him;
- (b) the amount of bauxite or laterite exported by him;

- (c) the amount of bauxite or laterite supplied by him to any other person for processing into alumina in Jamaica and the name of that person;
- (d) if he is a producer of alumina in Jamaica, the amount of bauxite or laterite processed by him into alumina in Jamaica;
- (e) the amount of bauxite or laterite which he has on hand.

(7) The return referred to in paragraph (5) shall be made within thirty days after the end of each quarterly period.

(8) Within three months of the export of any minerals originating in Jamaica, other than bauxite or laterite, or within such extended time as the Commissioner may allow, a sales accounting in respect of such minerals shall be produced to the Commissioner and any adjustments which may be necessary to ensure payment of the full amount of royalty due shall be made.

41.—(1) Subject to regulation 40(2), royalties shall be payable on all minerals at the rate specified in paragraphs (2) and (3).

(2) Royalties payable on metallic minerals shall be at a rate of 5% of the commercial value thereof, determined by reference to—

- (a) the London metal exchange; or
- (b) the London gold market.

(3) Royalties payable on industrial minerals shall be at a rate of 5% of the mine gate value.

(4) Where the Commissioner considers the value of the industrial mineral unreasonable he shall determine the value of such industrial mineral on the basis of the average market price.

(5) The holder of a mining lease shall, in respect of each quarterly period, submit to the Commissioner within thirty days after

the end of the quarterly period, a return in writing specifying the following particulars in relation to all minerals extracted or won by him—

- (a) the quantity by weight;
- (b) the grade;
- (c) the concentration; and
- (d) the value per unit of weight.

(6) The Commissioner may, in his discretion, extend the time specified in paragraph (5) for making the return.

(7) Where the holder of a mining lease fails to make a return or to pay royalties pursuant to these Regulations or if his returns are not substantiated by his records, the Commissioner may make an assessment of the royalties payable by that person.

(8) Where it appears from an inspection, audit or examination of the books, records or documents of the holder of a mining lease, that these Regulations have not been complied with, the person making the inspection, audit or examination shall calculate the amount of royalties payable by the holder of that mining lease and the Commissioner shall assess the amount of royalties so payable.

(9) The Commissioner may, at any time he considers reasonable, assess or reassess any royalties payable by the holder of a mining lease in respect of any period not being earlier than six years prior to that date of such assessment or reassessment.

(10) Where the Commissioner has made an assessment under this regulation, he shall send a notice of assessment by registered mail or by personal service to the holder of the mining lease requiring that the amount of royalties due under the assessment be remitted to the Commissioner or otherwise accounted for.

(11) Liability for the payment of royalties imposed under these Regulations shall not be affected by an incorrect or incomplete assessment or by the fact that no assessment has been made.

(12) The Commissioner shall not be bound by a return or information delivered by or on behalf of any person under this regulation and may, notwithstanding a return so delivered or if no return or information has been delivered, assess the royalties payable under this regulation.

(12A) Every holder of a mining lease who, in respect of any quarterly period, fails to—

- (a) make a return in accordance with paragraph (5), shall be liable to a penalty of an amount equivalent to 5% of the sum payable for that period but such penalty shall not in any case be less than fifty thousand or more than one hundred thousand dollars, whichever is the greater; or
- (b) pay the royalty due, shall be liable to a penalty of an amount equivalent to 15% of the royalty payable for that period.

(12B) Interest shall be chargeable for that period at the rate of 15% per annum on the amount of any royalty payable from the day on which such royalty becomes due until the date of payment thereof.

(13) In paragraph (3) "mine gate value" means the value of industrial minerals which, at the mine, are ready for sale or transfer.

41A.—(1) A holder of a mining lease shall, within thirty days from the date of receipt of a notice of assessment, pay the assessed royalties then remaining unpaid, whether or not an objection or appeal is outstanding in relation to the assessment.

(2) Where, in the opinion of the Commissioner, the holder of a mining lease is attempting to avoid payment of the royalties pursuant to this regulation, the Commissioner may direct that all royalties as set out in the notice of assessment shall be paid forthwith.

41B.—(1) Where the holder of a mining lease objects to an assessment made under regulation 41, he may, within sixty days from the date of receipt of the notice of assessment, serve on the Commissioner, a notice of objection in duplicate in a form approved by the Commissioner, setting out the reasons for the objection and all relevant facts.

(2) Upon receipt of the notice of objection, the Commissioner shall with all due dispatch reconsider the assessment and vacate, confirm

or vary the assessment or reassess it and he shall forthwith notify the holder of the mining leases of his decision by registered mail or by personal service.

41C.—(1) Where a person who has served notice of objection under regulation 41B is dissatisfied with the decision of the Commissioner thereon, he may appeal to the Minister to have the assessment vacated or varied.

(2) The Minister may dispose of the appeal by—

- (a) dismissing it; or
- (b) allowing it and—
 - (i) vacating the assessment;
 - (ii) varying it; or
 - (iii) referring it back to the Commissioner for reconsideration and assessment.

42. Where the holder of a licence or a mining lease is neither the owner nor the occupier of the land he shall, unless the owner or occupier agrees to a shorter period, give fourteen days' notice to the owner or occupier before commencing prospecting or mining operations thereon.

43.—(1) The holder of prospecting or mining rights shall forward to the Commissioner when lodging the deposit required by section 11, 12 or 13 of the Act a notice in the form set out as Form 23 in the First Schedule.

(2) On termination of the prospecting or mining rights the holder may make application for the return of such sum or any part thereof which remains unexpended, lodged under section 11, 12 or 13 of the Act, in the form set out as Form 24 in the First Schedule and if the Commissioner is satisfied that there are no further claims against any such deposit he may cause such deposit, or such part thereof, to be returned to the holder:

Form 24.

Provided that any such return shall not relieve such holder from any claims to which he may be liable.

(3) Where the owner or occupier of land has been awarded any sum as compensation under section 12 of the Act and has not received payment as provided in such section, then he may apply to the Commissioner in the form set out as Form 25 in the First Schedule for payment out of the amount lodged of the sum so awarded and in the event of such payment he shall give a receipt therefore to the Commissioner.

Form 25.

44. Every mining lessee shall keep, to the satisfaction of the Commissioner, proper books, records and accounts showing the expenses incurred and the profits earned, and the Commissioner or any official authorized by him in writing shall have access at all times to such books, records and accounts, and shall be entitled to make extracts therefrom.

45.—(1) Every holder of a licence and every mining lessee who is not resident in the Island or who intends to be temporarily absent from the Island shall appoint some person resident in the Island as his attorney with full powers to represent him during his absence from the Island, in all matter relating to his licence or mining lease.

(2) When any company, body of persons or partnership, whose registered or head office is outside the Island, is a holder of a licence or a mining lessee, such company, body of persons or partnership shall at all times be represented by an attorney resident in the Island and having full powers to represent such holder or lessee in all matters relating to such licence or lease.

(3) Every holder or mining lessee who gives a power of attorney as required by paragraphs (1) and (2) shall forthwith forward to the Commissioner a copy of such power of attorney and shall likewise on the revocation or variation of such power of attorney forthwith forward a copy of any document effecting such revocation or variation.

Second
Schedule.

46. The fees set out in the Second Schedule shall be paid in respect of the matters and things specified in that Schedule.

47.—(1) The Commissioner shall keep a register of prospecting rights, licences, mining leases and rights of passageway and of documents creating, terminating, assigning or transferring such prospecting rights, licences, leases or rights of passageway or any right, title or interest arising therefrom.

(2) Any person desiring to apply for the registration of any document creating, terminating, assigning, transferring or in any way dealing with or affecting any licence, mining lease, or right of passageway, or any right or interest under the same, shall send the original document, with a copy thereof and a copy of any plan attached to such document together with the prescribed fee, to the Commissioner, with a request that it shall be registered, and the Commissioner having first satisfied himself that the copy of the original document and of the plan (if any) is correct, and that the requisite approval of the creation, termination, assignment, transfer or other transaction has been obtained, and that the document if liable to stamp duty has been duly stamped, shall endorse on the document over his signature the word "Registered" together with the date on which the document was presented for registration and shall return the document so endorsed to the person who presented it for registration, and shall file the copy in the register.

48. In the event of a state of national emergency or war (of the existence of which the Minister shall be the sole judge) the Minister shall have the right of pre-emption of all minerals mined under the lease and all products thereof and shall also be at liberty to take control of the mining operations of the lessee.

Mineral Dealers

Form 26.

49. Mineral dealer's licence shall be in the form set out as Form 26 in the First Schedule.

Special provisions applicable to Bauxite or Laterite

50.—(1) Subject to the provisions of paragraphs (2) and (3), a mining lease for bauxite or laterite may be granted to any person whether or not such person is the owner in fee simple of the land.

(2) No mining lease for bauxite or laterite shall be granted to any person other than the owner in fee simple of the land where, on the 1st April, 1957—

- (a) the land was owned by a company holding a mining lease for bauxite or laterite in respect of other land; or
- (b) the land was the subject of an option to purchase held by such a company.

(3) No mining lease for bauxite or laterite shall be granted to any person other than the owner in fee simple of the land where the land is owned by a company which, on the 1st April, 1957, held any mining lease for bauxite or laterite and the land is land which is described by the Minister, by order, as land to which this paragraph applies.

(4) In this regulation "company" does not include—

- (a) Kaiser Bauxite Company;
- (b) Reynolds Jamaica Mines Limited;
- (c) Reynolds Jamaica Alumina Ltd., Kaiser Jamaica Corporation and Anaconda Jamaica Inc., each in its capacity as a partner in the firm which carries on business in Jamaica under the firm name of Alumina Partners of Jamaica,

but includes, in relation to any other company holding a mining lease for bauxite or laterite, any company, present or future, controlling, controlled by, or under common control with, such a company.

51. The royalty on bauxite or laterite shall be calculated on the weight of the ore mined, as ascertained by such method as the Commissioner may approve, after deducting therefrom the moisture content.

52.—(1) A minimum royalty charge shall be payable in each year ascertained on a basis of twenty-five tones of bauxite or laterite being mined (whether or not such amount has in fact been mined) for each hectare, or part thereof, held under the mining lease:

Provided that a mining lessee shall only be liable to a minimum royalty charge equivalent to the royalty on five, ten, fifteen and twenty tonnes for each hectare for the first, second, third and fourth years of the term respectively.

(2) Minimum royalty charges may be averaged over five-year periods, the first commencing on the date of the commencement of the mining lease and the subsequent periods following consecutively, but any excess or deficiency in any five-year period shall not be taken into account in any other five-year period.

(3) In this regulation "tonne" has the meaning specified in regulation 40 (1).

53.—(1) As soon as may be practicable, and in any event not later than three years after mining operations are concluded in any area, the holder of the mining lease shall restore every hectare of land disturbed for mining in such area, as nearly as may be practicable, to the level of agricultural or pastoral productivity or of utilization for afforestation purposes or such other uses as may be approved by the Commissioner or the Town and Country Planning Authority, as the case may require, and for the purpose of securing such restoration the holder of the mining lease shall—

- (a) before commencing mining operations in any deposit, remove the top soil thereof to a depth of not less than fifteen centimetres;
- (b) keep the top soil so removed stacked and preserved until such time as it is replaced in accordance with sub-paragraph (c);
- (c) within two years after mining operations have been concluded in the pit—
 - (i) utilize, remove, clear or dispose of all soil, debris and rubble in such a manner as to effect a smooth grading and prevent the creation of unsightly mounds and dumps in the area; and
 - (ii) replace the top soil which was removed therefrom except where exempt by the Commissioner;
- (d) construct such drains, trenches, drainages and works as will prevent the permanent accumulation of water upon or within the area, if such accumulation would, in the opinion of the Commissioner, be detrimental to the well-being of the land; and
- (e) provide reasonable access to the area.

(2) The provisions of paragraph (1) which specify the measures to be taken by the holder of a mining lease for the purpose of securing the restoration of mined land as nearly as may be practicable to its former level of agricultural or pastoral productivity or of utilization for afforestation purposes or other uses approved pursuant to paragraph (1), shall not take effect in any case in which the Commissioner is satisfied that compliance therewith would—

- (a) not be practicable as part of the operation of mining; or
- (b) not be consistent with good mining practice; or

- (c) be unreasonable or likely to raise costs out of proportion to the value of the ore body or to normal working costs or to the agricultural value of the land or to the final results likely to be achieved; or
- (d) render uneconomical on otherwise economical mining operation.

(3) A lessee shall, before commencing any of the operations specified in sub-paragraph (c) of paragraph (1) and from time to time during the course of such operations, consult the Minister and the Commissioner in relation thereto, and shall do or cause to be done all such things as the Minister or the Commissioner may reasonably require to be done for the effective compliance with the provisions of that sub-paragraph.

(4) For the purposes of this regulation and of regulations 54 and 55—

- (a) "pit" means a hole or cavity in the ground made by the open cut method in order to win minerals;
- (b) mining operations in any pit shall be deemed to be concluded where, at any time after commencement of such operations in such pit, such operations are discontinued by the lessee and are not resumed upon a substantial scale within six months next after the date of such discontinuance, unless within such period the lessee satisfies the Commissioner—
 - (i) that the discontinuance or the failure to resume operations within such period was due to circumstances wholly beyond the control of the lessee; or
 - (ii) that the lessee intends to resume operations upon a substantial scale in such pit within such further period as the Commissioner in his absolute discretion may consider reasonable.

53A.—(1) Subject to paragraph (2), every holder of a mining lease shall, for rehabilitation of the land on which mining is carried out, maintain on deposit with the Commissioner, security in such amount and form and subject to such conditions as the Commissioner shall determine.

(2) The Minister may, owing to special circumstances or in special cases, grant exemption in whole or part from the deposit referred to in paragraph (1), subject to such terms and conditions as he may impose.

(3) Where such rehabilitation is not carried out in accordance with the requirements of these Regulations or of the terms and conditions of the mining lease—

- (a) the Minister may authorize any person to enter upon the premises on which the mine is situated and perform such work as is necessary for rehabilitation; and

- (b) the costs thereof shall be recovered from the amount deposited and the balance (if any) shall be refunded to the holder of the mining lease.

54. Upon concluding mining operations in any pit the lessee shall apply to the Commissioner for a certificate that the requirements of sub-paragraph (c) of paragraph (1) of regulation 53 have been complied with, and the Commissioner upon being satisfied that such requirements have been complied with shall issue to the lessee a certificate to that effect.

55.—(1) A holder of a mining lease who fails to obtain a certificate under regulation 54 upon the conclusion of mining operations in a pit shall pay to the Commissioner for and on behalf of the Government the sum of twenty-five thousand dollars in the currency of the United States of America or the equivalent of that amount in the currency of Jamaica for each hectare of such land.

(2) Where a pit is not restored within the period specified in regulation 53(1) the holder of the mining lease shall, for each year during which the pit remains unrestored, pay to the Commissioner, the sum of two thousand five hundred dollars in the currency of the United States of America or its equivalent in the currency of Jamaica for each hectare of land disturbed for mining.

(3) The Commissioner may extend the period for restoration of the pit if the lessee satisfies the Commissioner that such extension is reasonably warranted.

56. Every company holding a mining lease for bauxite or laterite shall furnish to the Minister when so requested by him such particulars and such documents as he may require in respect of—

- (a) the capital structure of the company;
- (b) any sales or purchase contract;
- (c) any management, service or licence agreement;
- (d) any financial statement, including any profit and loss account or balance sheet; and
- (e) any income tax return filed in a country other than Jamaica in respect of its operations in Jamaica,

and shall give to the Minister in addition any such other information as he may reasonably require for the purposes of making, reviewing or confirming any agreements or arrangements that he may consider necessary for the orderly development of the bauxite industry.

57.—(1) Every company holding a mining lease for bauxite or laterite shall furnish annually to the Minister a return setting out—

- (a) the amount of bauxite or laterite sold by the company on the open market during the year and the average price realized;

- (b) the amount of bauxite or laterite sold or transferred by the company to an associate company and the price at which such transfer or sale was effected;
- (c) particulars of the costs applicable to the operations of the company in the Island during the year in relation to the following items—
 - (i) mining, transportation and drying;
 - (ii) administration and overhead (distinguishing local from overseas);
 - (iii) interest applicable to local operations;
 - (iv) income tax paid in Jamaica;
 - (v) payments other than income tax made to the Government of Jamaica;
 - (vi) normal depreciation;
 - (vii) costs other than those enumerated above;
- (d) particulars of special deductions allowed in computing profits for purposes of income tax under tax laws of countries other than this Island affecting the operations of the company in the Island;
- (e) particulars of the reserves of bauxite or laterite in the Island owned by the company or by associate companies showing—
 - (i) the reserves at the beginning of the year and indicating where necessary, any revision of figures previously supplied;
 - (ii) any reserves acquired or proved during the year;
 - (iii) the amount of bauxite or laterite mined or otherwise disposed of during the year;
 - (iv) the reserves at the end of the year,

and, wherever possible, distinguishing between commercial and non-commercial bauxite or laterite.

(2) In this regulation—

“associate company” means, in relation to a company holding a mining lease for bauxite or laterite, any company, present or future, controlling, controlled by, or under common control with, such a company:

“commercial bauxite or laterite” refers to bauxite or laterite which contains at least 47% alumina (by the standard difference method) and not more than 4% silica on a dry basis;

"open market" refers to a market where buyer and seller are independent of each other.

58. Every company holding a mining lease for bauxite or laterite shall furnish annually to the Commissioner of Mines a return setting out—

(a) the amount of capital investment undertaken in respect of operations in the Island during the year and an estimate of the proposed investment in the next succeeding year showing separately the amount spent or, as the case may be, to be spent on—

- (i) land and development;
- (ii) buildings;
- (iii) machinery and equipment;
- (iv) construction in progress;
- (v) other capital investment,

and, wherever possible, indicating separately capital expenditure in the Island and capital expenditure in respect of undertakings in the Island which are made elsewhere than in the Island;

(b) particulars of disbursements in the Island and elsewhere in respect of operating expenses of undertakings in the Island showing amounts spent on—

- (i) wages;
- (ii) salaries;
- (iii) other services;
- (iv) materials and supplies;
- (v) machinery and equipment;
- (vi) other items (specifying any major items).

and, wherever possible, indicating separately amounts spent in the Island and amounts spent elsewhere;

(c) particulars of the number of persons employed by the company at the end of the year showing the number of persons engaged in—

- (i) mining and related occupation;
- (ii) construction;
- (iii) agriculture;
- (iv) other occupations;

- (d) the average grade of bauxite or laterite mined during the year.

59. Returns required to be furnished by regulations 56 and 57 in respect of any year shall be furnished within ninety days after 31st day of December of that year and shall be signed and certified to be correct—

- (a) in the case of a company having its head office out of the Island, by the resident attorney of the company;
- (b) in the case of a company having its head office in the Island, by the manager or secretary of the company.

Special Mining Leases for Bauxite or Laterite

60. Where application is made for a special mining lease for bauxite or laterite pursuant to section 46 of the Act the provisions of these Regulations except regulations 23 and 27 shall have effect subject to the following modifications—

- (a) for the reference to "Form 12" in paragraph (1) of regulation 22 there shall be substituted a reference to "Form 27";
- (b) the sketch plan required by paragraph (2) of regulation 22 shall show, instead of the location beacon, particulars of the metric squares and the relative position of each of the applicant's holdings within the metric squares affected by the application;
- (c) for the reference to "Form 14" in paragraph (4) of regulation 22 there shall be substituted a reference to "Form 28".

Form 27.

Form 28.

61. Upon the grant of a special mining lease for bauxite or laterite the holder thereof shall cause the boundaries of all his lands included in the special mining lease to be permanently beacons or demarcated in accordance with the written directions issued from time to time by the Commissioner and shall during the period of such lease keep such boundaries demarcated in accordance with such written directions.

62.—(1) An application made pursuant to section 47 of the Act for the addition of other lands to a special mining lease for bauxite or laterite shall be made through the Commissioner in triplicate in the form set out as Form 29 in the First Schedule.

Form 29.

(2) There shall be forwarded with such application—

- (a) the appropriate fee specified in the Second Schedule;

Second
Schedule.

- (b) a sketch plan in quadruplicate showing to the satisfaction of the Commissioner the following details—
- (i) the main topographical features in and about the area applied for in such manner as to enable the boundaries to be identified on the ground;
 - (ii) an approximate estimate in square kilometers of the additional area applied for;
 - (iii) particulars of the metric squares in relation to which the application is made and of those in relation to which the special mining lease aforesaid was granted;
 - (iv) such other information as will enable the area to be delineated on the general map of the district in which the area applied for is situated.

FIRST SCHEDULE

FORM No. 1

(Regulation 3)

THE MINING REGULATIONS, 1947

Application for a Prospecting Right or Renewal thereof

To the Commissioner:

1. Name of applicant.....
2. Nationality of applicant.....
3. Age of applicant.....
4. Address in Jamaica at which notices, etc., may be served.....
5. Whether the applicant intends to prospect on his own account, or as an agent of any other person.....
6. If he is in the employ of any other person, the name and address of such person.....
7. Whether he has previously made an application for a prospecting right or licence, and if so, whether any such application has been refused.....
8. Whether the applicant or his employer (if any) has been convicted of an offence against the Mining Act, or previously held any prospecting right, licence or mining lease in Jamaica which has been revoked or forfeited.....
9. I am (not) in possession of a valid prospecting right
or
I hereby surrender prospecting right No.....
- (Strike out whichever is inapplicable)
10. I attach hereto from my principal an undertaking in the prescribed form.
(Strike out if inapplicable).
11. I forward herewith the appropriate fee.
I hereby declare the above particulars to be true.

.....
Signature of applicant

FORM No. 2

(Regulation 3)

THE MINING REGULATIONS, 1947

Prospecting Right

No.....

The right, subject to the provisions of the Mining Act and of the Regulations thereunder now in force or which may come into force during the continuance of this right, is hereby granted to (1).....
of.....agent for

THE MINING REGULATIONS, 1947

(2).....for one year
from the date hereof to prospect for minerals.

This.....day of.....19.....
Fee:

.....
Commissioner

(1) Here insert name, address and description of prospector.

(2) If the prospector is to use this right as agent, state name, address and description of principal.

FORM No. 3

THE MINING REGULATIONS, 1947

(Regulation 3)

Undertaking by Principal

In consideration of the grant of a prospecting right to.....

I/Ws hereby undertake to be responsible for all the acts or omissions of the
said.....
done or purported to be done in the course of prospecting operations under
prospecting right No.....granted to him as my/our agent, and to pay
to the Commissioner or to any other person any sum payable by the said.....
.....under or in respect of such rights or acts
or omissions.

.....
Signature of Principal

FORM No. 4

THE MINING REGULATIONS, 1947

(Regulation 6)

Notice to Show Cause

To.....the holder of prospecting right No.....

Whereas it has been brought to my attention that you have committed the
following contravention of the provisions of the Mining Act or of the
Regulations thereunder or of your prospecting right.....

Now, therefore, I hereby require you to show cause to me at.....
.....on or before the.....in
writing (or by attending personally) why your prospecting right should not be
revoked.

.....
Commissioner

FORM No. 5

THE MINING REGULATIONS, 1947

(Regulation 10)

Application for an Exclusive Prospecting Licence

To the Minister through the Commissioner.

Date and hour of receipt by the Commissioner.....

1. Name of application.....
2. Nationality of applicant.....
3. Name and nationality of directors of company, body of persons or partnership (if any)
4. Address in Jamaica at which notices, etc., may be served.....
5. Number of applicant's prospecting right.....
6. If a prospecting right was held by an individual as agent for the applicant, name of that agent and number of his prospecting right
7. If no prospecting right is held by the applicant or his agent, the special circumstances in which he is asking for the grant of the licence
8. Parish and approximate area (in square kilometres or part of a square kilometer) of area applied for.....
9. Mineral for which applicant desires to prospect.....
10. A financial statement as to the position of the applicant is appended hereto.
11. Is a copy of the memorandum and articles of association lodged with the Commissioner? If not, a copy must be enclosed herewith.
12. A sketch plan as required by the Regulations is attached hereto.
13. The date upon which the location beacon was erected was.....
14. The appropriate licence fee is forwarded herewith.
15. The delineation of the area is as follows—

An area of approximately _____ square kilometers.

The location beacon consists of _____ and is situated approximately at the intersection of false co-ordinates North _____ East on sheet _____ of the topographical map of Jamaica.

The first corner is situated approximately at the intersection of the false co-ordinates North and East, approximately metres distant from the location beacon on an approximate grid bearing of degrees.

The second corner is situated approximately at the intersection of the false co-ordinates North and East, approximately metres distant from the first corner on an approximate grid bearing of degrees.

The third corner is situated approximately at the intersection of the false co-ordinates North and East, approximately metres distant from the second corner on an approximate grid bearing of degrees and is metres distant from the location beacon on an approximate grid bearing of degrees.

Signature of applicant

NOTE—All descriptions should be clockwise.

FORM NO. 6

(Regulation 10)

THE MINING REGULATIONS, 1947

Exclusive Prospecting Licence

No.

The exclusive licence, subject to the provisions of the Mining Act and of the Regulations thereunder, now in force or which may come into force during the continuance of this licence or any renewal thereof, for one year from the day of, subject to the special conditions hereunder written, is hereby granted to

(here insert name, address and description of licensee)

to prospect for the following mineral with the following limits
(here insert boundaries of area)

as delineated approximately on the plan attached hereto and coloured.....

This day of 19.....

Minister

SPECIAL CONDITIONS

FORM NO. 7

(Regulation 16)

THE MINING REGULATIONS, 1947

Application for renewal of Licence

To the Minister through the Commissioner.

1. Name of applicant.....
2. Number of applicant's licence for which application to renew is being made
3. State whether alluvial or lode deposits are being explored
4. State whether renewal is sought for the whole of the area or only a part
5. If renewal is sought for only a part delineation an approximate area must be given (see under) and a sketch plan of the area applied for must be attached.
6. The appropriate renewal fee is forwarded herewith.

*DELINEATION

An area of approximately.....

The location beacon consists of and is situated at

The first corner beacon consists of..... and is situated
..... metres distant from the location beacon on an approximate
bearing of.....degrees.

The second corner beacon consists of.....and is situated
.....metres distant from the first corner beacon on an approximate
magnetic bearing of.....degrees.

The third corner beacon consists of.....and is situated
.....metres distant from the second corner beacon on an approximate
magnetic bearing of.....degrees and is
metres distant from the location beacon on an approximate magnetic bearing of
.....degrees.

.....
Signature of applicant

*NOTE—All descriptions should be clockwise.

FORM NO. 8

(Regulation 17)

THE MINING REGULATIONS, 1947

Notice to Show Cause

To..... the holder of licence No.....

Whereas it has been brought to the attention of the Minister that you have (or your
attorney or manager.....
has) committed the following contravention of the provisions of the Mining Act or of the
Regulations thereunder, or of your licence.....

now therefore you are hereby required to show cause to me at.....
..... on or before the in
writing (or by attending personally) why your licence should not be revoked.

.....
Commissioner

FORM NO. 9

(Regulations 19, 29)

THE MINING REGULATIONS, 1947

Transfer

To the Minister through the Commissioner.

I.....the holder
of licence/mining lease No..... hereby apply for consent
to transfer such licence/lease to

The reason for my application is.....

The following are the particulars of the persons to whom I am applying for
permission to transfer—

1. Name of applicant.....
2. Nationality of applicant.....

THE MINING REGULATIONS, 1947

3. Address in Jamaica at which notices, etc., may be served.....
4. Name and nationality of directors of the company, body of persons or partnership (if any).....
5. A financial statement of the position of the applicant is appended hereto.
6. If a copy of the memorandum and articles of association has not already been lodged with the Commissioner a copy must be enclosed herewith.
7. The appropriate transfer fee is forwarded herewith.

.....
Signature of applicant

I desire to acquire the interest above referred to and the above particulars are correct.

.....
Signature of the person to whom application for transfer is made

Consent is given to the above transfer.

.....
Minister

Date.....

FORM NO. 10

(Regulations 20, 30)

THE MINING REGULATIONS, 1947

Surrender

To the Minister through the Commissioner.

Ithe holder of licence / mining lease No.hereby apply for your consent to surrender my licence / mining lease.

The reasons for my application are.....

I forward herewith my licence / mining lease and the appropriate surrender fee.

.....
Signature of holder

Consent is given to the surrender.

.....
Minister

Date.....

FORM NO. 11

(Regulation 21)

THE MINING REGULATIONS, 1947

Certificate on termination of Licence

To the Commissioner.

1. Name of holder of licence.....
2. Number of the licence.....
3. Date of termination of the licence.....

I hereby certify that all the excavations (a list whereof appears hereunder) have been secured in the permanent manner set out below against each excavation, and I also certify that I have removed all beacons marking out the boundaries of the area the subject of the licence which has been terminated and that I have complied with the provisions of section 29 of the Act.

Excavations	Manner in which secured
(a)
(b)
.....	
Signature of holder	

FORM NO. 12

(Regulation 22)

THE MINING REGULATIONS, 1947

Application for Mining Lease

To the Minister through the Commissioner.

- Date and hour of receipt by the Commissioner.....
1. Name of applicant.....
 2. Nationality of applicant.....
 3. Name and nationality of members or directors of the company, body of persons or partnership (if any).....
 4. Address in Jamaica at which notices, etc., may be served.....
 5. Number of the applicant's prospecting right of licence.....
 6. Parish and area (in square kilometres or part of a square kilometer) of the area applied for.....
 7. Mineral for which the applicant desires to mine.....
 8. Length of term desired.....
 9. A financial statement of the position of the applicant is appended hereto.
 10. In the case of an application by a company if a copy of the memorandum and articles of association has not already been lodged with the Commissioner a copy must be enclosed herewith.
 11. The date on which the location beacon was erected was.....
 12. A sketch plan as required by the Regulations is attached hereto
 13. The appropriate mining lease fee is forwarded herewith.

14. The delineation of the area is as follows—

The area of approximately square kilometres

The location beacon consists of and is situated approximately at the intersection of false co-ordinates North and East on sheet of the topographical map of Jamaica.

The first corner is situated approximately at the intersection of the false co-ordinates North and East, approximately metres distant from the location beacon on an approximate grid bearing of degrees.

The second corner is situated approximately at the intersection of the false co-ordinates North and East, approximately metres distant from the first corner on an approximate grid bearing of degrees.

The third corner is situated approximately at the intersection of the false co-ordinates North and East, approximately metres distant from the second corner on an approximate grid bearing of degrees and is metres distant from the location beacon on an approximate grid bearing of degrees.

FORM NO. 13

(Regulation 22)

THE MINING REGULATIONS, 1947

Temporary Permission to Mine

This temporary permission to mine is granted to of for the purpose of mining..... in, under or upon..... in respect of which an application for a mining lease has been made by the said which said area is delineated on the application plan hereto annexed furnished by the said..... for a period of subject to the provisions of the Mining Act and of the Regulations made thereunder, which are now in force or which may hereafter come into force during the continuance of this temporary permission and subject to the following conditions and restrictions.....

Rent payable—

Dated the day of 19.....

Minister

FORM NO. 14

(Regulation 22)

THE MINING REGULATIONS, 1947

Mining Lease

This mining lease is granted to of for the purpose of mining..... in, under or upon as the same is delineated on the plan annexed hereto and coloured..... for a term of years from the day of subject to the provisions

of the Mining Act and of the Regulations made thereunder, which are now in force as well as to any regulations which may come into force during the continuance of this lease and relating to the safe working of the mines or to health or welfare of the persons employed therein, and subject also to the following conditions—

The surface rent payable in respect of the lands comprised in this Lease is

Dated the.....day of.....19.....

Minister

FORM NO. 15

(Regulation 31)

THE MINING REGULATIONS, 1947

Application for Renewal of Mining Lease

To the Minister through the Commissioner.

1. Name of applicant.....
2. Number of applicant's mining lease.....
3. Mineral for which applicant desires to mine.....
4. Length of term desired.....
5. If the application is for any area less than the area covered by the lease a sketch plan as required by the regulations must be attached and the delineation with the beacons set out.
6. The appropriate fee is forwarded herewith.

Date.....

Signature of applicant

FORM NO. 16

(Regulation 32)

THE MINING REGULATIONS, 1947

Notice of contravention to Mining Lessee

To.....holder of mining lease No.....

Whereas it has been brought to my notice that you have (or your attorney or manager.....has) committed the following contravention of the Mining Act or the Regulations made thereunder, or of the conditions of your mining lease

Now therefore I hereby require you to remedy that contravention on or before.....and if you do not your lease will be liable to revocation.

Date.....

Commissioner

THE MINING REGULATIONS, 1947

FORM NO. 17

(Regulation 34)

THE MINING REGULATIONS, 1947

Notice of removal of plant

To the Commissioner.

I who was holder of mining lease
 No. which terminated on hereby
 notify you of my intention to remove from the area of the lease the following plant,
 machinery, engines or tools—

The removal of the abovementioned articles will be completed by:

Date:

.....
Signature of holder

FORM NO. 18

(Regulation 35)

THE MINING REGULATIONS, 1947

Application to Treat Tailings

To the Commissioner.

I the holder of mining lease
 No. which terminated on hereby apply
 for leave to enter the land comprised in such lease and to treat/remove the tailings dumped
 or stacked at:

Date:

.....
Signature of applicant

I consent to the application.

.....
Commissioner

FORM NO. 19 [Deleted by L.N. 89D/2004]

FORM NO. 20 [Deleted by L.N. 89D/2004]

FORM NO. 21 [Deleted by L.N. 89D/2004]

FORM NO. 22

(Regulation 39)

THE MINING REGULATIONS, 1947

Export Permit

I hereby authorize..... to export
 on which royalty has been paid to

 Date.....

.....
Commissioner

FORM NO. 22A

(Regulation 39)

THE MINING REGULATIONS, 1947

Application for an Export Permit

To the Commissioner.

1. Name of applicant.....
2. Address.....
3. Mining lease No.....
4. Parish.....
5. Quarterly period (where applicable).....
6. Mineral.....
7. Destination and amount as set out below.

DESTINATION			Amount of mineral*
Consignee	Country	Port	
			Total

*Bauxite: dry metric tons (dmt); alumina and other bulk minerals: metric tons (mt).

The appropriate fee of is sent with this application.

.....
Signature of applicant

THE MINING REGULATIONS, 1947

FORM NO. 23

(Regulation 43)

THE MINING REGULATIONS, 1947

Notice of Lodgment

I..... the holder of prospecting right
 licence/mining lease No..... hereby forward the sum of
 as required under section of the Act.
 Date.....

.....
Signature of holder

FORM NO. 24

(Regulation 43)

THE MINING REGULATIONS, 1947

Application for return of lodgment

I..... the holder of prospecting right licence/
 mining lease No..... which terminated on.....
 hereby apply for the return of my lodgment of.....
 or the balance thereof lodged by me on the
 and I certify that there is no liability or claim outstanding to which such lodgment is liable.
 Date.....

.....
Signature of applicant

FORM NO. 25

(Regulation 43)

THE MINING REGULATIONS, 1947

Application for payment from lodgment

I..... have been awarded the sum of
 and..... costs against
 the holder of prospecting right licence / mining
 lease No..... on the day of
 in the Resident Magistrate's Court at
 and there remains outstanding the sum
 of which I have not as yet been paid. I
 therefore apply for the payment of such sum out of the amount lodged by
 the said..... under section 11 or 12 of the
 Act.

Date.....

.....
Signature of applicant

FORM NO. 26

(Regulation 49)

THE MINING REGULATIONS, 1947

Mineral Dealer's Licence

Licence is hereby granted to..... of
to deal in the following minerals
at.....subject to the
 provisions of the Mining Act and of the Regulations made thereunder from
 time to time in force.

This Licence expires on 31st December, 19.....

Date.....

.....
Commissioner

FORM NO. 27

(Regulation 60 (a))

THE MINING REGULATIONS, 1947

Application for Special Mining Lease for Bauxite or Laterite

To the Minister through the Commissioner.

Date and hour of receipt by the Commissioner.....

1. Name of applicant.....
2. Nationality of applicant.....
3. Name and nationality of members or directors of the company, body of persons or partnership (if any).....
4. Address in Jamaica at which notice, etc., may be served.....
5. Number of the applicant's prospecting right or licence.....
6. Parish and area (in square kilometres or part of a square kilometer) of the area applied for.....
7. Mineral for which the applicant desires to mine.....
8. Length of term desired.....
9. A financial statement of the position of the applicant is appended hereto.
10. In the case of an application by a company if a copy of the memorandum and articles of association has not already been lodged with the Commissioner a copy must be enclosed herewith.

11. A sketch plan as required by the Regulations is attached hereto.
12. The volume and folio numbers of the registered titles of the applicant's lands.
13. Particulars of the metric squares in relation to which the application is made.
14. The appropriate mining lease fee is forwarded herewith.

.....
Signature of applicant

FORM NO. 28

(Regulation 60 (c))

THE MINING REGULATIONS, 1947

Special Mining Lease for Bauxite or Laterite

This special mining lease is granted to.....
.....of..... for the purpose of mining
bauxite or laterite in, under or upon..... as
the same is delineated on the plan annexed hereto and coloured.....
.....for a term of..... years from the
.....day of..... subject to the provisions
of the Mining Act and of the Regulations made thereunder now in force, as well as
to any regulations which may come into force during the continuance of this lease
and relating to the safe working of the mines or to the health or welfare of the
persons employed therein, and subject also to the following conditions—
.....
.....

Date the.....day of.....19.....

.....
Minister

FORM NO. 29

(Regulation 62(1))

THE MINING REGULATIONS, 1947

*Application for Addition of other Lands to area of special Mining Lease
for Bauxite or Laterite*

To the Minister through the Commissioner.

1. Name of applicant.....
2. Number of applicant's special mining lease for bauxite or laterite.....
3. A sketch plan as required by the Regulations is attached hereto.
4. Approximate area in square kilometres of area applied for.....
5. The volume and folio numbers of the registered titles of the applicant's lands.....
6. Particulars of the metric squares in relation to which the application is made and of those in relation to which the special mining lease for bauxite or laterite was granted.....

7. The appropriate fee is forwarded herewith.

Date.....

.....
Signature of applicant

SECOND SCHEDULE

(Regulations 3(2),
10, 16(2), 19, 20,
22(2)(a), 29, 30,
31(2), 36(2), 46,
47(2) and 62)

Rates

					\$
1.	Prospecting Right or renewal thereof	...	...	...	5,000.00
2.	Exclusive Prospecting Licence	...	...	...	10,000.00
3.	Renewal of Exclusive Prospecting Licence	...	...	...	5,000.00
4.	Surrender or transfer of Exclusive Prospecting Licence and Special Exclusive Prospecting Licence or any share or interest therein	...	...	...	1,000.00
5.	Surrender or transfer of Mining Lease or any share or interest therein	...	...	...	5,000.00
6.	Temporary permission to mine or renewal thereof	...	...	...	10,000.00
7.	Sanction to group Exclusive Prospecting Licences or Mining Leases...	...	...	...	5,000.00
8.	Export Permit	...	...	...	1,000.00
9.	Mineral Dealers Licence	...	...	...	5,000.00
10.	Search of register	...	...	...	500.00
11.	Surrender or transfer of Special Mining Lease	...	...	...	5,000.00
12.	Addition of minerals to Prospecting Licences or Mining Leases—				
	for a single mineral	...	...	...	2,000.00
	for each additional mineral	...	...	...	1,000.00
13.	Special Exclusive Prospecting Licences (per metric square or part thereof)	...	...	...	600.00
14.	Renewal of Special Exclusive Prospecting Licence (per metric square or part thereof)...	...	...	...	400.00
15.	Mining Lease (per metric square or part thereof)				1,200.00
16.	Renewal of Mining Lease (per metric square or part thereof)...	...	...	...	600.00
17.	Special Mining Lease (per metric square or part thereof)...	...	...	...	1,200.00

SECOND SCHEDULE, *contd.*

				\$
18.	Special Mining Lease for bauxite or laterite (per metric square or part thereof)...	...	...	1,200.00
19.	Addition to Special Mining Lease (per metric square or part thereof)...	...	...	1,200.00
20.	Renewal of Special Mining Lease (per metric square or part thereof)...	...	...	1,200.00

THE MINING ACT

THE MINING (SAFETY AND HEALTH) REGULATIONS, 1977

ARRANGEMENT OF SECTIONS

PART I—*Short Title, Interpretation*

PART II—*General Provision*

PART III—*Explosives*

PART IV—*Loading, Hauling and Dumping*

PART V—*Fire Prevention and Control*

PART VI—*Mining and Ground Control*

PART VII—*Electricity*

PART VIII—*Accessways*

PART IX—*Guarding*

PART X—*Pressure Vessels*

PART XI—*Hoisting and Lifting*

PART XII—*Materials Storage and Handling*

PART XIII—*Air Quality*

PART XIV—*Personal Accommodation, Protection and First Aid*

PART XV—*Additional Provisions for Underground Workings*

THE MINING ACT

REGULATIONS
(under section 99)

THE MINING (SAFETY AND HEALTH) REGULATIONS, 1977

(Made by the Minister on the 9th day of December, 1977)

L.N. 345/77

PART I. *Short Title, Interpretation*

1. These Regulations may be cited as the Mining (Safety and Health) Regulations, 1977.

2. In these Regulations, unless the context otherwise requires—

“acceptable” means acceptable to the Commissioner of Mines;

“air receiver” means—

- (a) any vessel (other than a pipe or coil, or an accessory, fitting or part of a compressor) for containing compressed air and connected with an air compressing plant; or
- (b) any fixed vessel for containing compressed air or compressed exhaust gases and used for the purpose of starting an internal combustion engine; or
- (c) 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; or
- (d) any vessel in which any material is stored and from which it is forced by compressed air;

“approved” means tested and accepted for a specific purpose by a nationally recognized agency; or approved by the Commissioner of Mines;

“authorized person” means a person approved or assigned by management to perform a specific type of duty or duties or to be at a specific location or locations in the mine or plant,

"barricaded" means obstructed to prevent the passage of persons, vehicles, or flying materials;

"berm" means a pile or mound of material capable of restraining a vehicle;

"blasting agent" means any material consisting of a mixture of a fuel and oxidizer which—

(a) is used or intended for use in blasting;

(b) is not classed as an explosive by the Gunpowder and Explosives Act;

(c) contains no ingredient classed as an explosive by the Gunpowder and Explosives Act; and

(d) cannot be detonated by a No. 8 blasting cap;

"blasting area" means the area near blasting operations in which concussion or flying material can reasonably be expected to cause injury;

"blasting cap" means a detonator containing a charge of detonating compound, which is ignited by electric current, or the spark of a fuse, used for detonating explosives;

"blasting circuit" means electric circuits used to fire electric detonators or to ignite an igniter cord by means of an electric starter;

"blasting switch" means a switch used to connect a power source to a blasting circuit;

"boiler" means any closed fired vessel in which for any purpose steam is generated under pressure greater than atmospheric pressure and includes any economizer and any superheater associated with the boiler;

"booster" means a package or cartridge of explosives which is designed specifically to transmit detonation to other explosives and which does not contain a detonator;

"capped fuse" means a length of safety fuse to which a detonator has been attached;

"chain, rope and lifting tackle" means such gear used for the purpose of raising or lowering persons, goods or materials;

"combustible" means capable of being ignited and consumed by fire;

"company official" means a member of the company's supervisory staff;

- "competent person" means a person having skill and experience that fully qualify him to perform the duty to which he is assigned;
- "cone of protection" means a 45° cone centred about a lightning arrester with the apex of the cone at the tip of the arrester;
- "detonating cord" or "detonating fuse" means a flexible cord containing a core of high explosive;
- "detonator" means a device containing a small detonating charge that is used for detonating an explosive, including, but not limited to blasting caps, electric detonators, and delay electric blasting caps;
- "discharged" with respect to fire extinguishers means after any discharge has been made from the extinguisher by operation or leakage;
- "distribution box" means an apparatus with an electric enclosure through which an electric circuit is carried to one or more cables from a single incoming feed line; each cable circuit being connected through individual overcurrent protective devices;
- "electric blasting cap" means a blasting cap designed for and capable of being initiated by means of an electric current;
- "employee" means a person who works for wages or salary in the service of an employer;
- "employer" means a person or organization including contractors which hires one or more persons to work for wages or salary;
- "explosives" means any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion, and explosives include, but are not limited to black powder, dynamite, nitroglycerine, fulminate, ammonium nitrate when mixed with a hydrocarbon, and other blasting agents;
- "face or bank" means that part of any mine where excavating is progressing or was last done;
- "flash point" means the minimum temperature at which sufficient vapour is released by a liquid or solid to form an inflammable vapour-air mixture at atmospheric pressure;
- "free fall" means the vertical distance from the unguarded edge of a raised floor platform or structure over which a person can fall;

- "hoist or lift" means a lifting machine or appliance with a platform or cage, the direction of movement of which is restricted by a guide or guides;
- "inflammable" means capable of being easily ignited and of burning rapidly;
- "lay" means the distance parallel to the axis of the rope in which a strand makes one complete turn about the axis of the rope;
- "lifting machine" means a crane, crab, winch, teagle, gin wheel, transporter or runway;
- "lifting tackle" means chain slings, rope slings, rings, hooks, shackles, swivels, and pulley blocks;
- "major electrical installation" means an assemblage of stationary electrical equipment for the generation, transmission, distribution, or conversion of electrical power;
- "man trip" means a trip on which men are transported to and from a work area;
- "maximum permissible working pressure" means, in the case of a new pressure vessel, that specified by the manufacturer of the pressure vessel or by a pressure vessel inspecting company or association, and in the case of an existing pressure vessel, that specified in the report of the last examination under these Regulations;
- "misfire" means the complete or partial failure of a blasting charge to explode as planned;
- "operating zone" means the total area traversed or likely to be traversed by heavy equipment during mining, stockpiling, dumping, cleaning, earthmoving, grading or similar operations;
- "plant" includes all facilities used in the exploration, extraction, winning, processing and transportation of minerals;
- "prime mover" means every engine, motor or other appliance which provides mechanical energy derived from steam, water, wind, electricity, the combustion of fuel or other sources;
- "primer" means a package or cartridge of explosives which is specifically designed to transmit detonation to other explosives and which contains a detonator;
- "radiation" includes Alpha Rays, Beta Rays, Gamma Rays, X-Rays Neutrons, High-speed Electrons, High-speed Protons and other atomic particles;

- "reverse-current protection" means a method or device used on direct-current circuits or equipment to prevent the flow of current in a reverse direction;
- "roll protection" means a framework, safety canopy or similar protection for the operator when equipment overturns;
- "safety can" means an approved container, of not over 5 gallons capacity, having a spring-closing lid and spout cover;
- "safety fuse" means a train of powder enclosed in cotton, jute yarn, and waterproofing compounds, which burns at a uniform rate; used for firing a cap containing the detonating compound which in turn sets off the explosive charge;
- "safety switch" means a sectionalizing switch that also provides shunt protection in blasting circuits between the blasting switch and the shot area;
- "scaling" means removal of insecure material from a face or highwall;
- "secondary safety connection" means a second connection between a conveyance and rope, intended to prevent the conveyance from running away or falling in the event the primary connection fails;
- "shaft" means a vertical or inclined shaft, a winze, underground slope or incline;
- "static load safety factor" means a safety factor obtained when dead or non-moving test weights are used;
- "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 does not exceed atmospheric pressure, and through which steam is passed at atmospheric pressure or at approximately that 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, a steam pipe or coil, or a part of a prime mover) used for containing steam under pressure greater than atmospheric pressure;
- "stray current" means that portion of a total electric current that flows through paths other than the intended circuit;
- "substantial construction" means construction of such strength, material, and workmanship that the object will withstand all

reasonable shock, wear, and usage to which it will be subjected;

"suitable" means that which fits, and has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance;

"transmission machinery" means every shaft, wheel, drum, pulley, system of fast and loose pulleys, coupling, clutch, driving belt or other device by which the motion of a prime mover is transmitted to or received by any machine or appliance;

"travelway" means a passage, walk or way regularly used and designated for persons to go from one place to another;

"trip light" means a light displayed on the opposite end of a train from the locomotive or engine;

"underground working" includes underground mines, shafts, tunnels, and drifts;

"vacuum vessel" means a closed pressure vessel operated at a pressure lower than atmospheric pressure;

"water" as a content of pressure vessels includes water, liquors and aqueous mixtures;

"working place" means any place where work is being performed.

PART II. *General Provisions*

3. The employer shall—

- (a) take all reasonable steps to ensure that the provisions of these Regulations are carried out;
- (b) establish a continuing safety programme in which all employees shall participate fully;
- (c) for the purpose of making known the provisions of these Regulations to all employees in and about the mine and plant, the employer shall cause copies of the Regulations to be circulated, and kept posted in conspicuous places at or near the mine or plant where they may be conveniently read by the persons employed;
- (d) circulate or post, for employee information, company safety regulations and job safety procedures.

4.—(1) New employees shall be instructed in safety rules and safe work procedures.

(2) Inexperienced employees shall be assigned to work with experienced personnel until such employees have acquired the necessary skills to perform their duties safely.

(3) No employee shall be assigned or required to work alone in any particularly hazardous area, or at any particularly hazardous task, unless he can be heard, can be seen, or can communicate with others who might be of assistance to him.

(4) A competent person shall at all times be in charge of employees at work.

5.—(1) The employer shall appoint, by instrument in writing such number of competent persons as may be necessary—

- (a) to ensure a thorough supervision of all operations in or about the mine or plant;
- (b) to be safety officials to ensure the proper administration of the company's safety programme.

(2) No safety official shall have production responsibilities.

(3) Competent persons appointed under this regulation shall at all times be conversant with the conditions of all work areas, machinery, materials and equipment and with accepted work practices through continuous surveys, inspections and monitorings.

6.—(1) Every employee shall, before commencing work and during the course of it, make a careful examination of his working place, and if he notices anything that appears unsafe or likely to cause danger, he shall if practicable, remedy the matter if it is within the scope of his duties, and if not, shall immediately report the matter to his supervisor or other responsible official.

(2) Every employee who notes any defect, condition, practice or thing that may render the operation or job he is engaged on, or about to do unsafe, shall report the matter to his supervisor or other responsible official immediately, and shall not proceed with the operation until the matter has been examined.

7.—(1) The employer shall give attention to, and cause to be carefully investigated, any representations or complaints that may be made to him concerning any matter affecting the safety or health of employees at work.

(2) Whenever the employer finds any condition, practice, or thing, which constitutes an imminent danger to the health or safety of any person, the employer shall cause all employees to be withdrawn from exposure thereto, until the danger is removed or reduced to reasonable limits and shall permit only necessary employees to enter the area concerned, to remedy or control such condition, practice or thing.

8. Whenever an employee suffers an injury arising out of and during the course of employment—

- (a) the employee shall report the occurrence immediately or as early as possible to his supervisor irrespective of the seriousness of the injury;
- (b) the employer shall cause first aid and other medical treatment as necessary to be administered to the injured person without delay.

9. No employee or official shall—

- (a) wilfully destroy, or misuse any means, appliances or other thing provided in pursuance of these Regulations for securing the health or safety of the persons employed; or
- (b) wilfully by his acts or omissions do anything to endanger himself or any other person.

10. No person below the age of seventeen years shall be employed in or about a mine or plant and persons below this age shall not be allowed to enter such premises except with the employer's consent.

11.—(1) Serious accidents which result in death or dismemberment of any person shall be immediately reported to the Commissioner by the fastest possible means of communication, and in respect of each injured person, a written report shall be made out in the Form 1 of the Sixth Schedule and forwarded to the Commissioner with the least possible delay.

(2) All accidents which result in injury to any employee so as to occasion at least one day's disability shall be reported, in respect of each person injured, in the Form 1 of the Sixth Schedule, to the Commissioner with the least possible delay.

(3) A monthly accident return shall be made out in the Form 2 of the Sixth Schedule at the end of each month and shall be for-

Sixth
Schedule.
Form 1.

Form 2.

warded to the Commissioner within three weeks following the report month.

12.—(1) Equipment that is to be used during a shift shall be inspected before each shift. Equipment defects affecting safety shall be reported to a competent person.

(2) Equipment defects affecting safety shall be corrected before the equipment is used.

(3) Unsafe equipment or machinery shall be removed from service immediately.

(4) Tools and equipment shall be used only for the purpose and within the capacity for which they were intended and designed.

(5) Powered mobile equipment shall be provided with adequate brakes.

(6) Machinery shall not be lubricated while in motion where a hazard exists, unless equipped with extended fittings or cups.

PART III. *Explosives*

13.—(1) Detonators and explosives shall be stored in licensed magazines.

(2) Detonators shall not be stored in the same magazine with explosives.

(3) Ammonium nitrate-fuel oil blasting agents when mixed shall be stored as explosives, provided that such blasting agents shall not be stored in the same compartment with other explosives, safety fuse or detonating cord.

(4) Safety fuse or detonating cord may be stored with explosives in the same magazine.

14. Areas surrounding magazines or facilities for the storage of blasting agents shall be kept clear of all combustible material for a distance of not less than 8 metres (26.25 feet) in all directions.

15.—(1) Smoking and open flames shall not be permitted within 15 metres (49.21 feet) of a place where explosives or detonators are stored.

(2) Fires shall not be built within 100 meters (328 feet) of an explosive magazine.

(3) Explosives, detonators, and related materials such as safety fuse and detonating cord shall be stored in a manner to assure use of oldest stocks first.

16.—(1) Cases of explosives—

- (a) shall not be stored on their ends or sides;
- (b) shall not be stacked more than six feet high;
- (c) shall be stacked on wooden skids and shall have minimum clearances of two feet from the ceiling and three inches from floor and walls;
- (d) shall not be opened inside magazines.

(2) Tools used for opening containers of explosives shall be of non-sparking materials.

17. Magazines shall be—

- (a) located in accordance with the Table of distances for storage of explosives, as specified in the Fifth Schedule;
- (b) detached structures located away from powerlines, fuel storage areas, and other possible sources of fire;
- (c) constructed substantially of non-combustible material or covered with fire-resistant materials;
- (d) reasonably bullet-resistant;
- (e) electrically bonded and grounded if constructed of metal;
- (f) made of non-sparking materials on the inside, including floors and fixtures;
- (g) provided with adequate and effectively screened ventilation openings near the floor and ceiling. These vents shall be "zed shaped" or otherwise acceptably designed to allow for entrance of air only;
- (h) kept locked securely when unattended;
- (i) posted with suitable danger signs;
- (j) used exclusively for storage of explosives or detonators and kept free of all extraneous materials;

Fifth
Schedule.

- (k) kept clean and dry in the interior, and in good repair;
- (l) located within the 45° "cone of protection" of a lightning arrester.

18.—(1) Explosives shall be transported under the supervision of the holder of an exemption under the Gunpowder and Explosives Act.

(2) Explosives and detonators shall be transported in separate vehicles unless separated by 100 mm. (3.94 inches) of hardwood or the equivalent and the total weight of explosives does not exceed 25 kilogrammes (55.12 pounds).

19. Self-propelled vehicles used to transport explosives or detonators shall be equipped with suitable fire extinguishers.

20.—(1) Vehicles containing explosives or detonators shall be posted with proper warning signs and red flags.

(2) Vehicles containing explosives shall not be wilfully parked on public highways. When parked on a public highway in emergencies, suitable conspicuous warning devices shall be set up 30 metres (98.43 feet) in front and to the rear of such vehicles.

21. Vehicles containing explosives or detonators—

- (a) shall, when parked, have the brakes set, the motive power shut off, and shall be blocked securely against rolling;
- (b) shall not be taken to a repair garage or shop for any purpose;
- (c) shall be maintained in good condition; and
- (d) shall be operated at a safe speed and in accordance with all safe operating practices.

22. Vehicles used to transport explosives, other than blasting agents, shall have substantially constructed bodies, no sparking metal exposed in the cargo space, and shall be equipped with suitable sides and tail gates; explosives shall not be piled higher than the side or end enclosures.

23.—(1) Explosives or detonators shall be transported at times and over routes that expose a minimum number of persons.

(2) Explosives or detonators in open-body vehicles shall be covered with fire-retardant and water-repellent tarpaulins.

(3) Other materials or supplies shall not be placed on or in the cargo space of a conveyance containing explosives, detonating cord or detonators, except for safety fuse and except for properly secured, nonsparking equipment used expressly in the handling of such explosives, detonating cord or detonators.

(4) Explosives or detonators shall not be transported on locomotives.

(5) No person shall smoke while transporting or handling explosives or detonators.

(6) Only the necessary attendants shall ride on or in vehicles containing explosives or detonators.

24.—(1) Substantial, nonconductive, closed portable magazines shall be used to carry explosives, other than blasting agents, to blasting sites.

(2) Nonconductive containers with tight-fitting covers shall be used to transport or carry detonators to blasting sites.

(3) Vehicles or portable magazines containing detonators or explosives shall not be left unattended.

25.—(1) Blasting operations shall be under the direct control of authorized persons holding exemptions under the Gunpowder and Explosives Act.

(2) Persons who use or handle explosives or detonators shall be experienced men who understand the hazards involved; trainees shall do such work only under the supervision of and in the immediate presence of experienced men.

26. Damaged or deteriorated explosives or detonators shall be destroyed in a safe manner.

27.—(1) Holes to be blasted shall be charged as near to blasting time as practical and such holes shall be blasted as soon as possible after charging has been completed. In no case shall the time elapsing between the completion of charging to the time of blasting exceed twenty-four hours unless prior approval has been obtained from the Commissioner of Mines.

(2) Areas in which charged holes are awaiting firing shall be guarded, or barricaded and posted and flagged against unauthorized entry.

28. No person shall smoke within 15 meters (49.21 feet) of explosives or detonators.

29. Explosives shall be kept separated from detonators until charging is started.

30.—(1) Primers shall be made up at the time of charging and as close to the blasting site as conditions allow.

(2) A primer shall be prepared so that the detonator is contained securely and is completely embedded within the explosive cartridge.

31. Only wooden or other nonsparking implements shall be used to punch holes in an explosive cartridge.

32. Tamping poles shall be blunt at the tamping end and made of wood or other nonsparking material acceptable to the Commissioner of Mines.

33. No tamping shall be done directly on a capped primer.

34. Unused explosives and detonators shall be moved to a safe location as soon as charging operations are completed.

35. Where pneumatic loading is employed, before any type of blasting operation using blasting agents is put into effect, an evaluation of the potential hazard of static electricity shall be made. Adequate steps, including the grounding and bonding of the conductive parts of pneumatic loading equipment, shall be taken to eliminate the hazard of static electricity before blasting agent use is commenced.

36. Pneumatic loading equipment for explosives shall not be grounded to waterline, air lines, rails, or permanent electrical grounding systems.

37. Hoses used in connection with pneumatic loading equipment shall be of the semiconductive type, having a total resistance low enough to permit the dissipation of static electricity and high currents to a safe level. Wire-countered hose shall not be used because of the potential hazard from stray electric currents.

38. Blasting lines or cables shall not be less than 100 metres (328 feet) in length.

39.—(1) Completely wired rounds shall be tested with a blasting galvanometer before connections are made to the exploder.

(2) Tests shall be carried out with a blasting galvanometer at the end of the blasting line away from the wired round.

40. Permanent blasting lines shall be properly insulated, and kept in good repair.

41.—(1) When electric detonators are used, charging shall be stopped immediately when the presence of static electricity or stray current is detected; the condition shall be remedied before charging is resumed.

(2) When electric detonators are used, charging shall be suspended and men withdrawn to a safe location upon the approach of an electrical storm.

42. Where blasts are fired from power circuits—

- (a) safety switches located at safe distances from the blast areas shall be provided in addition to the main blasting switch;
- (b) blasting switches shall be locked in the open position except when closed to fire the blast. Lead wires shall not be connected to the blasting switch until the shot is ready to be fired;
- (c) electric circuits from the blasting switches to the blast area shall not be grounded;
- (d) power sources shall be suitable for the number of electric detonators to be fired and for the type of circuits used;
- (e) if any part of a blast is connected in parallel the time of current flow shall be limited to 25 milliseconds by incorporating a control device in the blasting circuit or by interrupting the circuit with a zero-delay electric blasting cap attached to one or both lead lines.

43. The key or other control to an electrical firing device shall be entrusted only to the person designated to fire the round or rounds.

44.—(1) When safety fuse has been used, men shall not return to the blast site for at least 30 minutes.

(2) When detonating cord or electric blasting caps have been used, men shall not return to the blast site for at least 5 minutes.

(3) Misfires shall not be handled until 60 minutes after failure to detonate safety fuse or 30 minutes after failure to detonate electrically or with detonating cord.

45. Blast sites shall be examined for undetonated explosives after each blast and undetonated explosives found shall be disposed of safely.

46. Blasting caps shall be crimped to fuses only with implements designed for that specific purpose.

47. The burning rate of the safety fuse in use at any time shall be measured and brought to the attention of all men concerned with blasting.

48. When firing from 1 to 10 blastholes with safety fuse ignited individually using hand-held lighters, the fuses shall be of such lengths to provide that the fuse in the last hole to fire is burning within the hole before the first hole fires.

49. No employee shall light more than 10 individual fuses.

50. In no case shall any 40-second-per-foot safety fuse less than 36 inches long or any 30-second-per-foot safety fuse less than 48 inches long be used.

51. Electric detonators of different brands shall not be used in the same round.

52. Except when being tested with a blasting galvanometer—

- (a) electric detonators shall be kept shunted until they are being connected to the blasting line or wired into a blasting round;
- (b) wired rounds shall be kept shunted until they are being connected to the blasting line;
- (c) blasting lines shall be kept shunted until immediately before blasting.

53. Where electric blasting is to be performed, electric circuits to equipment in the immediate area to be blasted shall be de-energized before explosives are brought into the area; the power shall not be turned on again until after the shots are fired.

54. Ample warning shall be given before blasts are fired. All persons shall be cleared and removed from the blasting area unless suitable blasting shelters are provided to protect men endangered by concussion or flyrock from blasting.

55. If explosives are suspected to be burning in a hole, all persons in the endangered area shall move to a safe location and no one shall return to the hole until the danger has passed, but in no case within one hour.

56. Explosives shall not be fired in such quantities as are likely to endanger life or property.

57. Records of total number of holes, depth and spacing of holes, total weight and weight of explosives per delay or shot, dates of shots and types of explosives used shall be kept for at least twelve months.

58. Explosive charges in tunnels and underground drifts shall be initiated from a safe distance dependent on the size of the charge, but not less than 300 metres (984.25 feet) away if initiated within the same drift.

59.—(1) The drilling area shall be inspected for hazards before starting the drilling operations.

(2) No drilling shall be carried out where safety hazards exist, and in particular no drilling shall be carried out beneath bare overhead power lines.

60. Men shall not be on a mast while the drill-bit is in operation unless they are provided with a safe platform from which to work and they are required to use safety belts to avoid falling.

61. Drill crews and others shall stay clear of augers or drill stems that are in motion. Persons shall not pass under or step over a moving stem or auger.

62. Receptacles or racks shall be provided for drill steel stored on drills.

63. When a drill is being moved from one drilling area to another, drill steel, tools and other equipment shall be secured and the mast placed in a safe position.

64. The drill helper, when used, shall be in sight of the operator at all times while the drill is being moved to a new location.

65. In the event of power failure, drill controls shall be placed in the neutral position until power is restored.

66. Before attempts are made to straighten a crossed cable on a reel, the drill stem shall be resting on the bottom of the hole or on the platform with the stem secured to the mast.

67. While in operation, drills shall be attended at all times.

68. Drill holes large enough to constitute a hazard shall be covered or guarded.

69. Employees operating or working near jackhammers or jackleg drills and other drilling machines shall position themselves so that they will not be struck or lose their balance if the drill steel breaks or sticks.

70. Employees shall not drill from positions that hinder their access to the control levers, or from insecure footing or staging, or from atop equipment not designed for this purpose.

71. Starter steels shall be used when collaring holes with handheld drills.

72. Employees shall not hold the drill steel while collaring holes or rest their hands on the chuck or centralizer while drilling.

73. Air shall be turned off and bled from the hose before handheld drills are moved from one working area to another.

74. Holes shall not be drilled where there is danger of intersecting a charged or misfired hole and no person shall drill within two feet of any hole or remnant of a hole that has been charged and blasted.

75. No person shall drill within five feet of any hole containing explosives.

PART IV. *Loading, Hauling and Dumping*

76. Materials shall be stockpiled at a height and slope consistent with their natural angle of repose and the reclaiming equipment to be used.

77. Stockpile faces shall be trimmed to prevent hazards to personnel.

78. Dumping locations and haulage roads shall be kept reasonably free of water, debris, and spillage.

79. Berms, bumper blocks, safety hooks, or similar means shall be provided to prevent overtravel and overturning at dumping locations.

80. Grizzlies, grates, and other sizing devices at dump and transfer points shall be anchored securely in place.

81. Where overhead clearance is restricted, warning devices shall be installed and the restricted area shall be conspicuously marked.

82. Only authorized persons shall be present in areas of loading or dumping operations.

83. Powered mobile haulage equipment shall be provided with audible warning devices. Lights shall be provided on both ends.

84. No vehicle having an obstructed view to the rear shall be backed unless it is equipped with an automatic, audible, back-up warning device or unless an observer is used to direct the operator in rearward movement.

85. Operators shall be certain by signal or other means, that all persons are clear before starting or moving equipment.

86. When an operator is present men shall notify him before getting on or off equipment.

87. Lights, flares, or other warning devices shall be posted when parked equipment creates a hazard to vehicular traffic.

88. Operators shall sit facing the direction of travel while operating equipment with dual controls.

89. Men shall not work or pass under the buckets or booms of loaders in operation.

90. Where truck spotters are used, they shall be well in the clear while trucks are backing into dumping position and dumping. Lights shall be used at nights to direct trucks where the lighting in the area is inadequate.

91. Electrically powered mobile equipment shall not be left unattended unless the master switch is in the off position, all operating controls are in the neutral position, and the brakes are set or other equivalent precautions are taken against rolling.

92. Trucks, shuttle cars, and front-end loaders shall be equipped with emergency brakes separate and independent of the regular braking system.

93. A tow bar shall be used to tow heavy equipment. A safety chain shall be used in conjunction with the tow bar.

94. Any load extending more than 1.25 metres (4 ft.) beyond the rear of the vehicle body shall be marked clearly with a red flag by day and a red light by night.

95. Operators' cabs shall be constructed to permit operators to see without straining and shall be reasonably comfortable.

96. Cab windows shall be of safety glass or equivalent, in good condition and shall be kept clean.

97. Cabs of mobile equipment shall be kept free of extraneous materials.

98. Berms or guards shall be provided on the outer bank of elevated roadways.

99. Haulage equipment shall be operated under power control at all times.

100. Mobile equipment operators shall have full control of the equipment while it is in motion.

101. Dippers, buckets, loading booms, or heavy suspended loads shall not be swung over the cabs of haulage vehicles until the drivers are out of them and in safe locations, unless the vehicles are designed specifically to protect the drivers from falling materials of the types involved.

102. Equipment operating speeds shall be prudent and consistent with conditions of roadway, grades, clearance, visibility, traffic, and the type of equipment used.

103. Vehicles shall follow each other at a safe distance; passing should be limited to areas of adequate clearance and visibility.

104. Dust control measures shall be taken where dust significantly reduces visibility of equipment operators.

105. Traffic rules, signals, and warning signs shall be standardized and posted.

106. Men shall not work on or from a piece of mobile equipment in a hoisted position until it has been blocked in place securely. This does not preclude the use of equipment specifically designed as elevated mobile work platforms.

107. Men shall not ride—

- (a) outside the cabs and beds of mobile equipment;
- (b) on top of loaded haulage equipment;
- (c) in dippers, shovel buckets, forks or in the beds of dump trucks, except where such dump trucks are provided with seating and the body is secured against tipping.

108. Dippers, buckets, scraper blades, and similar movable parts shall be secured or lowered to the ground when not in use.

109. When travelling between work areas, the equipment shall be secured in the travel position.

110. Equipment which is to be hauled shall be loaded and protected so as to prevent sliding or spillage.

111. Repairs or maintenance shall not be performed on machinery unless the motive power is off and the machinery is blocked against

motion, except where machinery motion is necessary to make adjustments.

112. Mobile equipment shall not be left unattended unless the brakes are set. The wheels shall be turned into a bank or rib, or shall be blocked, when parked on a grade.

113. Cars or trucks shall be loaded in such a manner as to minimize spillage while en route to a dumping site.

114. Adequate protection shall be provided against falling materials where such hazards exist.

115. Men shall not—

(a) get on or off moving equipment, except that trainmen may get on or off slowly-moving trains;

(b) ride between cars or on top of closed or loaded cars.

116. Only authorized persons shall be permitted to ride on trains or locomotives and they shall ride in a safe position.

117. Rocker-bottom or bottom-dump cars shall be equipped with positive locking devices.

118. Chute-loading installations shall be designed so that the men pulling chutes are not required to be in a hazardous position while loading cars.

119. Positive-acting stoplocks, derail devices, track skates, or other adequate means shall be installed wherever necessary to protect persons from runaway or moving railroad equipment.

120. Switch throws shall be installed so as to provide adequate clearance for switchmen.

121. Switches shall be equipped with conspicuous direction indicators.

122. Movements of two or more pieces of rail equipment operating independently on the same track shall be regulated by an efficient signal block, telephone, or radio system; movements on complex haulage systems shall be effectively controlled.

123. Parked railcars, unless held effectively by brakes, shall be blocked securely.

124. Persons shall not go over, under, or between rail cars as a means of crossing, unless the train is stopped and the motorman has been notified, and the notice acknowledged.

125. Inability of the motorman to clearly recognize his brakeman's signals when the train is under the direction of the brakeman, shall be construed by the motorman as a stop signal.

126. Bumper blocks or the equivalent shall be provided at all track dead ends.

127. Public and permanent railroad crossings shall be posted with warning signs and signals, or shall be guarded when trains are passing and shall be planked or otherwise filled between the rails.

128. Roadbeds, rails, joints, switches, frogs and other elements on railroads shall be designed, installed and maintained in a safe manner consistent with the speed and type of haulage.

129. Track guardrails, lead rails, and frogs shall be protected or blocked as to prevent a person's foot from becoming wedged therein, where such openings occur in a walkway crossing tracks.

130.—(1) Trains shall be brought to a complete stop when carrying out the manual aspects of the coupling or uncoupling of cars.

(2) Persons coupling or uncoupling cars shall be within sight of the motorman or a third person shall act as co-ordinating signalman.

(3) Makeshift couplings shall not be used.

131. Operators shall sound warning before starting trains, when trains approach crossings or other trains on adjacent tracks and where vision is obscured.

132. Hand shovels with handgrips shall not be used for cleaning, depositing materials onto, or removing materials from, conveyor belts or pulleys.

133. Drive belts shall not be shifted while in motion unless the machines are provided with mechanical shifters.

134.—(1) Belts, chains, and ropes shall not be guided onto power-driven moving pulleys, sprockets or drums with the hands except on slow moving equipment especially designed for hand feeding.

(2) Pulleys of conveyors shall not be cleaned manually while the conveyor is in motion, except that idlers may so be cleaned provided that adequate precaution is taken to prevent accidents.

(3) Belt dressing shall not be applied manually while belts are in motion unless an aerosol-type dressing is used.

135. When the entire length of a conveyor is visible from the starting switch, the operator shall visually check to make certain that all persons are in the clear before starting the conveyor. A positive audible or visible warning system shall be installed on all conveyors and operated to warn persons that the conveyor will be started.

136. Crossovers shall be provided where it is necessary to cross conveyors. Moving conveyors shall be crossed only at designated crossover points.

137. Railed walkways shall be provided wherever persons are regularly required to walk alongside elevated conveyor belts. Inclined railed walkways shall be non-skid or provided with cleats.

138. Unguarded conveyors with walkways or within six feet of ground or floor level shall be equipped with emergency stop devices or stop cords along their full length.

139. Effective automatic backstops or brakes shall be installed on inclined conveyor drive units to prevent conveyors from running inadvertently in reverse, where a hazard to personnel would be caused.¹

140. No person shall be allowed to ride a power-driven chain, belt, or bucket conveyor, unless the conveyor is specifically designed for the transportation of persons.

141. All drive units on conveyors operating in series shall be electrically interlocked.

[The inclusion of this page is authorized by L.N. 71/1979]

142.—(1) Carriers, including loading and unloading mechanisms shall be inspected each shift; brakes shall be inspected daily; ropes and supports shall be inspected as recommended by the manufacturer or as physical conditions warrant.

(2) Records of rope maintenance and inspection shall be kept.

143. Positive-action type brakes shall be provided on aerial ropeways.

144. Track cable connections shall be designed to offer minimum obstruction to the passage of wheels.

145. Guards shall be installed to prevent swaying buckets from hitting towers.

146. Guards, nets or other suitable protection shall be provided where ropeways pass over buildings, roadways, and walkways, where such walkways are in regular use.

147. Maintenance men shall not ride loaded buckets on ropeways.

148. Persons other than maintenance men shall not ride aerial ropeways and where maintenance men do so the ropeway shall have—

- (a) two independent brakes, each capable of holding the maximum load;
- (b) direct communication between terminals;
- (c) power drives with emergency power available in case of primary power failure;
- (d) buckets equipped with positive locks to prevent accidental tripping or dumping.

149. Aerial ropeway buckets shall not be overloaded and feed shall be regulated to prevent spillage.

PART V. *Fire Prevention and Control*

150.—(1) No person shall smoke or use an open flame—

- (a) where inflammable solvents, liquids, fluids or other inflammable or explosive materials are stored, transported, handled or used; or

- (b) within 15 metres (49.21 feet) of any area where smoking or the use of an open flame may cause a fire or explosion.

(2) Signs warning against smoking and open flames shall be posted so that they may be readily seen in areas or places where fire or explosion hazards exist.

151. Areas surrounding inflammable liquid storage tanks, liquefied fuel gas tanks, explosives magazines, electric substations and transformers shall be kept free from high grass, weeds, underbrush, and other combustible materials for at least 7 metres (22.97 feet) in all directions.

152. Liquefied petroleum gas tank locations must be out of doors, and must not be situated on any part of any building nor within the following minimum distances of any building or structure:

Water Capacity per Container	Minimum Distances		
	Containers		Between Above-ground Containers
	Underground	Above-ground	
Less than 550 litres (121.00 gallons)	3 metres	None	None
550–2,000 litres (121–439.99 gal.)	3 metres (9.84 feet)	3 metres (9.84 feet)	1 metre (3.28 feet)
2,000–10,000 litres (439.99–2,199.93 gal.)	7 metres (22.97 feet)	7 metres (22.97 feet)	1 metre (3.28 feet)
10,000–150,000 litres 2,199.93–32,998.96 gal.)	15 metres (49.21 feet)	15 metres (49.21 feet)	2 metres (6.56 feet)

153.—(1) Every liquefied petroleum gas tank shall have marked upon it—

- (a) the maximum safe or permissible working pressure;
- (b) water capacity at 60° F (16° C);
- (c) test pressure.

(2) Every liquefied petroleum gas tank shall be equipped with—

- (a) a pressure gauge connected to the vapour phase if the tank is over 2,000 litres (439.99 gallons) water capacity;
- (b) a pressure relief valve in communication with the vapour phase, arranged to discharge upwards and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas on the container. On a container of 10,000 or more litres (2,199.93 gallons), the discharge shall be vented not less than 2 metres (6.56 feet) vertically upwards.

154. Unburied inflammable-liquid storage tanks shall be securely mounted on firm foundations. Outlet piping shall be provided with flexible connections or other special fittings to prevent adverse effects from settling.

155.—(1) In the piping of liquefied petroleum gas—

- (a) liquid lines shall be of steel or other approved material;
- (b) vapour lines shall be of steel, solid drawn copper or other approved material.

(2) Piping, tubing and fittings which have been used for any purposes other than conveying fuel gas shall not be used.

(3) Liquefied petroleum gas piping shall, where practical, enter the building above ground and remain in an above ground and ventilated location.

156.—(1) When the installation of liquefied petroleum gas piping underground beneath buildings is unavoidable, the piping shall be encased in a conduit. The conduit shall extend into a normally usable and accessible portion of the building and, at the point where the conduit terminates in the building, the space between the conduit and the gas piping shall be sealed to prevent the possible entrance of any gas leakage. The conduit shall extend at least 4 inches outside the building, be vented above grade to the outside and be installed in a way as to prevent the entrance of water.

(2) No liquefied petroleum gas pipe smaller than standard $\frac{1}{2}$ inch iron pipe shall be used in any concealed location.

157. Bends which reduce the internal area or weaken fuel gas piping or tubing are prohibited.

158. Gas piping in contact with earth or other material which may corrode the piping, shall be protected against corrosion in an approved manner. When dissimilar metals are joined underground, an insulating fitting shall be used. Piping shall not be laid in contact with cinders.

159. Gas piping or tubing shall not be concealed in any location where corrosive chemicals are used.

160. Gas piping shall not be installed in unfrequented spaces unless adequate ventilation is provided. Such piping shall be protected against corrosion.

161. Outdoor gas piping in industrial plant yards installed above ground shall be securely supported and located where it will be protected from physical damage.

162. Fuel lines shall be equipped with valves to cut off the fuel at the source and shall be located and maintained to reduce fire hazards.

163. All heat sources, including lighting equipment, capable of producing combustion shall be insulated or isolated from combustible materials.

164.—(1) Before any system of gas piping is put in service, it shall be carefully tested to assure that it is gastight. Where any part of the system is to be enclosed or concealed, this test should precede the work of closing in.

(2) In order to test for tightness, the piping may be filled with the fuel gas, air, or inert gas, but not with any other gas or liquid, and OXYGEN SHALL NEVER BE USED, and—

- (a) for pipeline only, (between first stage regulator and appliances), the piping system must stand a pressure of at least 1.5 bars (21.75 p.s.i.) gauge pressure for 25 minutes, without showing any drop in pressure, after being stabilized. If any pressure drop is noted, the location of the leak must be detected by using soapy water solution or other approved method of gas leak detection. A flame SHALL NEVER be used; and

- (b) when appliances are connected to the piping system, the system must stand a pressure of not less than 500 millimetres (19.69 inches) water column for at least 10 minutes without showing any drop in pressure.

165. Tanks, piping, and fittings shall be examined and tested at intervals while in service to ensure they are safe, and in particular—

- (a) lines shall be tested as specified in regulation 164 once in every twelve months;
- (b) tanks shall be pressure tested once in every five years at $1\frac{1}{2}$ times the safe working pressure; and
- (c) records of all tests and repairs shall be kept.

166. Faulty lines, tanks and other liquefied petroleum gas equipment shall not be used and gas supplies shall be cut off until faults have been corrected.

167. Power wires and cables shall be adequately insulated where they pass through doors or walls or where they present a fire hazard.

168. Abandoned electrical circuits shall be deenergised and isolated so that they cannot become energised inadvertently.

169. Materials, such as oily waste and rags, which are subject to spontaneous combustion shall be placed in tightly covered metal containers until disposed of properly.

170.—(1) Solvents with flash points lower than 100°F. (38°C.) shall not be used for cleaning.

(2) Solvents shall not be used near an open flame or other ignition source, or near any source of heat, or in an atmosphere that can elevate the temperature of the solvent above the flash point.

171.—(1) Drip pans shall be provided to catch leakage or spillage when oil or flammable liquids are dispensed in a place or manner which may create drips or leakage.

(2) Floors around drip pans shall be kept free from inflammable liquids.

172.—(1) Oxygen cylinders shall not be stored near oil or grease.

(2) Gauges and regulators used with oxygen or acetylene cylinders shall be kept clean and free of oil and grease.

173. Battery-charging stations shall be located in well-ventilated areas.

174. Internal combustion engines, except diesels, shall be shut off and stopped before being fuelled.

175. Each area shall be provided with suitable fire-fighting equipment adequate for the size of the area and the classes of fire possible.

176.—(1) Buildings or rooms in which oil, grease, inflammable liquids or other inflammable materials are stored shall be of fire resistant construction and well ventilated.

(2) Means shall be provided to confine, remove, control, or drain away spilled or flowing inflammable liquids.

177. Firefighting equipment which is provided on the mine property shall be strategically located, readily accessible, plainly marked, properly maintained, and inspected periodically. Records shall be kept of such inspections.

178. Fire extinguishers shall be—

- (a) of the appropriate type for the particular fire hazard involved;
- (b) adequate in number and size for the particular fire hazard involved;
- (c) replaced immediately with fully charged extinguishers after being discharged;
- (d) inspected at regular intervals and maintained according to the manufacturer's recommendations;
- (e) approved by the Bureau of Standards or other competent testing agency acceptable to the Commissioner.

179. Fire hydrants shall be of a standard type. Adapters shall be provided to fit the hose equipment of local fire departments. Wrenches or keys to open the valves shall be readily available.

180. Water pipes, valves, outlets, hydrants, and hoses designated for fire fighting purposes shall be inspected every three months and tested annually. Records shall be kept of such inspections and tests.

181. Suitable fire extinguishers shall be provided on self-propelled mobile equipment with enclosed cabs.

182. When welding or cutting near combustible materials, suitable precautions shall be taken to ensure that smoldering metal or sparks do not result in a fire. Fire extinguishing equipment shall be readily available at the site.

183. Instructions for the use of firefighting equipment shall be prominently displayed on or near to such equipment.

184.—(1) A firefighting organization shall be established, equipped, and trained in firefighting; drills shall be held at least twice a year.

(2) All employees shall be instructed on current escape and evacuation plans, fire alarm signals, and applicable procedures to be followed in case of fire.

185. Valves on oxygen and acetylene tanks shall be kept closed when the contents are not being used.

186. Belt-conveyors in locations where fire would create a hazard shall be provided with safety switches to stop the drive pulley automatically in the event of excessive slippage.

187. Fire alarm systems shall be provided and maintained in operating condition, or adequate fire alarm procedures shall be established to warn promptly all persons endangered by a fire.

188. At least two independent exits shall be provided where men work or congregate in enclosed areas.

189. Each mine or plant shall develop standard operating procedures for fire and other emergencies. Drills shall be held at least once per year.

PART VI. *Mining and Ground Control*

190.—(1) Mining methods shall be consistent with prudent engineering practices and shall ensure pit wall and bank stability and safe working conditions.

(2) Loose unconsolidated material shall be stripped for a safe distance, but in no case less than 10 feet from the top of pit walls.

191. The width and height of benches shall be governed by the type of equipment to be used, the material to be mined and the operation to be performed.

192. Safe means for scaling pit banks shall be provided. Hazardous banks shall be scaled before other work is performed in the hazardous bank area.

193. Men shall not work near or under dangerous banks. Overhanging banks shall be taken down immediately, and other unsafe ground conditions shall be corrected promptly, or the areas shall be barricaded and posted.

194. Men shall approach from above loose rock and areas to be scaled and shall scale from a safe location.

195. Banks, benches and sloping terrain shall be examined after every rain and unsafe conditions corrected before men work in such areas.

196. Before a boulder is drilled or manually broken it shall be moved to a safe location or positioned securely and prevented from rolling and moving.

197.—(1) Unauthorized persons shall neither enter nor remain in the operating zone of mobile equipment while these are in operation.

(2) The operators of such equipment shall not begin or continue to operate while unauthorized persons are within the equipment's zone of operation.

198. Clean-up or other operations involving men and mobile equipment working complementarily shall be so conducted that the manual and mechanical steps run alternately.

199. Men working on grizzlies shall stand on suitable solid footing or be protected by suitable safety devices.

200. Wherever it is unavoidable to leave mined-out pit walls over five feet in vertical height and over 30° in slope, such walls shall be fenced or barricaded to prevent animals or persons falling over them.

PART VII. *Electricity*

201.—(1) Circuits shall be protected against excessive overloads by fuses or circuit breakers of the correct type and capacity.

(2) Electric equipment and circuits shall be provided with switches or other controls. Such switches or controls shall be of approved design and construction and shall be properly installed.

202. Individual overload protection or short-circuit protection shall be provided for the trailing cables of mobile equipment.

203. Power wires and cables shall have adequate current-carrying capacity and shall be protected from mechanical injury.

204.—(1) Areas containing major electrical installations shall be enclosed or securely fenced.

(2) Suitable danger signs shall be posted at all major electrical installations.

(3) Areas containing major electrical installations shall be entered only by authorized persons.

205. Metal fencing and metal buildings enclosing transformers and switchgear shall be grounded.

206. Power wires and cables shall be insulated adequately where they pass into or out of electrical compartments, or where they are installed in buildings and work areas.

207. Distribution boxes shall be provided with disconnect switches.

208.—(1) Telephone and low-potential electric signal wires shall be protected from contacting energized powerlines, and shall not be run in the same conduit or trucking compartment as medium or high voltage wiring.

(2) High-potential transmission cables shall be covered, insulated, or placed according to acceptable electrical codes to prevent contact with low-potential circuits.

209. Electrical connections and resistor grids that are difficult or impractical to insulate shall be guarded, unless protection is provided by location.

210. All metal enclosing or encasing electrical circuits shall be grounded or provided with equivalent protection.

211.—(1) Transformers shall be enclosed or shall be placed at least 2.5 metres (8.20 feet) above the ground or installed in a transformer house or surrounded by a substantial fence at least 2.0 metres (6.56 feet) high and at least 1 metre (3.28 feet) from any energized parts, casings, or wiring.

(2) Transformer enclosures shall be kept locked against unauthorized entry.

212. Guy wires of poles supporting high-potential conductors shall be equipped with insulators installed near the pole end.

213.—(1) Electrical equipment shall be de-energized before work is done on such equipment. Switches shall be locked out or other measures taken which shall prevent the equipment from being energized without the knowledge of the individuals working on it.

(2) Such locks, or preventative devices shall be removed only by the persons who installed them or by authorized personnel with the concurrence of the individuals who installed them. If this is not practical, then authorized personnel may remove the devices after a thorough check of the job.

(3) In cases where more than one group are working on the same equipment, each group shall install its own device.

214.—(1) Power circuits shall be de-energized before work is done on such circuits unless hot-line tools are used. Suitable warning signs shall be posted by the individuals who are to do the work.

(2) Switches shall be locked out or other measures taken which shall prevent the power circuits from being energized without the knowledge of the individuals working on them. Such locks, signs, or preventative devices shall be removed only by the person who installed them or by authorized personnel.

215. When a potentially dangerous condition is found it shall be corrected before electrical equipment or wiring is energized.

216. Principal power switches shall be labelled to show which units they control, unless identification can be made readily by location.

217. At least 1 metre (3.28 feet) of clearance shall be provided around all parts of stationary electric equipment or switchgear where access or travel is necessary.

218. Dry wooden platforms, insulating mats, or other electrically nonconductive material shall be kept in place at all switchboards and power-control switches where shock hazards exist. However, metal plates on which a person normally would stand and which are kept at the same potential as the grounded, metal, non-current-carrying parts of the power switches to be operated may be used.

219. Electrical motors, switches and controls exposed to damaging dust or water shall be of dust-tight or water-tight construction.

220. Inspection and cover plates on electrical equipment shall be kept in place at all times except during testing or repairs.

221.—(1) Hand-held electric tools shall not be operated above 415/240 volts three phase/single phase.

(2) Hand-held power tools, other than rock drills shall be equipped with controls requiring constant hand or finger pressure to operate the tools or shall be equipped with friction or other equivalent safety devices.

222.—(1) Fuses shall not be removed or replaced by hand in an energized circuit, and they shall not otherwise be removed or replaced in an energized circuit unless equipment and techniques especially designed to prevent electrical shock are provided and used for such purpose.

(2) Fuse tongs or hotline tools shall be used when fuses are removed or replaced in high-potential circuits.

223. Telegraph, telephone, or signal wires shall not be installed on the same crossarm with power conductors. When carried on poles supporting powerlines, they shall be installed below powerlines.

224. Operating controls shall be installed so that they can be operated without danger of contact with energized conductors.

225. Switches and starting boxes shall be of safe design and capacity.

226.—(1) Every electric motor shall be controlled by an efficient switch or switches for starting and stopping, so placed as to be easily operated by the person in charge of the motor and machinery connected thereto.

(2) In every place in which any machine is being driven by an electric motor there shall be means adjacent to the equipment for switching off the motor or for stopping the machine.

227. Every flexible cable for portable electrical apparatus shall be connected to the electrical system by a properly constructed connector.

228.—(1) The metal work of all electrical apparatus shall be efficiently earthed; and any flexible metallic covering of the conductors shall be itself efficiently earthed and shall not be the only earth connection for the metal of the apparatus.

(2) The lampholder of a portable lamp shall be efficiently earthed and shall not be in metallic contact with the guard or other metal work.

229. Portable apparatus and its flexible supply cable shall be controlled by an efficient device suitably located and capable of cutting off the power.

230.—(1) All electrical conductors and apparatus exposed to the weather, moisture, corrosion, inflammable surroundings or explosive atmosphere, or used in any process or for any special purpose shall be so constructed or protected as to prevent danger to life or limb from shock, burn, or injury to workers or from fire, and such special precautions shall be taken in the use of such conductors or apparatus as may be necessary in view of such exposure.

(2) In particular all electrical equipment installed in a location where the atmosphere is likely to become inflammable or explosive shall be of flame-proof or explosion-proof construction.

231. At the working platform of every switchboard and in every switchboard passage-way if there are bare electrical conductors exposed or arranged to be exposed when live so that they may be touched, there shall be a clear and unobstructed passage of adequate and safe width and height with a firm and even floor. Adequate and safe means of access shall be provided for every switchboard passageway.

232.—(1) In every plant in which electrical energy is generated or transformed or is used for any purpose other than lighting an adequate number of posters giving instructions for the treatment of persons suffering from electric shock shall be conspicuously exhibited in locations where such instructions can be easily read by persons employed in the plant.

(2) Each employee shall be instructed in at least one method of rescue.

233. Proper and effective precautions shall be taken either by grounding or other means to prevent any material other than a conductor from becoming electrically charged.

234. Ground continuity conductors shall be provided between the main switch-gear and the consuming apparatus.

235. Internal electrical wiring shall be arranged in an orderly manner. Make-shift connections or wiring shall not be used.

236. Long hand tools or equipment capable of making contact shall not be used beneath bare overhead conductors or in a room where such conductors are installed, unless such tools are non-conductive.

237. Outstanding warning signs shall be posted where bare power lines are installed for overhead cranes, cages or other equipment.

238. In each switch room or switch area a schematic diagram of the switchboard and all related switchgear shall be readily available to authorized personnel.

239. Fire alarm circuits shall not in any circumstances be housed in the same conduit as any other circuit. Where fire alarm circuits and other circuits are contained in a common channel or trucking, they shall be separated by a continuous portion of fire resistant material.

240. All electrical wiring and installations shall be done in accordance with appropriate national or international codes as approved by the Chief Electrical Inspector.

PART VIII. Accessways

241. Safe means of access shall be provided and maintained to all working places.

242. Crossovers, elevated walkways, elevated ramps, and stairways shall be of substantial construction, provided with handrails, and maintained in good condition. Where necessary, toeboards shall be provided.

243.—(1) Ladders shall be of substantial construction and maintained in good condition. Wooden members shall not be painted.

(2) Portable straight ladders shall be provided with non-slip bases, shall be placed against a safe backing and set on secure footing.

(3) Fixed ladders shall be anchored securely and installed to provide at least 150,000 millimetres (5.90 inches) of toe clearance.

(4) Fixed ladders shall project at least 1.0 metre (3.28 feet) above landings, or substantial handholds shall be provided above the landings.

(5) Fixed ladders shall be offset and have substantial railed landings at least every 6.00 metres (19.68 feet) unless backguards or other anti-fall devices are attached.

(6) Steep fixed ladders (70° to 90° from the horizontal) 6.00 metres (19.68 feet) or more in length shall be provided with backguards, cages or equivalent protection starting at a point not more than 2.00 metres (6.56 feet) from the bottom of the ladder.

244. Travelways steeper than 30° from the horizontal shall be provided with ladders or stairways.

245. Ladderways, stairways, walkways, and ramps shall be kept free of loose rock and extraneous materials.

246. Men climbing or descending ladders shall face the ladders and have both hands free for climbing.

247. No permanent structures (including backguards), shall be less than 600.00 millimetres (23.62 inches) from the face or climbing side of a ladder.

248. Scaffolds and working platforms shall be of substantial construction and maintained in good condition. Floor boards shall be laid properly and the scaffolds and working platform shall not be overloaded.

249. Floor planks, boards, or plates on a scaffold or working platform shall not be separated by more than 50.00 millimetres (1.97 inches).

250.—(1) Every scaffold, working platform or raised floor from which a person is liable to fall a distance of more than 2.00 metres (6.56 feet) shall be equipped with guardrails and toeboards of adequate strength.

(2) Guardrails shall be to a height of not less than 1.00 metre (3.28 feet) and toeboards to a height of not less than 100.00 millimetres (3.94 inches). Vertical separation between rails shall not exceed 750.00 millimetres (29.53 inches).

251. Every working platform, raised floor or scaffold from which a person is liable to fall a distance of more than 2.00 metres (6.56 feet) shall provide a footing with an unobstructed and free width of not less than 635 millimetres (25 inches).

252. Vertical clearance above stair steps shall be a minimum of 2.00 metres (6.56 feet) or adequate warning shall be provided to indicate an impaired clearance.

253. Slippery walkways shall be provided with cleats and handrails and/or ropes.

254. Openings above, below or near travelways through which or into which men or materials may fall shall be protected by railings, barriers or covers. Where it is impractical to install such protective devices, adequate warning signals shall be installed.

255.—(1) Carriageways shall be of a construction and width to comfortably accommodate the movement of traffic upon them, and in particular the width of haulageways shall, where practicable, be at least three times the width of the widest vehicles in use.

(2) Where it is impracticable to construct roadways of a width three times the width of the widest vehicles in use, for example within tunnels, traffic controllers shall regulate the movement of vehicles.

256. Where a raised pipeline or other obstruction crosses an access-way, suitable crossovers shall be provided.

PART IX. *Guarding*

257. Gears, sprockets, chains, drive, head, tail, and take-up pulleys, flywheels, couplings, shafts, sawblades, fan inlets, and similar exposed moving machine parts which may be contacted by persons, and which may cause injury to persons shall be guarded.

258. Every part of electric generators, motors and rotary converters, and every flywheel directly connected thereto, shall be securely fenced, unless it is in such a position or of such a construction as to be as safe to every person as it would be if securely fenced.

259. No driving belt when not in use shall be allowed to rest or ride upon a revolving shaft which forms part of the transmission machinery.

260. Projecting set-screws, bolts or keys on any revolving shaft, spindle, wheel or pinion shall be securely guarded, cut off or counter-sunk.

261. Every fixed vessel, structure, sump, trench, shaft or pit of which the edge is less than 1 metre (39.37 inches) above the adjoining ground or platform shall, if it contains any scalding, corrosive or poisonous liquid, either be securely covered or be securely fenced to at least that height, or where by reason of the nature of the work neither secure covering nor secure fencing to that height is practicable, all practicable steps shall be taken by covering, fencing or other means to prevent any person from falling into the vessel, structure, sump, trench, shaft or pit.

262. Stationary grinding machines other than special pit grinders shall be equipped with—

- (a) peripheralhoods (less than 90° throat openings), capable of withstanding the force of a bursting wheel;
- (b) adjustable tool rests set as close as practical to the wheel;
- (c) adjustable shields to restrain flying material.

263. Grinding wheels shall be operated within the specifications of the manufacturer of the wheels.

264. Fork-lift trucks, front-end loaders, bulldozers and other heavy mobile equipment shall be provided with substantial canopies where overhead protection is necessary.

265. Guards shall be—

- (a) securely in place while machinery is being operated;
- (b) sufficiently strong, of adequate form and dimensions; and
- (c) maintained to provide for required protection.

266. Flanges, glands, and other units which frequently fail and pose a hazard, and are not corrected by repair or redesign, shall be provided with spray shields or other protective devices or taken out of service until corrected.

PART X. *Pressure Vessels*

GENERAL

267.—(1) Every pressure vessel shall be identified by a tag or name-plate, and where two or more pressure vessels are used, each shall be distinguished by a serial number (e.g. Boiler No. 2), conspicuously displayed.

(2) Only competent persons trained for the purpose shall be in direct charge of fired and unfired pressure vessels.

268.—(1) The safety valve or valves on a pressure vessel shall be of a discharge capacity to prevent the pressure from building up over a maximum of 10% above the allowable working pressure, and shall be so adjusted as to start blowing as soon as the allowable working pressure is exceeded.

(2) The opening connection between the pressure vessel and the safety valve shall have at least the area of the valve inlet or the sum of the areas of the valve inlets where two or more valves are fitted to one connection.

(3) All safety valves shall be regularly tested to ensure correct functioning. Records of tests shall be kept available for inspection.

269. Steam blow-off pipes including those connected to safety valves shall be positioned to discharge in such a way as not to be likely to cause burns to persons.

270. No valve of any design shall be placed between the safety valve and the pressure vessel, nor on the discharge pipe between the

safety valve and the atmosphere, other than on unfired vessels where such valves shall be locked or sealed in the open position during vessel use.

271. Sight glasses on pressure vessels shall be guarded.

272.—(1) Areas surrounding steam, corrosive liquid or hot water leaks shall be immediately cordoned off and posted with danger tags; and repairs shall be effected without delay.

(2) Floors around containers of steam, hot water and corrosive fluids shall be of adequate slope and have drains and trenches and hoses close at hand, to keep the floors free of spillages, leakages and overflows.

273. Drains, trenches and overflow pipes for handling noxious substances shall be connected to sumps, slop tanks or salvage pits of such capacities that spillages are contained and prevented from polluting the environment.

274. Process lines which experience has shown to be subject to corrosion and erosion shall be regularly tested as dictated by such experience. Where experience does not exist, testing shall be carried out as necessary to establish the required frequency of tests.

BOILERS

275.—(1) Every steam boiler used for generating steam, whether separate or one of range, shall be fitted with—

- (a) proper safety valves;
- (b) a suitable fusible plug or an efficient low water alarm device;
- (c) a steam gauge and water gauge to show respectively the pressure of steam and the height of water in each boiler. The steam gauge shall be graduated to twice the allowable working pressure;
- (d) a steam top valve;
- (e) a suitable connection on the boiler steam drum for accepting a test gauge.

(2) On a boiler which is one of a range there shall be a non-return valve if the boilers are connected to a common heater.

276. The safety valve or valves on a boiler shall be of a discharge capacity to discharge totally the generated steam before the pressure builds up over a maximum of 10% above the allowable working pressure.

277. The pressure relief system of a boiler shall be of suitable design for the boiler and shall discharge freely to the outside atmosphere.

278. When no more than two safety valves of different sizes are mounted separately on a boiler, the relieving capacity of the smaller valve shall not be less than 50% of the larger.

279. Safety valves shall be so set that they all start blowing at a pressure not higher than 4% above the boiler's allowable working pressure, and variations in the set popping pressure shall not exceed the following—

Allowable Working Pressure		Permissible Variation
Bars (Gauge)	PSI (Gauge)	
1.00—5.00	14.50—72.50	140 millibars (2.03 PSI)
5.01—20.00	72.65—290.00	3%
20.01—70.00	290.15—1015.00	700 millibars (10.15 PSI)
Over 70.00	Over 1015.00	1%

280. Boilers shall be operated at safe water levels at all times.

281. Records of all boilers shall be kept and these shall be kept up to date at all times and, in particular, shall show—

- (a) type of vessel;
- (b) fabrication code;
- (c) installation date;
- (d) age (if previously installed elsewhere);
- (e) particulars of safety valves;
- (f) safe working pressure;
- (g) steam generating capacity;
- (h) shell plate type and thickness;

- (i) reports of examinations and tests;
- (j) fuel type.

282.—(1) Every steam boiler and all its fittings and attachments shall be—

- (a) thoroughly examined by an independent examiner approved by the Commissioner once in every 12 months (but in no case longer than 14 months):

Provided that the Commissioner may at his discretion extend this period;

- (b) pressure tested by an independent examiner approved by the Commissioner once in every 24 months (but in no case longer than 26 months), after extensive repairs, or when considered advisable by the independent examiner;
- (c) stripped of lagging and refractory as required by the independent examiner in order to permit him to determine the condition of the boiler.

(2) A full and accurate report of the result of every such examination and test shall be made in the Form A in the Fourth Schedule by the person making the examination, and a copy of the report shall be sent to the Commissioner of Mines within 28 days of such examination or test.

Fourth
Schedule.
Form A.

283. No person shall enter or be in any steam boiler which is one of a range of two or more steam boilers unless—

- (a) all inlets through which steam or hot water might otherwise enter the boiler from any other part of the range are disconnected from that part; or
- (b) all valves or taps controlling such entry are closed and securely locked.

UNFIRED PRESSURE VESSELS

284. Every steam receiver not so constructed as to stand with safety the maximum permissible working pressure of the boiler or the maximum pressure which can be contained in the pipe connecting the receiver with any other source of supply, shall be fitted with—

- (a) a suitable reducing valve or other automatic appliance to prevent the safe working pressure from being exceeded;

- (b) a suitable safety valve;
- (c) a correct steam pressure gauge;
- (d) a suitable stop valve.

285. Every steam container shall be so maintained as to secure that the outlet is at all times kept open and free from obstruction.

286. Records of all unfired pressure vessels shall be kept and these shall be kept up to date at all times and in particular shall show—

- (a) type of vessel;
- (b) fabrication code;
- (c) installation date;
- (d) age (if previously installed elsewhere);
- (e) particulars of safety valves;
- (f) safe working pressure;
- (g) shell plate type and thickness;
- (h) reports of examinations and tests.

287. Every air receiver shall—

- (a) have marked upon it so as to be plainly visible the safe working pressure in bars or pounds per square inch;
- (b) in case of a receiver connected with an air compressing plant, either be so constructed as to withstand with safety the maximum pressure which can be obtained in the compression, or be fitted with a suitable reducing valve or other suitable appliance to prevent the safe working pressure of the receiver being exceeded;
- (c) be fitted with a suitable valve, rupture disc or other relief device so adjusted as to permit the air to escape as soon as the safe working pressure is exceeded;
- (d) be fitted with a pressure gauge indicating the pressure in the receiver in bars or pounds per square inch, calibrated to at least twice the safe working pressure;
- (e) be fitted with a suitable appliance for draining the receiver; and

- (f) be provided with a suitable manhole, hand-hole, or other means which will allow the interior to be thoroughly cleaned.

288. Unfired pressure vessels and their fittings shall be of sound construction and properly maintained and shall be thoroughly examined by a competent person recognized as such by the Commissioner at least once in every period of 24 months (but in no case more than 26 months), except that where conditions corrosive to the vessel exist, such examinations shall be done at least once in every period of 12 months (but no longer than 14 months):

Provided that for a vessel so constructed that the internal surface cannot be thoroughly examined, a suitable hydraulic test shall be carried out in lieu of internal examination. A record of such test and examination in the Form B or B (Alternative) in the Fourth Schedule shall be kept.

Fourth
Schedule.
Form B, or
B (Alternative).

289. Regulations 287 and 288 shall apply as far as possible, to any vessel containing gases at pressures higher than atmospheric pressure without a constant outlet to the atmosphere (not being a portable vessel filled by suppliers and delivered to a mine or plant).

290.—(1) Compressed air receivers shall have inspection openings which shall be manholes when the tanks are over 36 inches in diameter.

(2) Safety devices on compressed-air systems shall be maintained in good operating conditions.

291. Repairs involving the pressure system of compressors, receivers, or compressed-air-powered equipment shall not be attempted until the pressure has been bled off.

292. At no time shall compressed air be directed toward a person. When compressed air is used, all necessary precautions shall be taken to protect persons from injury.

293. Safety chains or suitable locking devices shall be used at connections to machines of high-pressure hose lines of 1-inch inside diameter or larger, and between high-pressure hose lines of 1-inch inside diameter or larger, where a connection failure could create a hazard.

294. Air compressor intake lines shall not be located in atmospheres containing explosive concentrations of inflammable gases or vapours.

295. Lubricated air compressors shall be equipped with automatic temperature-activated shutoff mechanisms set for 400 F., or with fusible plugs installed in the compressor discharge lines as near the compressors as possible. Fusible plugs shall melt at temperatures 50% less than the flash point of the lubricants, including oils.

PART XI. *Hoisting and Lifting*

296.—(1) No chain, rope or lifting tackle shall be used unless it is of good construction, sound material, adequate strength and free from patent defect.

(2) All chains, ropes and lifting tackle in use shall be thoroughly examined by a competent person before each use and at such intervals as may be necessary during use to ensure they are safe.

297. All parts of every lifting machine shall be of sound construction and free from patent defect.

298. All lifting machine shall be thoroughly examined by a competent person at least once in every period of twelve months and a register in the Form C in the Fourth Schedule kept of such examinations.

Fourth
Schedule.
Form C.

299. There shall be plainly marked on every lifting machine the safe working load or loads thereof, except that in the case of a jib crane so constructed that the safe working load may be varied by the raising or lowering of the jib, there shall be attached thereto either an automatic indicator of safe working loads or a table indicating the safe working loads at corresponding indications of the jib or corresponding radii of the load.

300.—(1) No lifting machine shall be taken into use for the first time unless it has been tested and examined by a competent person and a certificate of such test and examination specifying the safe working load or loads of the machine and signed by the person making the test and examination has been obtained and is kept available for inspection.

(2) No lifting machine shall be loaded beyond the safe working load.

301. Every crane or dragline operated wholly or partially by a prime mover shall be equipped with a gong or other effective audible signalling

device (automatic or otherwise) and installed within easy reach of the operator, for warning persons who may be endangered by any movement of the crane or load.

302. Every hoist or lift shall be securely fenced and in particular—

- (a) every hoist or lift shall be of good mechanical construction sound material and adequate strength, and shall be properly maintained;
- (b) every hoist or lift shall be examined by a competent person at least once in every period of six months and records of such examinations shall be kept available; and
- (c) every hoistway or liftway shall be effectively protected by a substantial enclosure fitted with gates, being such an enclosure as to prevent, when the gates are shut, any person from falling down the way or coming in contact with any moving part of the hoist or lift.

303.—(1) No hoist or lift shall be used for carrying persons unless it is provided with a cage, which is—

- (a) so constructed as to prevent, when the cage gate or gates are shut, any person carried from falling out or from being trapped between any part of the cage and any fixed structure or other moving part of the hoist or lift, or from being struck by articles or materials falling down the hoistway; and
- (b) fitted on each side with a gate from which access is provided to a landing place, with efficient interlocking or other devices to secure that the gate cannot be opened except when the cage is at a landing place, and that the cage cannot be moved away from any such place until the gate is closed.

(2) Every gate in the hoistway or liftway enclosure of a hoist or lift used for carrying persons shall be fitted with efficient interlocking or other devices to secure that the gate cannot be opened except when the cage is at the landing place, and that the cage cannot be moved away from the landing place until the gate is closed.

(3) Cage doors or gates shall be closed while men are being hoisted and they shall not be opened until the cage has come to a stop.

(4) In connection with every hoist or lift used for carrying persons there shall be provided suitable efficient automatic devices

which will ensure that the cage comes to rest at a point above the lowest point to which the cage can travel.

(5) In the case of a hoist or lift used for carrying persons the maximum number of persons to be carried at any one time shall be plainly marked thereon, and a greater number of persons shall not be carried.

304. Hoists shall—

- (a) have rated capacities consistent with the loads handled and recommended safety factors of the ropes used; and
- (b) be anchored securely.

305. Belt, rope, or chains shall not be used to connect driving mechanisms to man hoists.

306.—(1) Every hoist and lift shall be equipped with a brake or brakes which shall be capable of holding its fully loaded cage, skip, or bucket at any point.

(2) Automatic hoists shall be provided with devices that automatically apply the brakes in the event of power failure.

307. The operating mechanism of the clutch of every hoist drum shall be provided with a locking mechanism, or interlocked electrically or mechanically with the brake to prevent accidental withdrawal of the clutch.

308. Man hoists shall be provided with devices to prevent overtravel and overspeed.

309. The following static load safety factors shall be used for selecting ropes to be used for hoisting and for determining when such ropes shall be removed from hoists—

Length of rope		Minimum factor of safety (new rope)	Minimum factor of safety (remove)
Metres	Feet		
150 or less	500 or less	8	6.4
151—300	501—1,000	7	5.8
301—600	1,001—2,000	6	5.0
601—900	2,001—3,000	5	4.3
901 or more	3,001 or more	4	3.6

310.—(1) At least three wraps of rope shall be left on the drum when the conveyance or bucket is at the lowest point.

(2) The end of the rope at the drum shall make at least one full turn on the drum shaft, or on a spoke of the drum in the case of a free drum, and shall be fastened securely by means of rope clips or clamps. This does not apply to friction hoists.

311.—(1) The rope shall be attached to the load by the thimble-and-clip method, the socketing method, or other approved method.

(2) Where the socketing method is employed zinc or its equivalent shall be used. The use of Rabbitt metal or lead for socketing wire rope is prohibited.

(3) Where the thimble-and-clip method is employed, the following shall be observed—

- (a) the rope shall be attached to the load by passing one end around an oval thimble that is attached to the load, bending the end back so that it is parallel to the long or "live" end of the rope, and fastening the two parts of the rope together with clips;
- (b) the U-bolt of each clip shall encircle the short or "dead" end of the rope and the distance between clips shall not be less than the figures given in the table set out below;
- (c) as a minimum, the number of clips specified in the table, or the equivalent, shall be used for various diameters of six-strand 19-wire plow steel ropes;
(Follow manufacturer's recommendations for other kinds of wire rope and clips).
- (d) for all ropes less than three-quarter inch in diameter, at least four clips or the equivalent shall be used; and

- (e) when special conditions require the attachment of a sling to the hoisting cable to handle equipment in the shaft, the sling shall be attached by clips or the equivalent in accordance with the table set out below:

Diameter of Rope		No. of Clips	Centre-to-Centre Spacing of Clips	
Millimeters	Inches		Inches	Millimeters
19.05	3/4	4	4 1/4	114.30
22.22	7/8	4	5 1/4	133.35
25.40	1	4	6	152.40
28.58	1 1/8	5	6 3/4	171.45
31.75	1 1/4	5	7 1/4	190.05
33.66	1 3/8	6	8 1/4	209.55
38.10	1 1/2	6	9	228.60
41.28	1 5/8	6	9 3/4	247.65
44.45	1 3/4	7	10 1/2	266.70
47.63	1 7/8	8	11 1/2	292.10
50.80	2	8	12	304.80
53.98	2 1/8	8	13	330.20
57.15	2 1/4	8	14	355.60

312. Fleet angles shall not exceed $1\frac{1}{2}$ degrees.

313. Platforms with toe-boards and handrails shall be provided around elevated head sheaves.

314. Diameters of hand sheaves and hoist drums shall conform to the following specifications—

Rope Construction		Diameter of Sheave and Drum	
		Recommended	Minimum
		Times Rope Diameter	Times Rope Diameter
6 X 7 classification	.. ..	72	42
6 X 19 .. ..	.. ..	45	30
6 X 37 .. ..	.. ..	27	18
6 X 25type B, flattened strand	.. ..	45	30
6 X 27type H, flattened strand	.. ..	45	30
6 X 30type G, flattened strand	.. ..	45	30
18 X 7 classification .. ..	.. ..	51	34

315. Head, idler, knuckle, and curve sheaves shall have grooves that support the rope properly. Before installing new ropes the grooves shall be inspected and where necessary machined to the proper contour and the proper groove diameter.

316. Only experienced operators shall operate hoists, cranes and draglines except where new personnel are being trained.

317. Open hooks shall not be used to hoist buckets or other conveyances.

318. A standard code of hoisting signals shall be adopted and used.

319.—(1) Jacks shall be so constructed that they will not continue to lift when overloaded.

(2) A safety device shall be provided on each jack so that it will continue to support its load in a raised position, even where a failure destroys or interferes with its jacking ability.

PART XII. *Materials Storage and Handling*

320.—(1) Materials shall be stored and stacked in a manner which minimizes stumbling or fall-of-material hazards.

(2) Materials that can create hazards if accidentally liberated from their containers shall be stored in a manner that minimizes the dangers.

(3) Hazardous materials shall be stored in containers of a type approved for such use by recognized agencies; such containers shall be labelled appropriately.

321.—(1) Portable compressed and liquefied gas cylinders shall be secured in a safe manner and so as to prevent any discharge of the liquid phase.

(2) Valves on compressed gas cylinders shall be protected by covers when being transported or stored and installed in a safe location when the cylinders are in use.

322. Taglines shall be attached to suspended material that requires steadying or guidance, wherever this is practicable.

323. Men shall stay clear of suspended loads.

324. Materials shall not be dropped from an elevation unless the drop area is guarded or sufficient warning is given.

325. Men shall not ride on loads being moved by cranes or derricks, nor shall they ride the hoisting hooks.

326. Substances that react violently or liberate dangerous fumes when mixed shall be stored in such a manner that they cannot come in contact with each other.

327.—(1) Only men wearing protective equipment shall stand near pots or ladles when molten material is being handled; warning shall be given before a pour is made or the pot is moved.

(2) Only men wearing suitable protective equipment shall attend to the loading and offloading of acids, alkalis or other corrosive substances.

328. Operator-carrying overhead cranes shall be provided with—

- (a) bumpers at each end of each rail;
- (b) limit switches to halt uptravel of the blocks before they strike the hoist;
- (c) effective audible warning signals under the control of the operator;
- (d) a means to lockout the disconnect switch.

329. No person shall work from or travel on the bridge of an overhead crane unless the bridge is provided with substantial footwalks with toeboards and railings the length of the bridge.

330. Forklift trucks shall be moved with the load in a low position and shall descend ramps with the load behind.

331.—(1) Only bolted, screwed or equivalent connections shall be used on acid and caustic lines, when carrying out loading, offloading or related operations.

(2) No air pressures higher than 2 bars (29 p.s.i.g.) shall be used in the offloading of acids or alkalis. Vessels and lines employing air pressure for liquid transfers shall be constructed, equipped, maintained and handled as pressure vessels.

332. Controls for the offloading of corrosive liquids under pressure shall be located at a safe distance but within view of the operations.

Systems for such offloading shall be approved by the Commissioner of Mines.

333.—(1) Vessels and lines with their connections shall be brought to atmospheric pressure and all corrosive fluids bled off before such vessels and lines are opened or taken apart in maintenance operations. Drains and valves shall be correctly positioned to facilitate compliance with this regulation.

(2) Valves, couplings and other connections on acid or caustic lines shall be opened gradually. Bolts shall not be completely removed before joint seals are broken.

334. In shops or rooms in which mechanical handling equipment is used, and where persons are expected to walk, sufficient safe clearances shall be allowed for aisles. Aisles shall be kept clear of obstructions.

335. All places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition. The floor of every workroom shall be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained, and false floors, platforms, mats or other dry standing places shall be provided where practicable.

336. All active areas shall be provided with effective drainage systems.

PART XIII. *Air Quality and Ventilation*

337.—(1) The exposure of a person in a mine or plant to airborne contaminants shall not exceed the threshold limit values, calculated on the basis of a time-weighted average, as specified in the Third Schedule.

Third
Schedule.

(2) Where for any reason a person is exposed to limits in excess of those specified in the aforesaid Schedule—

- (a) in the case of contaminants other than those designated with a "C" in the Schedule, the limit of exposure shall not be of a greater magnitude than the Commissioner may from time to time deem to be permissible; and
- (b) in the case of contaminants designated with a "C" in the Schedule, such person shall be withdrawn from such area immediately upon detection of the excess concentration of the contaminant.

338. Dust, gas, mist, and fume surveys shall be conducted as frequently as necessary to determine the adequacy of control measures.

339. Muckpiles, haulage roads, rock transfer points, crushers and other points where dust is produced in amounts sufficient to cause a health or safety hazard shall be wetted down as often as necessary, unless the dust is controlled adequately by other methods.

340. Respirators shall not be substituted for environmental control measures. However, where environmental controls have not been developed or when necessary by nature of the work involved (for example, welding, sand blasting, lead burning), a person may work for reasonable periods of time in concentrations of airborne contaminants which exceed ceiling "C" limits or the limit of permissible excursions, if such person wears a respiratory protective device approved by the Commissioner as protection against the particular hazards involved.

341. Atmospheres in all active areas shall contain at least 20 percent oxygen by dry volume.

342.—(1) Wherever radiation is used in diagnostic, analytic or other operations, no employee shall be permitted an exposure to more than the equivalent of 5,000 millirem in any consecutive 12-month period nor the equivalent of 3,000 millirem in any consecutive 3-month period. The maximum accumulated doses shall not exceed 5 (N-18) rem for any employee, where N is the employee's age in years.

(2) Rooms or areas in which radiation is generated shall be posted with identifying precautionary signs. Personal dosimeters or other methods shall continually monitor radiation exposure levels.

343. Effective provision shall be made for securing and maintaining a reasonable temperature in each workroom, but no method shall be employed which results in the escape into the air of any workroom of any fume of such a character and to such an extent as to be likely to be injurious or offensive to persons employed therein.

344. Illumination sufficient for safe working conditions, and complying with standards approved by the Commissioner shall be provided in all work areas and accessways. Standby artificial lighting, independent of the principal power generating system, shall be provided in power houses.

PART XIV. Personnel Protection, Accommodation and First Aid

345.—(1) All persons shall wear suitable hard hats when in or around a mine or plant where a hazard exists that could cause injury to unprotected heads.

(2) All persons shall wear suitable protective footwear when in or around a mine or plant where a hazard exists that could cause injury to unprotected feet.

(3) All persons shall wear safety glasses, goggles, or face shields or other suitable protective devices when in or around an area of a mine or plant where a hazard exists which could cause injury to unprotected eyes.

346. Safety belts and lines shall be worn when men work where there is danger of falling; a second person shall tend the lifeline when bins, tanks or other dangerous areas are entered.

347. Protective clothing, rubber gloves and goggles or face-shields shall be worn by persons handling substances that are corrosive, toxic, or injurious to the skin.

348. Protective clothing or equipment and face-shields or goggles shall be worn when welding, cutting, or working with molten metal.

349. Snug-fitting clothing shall be worn around moving equipment and machinery.

350. Protective gloves shall be worn by employees handling materials which may cause injury, provided that gloves shall not be worn where they could create a hazard by becoming entwined or caught in moving parts of machinery.

351. Finger rings should not be worn while working in or around a mine or plant.

352. Seat belts shall be provided in all vehicles with cabs or roll protection.

353.—(1) No employee shall be permitted an exposure to noise in excess of that specified in the table of Permissible Noise Exposures given in the Third Schedule.

Third
Schedule.

(2) Noise level measurements shall be made using a sound level meter or dosimeter approved by the Commissioner. No exposure

shall exceed 115 dB for continuous noise or 140 dB peak sound pressure level for impact noises.

354. Where it is otherwise impracticable to reduce exposure to within permissible levels, approved protective equipment shall be provided and used to reduce exposure to within the permissible levels.

355. Life jackets or belts shall be worn where there is danger from falling into water.

356. Personal protective devices shall be of adequate quality and form to provide the required protection.

357. Adequate first aid materials, including stretchers and blankets, shall be provided at places convenient to all working areas. Water or neutralizing agents shall be available where corrosive chemicals or other harmful substances are stored, handled, or used and in particular—

- (a) first aid stations shall be equipped with first aid boxes marked with the words "First Aid" and containing at least all the equipment prescribed in the First Schedule;
- (b) each first aid box shall be placed under the charge of a responsible person who shall hold a first aid certificate and shall always be readily available during working hours. A notice stating the name of the person in charge shall be posted at the mine or plant;
- (c) selected supervisors and security men shall be trained in first aid and if possible, one out of every ten of the persons employed shall be trained in emergency first aid treatment;
- (d) where the total number of persons employed in any one shift exceeds one hundred there shall be provided and maintained in good order a suitable first aid room;
- (e) the first aid room shall be used for first aid and ambulance work. It shall be situated within a central location and shall have a floor space of not less than one hundred square feet and shall be adequately lighted and kept clean. It shall be distinguished by the words "First Aid", "Medical Centre" or "Clinic" conspicuously posted;

First
Schedule.

- (f) the first aid room shall be adequately equipped and shall contain at least all the equipment prescribed in the Second Schedule;
- (g) the first aid room shall be placed under the charge of a competent person or persons appointed in writing by the responsible officer. A person shall not be appointed unless he is a qualified nurse or doctor or the holder of a certificate of proficiency in first aid, from a society or body approved by the Commissioner.

Second
Schedule.

358. The person or persons in charge of the first aid room shall always be readily available during working hours and shall keep a record of all cases treated at the first aid room, showing—

- (a) the name of the person treated;
- (b) the time and date of treatment;
- (c) the nature of the injury or illness; and
- (d) the name of the person by whom the treatment was given.

359. At every mine or plant, the employer shall, for the purpose of the removal of patients in serious cases of accidents or sickness, provide and maintain in good condition a suitably constructed ambulance carriage, unless arrangements have been made by or on behalf of the employer either to obtain such a carriage promptly, when required, from a hospital or other place within a reasonable distance from the mine, or to provide such a carriage jointly with the owners of other mines or plants in the neighbourhood.

360. The employer or some other qualified person appointed by him in writing shall inspect, at intervals not exceeding six months, the accommodation, equipment and material provided at the mine or plant and the working of the organization at the mine or plant for first aid and ambulance work; and if on such inspection anything is found to be defective or lacking, it shall be remedied without delay. Records of such inspections shall be kept.

361. Persons about to be regularly employed in a mine or plant shall be medically examined and employees shall be subject to further medical examinations annually if over 40 years in age and biennially if under 40.

Cap. 320
(1953 Edition).

362. There shall not be in attendance for work in any mine or plant any person known to be suffering from an infectious disease as defined in the Public Health Law.

363. In places where caustic, acid or other corrosive substances are stored, piped, handled or used, properly functioning safety showers and eye wash fountains shall be available on each floor or level. Safety showers and eye wash fountains shall be of such numbers and locations as are adequate for emergency use.

364. Every plant shall be kept in a clean state, and free from effluvia arising from any drain or sanitary convenience, and without prejudice to the generality of the foregoing provision—

- (a) suitable covered receptacles shall be provided in the plant for the disposal of dirt and refuse;
- (b) accumulations of dirt and refuse shall be removed daily from the floors and benches of workrooms, and from the staircases and passages;
- (c) the floor of every workroom shall be cleaned at least once in every week by washing or if it is effective and suitable, by sweeping or other method;
- (d) all inside walls and partitions, and all ceilings or tops of rooms, and all walls, sides and tops of passages and staircases shall be kept clean.

365. An enclosed area shall not, while work is carried on, be so overcrowded as to cause risk or injury to the health of the persons employed therein, and without prejudice to the generality of the foregoing provisions—

- (a) an area shall be deemed to be overcrowded, as aforesaid, if the number of persons employed at a time in any workroom is such that the amount of cubic space allowed for every person employed in the room is less than 12 cubic metres (423.78 cubic feet);
- (b) in calculating, for the purpose of this provision the amount of cubic space in any room, no space more than 4 metres (13.12 feet) above the floor shall be taken into account and, where a room contains a gallery, the gallery shall be treated for the purposes of this provision as if it were partitioned

off from the remainder of the room and formed a separate room.

366. Sufficient and suitable sanitary conveniences for the persons employed shall be provided, maintained and kept clean and the following requirements shall have effect—

- (a) in cases where females are employed there shall be at least one suitable sanitary convenience for every 25 females;
- (b) in cases where males are employed there shall be at least one suitable sanitary convenience (not being a convenience suitable merely as a urinal), for every 25 males;
- (c) in cases where the number of males employed exceed 100 and sufficient urinal accommodation is also provided, it shall be sufficient if there is one such convenience as aforesaid for every 25 males up to the first 100, and one for every 50 thereafter;
- (d) in calculating the number of conveniences any number of persons less than 25 or 50, as the case may be, shall be reckoned as 25 or 50;
- (e) every sanitary convenience shall be sufficiently ventilated and no sanitary convenience shall communicate—
 - (i) with any workroom; or
 - (ii) with any enclosed space which also communicates with any workroom unless such space is adequately ventilated.

367. An adequate supply of wholesome drinking water shall be provided at points conveniently accessible to all persons employed.

368.—(1) There shall be provided and maintained for the use of employed persons adequate and suitable facilities for changing of clothing and for accommodating clothing not worn during working hours.

(2) Separate accommodation shall be provided for persons of each sex and shall, when so required by the Commissioner, include adequate shower bath facilities.

369. There shall be provided and maintained for the use of employees a suitable and adequate lunch-room, which shall be furnished with—

- (a) sufficient tables and chairs or other suitable seating accommodation; and
- (b) adequate means, including hot water, for the washing of dishes.

PART XV. Additional Provisions for Underground Working

In addition to all other applicable regulations the following provisions shall apply to underground workings:

370.—(1) Men working underground shall examine and test the back, face and ribs of their working places at the beginning of each shift and frequently thereafter.

(2) Supervisors shall examine the ground conditions daily to ensure that proper testing and ground control practices are being followed.

(3) Loose ground shall be taken down or effectively supported before any other work is done. Ground conditions along haulageways and travelways shall be examined daily and scaled or supported as necessary.

371. An adequate supply of approved timber or rock bolts shall be provided and used where necessary to prevent danger to any person from a fall or dislodgement of earth, rock or other material forming the back, face or ribs of any underground working tunnel or shaft.

372. No timbering or other support for any part of an excavation shaft, earthwork or tunnel shall be erected or be substantially added to, altered or dismantled except under the direction of a competent person and so far as possible by competent workmen possessing adequate experience of such work. All material for any such work shall be inspected by a competent person on each occasion before being taken into use and material found defective in any respect shall not be used.

373. Approved monitoring devices shall be installed to monitor ground stresses and movement underground.

374. Where at any time there is reasonable cause to apprehend that any underground working has approached within 40 metres (43.75 yards) of a place which may contain an accumulation of water or other liquid matter or noxious gas, adequate and timely precautions shall be taken and, in particular, the working shall not be more than 2.5 metres (8.2 feet) in width or 2.5 metres (8.2 feet) in height and there shall be constantly kept at least one borehole, not less than 3 metres (9.84 feet) in igneous rock or 5 metres (16.4 feet) in other strata, in advance of the face of the said working, and sufficient flank, roof and floor bore-

holes of similar lengths as may be necessary to ensure that the water or other liquid matter or gas shall be tapped in the first instance by a borehole.

375. No internal combustion engine shall be used in any underground mines, tunnels or workings unless a permit to use equipment with such engines has first been obtained from the Commissioner. The conditions and restrictions in any such permit shall be complied with and a permit to use internal combustion engines underground may be revoked for failure to comply with the conditions and restrictions of the permit.

376. The quantity of fresh air circulated through each underground working place shall be at least 6 cubic metres (211.89 cubic feet) per minute for each person, provided that where this quantity of air is not provided naturally or where this quantity is insufficient to prevent harmful accumulations of dust, fumes, vapours, or gases, enough additional fresh air shall be provided by mechanical means.

377. Where in underground workings it is not practicable to provide sufficient illumination in all areas, individual cap lamps shall be worn:

Provided that standby lighting shall be on hand where individual cap lamps are not used.

378. At every shaft in which injured persons are raised or lowered and where the cage is not large enough to permit a stretcher being laid flat, and at every shaft where persons are raised or lowered otherwise than in a cage, there shall be provided and used a suitable jacket or attachment to minimize discomfort and prevent aggravation of an injury.

FIRST SCHEDULE

(Regulation 357 (a))

EQUIPMENT OF FIRST AID BOX (Minimum)

- 12 packets absorbent gauze (sterilized)
- 12 packets cotton wool (sterilized)
- 6 muslin bandages 5.08x457.2 cm. (2"x5 yards)
- 6 muslin bandages 2.54x457.2 cm. (1"x5 yards)
- 2 triangular bandages (the longest side at least 130 cm) (51 inches) and the other sides at least 91.44 cm. (36 inches).
- 1 spool adhesive tape 2.54x457.2 cm. (1"x5 yards)
- 1 box or card safety pins
- 1 pair scissors
- 1 pair dressing forceps
- 1 bottle 170cc./6 oz. Aromatic spirit of ammonia
- 1 bottle 110cc./4 oz. antiseptic
- 1 bottle 227cc./8 oz. iodine (tincture)
- 1 bottle eye lotion
- 1 bottle rubbing alcohol
- baking soda
- pain-relieving tablets

SECOND SCHEDULE

(Regulation 357 (f))

EQUIPMENT OF FIRST AID ROOM (MINIMUM)

- (a) A stretcher and a table of convenient height (about 75 cm./2.5 feet), large enough to stand the stretcher on;
- (b) a bench or chairs;
- (c) a glazed sink with cold water and hot water readily available.
- (d) soap, towels and a nail-brush;
- (e) a supply of suitable sterilized dressings, bandages and adhesive plaster;
- (f) a supply of picric acid (1 percent aqueous solution) a supply of smelling salts and a supply of tincture of iodine (2 percent alcoholic solution) or other antiseptic approved by the Commissioner;
- (g) a supply of rubbing alcohol, sodium bicarbonate and milk of magnesia or other approved antacid;
- (h) a supply of pain-relieving tablets;
- (i) blankets and hot-water bottles;
- (j) sets of splints (137 cm., 91. cm. and 30 cm./4½ feet, 3 feet and 1 foot) with the necessary triangular bandages for applying them, together with a supply of splint padding;
- (k) a supply of drinking water and coffee or other stimulant, and drinking vessels;
- (l) tourniquets, scissors, absorbent gauze and safety pins;
- (m) ointments and dressings for the treatment of burns;
- (n) a supply of eye lotion;
- (o) a flashlight or other standby lighting.

THIRD SCHEDULE
THRESHOLD LIMIT VALUES
for

(Regulation 337)

Dust, Fumes, Mists, Gases and Vapours
(Average concentrations per 8-hour day)

		ppm	mg/M ³
	Acetaldehyde	200	360
	Acetic Acid	10	25
	Acetic Anhydride	5	20
	Acrolein	0.1	0.25
	Ammonia	50	35
	Aniline (Skin)	5	19
"C"	Benzene (Skin)	25	80
"C"	Butylamine (Skin)	5	15
	Calcium Oxide		5
	Carbon Black		3.5
	Carbon Dioxide	5,000	9,000
	Carbon Monoxide	50	55
	Carbon Tetrachloride (Skin)	10	65
"C"	Chlorine	1	3
	Chromic Acid and chromates (AsCrO ₃)		0.1
	Copper Dusts		1
	Cotton Dust (Raw)		1
	Cyanide (AS-CN) (Skin)		5
	DDT (Skin)		1
	Dichlorodifluoromethane (and other freons)	1,000	4,950
	Dieldrin (Skin)		0.25
"C"	Ethyl mercaptan	10	25
	Fluorine	0.1	0.2
"C"	Formaldehyde	5	6
	Hydrogen bromide	3	10
"C"	Hydrogen Chloride	5	7
	Hydrogen Cyanide (Skin)	10	11
	Hydrogen Fluoride	3	2
	Hydrogen peroxide	1	1.4
	Hydrogen sulphide	10	15
"C"	Iodine	0.1	1
	Lead		0.2
	Liquefied Petroleum Gas	1,000	1,800
	Malathion (Skin)		15
	Mercury (Skin)		0.1
	Nitric Acid	2	5
"C"	Nitrogen Dioxide	5	9
"C"	Nitroglycerine (Skin)	0.2	2
	Oil Mist (mineral)		5
	Oxalic Acid		1
	Ozone		0.2
	Phosphoric Acid	0.1	1
	Phosphorus (Yellow)		0.1
	Picric Acid (Skin)		0.1
	Silver, metal and soluble compds.		0.01
"C"	Sodium Hydroxide		2
	Sulphur Dioxide	5	13
	Sulphuric Acid		1
	Tetraethyl Lead (as Pb) (Skin)		0.075
	Uranium (Soluble compounds)		0.05
	(Insoluble compounds)		0.25

NOTES:

1. ppm refers to parts of vapour or gas per million parts of contaminated air by volume.
2. mg/M³ refers to approximate milligrams of particulate per cubic metre of air.

THIRD SCHEDULE, *contd.*
THRESHOLD LIMIT VALUES, *contd.*
Respirable Dusts Evaluated by Count

SUBSTANCE	m.p.p.c.m.
<i>Silica, SiO₂</i>	
Crystalline	
Quartz: TLV in million parts per cubic metre	1,059
	%SiO ₂ + 10
Cristobalite.....	Use one half the value calculated for quartz.
Tremolite.....	177
<i>Silica</i>	
Amorphous, including diatomaceous earth.....	706
<i>Silicates</i> (less than 1% crystalline silica)	
Asbestos.....	177
Mica.....	706
Soapstone.....	706
Talc.....	706
Portland Cement.....	1,765
Graphite (Natural).....	530
Inert or Nuisance Particulate.....	1,765
(or 15 mg/M ³ whichever is the smaller)	

Conversion factor
m.p.p.c.m. divided by 35.3 = million particles per cubic foot.

PERMISSIBLE NOISE EXPOSURES

Duration per day: hours of exposure	sound level dBA (Slow response)
8	90
6	92
5	93
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

NOTE: When the daily exposure is composed of two or more periods of noise exposure, at different levels, their combined effect shall be considered rather than the individual effect of each.

If the sum $C_1 + C_2 + \dots + C_n$ exceeds unity

$\overline{T_1} \quad \overline{T_2} \quad \overline{T_n}$

then the mixed exposure shall be considered to exceed the permissible exposure. C_n indicates the total time of exposure at a specified noise level, and T_n indicates the total time of exposure permitted at that level. Interpolation between tabulated values may be determined by the following formula:

$$\log T = 6.322 - 0.0602 \text{ SL}$$

where T is the time in hours and SL is the sound level in dBA.

FOURTH SCHEDULE

(Regulations 282, 288, 298)

FORM A

REPORT ON EXAMINATION AND TEST OF STEAM BOILER

1. Name of Mine/Plant.....
2. Address.....
3. Name of Owner.....
4. Name of Manager.....
5. Description or distinctive number of boiler, and type.....
6. Age.....
7. The history should be briefly stated or reference made to record in earlier reports.....
8. Date of hydraulic test and pressure applied.....
9. Quality and source of feed water.....
10. Boiler
 - (a) Was the boiler scaled, prepared and (so far as its construction permits) made accessible, sufficiently for thorough examination and for such test as may be necessary in order to complete the thorough examination?
 - (b) What parts of seams, drums, or headers are covered?
 - (c) Date of last exposure of such parts for the purpose of examination
 - (d) What parts (if any) other than parts covered by brick work and mentioned above were inaccessible?
 - (e) What examination and tests were made?
 - (f) Condition

State any defects materially affecting the permissible working pressure.	}	External.....
		Internal.....
11. Mountings—
 - (a) Are there proper mountings, including safety valve, water gauge and steam gauge?
 - (b) Are all mountings properly maintained and in good working order?
 - (c) Are the water gauges protected?
 - (d) Is there a low water alarm device or fusible plug fitted?

Which?
12. Permissible working pressure for the ensuing 12 months (subject to any conditions stated in paragraphs 13 and 14), calculated from dimensions and from the thickness and other data ascertained by the present examination, due allowance being made for conditions of working if unusual or exceptionally severe.
13. Repairs (if any) required, and period within which they should be executed.

FOURTH SCHEDULE, *contd.*FORM A, *contd.*REPORT ON EXAMINATION AND TEST OF STEAM BOILER, *contd.*

14. Other observations.....

I CERTIFY THAT ON.....I thoroughly examined the boiler above described, that the above is a true report of the result, and that I am not the owner of the boiler nor am I employed by the owner in any capacity other than as an independent Contractor.

Signature.....
 Qualification.....
 Address.....
 Date.....

FORM B

REPORT ON EXAMINATION AND TEST OF STEAM RECEIVER AND AIR RECEIVER

1. Name of Mine/Plant.....
2. Address.....
3. Name of Owner.....
4. Name of Manager.....
5. Description of distinguishing number of mark (if any) of air receiver or steam receiver.....
6. Nature of Examination.....
7. Hydraulic pressure applied.....
8. Condition—
 State any defects materially affecting the permissible working pressure
 } External.....
 } Internal.....
9. Mountings—
 (a) Are there proper mountings including safety valves and pressure gauge?
- (b) Are all mountings properly maintained and in good working order?
- (c) Is the permissible working pressure marked on the receiver?
10. Permissible working pressure for the ensuing twelve (12) months

I certify that on.....I thoroughly examined the.....above described (steam receiver or air receiver) and that the above is a true report of the result.

Signature.....
 Qualification.....
 Address.....
 Date.....

FOURTH SCHEDULE, *contd.*

FORM B (ALTERNATIVE)

REPORT ON EXAMINATION AND TEST OF UNFIRED PRESSURE VESSEL

1. Name of Mine/Plant.....
2. Address.....
3. Name of Owner.....
4. Name of Manager.....
5. Description or Distinguishing No.....
6. Age of Vessel.....
7. Original Shell Thickness (in thinnest area).....
8. Nature of Examination.....
9. How was Vessel prepared for Examination?.....
10. Shell Thickness (in thinnest area).....
11. Rate of wear (per year).....
12. Internal Defects.....
13. External Defects.....
14. Defects Revealed by Sono-Ray, X-Ray, and/or Liquid Penetrant Tests:
 - (a) Seams and welds.....
 - (b) Shell.....
15. Mountings—
 - (a) Are there proper mountings including safety valves and pressure gauge?
 - (b) Are all mountings properly maintained and in good working order?
 - (c) Is the permissible working pressure marked on the vessel?
16. Permissible Working Pressure for the ensuing.....months

I certify that on.....I thoroughly examined the.....above described

AND THAT THE ABOVE IS A TRUE REPORT OF THE RESULT.

Signature.....

Qualification.....

Address.....

Date.....

FOURTH SCHEDULE, *contd.*

FORM C

REPORT ON EXAMINATION AND TEST OF LIFTING MACHINE

1. Name of Mine/Plant.....
2. Address.....
3. Name of Owner.....
4. Name of Manager.....
5. Distinguishing number or mark (if any) and description sufficient to identify the crane or other lifting machine.
.....
6. Date of examination made and by whom it was carried out.
.....
7. Particulars of any defect found on examination and affecting the safe working load, and of the steps taken to remedy such defect.
.....
.....
8. The safe working load for the ensuing twelve (12) months.

I CERTIFY THAT ON.....I thoroughly
 examined the.....above described and
 that the above is a true report of the result.
 *(Futher Certificate in case of Crane or Dragline)

I FURTHER CERTIFY that I am not the owner of the crane/dragline nor am I employed by the owner in any capacity other than as an independent Contractor.

Signature.....

Qualification.....

Address.....

Date.....

FIFTH SCHEDULE

(Regulation 17)

MINIMUM DISTANCES FOR MAXIMUM QUANTITIES OF
EXPLOSIVES IN UNBARRICADED MAGAZINES

Explosives (Kilogrammes)	Separation of Magazines (Metres)	Buildings (Metres)	Public Roads and Railways (Metres)
5	5	55	20
10	7	75	30
15	7	80	30
20	8	85	35
30	9	100	40
45	10	115	45
75	11	140	45
100	12	160	50
150	15	165	65
200	16	180	75
300	18	215	85
400	20	230	90
500	22	250	100
600	24	270	105
700	25	280	110
800	26	300	115
900	27	305	120
1,000	28	315	125
1,200	30	350	135
1,400	32	355	145
1,500	33	360	150
2,000	35	400	155
2,500	38	440	175
3,000	41	470	180
4,000	45	500	200
5,000	48	530	220
6,000	50	535	230
7,000	54	540	240
8,000	57	570	250
9,000	59	590	265
10,000	62	620	280
12,000	67	670	300
15,000	70	710	315
20,000	78	815	345
25,000	85	920	350
30,000	92	960	400
35,000	100	1,030	420
40,000	105	1,070	438
45,000	110	1,100	450
50,000	115	1,150	455

NOTES: 1. The quantity of explosives in a cap magazine shall govern the separation of cap magazines from other magazines. Blasting caps of up to No. 8 in strength shall be rated at 0.6804 kilogrammes ($1\frac{1}{2}$ pounds) explosives per 1,000 caps.

FIFTH SCHEDULE, *contd.*MINIMUM DISTANCES FOR MAXIMUM QUANTITIES OF EXPLOSIVE IN
BARRICADED MAGAZINES, *contd.*

2. Detonating cord of 50 to 60 grains per foot shall be calculated as 4.0824 kilogrammes (9 pounds) per 1,000 feet.
3. When a building containing explosives is barricaded the distances shown in the Schedule may be halved.

Conversion Factors:

Kilogrammes \times 2.204 = PoundsMetres \times 3.28 = Feet

SIXTH SCHEDULE

(Regulation 11)

REPORT OF ACCIDENT

FORM 1

(To be forwarded to the Commissioner of Mines with the least possible delay)

1. Name of Company.....
2. Full name and clock number of injured.....
.....
3. Home address.....
4. Address of Hospital (if hospitalised).....
.....
5. Occupation.....
6. Marital Status.....
7. Date of employment.....
8. Date and time of accident.....
9. Location of accident.....
.....
10. Name of Foreman.....
11. Nature of injury and particulars of First Aid rendered.....
.....
12. Witnesses.....
.....
.....
13. Type of accident (lost time/ fatal).....
14. Description of accident.....
.....
.....

.....
Responsible Officer

SIXTH SCHEDULE, contd.

FORM 2

COMPANY.....MONTH.....YEAR.....							
DATE OF INJURY	TIME	WORK SHIFT	PERSON INJURED		OCCUPATION	NATURE OF INJURY	PART OF BODY INJURED
			NAME AND NUMBER	YEARS EXPERIENCE			
Day Month Year		Day Evening Graveyard		Total With this Company In this Job			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40							
DISABLING INJURIES							
MINOR INJURIES							
<div> <div>Total</div> <div>Month</div> <div>Year to Date</div> </div>				<div> <div>Total</div> <div>Month</div> <div>Year to Date</div> </div>			
N.B.—TO BE RETURNED TO THE DEPARTMENT OF MINES				FREQUENCY { Month..... Year to Date.....			
AT THE END OF EACH MONTH							

N.B.—TO BE RETURNED TO THE DEPARTMENT OF MINES

AT THE END OF EACH MONTH

Indicated by tick(v) where possible

THE MINING (SAFETY AND HEALTH) REGULATIONS, 1977

MAN HOURS MINING.....

DRYING.....

PLANT

TOTAL.....

SEVERITY

Month.....

Year to Date.....

[illegible]