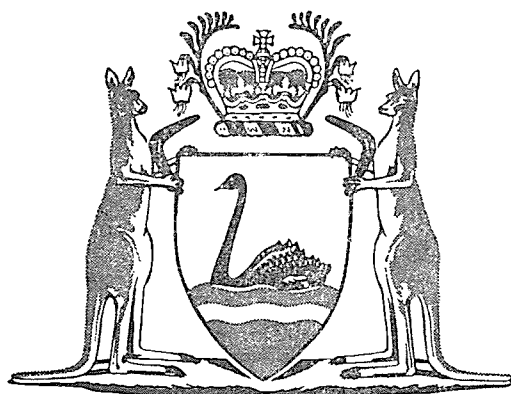


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Crown Law Department,  
Perth, 11th April, 1980.

THE undermentioned Regulations made under the provisions of the Mines Regulation Act, 1946-1974, and amended from time to time up to and including the amendments published on the 29th October, 1976, are reprinted as so amended pursuant to the Reprinting of Regulations Act, 1954 by authority of the Attorney General.

R. M. CHRISTIE,  
Under Secretary for Law.

MINES REGULATION ACT, 1946-1974.

## MINES REGULATION ACT REGULATIONS, 1976

Published in the *Government Gazette* on the 1st April, 1976 and incorporating the amendments thereto published in the *Government Gazette* on the 28th May, 1976; 2nd July, 1976 and the 29th October, 1976, and reprinted pursuant to the Reprinting of Regulations Act, 1954.



Reprinted pursuant to the Reprinting of Regulations Act, 1954 by authority of the Attorney General dated 11th April, 1980.

SCHEDULE.

**MINES REGULATION ACT REGULATIONS, 1976**

PART 1.—PRELIMINARY.

1.1 These regulations may be cited as the Mines Regulation Act Regulations, 1976. Citation.

1.2 The Mines Regulation Act Regulations published in the *Government Gazette* on the 4th April, 1949, as amended from time to time, reprinted as so amended pursuant to the Reprinting of Regulations Act, 1954, published as so reprinted in the *Government Gazette* on the 21st July, 1971, and thereafter amended by notice so published, are hereby revoked. Revocation.

1.3 The provisions of these regulations are arranged as follows:— Arrange-  
ment.

PART 1.—PRELIMINARY, regulations 1.1-1.9.

**Division A—Regulations to be Observed in all Mines.**

PART 2.—INSPECTION, regulations 2.1-2.14.

PART 3.—MANAGEMENT AND SUPERVISION, regulations 3.1-3.25.

PART 4.—GENERAL SAFETY, regulations 4.1-4.14.

PART 5.—ELECTRICITY IN MINES, regulations 5.1-5.31.

PART 6.—MACHINERY IN MINES, regulations 6.1-6.11.

PART 7.—EXPLOSIVES AND BLASTING AGENTS, regulations 7.1-7.52.

PART 8.—VENTILATION AND CONTROL OF DUST AND ATMOSPHERIC CONTAMINANTS, regulations, 8.1-8.36.

PART 9.—OCCUPATIONAL DISEASES, regulations 9.1-9.15

PART 10.—SURVEYS AND PLANS, regulations 10.1-10.15.

PART 11.—HYGIENE AND SANITATION, regulations 11.1-11.8.

**Division B—Regulations to be Observed in Underground Mining.**

PART 12.—SAFETY AND PROTECTION (UNDERGROUND), regulations 12.1-12.23.

PART 13.—LOADING AND TRANSPORT (UNDERGROUND) regulations 13.1-13.33.

PART 14.—DIESEL ENGINES (UNDERGROUND), regulations 14.1-14.16.

PART 15.—WINDING, WINDING ROPES, AND SIGNALS, regulations 15.1-15.85.

*Head I—Regulations of General Application.*

*Head II—Drum Winding Operations.*

*Head III—Friction Winding Operations.*

PART 16.—SHAFT SINKING, regulations 16.1-16.18.

**Division C—Regulations to be Observed in and about Quarries.**

PART 17.—SAFETY AND PROTECTION (QUARRIES), regulations 17.1-17.20.

**Division D—Regulations to be Observed in Dredging Operations.**

PART 18.—SAFETY AND PROTECTION (DREDGING), regulations 18.1-18.20.

**Division E—Regulations to be Observed in Treatment and Processing Plants.**

PART 19.—SAFETY AND PROTECTION (TREATMENT AND PROCESSING PLANTS), regulations 19.1-19.9.

**Division F—Regulations to be Observed in the Operations of Railways on Mines.**

PART 20.—RAILWAY OPERATIONS ON MINES, regulations 20.1-20.21.

PART 21.—COMMON CODE OF SIGNALS AND SIGNALLING PRACTICE, regulations 21.1-21.10.

**SCHEDULE.—FORMS.**

Com-  
mence-  
ment.

Reg. 1.4  
amended by  
G.G. 2/7/76,  
p. 2346.

1.4. (1) Subject to this regulation, these regulations shall come into force on 5th April, 1976.

(2) The provisions of regulation 15:33 shall come into force on 3rd October, 1976.

(3) The provisions of regulation 14.12 and regulation 20.3 shall come into force on 4th October, 1976.

(4) The provisions of—

(a) subregulation (1) of regulation 12.5;

(b) regulation 15.21;

(c) regulation 15.48;

(d) subregulation (2) and subregulation (3) of regulation 15.53;

(e) regulation 15.61; and

(f) subregulation (4) of regulation 15.62,

shall come into force on 4th April, 1977.

Interpreta-  
tion.

1.5. (1) In these regulations, unless the context otherwise requires—

“Act” means the Mines Regulation Act, 1946;

“Division” means Division of these regulations;

“Form” means a form contained in the Schedule;

“Minister” means the responsible Minister of the Crown charged for the time being with the administration of the Act;

“Part” means Part of these regulations;

“regulation” means a regulation contained in these regulations;

“revoked regulations” means the regulations revoked by regulation 1.2 of these regulations;

“Schedule” means the Schedule to these regulations;

“Senior Inspector” means the District Inspector of Mines appointed by the Minister to the position of Senior Inspector of Mines for the district in which the mine is situated;

“subregulation” means a subregulation of the regulation of which it forms part;

“the Mines Survey Board” means the Board established under regulation 10.2.

(2) The interpretations set out in the Act apply to these regulations.

Exemptions.

1.6. (1) In relation to any particular mine an Inspector may issue a direction in writing that because of the circumstances stated in the direction the provisions of any regulation contained in—

(a) Part 4;

(b) Parts 6 to 8 inclusive; and

(c) Parts 11 to 21 inclusive, specified in the direction shall not apply to that mine, either wholly or to the extent so specified, and thereupon these regulations shall apply to that mine subject to that exemption.

(2) A direction given pursuant to subregulation (1) has effect as from the time it is given until it is revoked in writing—

- (a) by the Inspector who issued that direction;
- (b) by the Senior Inspector; or
- (c) by the State Mining Engineer.

(3) Where a direction is issued or revoked pursuant to this regulation a copy of that direction or revocation shall be forwarded to the agent, manager or owner of the mine and to the Mining Division of the Australian Workers' Union.

1.7. Nothing contained in these regulations limits or affects the provisions of the Inspection of Machinery Act, 1921, or any other Act relating to the inspection of machinery by which that Act is repealed and replaced in so far as they are applicable to any machinery or boilers used in the working of any mine, but when an Inspector of Machinery appointed under the provisions of that Act is not available a District Inspector may exercise all the powers of an Inspector so appointed in respect of that machinery but not in respect to those boilers.

Inspection of Machinery Act, 1921.

1.8 (1) A printed copy of the regulations for the time being to be observed on the mine shall be posted in the office, if any, and on a building or board in some conspicuous place on every mine in which they are in force, and the copies shall be maintained in a legible condition.

Regulations to be posted on every mine.

(2) A person shall not pull down, injure or deface any copy of the regulations posted on a mine.

1.9. Any person who—

- (a) fails to comply with any requirement of or made under these regulations within the time or in the manner thereby specified; or
- (b) contravenes or fails to comply with any provision of these regulations,

commits an offence and shall, where no specific penalty is provided for that offence, be liable on conviction to the general penalty provided in the Act.

Offences and penalties.

#### Division A.—Regulations to be Observed in all Mines.

##### PART 2.—INSPECTION.

2.1. (1) In the exercise of his powers and duties under the Act an Inspector shall, so far as is practicable, inspect all current working places underground and on the surface.

Power to inspect, and duty to record.

(2) After every inspection made by him an Inspector shall enter in the Record Book his reasons for holding that any defect observed by him in the state and condition of the mine and machinery exists.

(3) Within three days of an entry in the Record Book being made by an Inspector, the manager shall post a copy of the entry on a notice board maintained by the manager at the mine so as to be easily accessible for perusal by all workers.

(4) Where a Workmen's Inspector makes an entry in the Record Book, he shall also forward a copy of the entry to the Industrial Unions having members concerned and to the Chamber of Mines of Western Australia (Incorporated).

2.2. Where an inspector exercises his powers under the Act to require that a dangerous or defective situation not covered by the Act or these regulations be remedied, he shall confirm the giving of the requisition by making an entry in the Record Book.

Dangers or defects not covered by regulations.

Non-compliance with Act or regulations.

2.3. (1) Where on inspection—

- (a) of any part of a mine by a District or Special Inspector; or
- (b) underground or in any quarry excavation by a Workmen's Inspector,

the Inspector finds that any provision of the Act or of these regulations is not being observed and in his opinion such non-compliance could threaten or tend to the bodily injury of any person employed in that part of the mine, he may stop the work therein and require that the manager withdraw that person or persons from that part of the mine and the manager shall forthwith withdraw all such persons from that part of the mine, except any person needed for the purpose of remedying the situation to comply with the provisions of the Act and these regulations.

(2) Where the manager does not agree with the interpretation placed on any provision by an Inspector, the manager shall withdraw the persons required but may appeal—

- (a) against the requisition of a District or Special Inspector, to the Senior Inspector for the State; and
- (b) against the requisition of a Workmen's Inspector, to the Senior Inspector for the district,

and the decision of the Senior Inspector on appeal is final.

Prosecutions.

2.4. (1) A District or Special Inspector may initiate and conduct a prosecution against the owner, agent, registered manager or any other person for any offence against the provisions of the Act or these regulations, but before doing so shall give notice of his intention to the State Mining Engineer.

(2) Where a Workmen's Inspector proposes to seek the authority of the State Mining Engineer to initiate or conduct any prosecution, he shall first inform the Senior Inspector of the district for which he is appointed.

Powers and duties of District and Special Inspectors.

2.5. The powers vested in a District or Special Inspector pursuant to the Act apply to all mines and it shall be the duty of any such District or Special Inspector from time to time to make examination and inquiry to ascertain whether the provisions of the Act and these regulations affecting any mine are being complied with.

District Inspectors of Mines, conditions of appointment.

2.6. All appointments of District Inspectors of Mines made under the provisions of the Act shall be subject to the following conditions:—

- (a) Applicants for appointments as District Inspectors of Mines shall forward with their applications a statutory declaration stating—
  - (i) the name in full of the applicant;
  - (ii) the place and date of his birth;
  - (iii) the nature of his occupation or profession during the period of five years last preceding the date of the application, with the dates of the beginning and ending of each period of employment, and the names and addresses of his employers;
  - (iv) the nature and amount of his practical experience in underground and surface mining work, railways, or processing plants;
  - (v) particulars of any degrees, diplomas, or certificates of competency in regard to mining work held by him; and
  - (vi) that he is the person mentioned and referred to in the testimonials and other documents submitted in support of and attached to his application.
- (b) Applicants of less than twenty-eight years of age shall not be eligible for appointment, and applicants of more than fifty years of age shall not be eligible for appointment unless the Minister, on the report of the Selection Committee established pursuant to regulation 2.7, is satisfied that there are good reasons for appointing a person of more than fifty years of age.

- (c) Applicants shall submit documentary evidence from persons of good repute certifying to the good character and sobriety of the applicant.
- (d) Prior to any appointment being confirmed the Minister shall require the applicant to supply satisfactory medical evidence of his being in a sound state of physical health and free from any ailment or disease likely to interfere with the performance of his duties.

2.7. (1) All applications from persons seeking appointment as a District Inspector of Mines shall be submitted to a Selection Committee consisting of—

District Inspectors of Mines, Selection Committee.

- (a) the State Mining Engineer, who shall be chairman and convenor of the Committee;
- (b) one representative, being a person who is the holder of a Mine Manager's Certificate under the Act, appointed by the Minister on the nomination of the Chamber of Mines of Western Australia (Incorporated); and
- (c) one representative appointed by the Minister on the nomination of the Australian Workers' Union, Westralian Goldfields Mining Branch, Industrial Union of Workers.

(2) The Selection Committee shall examine the applications of candidates and may require candidates to appear before the Committee for personal interview.

(3) The Selection Committee shall make to the Minister a recommendation as to whether or not each candidate is suitable for appointment, and shall set out the names in descending order of merit.

(4) Where a candidate is recommended by the Selection Committee and approved by the Minister he shall be eligible for appointment, with or without a period of probation, under and subject to the Public Service Act, 1978, as a District Inspector of Mines.

2.8. (1) The powers vested in a Workmen's Inspector pursuant to the Act shall apply to all mines within the geographical area, mining centre, mines or groups of mines specified by the Minister as the district in relation to which the appointment of that Inspector extends, and subject always to the control of the Senior Inspector for that district it shall be the duty of a Workmen's Inspector from time to time to make examination and inquiry to ascertain whether the provisions of the Act and these regulations affecting such mines or groups of mines are being complied with where men are employed.

Powers and duties of Workmen's Inspectors.

(2) A Workmen's Inspector shall be under the control and direction of the Senior Inspector for the district for which the Workmen's Inspector is appointed and shall supply that Senior Inspector with a copy of every entry made by him in a Mine Record Book.

2.9. (1) The Minister, may from time to time, by notice in the *Government Gazette*, specify the districts or the mining centres, mines or groups of mines for which Workmen's Inspectors may be appointed after election in accordance with the Act and these regulations.

Appointment of Workmen's Inspectors of Mines.

(2) The Minister may from time to time, by notice in the *Government Gazette*, extend the boundaries of the district of a Workmen's Inspector to include other areas, mining centres, mines or groups of mines than those for which he was elected, without an election for the district so extended, but all persons *bona fide* employed in the mines in the district as so extended shall be entitled to participate in the next subsequent election.

(3) Workmen's Inspectors shall be appointed for full-time employment or part-time employment, as the Minister in his discretion may decide that the needs of the case require, but a person shall not be so employed after reaching the age of sixty-five years.

2.10. (1) The Minister may, from time to time, direct that an election of Workmen's Inspectors be held on such dates and at such times and places as he may appoint.

Workmen's Inspectors elections.

(2) The Chief Electoral Officer appointed pursuant to the provisions of the Electoral Act, 1907, or a deputy appointed by him, shall act as returning officer at the election and is empowered to make all necessary arrangements.

(3) Every candidate for appointment shall be nominated in writing by not less than six persons who are actually employed in or on mines in the district for which the election is to be held at the date of signing the nomination and shall forward his nomination paper so as to reach the office of the returning officer on or before the date fixed by the Minister for receipt of nominations, accompanied by—

- (a) an application from himself for employment in the desired position;
- (b) any testimonials or other evidence which he may desire to submit in support;
- (c) a medical certificate that he is in good health and physically fit for the work of the position; and
- (d) a Statutory Declaration signed by himself, under the Evidence Act, 1906, declaring his name in full, occupation, place of abode, age, place and date of birth, and the nature and extent of his mining experience.

(4) All nominations received shall be transmitted forthwith to the Minister, who may require further information about any candidate, and proof of any of the facts contained in the Declaration accompanying his application, including a medical certificate of health and physical fitness, and a Statutory Declaration from not less than two reputable persons that they are well acquainted with the candidate and know him to be of sober habits and good character.

(5) The Minister may disapprove of any candidate at his discretion and the nomination of that candidate shall thereupon be void.

(6) If only one nomination is received for each position vacant, and is approved by the Minister, the candidate so nominated and approved may be appointed by the Governor without further election, or the Minister may call for fresh nominations.

(7) If more nominations than one for each position vacant are received and approved by the Minister, he shall fix the dates, times and places at which elections shall be held for each position, and the returning officer shall thereupon cause the names and addresses of the duly nominated and approved candidates to be posted up at two or more conspicuous places within each district for which a Workmen's Inspector is to be appointed, and to be advertised not less than twice in a newspaper circulating in that district, and the notices and advertisements shall state the dates, times and places at which votes may be cast for election of the Workmen's Inspector.

(8) The returning officer shall arrange for voting papers to be given out and ballot boxes to be provided to receive them when duly marked at the mines in each district for which a Workmen's Inspector is to be appointed, or at such other convenient places as the Minister may direct, or both, and every person voting shall appear personally at one of those places to cast his vote.

(9) All persons, both male and female, who are *bona fide* employed as mine workers in, on or about a mine in the district for which the election is held at the time of the election shall be entitled to vote.

(10) A person who is not employed in a mine in the district for which the election is held, or who, being out of employment at the time of the election, was not last employed in a mine in that district within a month of the date of the election, shall not be entitled to vote, but any person who may be out of employment through illness or any other cause and who would be debarred from voting under this subregulation, may apply to the returning officer or a presiding officer to be allowed to vote, and may be permitted to vote if the returning officer or presiding officer is satisfied that the person has been previously last employed in a mine in that district and is not still so employed for good and sufficient reasons beyond his own personal control.



(11) Before receiving his voting paper from the returning officer or a presiding officer, each voter shall satisfy the returning officer or presiding officer by a certificate from the office of the mine at which he is employed, or by personal identification by an officer of that mine, or by such other evidence as may seem to the returning officer or presiding officer to be sufficient, that he is entitled to vote at the election.

(12) In any case in which the returning officer or presiding officer is not fully satisfied as to the entitlement of any person, he may require the person to make a Statutory Declaration showing the grounds on which that person claims to be entitled to vote.

(13) A person shall not vote more than once at the same election and the returning officer or a presiding officer may require any voter, before a voting paper is given to him, to make a Statutory Declaration that he has not voted previously at the same election.

(14) Each candidate may scrutinise all evidence submitted to the returning officer or a presiding officer in support of claims to vote, and may have the assistance of one scrutiner appointed by himself at each voting place in doing so and in scrutinising the subsequent counting of the votes.

2.11. (1) The method of marking the voting papers shall be on the optional preference system, as follows:—

- (a) In the case of the election of one Workmen's Inspector, the voter shall mark his vote on the voting paper by placing the numeral 1 opposite the name of the candidate for whom he votes as his first preference, and he may, if he so desires, give contingent votes for the remaining candidates or any of them by placing numerals 2, 3, 4 and so on opposite their names.
- (b) In the case of the election of two Workmen's Inspectors, the voter shall mark his vote on the voting paper by placing the numerals 1 and 2 opposite the names of the candidates for whom he votes as his first and second preference, and may, if he so desires, give contingent votes for the remaining candidates, or any of them, by placing numerals 3, 4, 5 and so on opposite their names.

Voting at  
elections for  
Workmen's  
Inspectors.

(2) In the case of the election of one Workmen's Inspector, the counting of votes shall be on the preferential system as employed in elections for the State Parliament, so far as it is applicable, but a voting paper shall not be informal if it is marked in accordance with subregulation (1).

(3) Where two Workmen's Inspectors are to be elected—

- (a) the count of the votes will proceed until one candidate has received an absolute majority, when he shall be declared elected;
- (b) the first elected Workmen's Inspector shall then be eliminated from the count, and to proceed with the election of the second Workmen's Inspector, all the ballot papers, including those which have been set aside as exhausted, shall be brought into operation and again sorted into first preference votes;
- (c) the first preference votes of the eliminated successful candidate shall be distributed according to the second preference markings shown thereon to the remainder of the candidates, and, when added to their respective first preference votes, shall constitute the first count for the second Workmen's Inspector; and
- (d) the procedure from then on will be similar to that obtaining for the election of the first Workmen's Inspector.

(4) When the votes have been counted the returning officer shall publicly announce the result and post it in writing in a conspicuous place, and shall report it forthwith to the Minister.

2.12. Save as is provided in these regulations or as the Minister may direct, the provisions of the Electoral Act, 1907, in respect of Parliamentary elections shall be followed in relation to the election of Workmen's Inspectors in so far as they are applicable.

2.13. A person who votes and who is not entitled to vote, or who votes more than once at the same election, commits an offence.  
Penalty: Forty dollars.

2.14. (1) In relation to the election of Workmen's Inspectors—

- (a) returning officers shall be paid fifty per cent of the fee prescribed for a returning officer for State Parliamentary Elections in the regulations made under the Electoral Act, 1907, as in force at the time of the holding of an election;
- (b) assistant returning officers shall be paid the fee prescribed for a presiding officer plus two dollars (\$2.00) which shall be taken to include any fee for presiding; and
- (c) presiding officers, assistant presiding officers and poll clerks shall be paid the appropriate fee prescribed for State Parliamentary Elections in the regulations made under the Electoral Act, 1907, as in force at the time of the holding of an election.

(2) Where more than twenty polling places have been appointed the returning officer shall be paid in addition to the fee prescribed in subregulation (1) a further fee of fifty cents (50c) for every polling place in excess of twenty.

(3) A fee of four cents (4c) for each Certificate shall be paid to Mines Officials for the preparation of Voters' Certificates.

### PART 3.—MANAGEMENT AND SUPERVISION.

Interpreta-  
tion.

3.1. For the purposes of this Part the term "men employed in or about a quarry by the owner of the quarry" means all persons employed in the quarry and also includes persons employed in the quarry pit by any contractor carrying out mining operations for the owner or manager of the quarry.

Board of  
Examiners.

3.2. (1) For the purpose of granting Mine Manager's, Quarry Manager's and Underground Supervisor's Certificates, there shall be a Board of Examiners consisting—

- (a) when dealing with matters concerning Mine Manager's and Underground Supervisor's Certificates, of—
  - (i) the State Mining Engineer;
  - (ii) the Senior Inspector of Mines for the State;
  - (iii) the Principal of the School of Mines of Western Australia; and
  - (iv) subject to subregulation (4), two persons, each of whom shall be the holder of a Mine Manager's Certificate, appointed by the Minister on the nomination of the Chamber of Mines of Western Australia (Incorporated); and
- (b) when dealing with matters concerning Quarry Manager's Certificates, of—
  - (i) the State Mining Engineer;
  - (ii) the Senior Inspector of Mines for the State;
  - (iii) the Director, Technical Education Division, Education Department of Western Australia; and
  - (iv) subject to subregulation (4), two persons, each of whom shall be the holder of a Quarry Manager's Certificate, appointed by the Minister on the nomination of the Chamber of Mines of Western Australia (Incorporated).

(2) Any member of the Board may, with the permission of the Chairman, appoint a deputy to act for him when the member is unable to attend any meeting of the Board.

(3) The State Mining Engineer, or his deputy, shall be Chairman of the Board.

(4) The Chairman and three other members of the Board, as provided for in paragraphs (a) or (b) in subregulation (1), shall constitute a meeting and shall be competent to discharge the duties of the Board, save that until nominations can be made by the Chamber of Mines of Western Australia (Incorporated) of persons who are the holders of relevant certificates the Board may be constituted by the *ex officio* members.

3.3. (1) The Board shall carefully examine or cause to be examined the qualifications of every applicant for a Certificate as a Mine Manager, Quarry Manager or Underground Supervisor and may examine the applicant in writing or orally, or both, as may seem to it most advisable, or may appoint examiners to conduct such examinations, and shall issue a Certificate to each successful candidate.

Functions  
of the Board  
of Exam-  
iners.

(2) The Board shall not examine candidates who are not resident in the State.

(3) The Board, or the examiners appointed by it, will meet at such times and places as the Minister may determine.

(4) Notices of intention to hold examinations shall be advertised in a paper or papers circulating in the mining districts of the State.

(5) The Board on issuing a Certificate pursuant to subregulation (1) may restrict the application of an Underground Supervisor's Certificate or a Quarry Manager's Certificate to either or both a particular locality or a particular type of work, and shall endorse any such restriction or restrictions on the face of the Certificate.

(6) The Board shall cause to be kept a register showing the full names, date of birth, the serial number and date of issue of the Certificate, and any restriction imposed on the Certificate, in relation to every certified Mine Manager, Quarry Manager, or Underground Supervisor and whether they hold a Certificate of Competency by examination, a reciprocal Certificate of Competency granted to the holder of a Certificate from another State or country, or a Service Certificate.

3.4. (1) An applicant for a First Class Mine Manager's Certificate of Competency shall be the holder of—

First Class  
Mine Man-  
ager's Certi-  
ficate.

- (a) the Degree of Bachelor of Engineering in Mining of any Australian University;
- (b) the Diploma of Associateship in Mining Engineering from the School of Mines of Western Australia; or
- (c) such other qualifications as the Board may in any case consider to be equivalent thereto,

and shall have passed a separate examination in Mining Law set by the Board requiring a knowledge of the Mining Laws of Western Australia as laid down in the Act and these regulations.

(2) Every applicant for a First Class Mine Manager's Certificate of Competency shall make application in Form 1 and shall with his application, produce to the Board evidence that—

- (a) he has attained the age of 25 years;
- (b) he has had practical experience in or about a mine for a period of not less than five years, of which period at least three years has been general underground mining experience of a nature acceptable to the Board, and which shall include—
  - (i) face experience in operating a rockdrill on development and stoping faces for a period of not less than three months;
  - (ii) personal experience in using explosives in charging and firing both development and stoping rounds for a period of not less than three months;
  - (iii) six month's full time employment in other underground mining operations including general timbering and sufficient time to become proficient in shaft inspection and repair work;

- (c) he is of good character; and
- (d) he has received satisfactory training in First Aid.

(3) Experience as an active certificated Underground Supervisor will be considered experience of a nature acceptable to the Board.

Quarry Man-  
ager's Cer-  
tificate.

3.5. (1) An applicant for a Quarry Manager's Certificate of Competency shall be the holder of—

- (a) the Degree of Bachelor of Engineering of any Australian University;
- (b) the Diploma in Mining or Engineering of any recognised Australian Technical Institute;
- (c) the Diploma in Surface Mining from the Technical Education Division, Education Department of Western Australia; or
- (d) such other qualifications as the Board may in any case consider to be equivalent thereto,

and shall have passed a separate examination in Mining Law set by the Board requiring a knowledge of the Mining Laws of Western Australia as laid down in the Act and these regulations.

(2) Every applicant for a Quarry Manager's Certificate of Competency shall make application in Form 2 and shall, with his application, produce to the Board evidence that—

- (a) he has attained the age of 24 years;
- (b) he has had experience in or about a quarry for a period of not less than two years, of which period at least one year has been in close association with quarry pit operations including not less than three months' practical experience in the use of explosives and blasting agents in a pit;
- (c) he is of good character; and
- (d) he has received satisfactory training in First Aid.

Under-  
ground  
Supervisor's  
Certificate.

3.6. (1) An applicant for an Underground Supervisor's Certificate of Competency shall pass examinations set by the Board which shall include the following subjects—

- (a) Mining, which may include—
  - (i) the construction of shafts, plats, bins, levels, rises, winzes, stopes and other underground workings;
  - (ii) methods of stoping, breaking and crushing of rock;
  - (iii) practices used in the charging and firing of explosives and blasting agents;
  - (iv) methods of timbering in development and stoping operations in mining;
  - (v) methods of filling stopes and supporting ground generally;
  - (vi) methods of underground loading and transport of rock and mining stores;
  - (vii) shaft hoisting;
  - (viii) ventilation and suppression of dust and atmospheric contaminants;
  - (ix) mine drainage; and
  - (x) any subject concerning the safe operation of underground workings in a mine; and
- (b) the Mining Laws of Western Australia, as laid down in the Act and these regulations.

(2) Every applicant for an Underground Supervisor's Certificate shall make application in Form 3 and shall, with his application, produce to the Board evidence satisfactory to the Board that—

- (a) he has had general experience in underground mining, and has been employed underground for a period of not less than five years or that he is the holder of a Degree or Diploma in Mining Engineering from a recognised University, School of Mines, or

Institute of Technology and has been in full time employment underground for a period of not less than one year and has had—

- (i) face experience in operating a rockdrill on development and stoping faces for a period of not less than three months;
  - (ii) personal experience in using explosives in charging and firing both development and stoping rounds for a period of not less than three months; and
  - (iii) six months' full time employment in other underground mining operations including general timbering and sufficient time to become proficient in shaft inspection and repair work;
- (b) he is of good character; and
- (c) he has received satisfactory training in First Aid.

3.7. (1) An applicant for a Restricted Quarry Manager's Certificate of Competency shall pass examinations set by the Board which shall include the following subjects—

Restricted  
Quarry  
Manager's  
Certificate.

- (a) Quarrying, which may include—
  - (i) the layout and construction of a quarry excavation to provide stability of faces and safe entrance to and exit from such faces;
  - (ii) methods of breaking, excavating and crushing of rock;
  - (iii) practices used in the charging and firing of explosives and blasting agents including the control of fly rock, noise and ground vibration;
  - (iv) methods of loading and transport of rock and mining stores;
  - (v) ventilation and suppression of dust and atmospheric contaminants; and
  - (vi) any other subject concerning the safe operation of quarry workings; and
- (b) the Mining Laws of Western Australia applicable to quarrying as laid down in the Act and these regulations.

(2) Every applicant for a Restricted Quarry Manager's Certificate of Competency shall make application in Form 4 and shall, with his application, produce to the Board evidence satisfactory to the Board that—

- (a) he has attained the age of 21 years;
- (b) he has had experience in or about a quarry for a period of not less than two years, of which period at least one year has been in close association with quarry pit operations including not less than three months' practical experience in the use of explosives and blasting agents in a pit;
- (c) he is of good character; and
- (d) he has received satisfactory training in First Aid.

(3) The requirement in relation to experience with explosives and blasting agents in this regulation shall not apply to a person whose experience has been in a quarry where explosives were not used, but any Certificate issued to such a person shall be restricted to quarries where explosives are not used.

3.8. An applicant for a Certificate of Competency as an Underground Supervisor or a Restricted Quarry Manager may be exempted from examination, other than an examination in mining law, if he submits proof that he has already passed an examination which in the opinion of the Board is equivalent to the standard required.

Exemptions.

3.9. Certificates of Competency or of Service issued under the Mines Regulation Act, 1946 prior to the coming into operation of these regulations shall be deemed to be equivalent to similar Certificates issued

Existing  
Certificates.

under these regulations and the holders of such Certificates shall be deemed to be competent for the purpose of control and daily supervision as required by the Act in relation to the matters that may lawfully be undertaken by the holder of a Certificate of that kind.

Certificates of Service. Substituted by G.G. 28/5/76, p. 1667.

3.10. (1) A Quarry Manager's Certificate of Service may be issued to an applicant who, prior to 5th April, 1977, submits to the Board of Examiners an application in Form 5 together with evidence satisfactory to the Board that on 5th April, 1976, being the date of the coming into force of this regulation, or for a period or periods aggregating not less than twelve months during the five years preceding 5th April, 1976, he had the control and daily supervision of a quarry in the State where twenty-five or more men were employed in or about the quarry by the owner of the quarry and where explosives were used.

(2) A Restricted Quarry Manager's Certificate of Service may be issued to an applicant who, prior to 5th April, 1977, submits to the Board of Examiners an application in Form 6 together with evidence satisfactory to the Board that on 5th April, 1976, being the date of the coming into force of this regulation, or for a period or periods aggregating not less than twelve months during the five years preceding 5th April, 1976, he had the control and daily supervision of a quarry in the State where less than twenty-five men were employed by the owner of the quarry or any quarry in the State where explosives were not used.

Applications.

3.11. (1) Candidates for Certificates of Competency or Service shall make application on the relevant prescribed form which may be obtained from—

- (a) The Secretary of the Board, Department of Mines, Mineral House, 66 Adelaide Terrace, East Perth, 6000, who shall deal with matters concerning Quarry Managers' Certificates; or
- (b) the Secretary of the Board, W.A. School of Mines, Egan Street, Kalgoorlie, 6430, who shall deal with matters concerning Mine Managers' and Underground Supervisors' Certificates.

(2) The original and a copy of every testimonial of a candidate shall be forwarded to the Board which, after examination, shall return the originals to the candidate.

(3) Every application shall have attached to it a Statutory Declaration of the applicant that all representations are true.

Fees.

3.12. Applications shall be accompanied by a fee according to the following scale:—

|                                                                                                                                        | \$    |
|----------------------------------------------------------------------------------------------------------------------------------------|-------|
| (a) For an Underground Supervisor's Certificate of Competency or a Restricted Quarry Manager's Certificate of Competency or of Service | 5.00  |
| (b) For a Quarry Manager's Certificate of Competency or of Service                                                                     | 10.00 |
| (c) For a First Class Mine Manager's Certificate of Competency                                                                         | 10.00 |

Lost Certificates.

3.13. (1) Whenever any person proves to the satisfaction of the Board that he has lost any Certificate granted to him under the provisions of these regulations, the Board may, on payment of a fee of five dollars, cause a copy of the Certificate to which the applicant appears by the register to be entitled to be made out and certified by the person who keeps the register, and to be delivered to the applicant.

(2) A copy Certificate which purports to be made out and certified in accordance with this regulation has all the effect of the original certificate that was lost.

Forged or false certificates.

3.14. A person convicted of an offence referred to in Division III (Forgery and like Offences, Personation.) of The Criminal Code in relation to any Certificate of Competency or Service referred to in these regulations is deemed to have committed an offence against the provisions of this Part.

3.15. (1) A person shall not—

Certificates,  
offences.

- (a) act as Underground Shift Boss or in any other capacity which requires inspection of working places underground unless he is the holder of a First Class Mine Manager's Certificate of Competency, an Underground Supervisor's Certificate of Competency, or a Certificate deemed by the Board to be equivalent thereto;
- (b) act as Underground Manager of a mine employing less than twenty-five men underground unless he is the holder of a First Class Mine Manager's Certificate of Competency, or an Underground Supervisor's Certificate of Competency, or a Certificate deemed by the Board to be equivalent thereto;
- (c) act as Underground Manager or Assistant Underground Manager of a mine employing twenty-five or more men underground unless—
  - (i) he is the holder of a First Class Mine Manager's Certificate of Competency or a Certificate deemed by the Board to be equivalent thereto; or
  - (ii) he is a person appointed in accordance with the provisions of the Act by the registered manager or the owner to be Deputy Underground Manager during a period when the required certificated manager is not available, is incapacitated, or is absent;
- (d) act as a Quarry Manager in a quarry where twenty-five or more men are employed by the owner of the quarry and where explosives are not used, or in any quarry where less than twenty-five men are employed by the owner of the quarry, unless he is the holder of a First Class Mine Manager's Certificate of Competency, Quarry Manager's Certificate of Competency, Restricted Quarry Manager's Certificate of Competency or a Certificate that is deemed by the Board to be equivalent thereto; or
- (e) act as a Quarry Manager of a quarry where twenty-five or more men are employed by the owner of the quarry and where explosives are used unless he is the holder of a First Class Mine Manager's Certificate of Competency, a Quarry Manager's Certificate of Competency, or a Certificate that is deemed by the Board to be equivalent thereto.

Daily Penalty: Forty dollars.

(2) A person shall not employ any other person knowingly contrary to the provisions of subregulation (1) or to the provisions of the Act relating to the control and daily supervision of underground workings or quarries by certificated persons.

Daily Penalty: Forty dollars.

3.16. Underground Managers, Assistant Underground Managers, Quarry Managers, Underground Foremen, and Underground Supervisors shall report all serious or repeated breaches of provisions of the Act or these regulations by entering them in the Record Book kept for the purpose.

Breaches of  
Mining Law  
to be re-  
corded.

3.17. (1) If at any time representation is made to the Minister by an Inspector that any holder of a Certificate issued pursuant to these regulations, or deemed to be equivalent thereto, is incompetent or unfit to discharge his duties, or has been convicted of an offence against the provisions of this Part, the Minister shall investigate, and if he thinks fit cause inquiry to be made by the Board of Examiners into, the conduct of the holder of the Certificate.

Inquiries.

(2) The inquiry shall be held at such time or place as the Board may appoint and the holder of the Certificate shall be given twenty-one days' notice of the Board's intention to hold the inquiry and shall have the right to defend himself at the inquiry.

(3) The Board shall, at least ten days before the commencement of the inquiry, furnish the holder of the Certificate with a statement of the case upon which the inquiry is instituted.

(4) The holder of the Certificate shall attend the inquiry and may produce such evidence as may be considered necessary.

(5) The Board shall, upon the conclusion of the inquiry, forward to the Minister a report containing a full statement of the case, and its opinion thereon.

(6) The Governor, on the recommendation of the Minister, may order that the holder of the certificate be exonerated, fined, or admonished and may suspend or cancel the Certificate.

(7) The Board shall notify the holder of the Certificate of the Governor's decision.

Suspension or cancellation of certificates.

3.18. (1) Where a Certificate is suspended or cancelled the suspension or cancellation shall be recorded in the register of the holders of Certificates and shall be notified by the Board to the Minister.

(2) Where a Certificate is suspended—

(a) it shall not have effect during a period specified by the Governor;

(b) the holder, if ordered in writing by the Board, shall deliver into its charge his Certificate of Competency or of Service, which shall be retained by the Board during the period of suspension; and

(c) the holder shall not, during the period of the suspension, act or be employed as Underground Manager, Assistant Underground Manager, Quarry Manager, Underground Foreman or Underground Supervisor.

(3) An order for the suspension or cancellation of a Certificate takes effect either at the time it is made or from such later time as may be specified in the order.

(4) Where a Certificate is ordered to be cancelled, the order may prohibit an application under these regulations by the former holder for the grant of any certificate until the expiration of such period from the date of the order as may be specified in the order.

Costs, expenses and witness fees.

3.19. (1) The Board may make such order as it thinks fit respecting the costs and expenses of an inquiry and such order shall, on the application of any party entitled to the benefit of the order, be enforced by any Court of summary jurisdiction as if such costs and expenses were a penalty imposed by that Court.

(2) The party entitled to the benefit of an order shall be entitled to obtain from the Board a certified copy of the order.

(3) Any person attending as a witness before the Board at an inquiry shall be allowed the same witness fee and expenses as would be the case were he attending as a witness before the Supreme Court in its criminal jurisdiction.

Notices to be given.

3.20. Where under the Act a notice is required to be given of the commencement, discontinuance, abandonment or recommencement of any mining operations, that notice shall be given by the owner, agent or manager to the District Inspector and shall specify—

(a) the name and address of the mine owner;

(b) the name and location of the mine;

(c) the number of the lease, tenement or other interest;

(d) the date on which the mining operations are to be commenced, discontinued, abandoned, or recommenced; and

(e) what mining operations are to be affected, and whether they are to be commenced, discontinued, abandoned, or recommenced.

Control and supervision of contractors and tributors.

3.21. (1) Subject to the provisions of subregulation (3), in every mine in which contractors or tributors are employed it shall be a condition of the agreement between the owner or Registered Manager and each contractor or tributor employed in or about that mine that the owner or Registered Manager shall have the control and supervision of all work carried out



under the Act by that contractor or tributor, unless the contractor or tributor with the consent in writing of the Senior Inspector and of the owner or Registered Manager, shall himself appoint and register a manager to have charge of that work.

(2) Subject to the provisions of subregulation (3), the Senior Inspector may, in writing, specify the part or parts of the mine in which the contractor's or tributor's Registered Manager shall have responsibility for the due performance of the provisions of the Act and these regulations, and beyond such specified part or parts, the owner or his Registered Manager shall have full responsibility.

(3) The provisions of this regulation do not apply where the whole of the land or mine to be worked is let on contract or tribute and it is one of the conditions of the contract or tribute agreement that the contractor or tributor, or some person nominated by him, shall be registered as Manager under the Act.

3.22. (1) The Registered Manager shall be responsible for the control and daily supervision of all employees in, on or about a mine and for the inspection of all working places to ensure that they are safe and healthy for persons employed therein.

Control and supervision of mine employees and inspection of workings.

(2) In relation to surface operations on a mine, the Registered Manager may appoint one or more duly qualified persons to supervise employees and to inspect daily the condition of their working places.

(3) Every working place underground shall be inspected at least once in every working shift by a person who is the holder of a Mine Manager's Certificate of Competency or Service, or of an Underground Supervisor's Certificate issued under the Act.

(4) In any quarry if twenty-five men or more are employed in or about the quarry by the owner of the quarry, the Registered Manager shall ensure that the quarry is under the control and daily supervision of a Quarry Manager, who may be the Registered Manager himself, and who shall possess the qualifications required by the Act.

(5) In any quarry if less than twenty-five men are employed in or about the quarry by the owner of the quarry, when required by the District Inspector in the district wherein the quarry is situated, the Registered Manager shall ensure that the quarry shall be under the control and daily supervision of a Quarry Manager, who may be the Registered Manager himself, and who shall possess the qualifications required by the Act.

(6) The Registered Manager of a mine employing twenty-five or more men underground shall ensure—

- (a) that the underground workings of that mine are under the control and daily supervision of an Underground Manager who may be the Registered Manager himself; and
- (b) that the Underground Manager, and each Underground Superintendent, Foreman or Shift Boss is the holder of a Mine Manager's Certificate of Competency or Service, or of an Underground Supervisor's Certificate issued under the Act.

(7) The Registered Manager of a mine employing less than twenty-five men underground shall, when required by the District Inspector, ensure that the underground workings of that mine are under the control and daily supervision of an Underground Manager, who may be the Registered Manager himself, and who shall be the holder of a Mine Manager's Certificate of Competency or Service, or of an Underground Supervisor's Certificate issued under the Act.

3.23. (1) The Quarry Manager shall be responsible to the Registered Manager for the safe operation of the workings of the quarry in accordance with the Act and these regulations, and shall report to the Registered Manager—

Quarry Manager's duties.

- (a) any matter which has come to his notice and which could constitute a hazard to any person in the quarry; and
- (b) any serious breach of the Act or of these regulations.

(2) The Quarry Manager shall either personally inspect every working place in which a person is employed in the quarry at least once in every working shift, or he shall have under his control one or more competent persons to ensure that every such working place is so inspected and is safe and healthy for the persons employed therein and be responsible for the carrying out of that inspection.

Under-  
Ground  
Manager's  
duties.

3.24. (1) The Underground Manager shall be responsible to the Registered Manager for the safe operation of the underground workings of the mine in accordance with the Act and these regulations, and shall report to the Registered Manager—

- (a) any matter which has come to his notice and which could constitute a hazard to any person in the mine; and
- (b) any serious breach of the Act or these regulations.

(2) The Underground Manager shall either personally inspect every underground working place in which a person is employed in the manner required of a Shift Boss under regulation 3.25 or he shall have under his control sufficient duly certificated Shift Bosses, Foremen, or Assistant Underground Managers to ensure that every such working place is so inspected and is safe and healthy for the persons employed therein and be responsible for the carrying out of that inspection.

Shift Boss's  
duties.

3.25. (1) A Shift Boss shall be responsible to the Underground Foreman, or Assistant Underground Manager, or the Underground Manager, whichever is applicable, for the safe operation of the underground workings of the mine in accordance with the Act and these regulations, and shall report to him—

- (a) any matter which has come to his notice and which could constitute a hazard to any person in the mine; and
- (b) any breach of the Act or of these regulations.

(2) A Shift Boss shall be responsible for the safety and health of every person employed in that portion or those portions of the mine which have been assigned to him as his round, and during his working shift he shall personally inspect every underground working place in his round in which any person is employed and shall ensure that such working place is maintained in a safe condition.

(3) It shall be the Shift Boss's responsibility to ensure that every working place where any person is employed on his round is inspected or visited both before and after the mid shift break for crib during his working shift and, if he is not able to inspect each working place both before and after the crib break himself, he shall personally inspect the working place on one half of the shift and ensure that the workman there is at least visited in his working place by some competent person on the other half of the shift.

#### PART 4.—GENERAL SAFETY REGULATIONS.

First Aid  
require-  
ments.

4.1. (1) Where any persons are employed in or about a mine—

- (a) an adequate First Aid outfit shall be kept at the mine for immediate use in the case of accident; and
- (b) small dressings and disinfectant shall be made available at all shafts where work is in progress.

(2) Where more than twenty persons are ordinarily employed in a mine a First Aid room with stretchers and medical and surgical appliances shall be provided and maintained in good condition.

(3) A supply of remedies, including approved appliances for treatment of men suffering from fumes from explosives or other noxious gases, with instruction for their use, shall be kept at every mine employing men underground.

(4) Where practicable a person qualified in First Aid shall be available at a mine.

(5) A vehicle for transportation of injured persons shall be kept readily available at a mine.

(6) The First Aid outfit, stretchers, medical and surgical requisites and the vehicle to be kept on a mine under this regulation shall be maintained to the satisfaction of the District Inspector as to both nature and adequacy.

4.2. (1) Rescue equipment and breathing apparatus, and persons trained in the use of that equipment and apparatus, shall be provided on every mine unless the District Inspector in writing grants an exemption from all or any of the requirements of this regulation. Rescue equipment.

(2) The rescue equipment and breathing apparatus to be kept on a mine under this regulation shall be provided and maintained to the satisfaction of the District Inspector as to both nature and adequacy.

4.3. (1) A safety helmet conforming to the Standards Association of Australia current specification for industrial safety helmets shall be supplied by the owner, or his agent or manager on his behalf, to every person who is employed— Safety helmets

- (a) underground in a mine;
- (b) in crushing, screening or treatment plants;
- (c) in quarry excavations; and
- (d) in every other place in, on or about a mine where he may be struck by a falling object,

and the helmet so supplied shall be worn by all employees in such places.

(2) Where the need for replacement of a safety helmet is the result of wilful damage caused by the employee, or of loss, the employee shall pay for the replacement, but otherwise the owner, or his agent or Manager on his behalf, shall replace a safety helmet whenever necessary without cost to the employee.

(3) A safety helmet supplied or replaced by the owner, or his agent or Manager on his behalf, or replaced by the employee, at all times remains the property of the owner.

4.4. (1) Every person who works anywhere in a place where there is a danger of his falling from a height shall be provided with a safety belt and sufficient rope to enable him to be secured to an anchorage in a manner which will prevent him from falling and enable him to work with both hands free. Safety belts and ropes.

(2) Unless—

- (a) the kibble is of sufficient size to contain a person up to his armpits; and
- (b) the person rides inside the kibble,

in all winzes and shafts having an inclination of more than sixty degrees below the horizontal and in all places on the surface where men are raised or lowered in kibles safety belts shall be provided and shall be attached to the kibble rope and worn by all men when raised or lowered in the kibble.

(3) All safety belts and ropes shall be provided by the owner, or his agent or Manager on his behalf, and shall be maintained in a safe condition and inspected regularly.

(4) An owner, agent or Manager who fails to provide a safety belt or rope as required by this regulation, and any person who fails to wear and use a safety belt or rope when provided, is guilty of an offence against this regulation.

Penalty: Forty dollars for every such failure.

4.5. (1) A person shall not go into any bin on top of broken ore or other material unless— Bin Safety precautions.

- (a) he is instructed by the Manager or his representative to do so; and
- (b) the feed into and from the bin has been effectively stopped; and
- (c) he is wearing a safety belt attached to a rope of correct length securely fixed above him; and
- (d) he is assisted by another person stationed above the bin.

(2) The Manager shall cause a notice or notices to be erected and maintained at conspicuous places near each bin instructing persons in the requirements of this regulation.

Guards and handrails.

4.6. (1) Handrails, guards or fences shall be provided on all steps, stairs, elevated walkways, elevated platforms, platforms around the sheaves of headframes, and platforms around vats, bins or similar vessels containing fluid or fluid substances, poisonous or dangerous solutions, and solution vats containing propellers, revolving vanes or any other submerged moving machinery.

(2) A ladder on a chimney stack or a ladder in any other elevated position where, in the opinion of the Inspector, there is a danger of a person falling from a height, shall be enclosed with a safety mesh or similar guard and provided within the confines of such guard with platforms for rest purposes at intervals not greater than 10 metres.

(3) All guards, handrails and fences shall be of substantial construction and kept in good order and safe condition.

Wilful damage.

4.7 A person shall not wilfully or negligently damage, or without proper authority, use, remove or render useless or ineffective any machinery, building, fence, guard, structure, equipment or anything provided for the working of the mine or for the safety or health of the workmen.

Toxic substances.

4.8. All toxic substances shall be stored in a manner approved by the Inspector, and only a person authorized by the Manager shall have access to toxic substances.

Intoxicating liquor.

4.9. (1) Where in the opinion of the owner, Manager or Supervisor, an employee reporting for duty is adversely affected by intoxicating liquor or drugs, he shall not be permitted to remain in or on the mine, and any person so remaining after being required to leave is guilty of an offence.

(2) A person, whether or not an employee, who, while in or on any mine, is adversely affected by intoxicating liquor or drugs, is guilty of an offence.

(3) Intoxicating liquor or deleterious drugs shall not be in or about any mine or be taken by any person on to or into any mine, except with the knowledge and permission of the Manager, and any person having intoxicating liquor or deleterious drugs in his possession while in or on the mine, without such permission, is guilty of an offence.

Fire precautions.

4.10. (1) The owner of a mine, or his agent or Manager on his behalf, shall provide, install, and maintain in good operating condition adequate appliances for the prevention and suppression of fire, and all such appliances shall be of a type approved by the W.A. Fire Brigades Board.

(2) Waste used in cleaning machinery and other flammable materials shall be kept in suitable containers, and chips, wood shavings, paper or other flammable rubbish shall not be allowed to lie about or accumulate, nor shall any such matter be thrown into underground workings.

(3) In the event of an outbreak of fire underground the Manager shall—

- (a) ensure that all those men necessary for firefighting and rescue operations are notified forthwith;
- (b) have every man who is underground and who may be affected by the fire or smoke withdrawn to a place of safety or brought to the surface; and
- (c) if it is not practicable to have a person withdrawn to a place of safety, equip such person with self rescue breathing apparatus to wear while he makes his own way to a place of safety.

Weather protection.

4.11. (1) In every shaft brace, and wherever requested by an Inspector elsewhere, shelter for protection against inclement weather or suitable wet weather clothing for persons working in a fixed exposed place shall be provided.

(2) Provision shall be made for the protection of employees from the inclemency of the weather whilst they are waiting to go underground.

4.12. (1) Stagnant water shall not be allowed to remain underground in those parts of a mine which are in use, but shall be drained or pumped away. Stagnant water

(2) Where accumulations of stagnant water are being drained or pumped away, ventilation precautions shall be taken to prevent dangerous pollution of the mine atmosphere by noxious gases.

4.13. Waste timber in underground workings shall not be permitted to decay or constitute a fire hazard but shall be removed as soon as practicable. Waste timber.

4.14. Any person who places in a quarry (whether in use or abandoned) any debris, refuse or other material likely to be injurious to the health of any person or to endanger the life or limb of any person is guilty of an offence. Debris in quarries.

#### PART 5.—ELECTRICITY IN MINES.

##### 5.1. In this Part—

“cable” means an electrical cable as defined in the Australian Standard CCI Part I—Wiring Methods;

“Commission” means The State Energy Commission of Western Australia constituted pursuant to the State Energy Commission Act, 1979;

“earthed” means connected to the general mass of earth in accordance with the appropriate requirements of the Standards Association of Australia current standard CCI Part I—Wiring Methods in such a manner as will ensure the electrical isolation of any defective equipment through the operation of protective apparatus;

“Electrical Supervisor” means a person appointed as such pursuant to these regulations;

“flexible cable” means a cable the conductors, insulation and covering of which are such as will afford flexibility;

“Mines Electrical Inspector” means a person appointed by the Commission as an Inspector and appointed a Special Inspector of Mines (Electricity) under the Act;

“mobile machine” means an electrically operated machine or apparatus capable of being readily moved about while in use and includes a readily transportable machine;

“portable apparatus” means hand held electrical tools, lights or machines which are easily carried;

“SAA Wiring Rules” means the current rules published by the Standards Association of Australia, and more particularly referred to as Australian Standard CCI Part I—Wiring Methods and amendments;

“specification” means the relevant standard or code published by the Standards Association of Australia, or where no Australian Standard or Code has been published the British or other Standard or Code which is acceptable to the Commission;

“trailing cable” means a cable having stranded or bunched conductors, insulation, filling reinforcement or protective covering and specially designed to provide a flexible electrical connection between a multiphase mobile machine or a multiphase portable apparatus and a fixed point or points;

“voltage” means the differences of potential between conductors and earth and shall be classified as follows:—

Extra Low—normally not exceeding 32 volts Alternating Current or 115 volts Direct Current;

Interpretation.

Low—normally exceeding 32 volts Alternating Current or 115 volts Direct Current but not exceeding 250 volts in either case;  
 Medium—normally exceeding 250 volts but not exceeding 650 volts;  
 High—normally exceeding 650 volts.

- Requirements to prevail.** 5.2. The installation and use of electricity in any mine to which these regulations apply shall be in accordance with the requirements of this Part, the S.A.A. Wiring Rules and appropriate specifications.
- Exemptions.** 5.3. Subject to such conditions as the Commission may specify therein, the Commission may in special circumstances give in writing an exemption from the requirements of this Part.
- Standards.** 5.4. The minimum standard of design, construction, performance and rating of apparatus, cables, conductors and materials for use in a mine shall be in accordance with the appropriate specification.
- Dangerous atmospheres.** 5.5. Where explosive or flammable atmospheres are encountered, such precautions, methods of installation and apparatus shall be adopted as may be required by the Mines Electrical Inspector in accordance with the SAA Wiring Rules and specifications.
- Shot firing.** 5.6. (1) Any cable used for shot firing shall be used solely for that purpose, shall be well insulated, of substantial construction and shall not be allowed to come into contact with any other electrical conductors.  
 (2) Electricity from lighting and power cables shall not be used for firing shots except in accordance with Part 7.
- Unauthorized or inadvertent use.** 5.7. (1) Any unattended motor room, switch room or transformer area shall be kept closed to prevent the entry of unauthorized persons.  
 (2) Switch gear shall be so arranged that a person cannot inadvertently come into contact with live parts.
- Interference or damage.** 5.8. A person who wilfully or negligently damages, interferes with, or without proper authority removes or renders useless any electric cable or wire, machine, apparatus or part thereof used in connection with the supply or use of electricity in a mine is guilty of an offence.
- Switching on or cutting off of supply.** 5.9. Any person employed in a mine, and any person who by contract or otherwise undertakes any work relating to the electrical installation or apparatus in a mine, shall not switch on or cut off any electrical supply until he has made certain that it is safe to do so.
- Working space.** 5.10. Sufficient working space and adequate means of access shall be provided for all electrical apparatus which has to be worked on, or attended to, by any person.
- Controls.** 5.11. Controls for operating any electrically driven machine shall be placed in a convenient position for the operator.
- Accidents to be reported.** 5.12. (1) Any accident to a person caused by electricity, including electric shock and burns, shall be promptly reported to the Manager or Electrical Supervisor who shall record such report in the Electrical Record Book.  
 (2) In the case of a serious or fatal accident, the Manager shall ensure that the matter is reported forthwith to the Commission and to the Senior Inspector, and the notification when made by telephone or telegram shall be confirmed in writing within one week of the date of the accident.
- Electrical workers' qualifications.** 5.13. (1) A person shall not use any electrical apparatus unless he has been instructed in its use.

(2) No person other than a person holding a current Electrical Workers' Licence or a current permit issued by the Electrical Workers' Board under the Electricity Act, 1945, shall be engaged in or be employed on electrical work in a mine, except that the Manager may authorize a suitable person to be a lamp attendant or locomotive battery attendant.

5.14. (1) The provisions of regulation 5.14 to regulation 5.31, inclusive, apply to every installation of electrical equipment and the use of electricity in a quarry or underground in a mine; but do not apply to installations or the use of electricity elsewhere.

Electrical equipment in quarries and underground.

(2) For the purpose of this Part a winding engine installation shall be considered to be included in the underground workings of a mine.

5.15. (1) The Manager or owner shall appoint in writing such persons as may be necessary as Electrical Supervisors to ensure the efficient supervision of the installation, use, maintenance and testing of electrical equipment and to be responsible to the Manager for the electrical machinery, apparatus and installations in the mine.

Electrical Supervisors.

(2) An Electrical Supervisor shall be a person who is eligible to become a corporate member of the Institution of Engineers Australia or hold qualifications which in the opinion of the Commission are equivalent thereto, and shall have not less than two years' electrical engineering experience of a nature acceptable to the Commission or be the holder of a current Electrical Workers' Licence or, subject to the permission of the Commission, a current permit issued by the Electrical Workers' Board under the Electricity Act, 1945.

5.16. (1) An Electrical Supervisor shall—

- (a) be responsible for the maintenance of electrical installations and apparatus in a safe working condition;
- (b) arrange for the carrying out of routine examinations and tests of all electrical machinery, apparatus, appliances, wires, cables and trailing cables;
- (c) arrange for the carrying out of routine tests of the effectiveness of any earthing system, the continuity of earthing conductors and the condition of electrical installations;
- (d) report immediately to the Manager any circumstances affecting or likely to affect the safe use of any electrical installation, apparatus or appliance and stop forthwith the use of any electrical installation, apparatus or appliance which he considers dangerous;
- (e) ensure that an entry certified by the person making the test is made in the Mine Record Book of the result of each routine examination or test carried out, together with a statement as to the condition and safety of the machinery, apparatus, appliance, wire, cable, trailing cable, earthing systems and conductors and any repairs or alterations required to ensure safety or to comply with the regulations.

Electrical Supervisor's duties.

(2) The routine examinations and tests required by subregulation (1) shall be carried out to the satisfaction of the Mines Electrical Inspector.

5.17. Any electric plant, apparatus or installation existing in a mine or contracted for, prior to the publication of these regulations in the *Government Gazette* may be used subject to such conditions as the Commission may prescribe.

Existing equipment.

5.18. (1) Any person employed in a mine shall immediately report any case of overheating, arcing, electrical shock or damage relating to an electrical installation or apparatus which may come to his knowledge, to the Manager or to the Electrical Supervisor, who shall take any remedial action considered necessary.

Defects to be reported.

(2) A person who operates a portable electrically driven machine shall—

- (a) carefully inspect each such machine and the flexible cable attached thereto prior to operating the machine;
- (b) report any defect in accordance with subregulation (1); and
- (c) satisfy himself that the electric current is cut off from the flexible cable and machine before leaving the working place.

Records to be kept and furnished.

5.19. (1) The Manager shall cause to be kept at the mine an Electrical Record Book in which the information required by this Part shall be recorded.

(2) The Mines Electrical Inspector may examine the Electrical Record Book at any time and shall upon demand be supplied with a copy of it or of any part thereof.

(3) The Manager shall cause to be kept a plan of a scale acceptable to the Commission showing the position of all permanent electrical equipment and fixed cables in the mine, and that plan shall be corrected whenever alterations are made to permanent wiring and checked at least once in each year.

(4) The Mines Electrical Inspector may examine the plan kept under this regulation at any time and shall upon demand be supplied with a copy of it or of any part thereof.

(5) The Manager shall cause to be kept such other records of the electrical installation and of the use of electricity as the Commission may require.

(6) The Manager shall, when required, supply to the Commission in the manner requested by the Commission such information in regard to the electrical installation and use of electricity in the mine as the Commission may require.

Emergency and safety provisions.

5.20. (1) In all places where a failure of electric lighting could cause danger, suitable emergency lighting shall be provided and kept ready for use.

(2) Where required by the Mines Electrical Inspector fire extinguishers of a type and size approved by the W.A. Fire Brigades Board shall be kept ready for use—

- (a) near main switchboards; and
- (b) in any other place that the Mines Electrical Inspector requires.

(3) Provision shall be made to confine safely any flammable oil or other material which may escape from electrical apparatus.

(4) The owner, agent or manager shall ensure that all safety equipment required by regulations made under the Electricity Act, 1945, is provided and that all safe methods of working prescribed in those regulations are adhered to.

(5) It shall be the duty of every person working on electrical equipment to use the safety equipment provided in a proper manner.

(6) Safety apparatus other than that specially provided by the owner, agent or manager shall not be used.

(7) In the case of accident or emergency the Mines Electrical Inspector may authorize temporary repairs and installations.

Main switches.

5.21. (1) Main switches shall be provided in readily accessible positions for controlling the supply of electricity to the winding engine and other underground workings of the mine.

(2) Each main switch shall open all the active conductors of the circuit it controls.



5.22. (1) The Manager shall cause—

Notices to  
be exhibited.

- (a) instructions containing directions as to the resuscitation of persons suffering from electric shock to be posted and maintained at every—
  - (i) transformer station;
  - (ii) switchboard at the entrance to the underground workings; and
  - (iii) other place required by the Mines Electrical Inspector;
- (b) a notice to be kept posted in a conspicuous place on the mine warning unauthorized persons not to touch, or interfere with, any fallen, broken or damaged cable, wire or apparatus, but to report such occurrence to the Manager or Electrical Supervisor;
- (c) notices to be posted and maintained in conspicuous places underground, containing instructions in the procedure to be adopted in the event of fire associated with electrical equipment;
- (d) a notice to be posted near any potentially dangerous installation, prohibiting access by unauthorized persons; and
- (e) where required by an Inspector, a notice giving instructions on the means of stopping an electrical apparatus in the case of accident.

(2) A person working with electrical equipment shall acquaint himself with the notices required by this regulation, and shall act in accordance with any directions therein.

5.23. (1) A high voltage installation shall not be installed or used unless and until complete details of the proposed installation have been submitted to the Commission and the written approval of the Commission for such installation has been obtained.

Voltage  
Limitations.

(2) Portable lighting and signal installations underground in a mine shall not be connected to any system operating on a voltage exceeding extra low voltage, and if alternating current is used the system shall be supplied through a double wound transformer having the secondary winding earthed.

(3) Underground lighting, other than portable lighting, shall not be connected to a system operating at a voltage in excess of low voltage, and if alternating current is used the system shall be supplied through a double wound transformer having the secondary winding earthed.

(4) Except in the case of the high voltage winding of a transformer, no portable, mobile or transportable apparatus used underground shall be supplied at a voltage greater than medium voltage without the written permission of the Commission.

5.24. (1) A cable shall be properly placed, attached, connected and supported in accordance with this Part and the Electricity Act, 1945, or otherwise to a specification satisfactory to the Commission.

Cable  
Installation.

- (2) A cable other than a trailing cable shall—
  - (a) be placed so that it has at least 300 millimetres clearance from any moving truck, vehicle or other such equipment; or
  - (b) alternatively, be protected in a manner to which the Mines Electrical Inspector has agreed in writing.
- (3) A cable shall not be placed in any position where it could fall on to or foul any hoisting rope.
- (4) Where blasting is to be carried out, cables and cable boxes shall be suitably protected from damage or be removed from the site prior to blasting.

(5) A cable shall at all times be kept clear of rails and roads, except when electrical equipment is being moved from place to place in which case special care shall be taken to ensure protection of the cable.

(6) In any operation where it is necessary for a cable to cross a road or railway track, the cable shall be suitably protected from damage by traffic.

(7) A cable or cable box shall not be installed in any position where it could cause an obstruction in a ladderway, shaft or travelling way.

**Cable coverings.**

5.25. (1) Except where the Mines Electrical Inspector exempts a cable from this regulation because the manner and place of installation will afford adequate protection to that cable, or if it is an aerial cable, every cable installation shall be enclosed in—

- (a) a metallic covering; or
- (b) some other covering approved in writing by the Mines Electrical Inspector.

(2) The metallic covering shall be iron or steel wire, iron or steel tape or a rigid iron, steel or other hard metal tube.

(3) The metallic covering shall enclose all the conductors of the cable including the earthing conductor.

(4) The metallic covering shall be electrically continuous throughout and shall be securely attached to the metallic structure, or the apparatus to which the cables are connected shall be suitably bonded at junctions.

(5) The metallic covering shall be efficiently protected against corrosion.

**Trailing cables.**

5.26. (1) Other than flexible cables used with single phase portable apparatus and conforming to the requirements of the specification for flexible cables, all trailing cables shall conform—

- (a) to the requirements of the specification of Australian Standard No. C81 as from time to time amended; or
- (b) to some other specification acceptable to the Commission.

(2) Trailing cables shall conform to the following requirements—

- (a) the cable shall comprise all the conductors of the circuit including the earth wire and pilot wires;
- (b) in the case of low or medium voltages—
  - (i) the cable shall be provided with a flexible metallic screen or armour enclosing all the conductors of the cable; or
  - (ii) each active core shall be enclosed by a separate tinned copper screen; and
- (c) in the case of high voltage, a cable conforming to the requirements of paragraph (b) of this subregulation may be used where that cable is connected to an earth leakage protective device approved by the Mines Electrical Inspector.

(3) Non-screened flexible cables may be used to connect apparatus operating at extra low voltage.

**Signal and telephone cables.**

5.27. (1) Cables for signals and cables for telephones shall not be allowed to come into electrical contact with each other or with any other electrical conductor.

(2) Cables and other apparatus used in connection with signal systems or telephone systems shall be of substantial and reliable construction and shall be installed to the satisfaction of the Mines Electrical Inspector.

**Earthing systems.**

5.28. (1) All metal and conductors which are required to be earthed shall be connected by an earthing conductor to an effective main earthing system in accordance with the SAA Wiring Rules.

(2) Additional earthing systems, which shall be effectively bonded to the main earthing system, shall be provided in the mine where required by the Mines Electrical Inspector.

(3) The neutral point of an alternating current electrical system shall be effectively earthed to the main earthing systems, and a direct current earthing system may be earthed in the same manner.

(4) No impedance shall be introduced into a mine electrical system earthing connection without the written permission of the Mines Electrical Inspector.

5.29. (1) An approved method of earth leakage protection shall be provided for all alternating current circuits operating above extra low voltage. Earth leakage protection.

(2) Portable apparatus, transportable and mobile machines and their associated trailing cables operating from a 3 phase system at a voltage above extra low shall be protected by an approved earth leakage system, and shall in addition be protected by automatic earth continuity equipment capable of cutting off the voltage in the event of a break in the earth conductor of the cable.

(3) Where a system of earth leakage protection is installed, the earth leakage relay shall be set to operate at a leakage current not exceeding—

- (a) 30 milli amps with single phase machines and apparatus;
- (b) 1 ampere on circuits up to and including 650 volts; or
- (c) 2 amperes on circuits above 650 volts.

(4) Earth leakage protection equipment shall be provided with means by which tests of its operation may be made.

(5) A test shall be made at least once a month to ensure the satisfactory operation of the equipment and the result of the test shall be recorded in the Electrical Record Book.

5.30. An electric trolley locomotive with an ancillary trolley wire shall not be installed or used underground without the written permission of both the Mines Electrical Inspector and Senior Inspector, and either or both such Inspectors may impose conditions under which the installation shall be operated. Electric trolley locomotives underground.

5.31. Where required by the Mines Electrical Inspector, the owner agent or Manager shall provide equipment to protect an electrical installation from abnormal voltage due to atmospheric electricity, and such equipment shall be installed to the satisfaction of the Mines Electrical Inspector. Lightning protection.

#### PART 6.—MACHINERY IN MINES.

6.1. For the purposes of this Part machinery shall be taken to include the mechanical equipment and attachments used for— Interpretation.

- (a) drilling rock;
- (b) excavating, loading, and transporting rock or material when part of mining operations, including—
  - (i) road haulage vehicles on the surface;
  - (ii) railways in, on and about mines, except railways operated by the Western Australian Government Railways; and
  - (iii) materials handling systems;
- (c) hoisting men, rock, and materials, including winding machinery, hoists, ropes, cages, skips, skiploading and unloading equipment, shaft sinking equipment and lifts;
- (d) crushing, screening, processing, smelting or refining;
- (e) pumping;
- (f) ventilation; or
- (g) dredging.

6.2. All machinery and associated attachments shall be kept and maintained in good order and operated in a safe manner. Machinery to be maintained and operated in a safe manner.

- Safe working conditions. 6.3. Safe footing, sufficient room, and lighting, but not necessarily fixed lights, shall be provided for all workmen who are required to work near or about machinery.
- Parts to be guarded. 6.4. Guards shall be provided for every flywheel, pulley, drive wheel, drive belt, shafting and all exposed parts of machinery in operation which could, in the opinion of the Inspector, be dangerous to persons working on or passing by such machinery.
- Prohibition on damage or removal of safety provision. 6.5. A person shall not wilfully or negligently damage, or without proper authority remove or render useless, any fence, guard, structure, or any other safety provision.
- Persons in control to remain unless relieved. 6.6. A person having control of any machinery used in a power house, pumping station, reduction works or any other processing works shall not absent himself from or cease to have effective supervision or control of that machinery while it is required to be used, unless relieved by a qualified person.
- Switching on or off. 6.7. Where any operation is dependent on electricity, steam, compressed air or other power, that power shall not be switched on or cut off unless and until the person having control of that power has ensured that it is safe to do so.
- Machinery under repair. 6.8 (1) When machinery is stopped for repair, maintenance, or cleaning purposes it shall be isolated from the power source, and the isolating switch or device shall be tagged with a suitable prominent danger tag.  
(2) Machinery shall not be restarted until the person who fixed the danger tag has ensured that it is safe to do so and has removed the tag.
- Operators and drivers requirements. 6.9. (1) Where machinery that would otherwise be required to be operated or driven by a person qualified under the provisions of these regulations is undergoing repair or adjustment that machinery may be operated or driven for that purpose by the person carrying out the repair or adjustment.  
(2) Subject to subregulation (1), a person shall not operate or drive—  
(a) a winding engine, a stationary steam engine or an engine including a steam turbine, a locomotive or traction engine, a crane, internal combustion engine or boiler unless—  
(i) he is the holder of the appropriate Certificate issued by the Board of Examiners appointed under the Inspection of Machinery Act, 1921, or any Act repealing or replacing that Act, where such a Certificate is required by that Act; or  
(ii) he is the holder of a written exemption granted by the Minister where the circumstances are such that it is impracticable to employ a certificated person;  
(b) a power shovel equipped with a jib or boom, a hoist for hoisting purposes, an underground locomotive, or a diesel engined vehicle underground, unless he is the holder of a Certificate under the Act issued by the Manager or Inspector in accordance with these regulations; or  
(c) any machinery, other than that specified in paragraph (a) or (b) of this subregulation until he has been trained and found to be competent by a practical trial in the operation of that machinery by the Manager or some suitable person appointed by the Manager for the purpose.  
(3) A person shall not use or operate any machinery unless he has been given authority to do so by the Manager or the Manager's representative.

6.10. An operator shall not leave the controls of his vehicle or other machinery unattended while— **Unattended machinery.**

- (a) the bucket of a front end loader, backhoe or other excavating machine;
- (b) the blade of a bulldozer;
- (c) the platform or forks of a fork lift truck; or
- (d) the load on a crane or other hoisting machine,

is in a raised position unless it is safely supported by a suitable prop or props or the area is safely guarded or fenced.

6.11. (1) A person shall not ride on a conveyor or belt, other than an escalator or conveyor installed for travel purposes. **Conveyor belts.**

(2) When required by an Inspector the Manager shall provide a means for stopping a conveyor belt by a device that is not capable of re-starting the conveyor belt and is available to any person along the course of the belt.

#### PART 7.—EXPLOSIVES AND BLASTING AGENTS.

7.1. For the purpose of this Part—

“blasting agent”, pursuant to the definition given in the Act, means any material or mixture intended for blasting, not otherwise classified as an explosive and none of the ingredients of which is classified as an explosive; provided that the finished product cannot be detonated when tested in a manner laid down by the Chief Inspector of Explosives;

“butt” or “socket” means the remaining or enlarged portion of a drill hole in rock remaining after a charge of explosives or blasting agent, or both, has been fired;

“charge” means explosive or blasting agent, or both, placed in a drill hole or other position for the purpose of producing an explosion;

“Chief Inspector of Explosives” means the Chief Inspector of Explosives appointed under the Explosives and Dangerous Goods Act, 1961, and includes any person who is for the time being discharging the duties of that office;

“detonator” means a device containing high explosive which upon ignition will explode itself and which is used to initiate the explosion of a charge;

“explosive”, pursuant to the definition given in the Act, means any substance manufactured or used with a view to producing a practical effect by explosion or a pyrotechnic effect, and without limiting the generality of the foregoing the term includes fireworks, coloured fires, fog signals, fuses, rockets and every adaptation or preparation of an explosive;

“magazine” means a building, storehouse, structure, or place in which any explosive or blasting agent is kept or stored, whether in or about a mine, and includes detonator storage buildings and buildings containing capped fuses;

“to charge” means the operation of placing a charge.

7.2. When a blasting agent is used in a mine only that blasting agent specified on the License to Manufacture a Blasting Agent issued by the Chief Inspector of Explosives to the manufacturer shall be used. **Blasting agents.**

7.3. The provisions of these regulations with respect to explosives shall, as far as they are applicable, also be observed in relation to blasting agent, which shall be stored, transported, handled and used with the same care and regard to safety as is explosive. **Blasting agents to be treated as explosive.**

7.4. Explosive and blasting agent shall be stored in a main magazine or a working party’s magazine. **Explosives storage.**

- Surface Magazine.** 7.5. (1) A magazine built on the surface of a mine in which more than 250 kilograms of explosive or blasting agent is to be stored shall be constructed in accordance with the requirements of the Explosives and Dangerous Goods Act, 1961, and shall be licensed by the Chief Inspector of Explosives.
- (2) A magazine built on the surface of a mine in which 250 kilograms or less of explosive or blasting agent is to be stored shall be constructed to the satisfaction of an Inspector.
- Under-ground magazines.** 7.6. (1) Subject to the requirements of this regulation, a main magazine underground may be situated in a drive or chamber in an upper level of the workings of a mine connected with the surface by an independent air pass.
- (2) The passage connecting the magazine with the workings of the mine shall describe in its course at least one right angle.
- (3) The magazine shall be situated at a distance of not less than twenty metres from any underground thoroughfare, unless owing to the nature of the ground this distance may, with the approval of the Inspector, be reduced; but in no case shall the distance be less than ten metres.
- (4) The aggregate quantity of explosive and blasting agent which may be stored in a main magazine underground shall not exceed—
- (a) the amount required for one week's supply according to the requirements of the mine; and
- (b) an extra amount not exceeding 500 kilograms.
- (5) Every main magazine underground shall be protected by doors so constructed and secured as to render it safe against unlawful entry.
- (6) The construction and ventilation of every main magazine underground shall be as approved by the District Inspector.
- Control of main magazine.** 7.7. Every main magazine shall be in the charge of a person appointed for the purpose, who shall have in his possession the keys of the magazine and shall be responsible for the safe storage of the explosive and blasting agent contained in that magazine.
- Lights.** 7.8. (1) A naked light shall not be introduced into a main magazine.
- (2) Only lighting approved by an Inspector shall be used in a main magazine.
- Inspection.** 7.9. (1) For the purpose of inspecting magazines an Inspector shall have all the powers of an Inspector of Explosives.
- (2) Main magazines on the surface of mines may be subject to inspection by an Inspector of Explosives.
- Working party's magazine underground.** 7.10. (1) Every working party's magazine underground shall be situated clear of any travelling way and at such distance as may be approved by the Inspector.
- (2) All explosive, blasting agent, detonating fuse and detonators stored in a working party's magazine underground shall be kept in separate containers approved by the Inspector.
- (3) Explosive, blasting agent, detonating fuse, and detonators shall be promptly stored in the working party's magazine on delivery.
- (4) The quantity of explosive and blasting agent in a working party's magazine shall not exceed the amount normally required for two days' work.
- Working party's magazine, quarries and dredging.** 7.11. (1) In relation to any quarry or dredging operation, sufficient explosive, blasting agent, detonating fuse and detonators in quantity not exceeding that normally required for one days' working may be stored in a working party's magazine.
- (2) The type, protection and location of the magazine and the separate containers for the explosive, blasting agent, detonating fuse, and detonators contained in that magazine shall be as approved by the Inspector.

- 7.12. Old and deteriorated explosive or blasting agent shall not be stored in a magazine and shall be removed and destroyed. Faulty explosive in a magazine.
- 7.13. In the event of the closing of a mine or part of a mine, any explosive, blasting agent, detonating fuse, or detonators stored therein shall be removed and disposed of in a manner approved by the Inspector. Removal on closure of mine.
- 7.14. Explosives or blasting agents may not be sold from a mine except— Not to be sold.
- (a) for use within that mine; or
  - (b) under authority of a licence or permit issued by the Chief Inspector of Explosives.
- 7.15. (1) A person employed in a mine shall not charge or fire explosive or blasting agent unless and until he has satisfied the owner, Manager, foreman or supervisor by a practical test that he is competent to do so. Users to be competent. Smoking prohibited.
- (2) A person under the age of eighteen years shall not be allowed to handle, charge or fire explosive or blasting agent.
- 7.16. A person shall not smoke while carrying, handling or using explosive, blasting agent, detonating fuse or a detonator or while being within eight metres of any such thing.
- 7.17. (1) Explosive or blasting agent shall not be transported or stored except in securely covered cases, bags, trucks or other containers of a size and construction approved by the Inspector. Handling and transport.
- (2) Explosive or blasting agent shall not be taken—
- (a) into any working face underground in a quantity exceeding that estimated for use during one shift in that face; or
  - (b) into any face in a quarry or dredging operation in a quantity exceeding that estimated for immediate use,
- and any quantity in excess of that used shall be returned to the magazine before firing.
- (3) All workmen or parties of workmen shall be provided with separate containers for explosive, blasting agent, fuses and detonating accessories.
- (4) Detonators, or fuses which have detonators attached to them, shall not be placed in the same container as other explosive, but primers may be—
- (a) made up in a place used solely for that purpose and approved by the Inspector; and
  - (b) conveyed to the working face in a bag, case or container approved by the Inspector,
- if they are kept separate from any other explosive.
- 7.18. (1) Transportation of explosive or blasting agent by railways on mines shall be in an enclosed van which shall— Transportation by railways on mines.
- (a) be lined with an impervious material other than a ferrous metal and constructed in such a manner as will permit effective drainage following cleaning out with water;
  - (b) be supplied with adequate ventilation securely screened to prevent the introduction of flammable material or other foreign objects;
  - (c) be effectively secured against unlawful entry; and
  - (d) have painted on each side or on fixed signs the word "Explosives" in red letters at least 100 millimetres high on a yellow background.
- (2) Detonators or detonating accessories shall not be transported in a van containing other explosive or blasting agent, unless in a substantial and locked wooden container which is securely fixed in such a position that explosion of all the detonators therein will not detonate the other explosive or the blasting agent in the van.

(3) An explosives van or vans shall be positioned on a train so that there shall be at least five rail vehicles between any explosives van and a locomotive, or between any other rail vehicle containing any flammable gas or dangerous goods.

(4) Explosive or blasting agent shall not be transported in any rail vehicle containing other flammable goods.

**Detonators.** 7.19. Detonators shall be stored in a separate magazine wherever practicable, and no detonators or detonating accessories of any kind shall be stored in a main magazine unless they are so contained and separated from any explosive or blasting agent in the magazine that explosion of all the detonators so stored will not detonate that other explosive or blasting agent.

**Detonator capping station.** 7.20. (1) The capping of safety fuse with detonators to form rods shall be done above ground and not in a magazine.

(2) Any such rods shall be prepared in daylight or electric light and under cover.

(3) Fuse shall be cut into required lengths with a sharp instrument.

(4) Detonators shall be placed on the fuse and crimped thereto by an approved appliance.

(5) The doors of a capping station shall be so constructed that they will open outwards.

**Detonating fuse.** 7.21. (1) Detonating fuse shall be stored in the explosive magazine and in all respects, handled and kept as an explosive.

(2) No detonating fuse shall be stored, kept or carried together with any detonators.

**Safety fuse, burning rate.** 7.22. (1) Safety fuse, the burning rate of which is less than 90 or more than 110 seconds per lineal metre shall not be used in any mine.

(2) The Manager of every mine shall ascertain the rates of burning of the various sorts of fuse in use in the mine and shall—

(a) take all necessary steps to have those rates made known to the men using the fuse; and

(b) post on a notice board in a conspicuous place a notice specifying the rate of burning of safety fuse in use in the mine.

(3) The burning rate shall be ascertained by taking sufficient samples from each case or package brought on to any mine, which samples shall be tested by burning before any of the contents of the case or package are used for mining purposes.

**Safety fuse, permitted length.** 7.23. (1) The length of safety fuse for firing any charge shall be—

(a) not less than one metre; and

(b) long enough so that the person firing the charge will have sufficient time to reach a place of safety without undue haste.

(2) Safety fuse used when bulling holes shall be of sufficient length—

(a) for the primer to be in contact with the bulling charge; and

(b) to extend above the collar of the hole.

**Drilling precautions, underground.** 7.24. (1) Drilling shall not be carried out in any face or bench underground until it has been washed down and the butts washed and cleaned and examined for misfires, except that a bench may be blown clean for examination.

(2) In underground workings a hole shall not be drilled in any butt.

(3) Drilling shall not be carried out by any person underground in any face containing a charged hole or misfire unless instructed by the Underground Manager or his representative to do so in accordance with these regulations after the time interval prescribed.

(4) No connection between mine workings underground shall be undertaken until a thorough examination for misfires has been made in the workings towards which the active face or heading is advancing.



- 7.25. (1) Drilling shall not be carried out in any face or bench in a quarry until it has been examined for misfires. Drilling precautions, quarry and surface working.
- (2) Except when—
- (a) clearing a misfire after repriming and repriming in accordance with these regulations; or
- (b) otherwise approved in writing by the Senior Inspector, a drill hole shall not be drilled in any quarry bench or face so that any portion of it shall be closer than six metres to a hole containing explosive or blasting agent.
- 7.26. (1) This regulation applies to charging operations underground. Charging operations, underground.
- (2) A hole in underground workings shall not be charged until it has been blown out or otherwise cleaned of cuttings and sludge.
- (3) In underground workings when charging holes for blasting, tamping rods of either wood or an approved non-metallic material shall be used.
- (4) Metal ferrules, tips or connectors shall not be used on tamping rods.
- (5) An adequate supply of approved tamping rods shall be provided at the mine.
- (6) Nitroglycerine explosive shall be charged into holes in the form of cartridges, which shall not be forcibly pressed into any hole of insufficient diameter.
- (7) No more holes shall be charged in any one working face underground than are intended to be fired in one blasting.
- (8) If any charge is not fired or exploded, it shall be treated as a misfire.
- 7.27. (1) This regulation applies to charging operations in quarries and surface mining operations. Charging operations quarry and surface working.
- (2) Nitroglycerine explosive shall be charged into holes in the form of cartridges, which shall not be forcibly pressed into any hole of insufficient diameter.
- (3) In down holes explosive in cartridge form shall not be dropped freely into a drill hole but shall be lowered gently into position.
- (4) No more holes shall be charged in any one designed blast in a quarry than are intended to be fired in the one blasting.
- (5) If any charged hole in a designed blast is not fired or exploded, it shall be treated as a misfire.
- (6) A rockdrill, shovel, machine or vehicle shall not be operated, driven or repaired within a distance of six metres from any hole which is being charged for blasting on the same quarry bench.
- (7) Subregulation (6) does not apply to any vehicle or machine used in the charging operation.
- 7.28. (1) A person intending to fire a charge of explosive or blasting agent, or both, in an underground working shall— Firing warnings, underground.
- (a) give complete and definite warning to all persons in adjacent workings before he fires; and
- (b) ensure that all means of entry to the place of firing are guarded against entry by any person, or otherwise that firing warning notices are erected at each place of entry.
- (2) Firing warning notices shall be removed when work at that place is resumed.
- 7.29. (1) A charge of explosive or blasting agent, including a bulling charge, shall not be fired in a quarry or other surface mining operation unless and until— Firing warnings, quarry and surface working.
- (a) proper warning has been given in all adjacent areas from which any person might approach within danger of the explosion;
- (b) all persons who are in places where they might be injured by the blasting have been warned of the intended blasting; and
- (c) all such persons have taken adequate shelter or left the area.

(2) In addition to the warnings required by this regulation being given, the person firing shall ensure that each means of entry to the place of blasting is securely guarded against entry by any person, or that firing warning notices are erected where necessary to prevent entry.

(3) Firing warning notices shall be removed when work at that place is resumed.

(4) Where, in the opinion of the Inspector, blasting in a quarry or other surface mining operation could constitute a public nuisance or danger he may, by notice in writing, require the owner or Manager to provide and install an audible warning device.

(5) Where an audible warning device is required to be installed, the owner or Manager shall provide and install the device, and ensure that—

(a) at all entrances leading to the blasting area, sufficient and suitable notices are erected warning all persons that the noise of the warning device is a signal that blasting is to take place; and

(b) that a person engaged in blasting shall—

- (i) before firing make audible signals of the kind designated as the firing warning described on the notice; and
- (ii) continue those signals throughout the danger period.

Firing times,  
under-  
ground.

7.30. (1) No firing of a charge of explosive or blasting agent shall be done unless and until the workmen have been removed to the ventilation intake side of all places where firing is to be done and where the resultant smoke and dust will not affect them.

(2) Subject to this regulation, firing underground shall be done during the period of fifteen minutes before the recognised crib time or the end of the shift, or both.

(3) For the purpose of removing obstruction in ore passes, chutes, mill holes or rock crushers, or for the purpose of making the working safe, or for firing misfired holes in development faces but not in stoping faces, and with the consent in every case of either the Underground Manager, Assistant Underground Manager, Foreman or Shift Boss, firing may be done at times other than those prescribed in subregulation (2).

(4) For the purpose of sinking shafts and advancing development headings, in isolated localities provided there is no danger to any person from the firing or from the fumes produced therefrom, and with the written consent in each case of the Senior Inspector, firing may be done at times other than those prescribed in subregulation (2).

(5) When it is intended to fire any unusually large blast underground and the Manager has given not less than 48 hours' notice of that intention as required by these regulations, and with the written consent of the Senior Inspector, that firing may be done at a time other than those prescribed in subregulation (2).

Firing times,  
quarry and  
surface  
working.

7.31. (1) Subject to this regulation, the owner or Manager shall cause the times of blasting operations in every section of a quarry or other surface mining operation to be so arranged that the workmen and the public are not exposed to any danger.

(2) No blasting shall be allowed in the quarry pit between the hours of 6.00 p.m. and 7.00 a.m. unless the written permission of the District Inspector is first obtained, and the Inspector may impose such conditions as he deems necessary.

(3) For the purpose of removing obstruction in crushers, or for the purpose of making workings safe, or for firing misfired holes, and with the consent in every case of the quarry manager or his representative, firing may be done at times outside those prescribed in subregulation (2).

(4) Where the District Inspector considers that blasting will constitute a public nuisance in a built-up area, he may prohibit firing at any times other than such as he may determine.

7.32. (1) When it is intended to fire any unusually large blast underground and, in the opinion of the Manager, there is a possibility of danger to persons or of damage to adjacent mines or property, the Manager shall give not less than 48 hours' notice of the intention to the Senior Inspector who may appoint a time for the blasting and specify precautions to be taken.

Special  
blasts  
under-  
ground.

(2) The Manager shall also give not less than 48 hours' notice of his intention to fire such a blast to persons who may be endangered and to the Manager of any mine in which damage could result.

7.33. (1) When debris from blasting in a quarry or other surface mining operation could constitute a danger to any person or property the owner or Manager shall cause such adequate precautions to be taken as may be necessary to prevent injury to persons or damage to property.

Fly rock  
surface  
working.

(2) When debris from blasting could constitute a danger to persons or where fly rock could land on public roads or property other than that of the owner, blasting mats shall be used and shall be secured in a manner which will contain the debris during the complete blasting operation.

7.34. (1) A single fuse may be lit by means of a match but when lighting more than one fuse an approved type of fuse lighter shall be used.

Firing with  
safety fuse

(2) A person shall not light separately, by hand, more than four fuses in any one place.

(3) When more than four fuses are to be lighted, a multiple igniting cartridge, ignitor cord, or some similar device shall be used, but no other method or device shall be used without the approval of the Senior Inspector of Mines.

(4) Care shall be taken both during lighting and when lighting is completed to ensure that no portion of the burning fuse lighter falls into any of the holes or upon any part of the fuses.

7.35. (1) For the purpose of electrical firing efficient circuit testers, exploders, switches, fuses, electrical conductors and other necessary apparatus, suitable for the conditions under which they are to be used, shall be provided by the owner or Manager and maintained in good working order.

Electrical  
firing.  
Amended by  
G.G. 28/5/76,  
p. 1667.

(2) No meter or device for the purpose of testing the continuity or resistance of circuits intended for electrical firing shall be used unless it is of a type which is approved by the Chief Inspector of Explosives and is neither damaged nor modified.

(3) Subject to subregulation (4), where a circuit intended for electrical firing is to be tested for continuity or resistance—

- (a) the test shall first be done at a safe distance from the charged face; and
- (b) where the initial test from a safe distance has indicated a fault in the circuit, a testing meter or device may be used at the charged face if it has a maximum current output of not more than 10 milliamps,

and not otherwise.

(4) Where the complexity of the circuits to be used for a mass blast is such that in the opinion of the Senior Inspector frequent circuit testing is necessary, that testing may be carried out at a charged face at any time with a meter or device—

- (a) which has been tested within the preceding twenty-four hours with a certified milliammeter which has itself been checked, adjusted and approved by the Chief Inspector of Explosives within the preceding twelve months; and
- (b) has been shown to have a maximum current output of not more than 10 milliamps,

if each electric detonator has first been tested for continuity with the meter or device before being included in the circuit.

(5) A storage battery or dry cell shall not be used for firing except when contained in an approved battery operated exploder.

(6) Only a competent person who has been instructed in the work, and duly authorized by the Manager in writing, shall be allowed to charge or fire shots electrically in a mine.

(7) The Manager shall cause a register of authorized persons to be kept at the mine.

(8) When, in the opinion of the Manager, the proximity of an electrical storm is such as to constitute a danger, work in connection with the electrical firing of charges shall cease, and all men shall be withdrawn from the face, and this subregulation applies both above ground and underground when the firing is to be done from the surface.

(9) When, in the opinion of the Senior Inspector, there is, or is likely to be, a danger arising from electrical firing in a mine, he may prohibit or restrict any electrical firing.

(10) Exploders and detonators to be used for electrical firing shall be of a type approved by the Chief Inspector of Explosives.

(11) Electrical detonators shall not be taken underground unless the lead wires of each detonator have been short circuited, and the short circuit shall not be opened until charging operations have been completed and the detonator is required for connecting to the firing circuit.

(12) Shot firing cables shall be adequately protected and insulated for the conditions under which blasting is to be carried out, and precautions shall be taken to prevent them from coming into contact with any lighting or power cables.

(13) Shot firing cables shall be kept short circuited at each end during the period the face is being charged and shall remain short circuited at the power end while the leads from the detonators are being connected to each other or to the firing cables.

(14) The short circuit at the power end shall not be opened for connection to the source of power until all men have been withdrawn from the face to a safe place for firing, but as soon as the short circuit has been opened the shot firing cable shall be connected to the source of power and the blast fired forthwith, and the short circuit shall then be replaced.

**Mains firing.** 7.36. (1) Electricity for lighting or power cables may only be used for firing shots where—

- (a) the voltage and current to be used are adequate for the number of detonators and type of circuit, and the voltage used does not exceed medium voltage;
- (b) the shot firing cables are isolated from the source of power by a double throw switch by means of which the cables when disconnected from the source of power are short circuited and earthed;
- (c) the isolating switch is housed in a box with a locked door; and
- (d) the shot firing leads are connected to the firing cables through two pin plugs fitted to appropriate bases connected to the firing cables.

(2) Immediately after firing any charge the shot-firer shall disconnect the shot firing cables from the source of power and lock the box.

(3) The key to the door of the isolating switch box shall not, under any circumstances, pass from the personal custody of the shot-firer on duty.

**Electric exploder firing.**

7.37. (1) An exploder may be used for firing—

- (a) single electric detonators; or
- (b) electric detonators wired in series,

but shall not be used for firing electric detonators wired in a series/parallel circuit unless authorized by the Manager.

(2) The exploder shall have adequate capacity for the number of detonators to be fired in the circuit.

(3) The exploder shall be in the charge of the shot-firer on duty and shall be fitted with a handle, key or other device, the removal of which will render the exploder inoperative.

(4) It shall be the duty of the shot-firer to ensure that the exploder is inoperative when not in use for firing and the handle, key or other device shall remain in his personal custody while he is on duty.

7.38. (1) A person intending to mix or manufacture a blasting agent shall first obtain a "License to Manufacture a Blasting Agent" from the Chief Inspector of Explosives.

Mixing  
blasting  
agent.

(2) Blasting agent shall not be mixed underground.

7.39. (1) A hole being charged with ammonium nitrate blasting agent shall be loaded so as to ensure a continuous explosive line.

Blasting  
agent,  
charging  
holes.

(2) For charging purposes where other means are not practicable ammonium nitrate blasting agent may be poured into a hole.

(3) Pneumatic loading of ammonium nitrate blasting agent shall not be used unless the loader, charging hose and earthing arrangements are safe and efficient to the satisfaction of the Inspector.

(4) When pneumatic loading is used, the ammonium nitrate blasting agent shall be loaded through a semi-conductive hose or tube having a resistance of not less than fifteen thousand ohms per metre and not more than two megohms for its total length.

(5) The loader used and associated equipment shall be earthed to give a total resistance to earth of not more than one megohm.

(6) Water lines, compressed air lines, wire covered hoses, rail or permanent electrical earthing systems shall not be used as a means of earthing.

(7) With pneumatic loading and electric firing, protective-type detonators shall be used.

7.40. After a charge of explosive or blasting agent has been fired in a working place, a person shall not recommence work in that place until it has been carefully inspected for misfires by the shot-firer or other competent person.

Suspension  
of work  
following  
firing.

7.41. (1) It shall be assumed that a misfire has occurred if, when using safety fuse, the number of shots counted is less than the number of holes or groups of holes fired, or there is any other reason to suspect that any of the charges has failed to explode.

Misfires.

(2) Any hole or portion of a hole which has damaged safety fuse, detonating fuse, or detonating wires exposed shall be treated as a misfire.

(3) Any cut-off, butt, or remaining portion of a hole which is suspected to contain explosive or blasting agent shall be treated as a misfire until it is shown not to contain explosive or blasting agent.

7.42. (1) When a misfire is known or suspected to have occurred underground the miner or shot-firer shall report the misfire to the Underground Manager, Foreman or Shift Boss, and if the misfire occurred at the end of the shift he shall also report it to the person relieving him.

Suspension  
of work,  
under-  
ground  
misfires.

(2) No further drilling shall be done in that face until the misfire has been made safe or refired.

7.43. When a misfire is known or suspected to have occurred in a quarry or surface mining operation no work shall be done at the site at which the misfire occurred until the shot-firer or Quarry Manager has inspected that site and taken such action as may be necessary to ensure that further work may be safely continued.

Suspension  
of work,  
quarry and  
surface  
working  
misfires.

7.44. (1) A charge which has misfired shall not be approached—

(a) when safety fuse was used, until half an hour has elapsed since the time of lighting the fuse ;

(b) when electrical firing was used, until the firing cables are disconnected from the source of electric power and short circuited and five minutes have elapsed.

Time in-  
terval, and  
inspection.

(2) After the time interval prescribed in subregulation (1), the shot-firer, Shift Boss, Foreman or Manager, whichever is applicable, shall inspect, or delegate some other experienced person to inspect, the bench or face and take such action as shall be necessary to ensure that further work can be safely continued.

(3) A record of the inspection and of the action taken shall be recorded in the Record Book at the end of shift by the person making the inspection.

**Remedial action, repriming.**

7.45. (1) A charge of nitroglycerine explosive which has misfired shall not be withdrawn, but shall be reprimed and fired.

(2) Where the misfired charge consists of blasting agent and that charge—

(a) can be easily destroyed by water, the blasting agent may be washed out of the hole which shall then be examined for any remaining primer, and any such primer shall then be refired; or

(b) can not be easily removed with water, it may be removed by using a non-ferrous air-water blowpipe of a type approved by the Inspector, or by any other means authorised by the Manager.

**Misfires using safety fuse.**

7.46. When a misfire containing blasting agent and safety fuse has been reprimed and fired, notwithstanding whether the charge explodes or does not explode, the face or bench containing the misfire so reprimed and fired shall not be approached until one hour has elapsed from the time of initiating the last charge, unless it is in a quarry and the shot-firer from a safe position can confirm that the hole which has been reprimed and fired has effectively broken out the ground.

**Failed re-firing, quarry and surface working.**

7.47. (1) When repriming and refiring has failed to explode all explosive or blasting agent in a misfired hole in a quarry or other surface mining operation, the rock around the misfire shall be cleaned off and the position of that hole determined.

(2) The remaining portion of the hole shall be removed either by digging it out or by drilling and firing one or more holes adjacent as may be necessary to remove the misfire.

(3) The position of each additional hole shall be determined by the Manager or shot firer.

**Burning without exploding.**

7.48. (1) Where in any working place a charge of explosive or blasting agent burns without exploding—

(a) no person shall approach the place until one hour has elapsed from the time when the attempt to fire the charge was made; and

(b) no person shall place another charge in any hole in which the charge has burned unless and until the hole has been left to cool or filled and cooled with water.

(2) The hole, when cool, shall be dealt with as a misfire.

**Recharging of holes.**

7.49. A hole which has been fired or bulled shall not be recharged unless and until—

(a) a period of one hour has elapsed from the time of firing; or

(b) the hole has been thoroughly cooled with water.

**Blasting under water.**

7.50. Under water blasting operations shall be carried out strictly in accordance with the section dealing with "Blasting Under Water" in the current Standards Association of Australia Explosives Code Australian Standard CA 23.

**Blasting in hot material.**

7.51. All blasting operations in material which has a temperature of 57°C (135°F) or more but less than 93°C (200°F) shall be carried out strictly in accordance with the section dealing with "Blasting in Hot Material" in the current Standards Association of Australia Explosives Code Australian Standard CA 23.

- 7.52. (1) In no circumstances shall blasting be attempted in material having a temperature exceeding 640°C (1200°F). Blasting in high temperature material.
- (2) All blasting operations in material which has a temperature of 93°C (200°F) or more but less than 640°C (1200°F) shall be carried out strictly in accordance with the section dealing with "High Temperature Blasting" in the current Standards Association of Australia Explosives Code Australian Standard CA 23.

**PART 8.—VENTILATION, AND CONTROL OF DUST AND  
ATMOSPHERIC CONTAMINANTS.**

- 8.1. The provisions of this Part are supplementary to the provisions of the Clean Air Act, 1964, and nothing contained in these regulations limits or affects the provisions of that Act. Clean Air Act, 1964.
- 8.2. (1) The provisions of this Part relating to the standards of dust concentration in surface workings of a mine are subject to the discretionary authority of the Ventilation Board. Discretionary authority conferred on Ventilation Board.
- (2) A determination of the Ventilation Board on any matter referred to the Board for adjudication is final.
- 8.3. (1) The Manager of a mine shall appoint a Ventilation Officer or officers— Ventilation Officers to be appointed.
- (a) when a diesel engine is used underground in that mine; and
- (b) in any other case, when required to do so by the District Inspector.
- (2) The Manager shall notify the District Inspector in writing of the name of the person or persons so appointed.
- 8.4. (1) The ventilation of the underground workings of a mine in which a diesel engine is used and in any other workings underground when required by the District Inspector shall be under the control and daily supervision of a Ventilation Officer, who may be the Underground Manager, and who shall be the holder of— Qualifications of Ventilating Officers.
- (a) a Diploma or Degree in Mining Engineering, or a related subject, recognised for the purpose of this regulation by the Ventilation Board; or
- (b) a Diploma in Mine Ventilation Technology from the School of Mines of Western Australia; or
- (c) qualifications considered adequate for that mine by the Ventilation Board.
- (2) The control or suppression of dust and contaminant emissions in quarries and surface mining operations when required by the District Inspector shall be under the control and supervision of a Ventilation Officer whose qualifications are considered by the Ventilation Board to be acceptable for that quarry or surface mining operation.
- 8.5. (1) In relation to underground operations, the Ventilation Officer shall be responsible for— Duties of Ventilation Officers, underground.
- (a) having regular inspections and tests made in the working places and ventilating airways underground in the mine to ensure that the provisions of this Part and that Part dealing with the use of diesel engines underground are being complied with;
- (b) determining the quantity and quality of ventilating air in the mine workings;
- (c) the sampling and recording at three monthly intervals, or more frequently when requested by the Inspector, of dust and toxic gases in the mine air;
- (d) the reading and recording at three monthly intervals, or more frequently when requested by the Inspector, of temperatures in working places;

- (e) the examination of and reporting on the quality, distribution, and use of water used for suppressing dust; and
- (f) the output and operating efficiency of the fans and other appliances used in ventilating the mine.

(2) The Ventilation Officer shall report any serious defect or deficiency found in the mine ventilation and any variation from the standards of purity required by this Part to the Manager who shall have such defect or variation remedied as soon as practicable.

(3) The Ventilation Officer shall record his findings in the Record Book.

(4) The quantity of ventilating air flowing in each primary ventilating circuit in the mine shall be determined at least once in every six months, and the quantity of ventilating air flowing in each secondary ventilating circuit shall be determined at least once a month, and the quantities so determined shall be recorded in the Record Book.

(5) For the purposes of this regulation—

“primary ventilating circuit” means that main ventilating air flow which commences at the main intake airway and terminates at the surface of the main return airway and from which circuit air is diverted to ventilate other workings in the mine;

“secondary ventilating circuit” means an air flow which is provided by diverting air from the primary ventilating circuit to flow through mine workings before joining the return airway.

(6) Where diesel powered equipment is used the provisions of Part 14 shall also apply.

Duties of  
Ventilation  
Officer,  
surface  
working.

8.6. (1) In relation to surface mining operations, the Ventilation Officer shall be responsible for—

- (a) having regular inspections and tests made in the working places to ensure that the provisions of this Part are being complied with;
- (b) the sampling and recording at three monthly intervals, or more frequently when required by the Inspector, of dust and toxic gases in the working places;
- (c) the examination of and reporting on the quality, distribution, and use of water used for suppressing dust;
- (d) the operating efficiency of the fans and other appliances used in suppressing or collecting dust; and
- (e) the operation and maintenance of any metering or monitoring device used with respect to the emission of toxic or other atmospheric contaminants.

(2) The Ventilation Officer shall report any serious defect or deficiency found in the mine ventilation and any variation from the standards of purity required by this Part to the Manager who shall have such defect or variation remedied as soon as practicable.

(3) The Ventilation Officer shall record his findings in the Record Book.

Control of  
dust and  
contami-  
nants.

8.7. Where dust or other atmospheric contaminant is being produced in the course of mining in or about a mine to such an extent that the health of persons employed in the mine is endangered, the owner or Manager shall—

- (a) make provision for the control or suppression of such dust or atmospheric contaminant; or
- (b) supply and cause to be constantly used such appliances as will prevent the dust from being breathed by those persons.

Rock  
crushing  
and process-  
ing plant.

8.8. (1) A rock crushing and processing plant and any other plant or part of a plant in or about a mine or quarry where rock, metal, mineral or mineral substance is being, or is to, be broken, crushed screened, conveyed or processed, shall not be operated without appliances to control and suppress the emission of dust and contaminants to the atmosphere.



(2) Any dust or contaminant emission to atmosphere from such a plant or part of a plant which could endanger the health of any person employed in that mine or quarry shall be controlled or suppressed to the extent that the air breathed by any person in or about that plant or part of that plant shall conform with the standards of purity required under this Part.

(3) Before any such rock crushing and processing plant and any other plant or part of a plant is initially brought into operation, the owner or Manager shall notify the District Inspector of the district in which the plant is situated of the date when it is proposed to bring it into operation.

8.9. When required by the District Inspector for the district wherein the mine is situated, the Manager shall forward to him at three monthly intervals—

Ventilation records to be forwarded.

- (a) records of underground dust and of toxic gas sampling and temperature readings of underground working places;
- (b) records of dust and of toxic gas sampling taken in or about the surface working places of the mine or quarry.

8.10. (1) For the purpose of this regulation—

Standards of purity.

“free silica” means the quartz ( $\text{SiO}_2$ ) content in a sample as determined by means of an X-ray diffraction unit or other method approved by the Ventilation Board;

“inert or nuisance dust” means a dust which contains 5 per cent or less free silica by mass and is not a dust referred to in subregulation (7), or any other dust for which a “recommended value” has been set in the “Hygienic Standards for Contaminants of the Air of a Workplace” in the Australian National Health and Medical Research Council publication “Atmospheric Contaminants 1970” and subsequent amendments;

“respirable dust” means that fraction of dust which when sampling the airborne dust in a mine is retained on the filter of a size selective sampler designed to perform generally in accordance with the Mine Research Establishment dust retention curve, ratified by the Pneumoconiosis Conference, Johannesburg 1959, and which sampler is approved by the Ventilation Board;

“siliceous dust” means an airborne dust which contains more than 5 per cent quartz ( $\text{SiO}_2$ ) by mass;

“total dust” means the mass of dust which is retained on the filter of a non-size selective gravimetric sampler of a type approved by the Ventilation Board, when sampling the airborne dust in a mine.

(2) The ventilation in a mine shall be of a standard to ensure a reasonably healthy environment in all working places in or about that mine, and subject to these regulations, that standard shall conform with the requirements of the “Hygienic Standards for Contaminants of the Air of the Workplace” in the Australian National Health and Medical Research Council publication “Atmospheric Contaminants 1970” and subsequent amendments.

(3) In a dangerous gas situation the Manager is responsible for withdrawing persons from the place of danger.

(4) Where it is found that a toxic gas concentration in the air breathed in any working place exceeds the standard prescribed by subregulation (5)—

- (a) if the excess is such as to endanger the life of any person in that part of the mine, no work shall be allowed or undertaken in that place unless such work is necessary for the purpose of remedying the situation and is carried out with protective equipment; and

- (b) if the excess is not likely to constitute a danger, tests shall be made over a period of not less than thirty minutes and a time weighted average of gas concentration shall be determined, but if that time weighted average of gas concentration exceeds the standard for that gas prescribed by subregulation (5) action shall be taken forthwith to remedy the situation.

(5) The air breathed in or about a mine shall be of an acceptable standard if it contains not less than 20% of oxygen by volume and not more than—

- 5 000 parts per million of carbon dioxide;
- 50 parts per million of carbon monoxide;
- 10 parts per million of hydrogen sulphide;
- 5 parts per million of nitrogen dioxide;
- 5 parts per million of sulphur dioxide;
- 5 parts per million of aldehydes (as formaldehyde), and—

- (a) where the air breathed contains siliceous dust, no more respirable dust than can be obtained when sampling the airborne dust at a working place using the following method or a method approved by the Ventilation Board—

*Gravimetric sampling—respirable dust*

The size selective gravimetric dust sampler shall be used for a continuous period of not less than four hours to provide a representative dust sample at a working place.

The permissible maximum mass of respirable dust in milligrams per cubic metre of air at that place shall be derived from the formula—

$$\text{Permissible maximum mass of respirable dust (in milligrams per cubic metre of air)} = \frac{25}{\% \text{ of respirable free silica in dust sample}} + 5$$

- (b) where the airborne dust contains only inert or nuisance dust, no more total dust than can be obtained when sampling the airborne dust at a working place when using the following method or a method approved by the Ventilation Board—

*Gravimetric Sampling—total dust.*

The non-size selective gravimetric dust sampler shall be used for a continuous period of not less than fifteen minutes to provide a representative dust sample at a working place.

The permissible maximum mass of inert or nuisance dust in the air at that place shall not exceed 15 milligrams per cubic metre.

(6) With respect to surface working places the Ventilation Board may specify less stringent standards of dust concentration to those set out in paragraphs (a) and (b) of subregulation (5) where—

- (a) an application to operate at a less stringent standard of dust concentration at a surface working place is made through the Senior Inspector and forwarded by him with his recommendations to the Ventilation Board; and
- (b) the reasons for the request, the remedial action proposed and the estimate of the time within which the dust concentration at the working place will be brought to the required standard, are acceptable to the Ventilation Board.

(7) The following provisions shall also apply—

- (a) where rock containing asbestos or fibrous talc is mined, the long term average fibre concentration of the air breathed by a worker shall not exceed four fibres per cubic centimetre of air as

- measured by the membrane filter method of the British Occupational Hygiene society or by any other method acceptable to the Ventilation Board;
- (b) where rock containing lead is mined and in assay laboratories and processing works where lead compounds are used, the total dust or fume concentration of the atmosphere breathed shall not contain more than 0.2 milligrams of lead per cubic metre of air when collected on a membrane filter or by a method approved by the Ventilation Board;
  - (c) where rock is mined for manganese, the total dust concentration of the atmosphere breathed shall not exceed 5 milligrams per cubic metre of air when collected on a membrane filter or by a method approved by the Ventilation Board;
  - (d) where rock is mined for talc or mica, the total dust concentration of the atmosphere breathed shall not exceed 2.5 milligrams per cubic metre of air when collected on a membrane filter or by a method approved by the Ventilation Board;
  - (e) where rock containing vanadium is mined, the total dust concentration of the atmosphere breathed shall not contain more than 0.5 milligrams of  $V_2O_5$  as dust, or 0.05 milligrams of  $V_2O_5$  as fume per cubic metre of air when collected on a membrane filter or by a method approved by the Ventilation Board;
  - (f) where rock containing a metal or mineral other than those mentioned in paragraph (a) to paragraph (e) of this subregulation is mined, the total dust of the atmosphere breathed shall not exceed that prescribed as the "Recommended Value" for the metal or mineral in the Australian National Health and Medical Research Council publication "Atmospheric Contaminants, 1970" and subsequent amendments thereto;
  - (g) where the atmosphere breathed contains a gas or fume other than those listed in subregulation (5), the concentration of such gas or fume shall not exceed that prescribed as the "Recommended Value" for that gas or fume in the Australian National Health and Medical Research Council publication "Atmospheric Contaminants, 1970" and subsequent amendments.

8.11. (1) The ventilating air provided for underground workings shall be of sufficient volume, velocity and purity to remove dust and toxic gases resulting from blasting and other operations from those workings of the mine in the time allowed for this purpose and to maintain a healthy atmosphere in working places and travelling ways during working hours by reducing the concentration of dust and toxic gases produced in mining operations to harmless levels.

(2) Where the standard of ventilation of any working place underground does not meet the standards of purity and temperature required by this Part, no work shall be allowed or undertaken in that place, except such as is necessary for the purpose of remedying the situation, and then only if suitable protective equipment is provided and worn.

(3) In any underground workings where an Inspector finds the ventilation of any working place or part in or about a mine does not comply with the provisions of this regulation, or with the standards of purity or temperature required by this Part, he may suspend operations in that working place or part of that mine by means of an entry to that effect in the Record Book and thereupon no work shall be allowed or undertaken in that working place or part of the mine, except such as is necessary for the purpose of remedying the situation.

(4) Where in any surface working place in relation to which the Ventilation Board has issued a direction specifying the acceptable concentration of airborne dust an Inspector finds that that concentration is exceeded, or where in any other surface working place an Inspector finds the standard of purity with regard to air contaminants does not comply with the requirements of this Part he may suspend operations in that working place by means of an entry to that effect in the Record Book and thereupon no work shall be allowed or undertaken in that working place, except such as is necessary for the purpose of remedying the situation.

Air in  
working  
places.

- Standards of temperature underground. 8.12. Unless exempted in writing by the Senior Inspector in any underground working place the temperature difference between wet and dry bulb readings shall be at least one degree Celsius, but when the dry bulb temperature is greater than 26.5 degrees Celsius, for every half a degree Celsius rise in the wet bulb reading, the dry bulb reading shall rise at least one degree Celsius.
- Protective equipment. 8.13. (1) Respiratory protective devices provided for the purposes of these regulations shall conform to the Standards Association of Australia Safety Codes CZ.11 and Z.18, 1968 and subsequent amendments.  
(2) The devices shall be maintained in good working order.  
(3) A face mask, mouth piece or similar item shall, where practicable, be issued to and used by one person only, and when returned shall be cleaned and disinfected before being issued again.
- Air sources. 8.14. The supply of air for any ventilating machine or compressor shall be drawn from the purest source available and shall be free from dust, toxic gases, oil or other impurities in accordance with Australian Standards Z18—1968 and subsequent amendments.
- Suppression of dust, drilling operations. 8.15. (1) In boring holes in rock underground wet drilling shall be used wherever practicable.  
(2) Dry drilling in rock shall not be permitted underground unless and until the rock drill is fitted with a dust suppression or dust extraction device which will prevent the emission of dust to the atmosphere.  
(3) Dry boring in rock containing any asbestos or free silica in a quantity exceeding 10% by mass shall not be permitted unless and until the rock drill is fitted with a dust suppression or dust extraction device which will minimise the emission of dust to the atmosphere.  
(4) Where dry drilling is being undertaken in surface mining operations the Manager or owner shall ensure that the drilling machine used is fitted with a device—  
(a) to collect the dust produced by drilling; or  
(b) to discharge that dust through ducting to a position where it will not be breathed by the drill operator or other persons.
- Suppression of dust, tailings, stockpiles, etc. 8.16. Where in the opinion of the Inspector the dust from tailings, dumps, stockpiles or any other heaps of rock, mill residues or roads on a mine or quarry is a nuisance to persons employed on them or in their vicinity or is detrimental to their health, he shall give notice in writing to that effect to the Manager who shall thereupon implement such methods or provide and use such appliances as will effectively suppress that dust.
- Suppression of dust, use of water. 8.17. Water used, either on the surface or underground, for the purpose of suppressing dust shall be free from pollution by noxious matter.
- Suppression of dust, appliances. 8.18. (1) Where dust collection or dust suppression appliances are provided they shall be maintained in an efficient operating condition.  
(2) Every person engaged in operations where dust is produced in, on or about a mine shall use the water and appliances provided, or both such water and such appliances, for the suppression or collection of dust.
- Damage to, misuse or failure to use equipment etc. 8.19. A person who wilfully or negligently damages or misuses—  
(a) any ventilating equipment or installation;  
(b) any dust collection or dust suppression appliance,  
or who fails to use any such equipment, installation, or appliance, or water provided for dust suppression, commits an offence.

8.20. (1) Where the Inspector finds the state of the ventilation in any part of a mine is unsatisfactory he may, by means of entry in the Record Book, require that a ventilating device shall be installed and such device shall thereupon be provided and used.

Ventilating fans and equipment.

(2) At any primary fan installation the flow of air on either side of the fan shall not be permitted to be obstructed by the storing or stacking of timber, rock or other material which might reduce the designed operating capacity of the fan.

(3) All fans and all structures containing fans used underground shall be of such construction as to reduce the fire hazard to a minimum.

8.21. In the event of a breakdown of a main underground ventilating system the Manager shall take such action as is necessary to ensure the safety of all persons underground.

Ventilating system breakdowns.

8.22. (1) In every mine being developed one or more airways independent of the main shaft or other principal entrance shall be constructed as soon as practicable from the lowest level through to the surface.

Airways underground.

(2) Every such airway shall be of sufficient cross sectional area to allow the volume of air required to ventilate all the parts of the mine served by that airway.

(3) Every such airway shall be maintained open and unobstructed except when it may be necessary to close it to regulate and properly distribute the air through the workings.

(4) Where any adit is being driven or where any development work is being undertaken from a shaft or a winze and the quantity or quality of the ventilating air is found to be inadequate, the District Inspector may require an independent return airway to be provided, but such return airway may be a raise, winze or borehole of sufficient cross sectional area to provide adequate airflow.

(5) The ventilating air from all working places shall be routed as directly as practicable to the return airway.

8.23. (1) A development heading shall not be advanced more than three metres from fresh air or a through ventilating air current, nor shall any working be undertaken from a development heading until ventilating equipment has been installed to adequately ventilate the heading or working.

Shafts, adits and development headings.

(2) Where a shaft, adit or tunnel is developed from the surface an Inspector may direct that a distance of more than three metres shall be permitted.

8.24. (1) When blasting is to be carried out in any development heading or any working place which is not situated in a through airway, a compressed air pipe or hose or other ventilating method approved by the Inspector shall be provided to remove the blasting fumes quickly from that heading or working place.

Fumes from blasting.

(2) When a compressed air pipe or hose is used to blow out blasting fumes, the discharge end of the pipe or hose shall be secured in such a manner as to blow the compressed air on the face.

(3) In the case of a shaft, winze or raise the valve controlling the air pipe or hose shall be situated outside the entrance to that shaft, winze or raise.

8.25. A person shall not enter any working place after blasting has taken place until he has satisfied himself that the fumes resulting from the blast have been effectively dispersed.

Dispersal of fumes.

8.26. Following a blasting operation underground the back, face, walls and broken rock in the working place shall be thoroughly wetted down and made safe before any other work is carried out in that place.

Wetting down following blasting.

- Compressed air underground. 8.27. (1) A compressor supplying air for use underground shall be maintained in good mechanical condition to prevent contamination of the compressed air by overheating, lubricating oil or other causes.  
(2) Compressed air mains shall be fitted with sufficient traps to remove accumulation of oil and water therefrom, and all receivers and water traps shall be drained every working day.
- Air to be split. 8.28. The workings from each level in every mine shall, where practicable, be ventilated by a separate split of air from the main intake into each level, and after passing through these workings the air shall be led as directly as possible to the return airway.
- Stoppings and doors. 8.29. (1) Air doors, stoppings, cross-overs and brattices shall be provided and maintained in good order for the regulation of the ventilating air current underground in a mine.  
(2) Air doors shall be self closing where practicable and shall have "Keep Open" or "Keep Shut" notices attached to them, as the case may require.  
(3) A person who operates a door contrary to the notice thereon commits an offence.
- Airways through stopes. 8.30. (1) In—  
(a) any stope being worked by cut and fill or shrinkage method; and  
(b) any other stope when required by the Inspector,  
rearings or passes shall be constructed to provide ventilation through the stope.  
(2) A blind stope, or a leading stope which has no through ventilation along the level below or to the level above such stope, shall not be worked until ventilating equipment is installed to provide ventilation throughout the whole working area.
- Stope fill tailings, cyanide. 8.31. Tailings used for filling stopes underground shall not contain more free cyanide than is equivalent to 0.01% of potassium cyanide, and a strong ventilating current of air shall be maintained through any workings which are being filled with such tailings when men are working or travelling therein.
- Disused workings may be shut off. 8.32. (1) Any disused workings underground in a mine may be isolated from the ventilation system and the workings so isolated shall not be subject to the provisions of this Part.  
(2) A record of such workings shall be kept in the Record Book, and work shall not be resumed in those workings until ventilation has been restored.
- Connections with adjacent mines. 8.33. (1) When adjacent mines are connected by underground workings ventilating air shall not be allowed to pass from one mine to another except by agreement between the owners or Managers of such mines.  
(2) The owners or Managers shall each notify the District Inspector of any such agreement.
- Ventilation plans. 8.34. (1) Unless exempted in writing by the District Inspector, the Manager shall keep at the mine plans and sections on which shall be marked the direction, course and volume of all air and the position of all air doors, stoppings, permanent fans and permanent ventilating devices of all kinds throughout the underground workings of the mine.  
(2) An Inspector may require a copy of the ventilation plans which shall be supplied on request.
- Monitoring of toxic gases. 8.35. (1) In any operation in or on a mine where toxic gases are emitted to the atmosphere, the District Inspector may require that a monitoring device or devices be installed to give adequate warning when a dangerous level of gas concentration is being approached, and the Manager shall thereupon either provide such device or devices or appeal as provided for in these regulations.

(2) Where a monitoring device is installed the Manager shall have notices erected in conspicuous places, informing persons of the meaning of the warning and the action to be taken for safety.

8.36. (1) In every case where fumes, gases or dusts which are toxic or dangerous to persons are likely to escape from any furnace or other plant used in connection with any metallurgical or other processes in quantities or under conditions likely to endanger the health or life of persons engaged in or about the premises in which the metallurgical or other process is carried on, such furnace or other plant shall be equipped with suitable devices approved by the Ventilation Board to ensure that the fumes, toxic gases or dust are not a source of danger to persons in, on or about the mine.

Protection  
of employees  
from fumes  
and gases.

(2) The devices shall be constructed and operated at all times to the satisfaction of the Inspector.

(3) All vessels used for an acid treatment of minerals or mineral substance shall be fitted with hoods or other appliances to prevent fumes from entering the air breathed by employees.

#### PART 9.—OCCUPATIONAL DISEASES.

9.1. (1) In this Part of these regulations, unless the context otherwise requires—

Inter-  
pretation.

“Class A mine” means—

- (a) the underground workings of any mine; and
- (b) any mine which is worked for asbestos, manganese, lead, vanadium, talc, mica or a radio active substance;

“Class B mine” means any quarry or other surface mining operation other than a Class A or Class C mine;

“Class C mine” means—

- (a) a surface mining operation or quarry which is worked for clay, gypsum, limestone, salt, natural sand, or gravel; and
- (b) a sinter plant, pellet plant, smelter, refinery, blast furnace, privately owned railway built to transport the mine ore or material, and a wet sluicing or wet dredging operation;

“mine worker” means a person employed under a contract of service or contract for service on, in or about a mine to perform manual or other labour, either on the surface or underground, in and as part of the mining operations carried out in the course of working or developing a mine; the term includes a tributer or contractor who does the work of a mine worker, a District or Workmen’s Inspector of Mines appointed under the Act, and a Ventilation Officer employed by the Mines Department of Western Australia, but does not include—

- (a) the registered manager and office workers solely engaged in clerical work; or
- (b) a person who is the holder of a valid Certificate in Form 8 issued by the Mines Medical Officer exempting him from the requirements as a mine worker;

“Mines Medical Officer” means a medical officer appointed to, and employed in that office pursuant to the Act or the Mine Workers’ Relief Act, 1932, and includes a medical practitioner acting by and under the authority of a medical officer so appointed.

(2) On the recommendation of the Ventilation Board established under the Act, and notwithstanding the provisions of subregulation (1), the Minister may, by notice in the *Government Gazette*, declare any mine or mining operation to be classified as—

- (a) a Class A mine;
- (b) a Class B mine; or
- (c) a Class C mine,

and any such mine or mining operation shall thereupon be classified accordingly for the purposes of this Part.

- Exemption of persons. 9.2 (1) A person who has special professional or scientific qualifications or training for work of a specific nature or who for any other sufficient reason wishes to be exempted from the requirements of this Part applicable to mine workers shall make application in Form 7 to the Secretary of the Ventilation Board at the Mines Department, Perth.
- (2) The Mines Medical Officer may issue a Certificate of exemption in Form 8 only to a person who has made application to the Ventilation Board and who has been recommended for exemption by that Board.
- (3) A Certificate of exemption shall specify the conditions, if any, under which the holder may be employed on a mine or mining operation.
- (4) The Mines Medical Officer may at any time withdraw a Certificate of exemption issued under this regulation for non-compliance with a specified condition or for any medical reason, and such Certificate shall thereupon cease to be valid.
- Tuberculosis sufferers. 9.3 Any—
- (a) person who, knowing himself to be suffering from active pulmonary tuberculosis, enters a mine for the purpose of working therein;
- (b) owner or Manager who knowingly employs in any mine or mining operation any person suffering from active pulmonary tuberculosis,
- is guilty of an offence.
- Penalty: Two hundred dollars.
- Exemption of Class C Mines. 9.4. The provisions of regulation 9.5 to regulation 9.15 of this Part, inclusive, do not apply to a Class C mine.
- Mine Workers' Health Certificates. 9.5. (1) An application by a person requiring a medical examination for a Mine Worker's Health Certificate shall be made in Form 9, whether for his initial examination or for an examination for re-admission as a mine worker.
- (2) Subject to subregulation (3), a person shall not be employed nor shall he accept employment as a mine worker in a mine or mining operation unless—
- (a) he is the holder of a current Mine Worker's Health Certificate in Form 10; or
- (b) he is the holder of a current Provisional Health Certificate in Form 11; or
- (c) unless within three calendar months of commencing work in that mine or mining operation he has—
- (i) been examined by a Mines Medical Officer and been issued with a Mine Worker's Health Certificate; or
- (ii) been examined by a medical practitioner as a result of which he has been issued by the Mines Medical Officer with a Provisional Health Certificate.
- Penalty: Two hundred dollars.
- (3) A person may be employed or accept employment as a mine worker if he holds an unexpired Certificate issued before the coming into force of these regulations under Part XIV of the revoked regulations or under the Mine Workers' Relief Act, 1932, entitling him to work or be employed in a mine as a mine worker.
- Compulsory medical examination. 9.6. (1) Subject to subregulation (2), every person employed in a mine or mining operation shall submit himself to a Mines Medical Officer for medical examination within three months after the date on which he commences work on that mine.
- (2) A person who is the holder of a Certificate—
- (a) in Form 10 or Form 11;
- (b) under Part XIV of the revoked regulations; or
- (c) under the Mine Workers' Relief Act, 1932,



entitling him to work or be employed in a mine, is not required to submit himself for medical examination by a Mines Medical Officer at any time prior to the date of expiry of that Certificate unless directed to do so by the Mines Medical Officer.

9.7. (1) Where a person examined under the provisions of this Part is found not to be suffering from active pulmonary tuberculosis or from pneumoconiosis and to be medically fit for employment as a mine worker, the Mines Medical Officer shall issue him with a Mine Worker's Health Certificate in Form 10 which shall entitle him to work in any mine. Issue of Mine Workers' Health Certificates.

(2) Where a person examined under the provisions of this Part is found to have pneumoconiosis but is found not to be suffering from active pulmonary tuberculosis and to be otherwise medically fit for employment as a mine worker, the Mines Medical Officer shall issue that person with a Mine Worker's Health Certificate if—

- (a) at the date of coming into force of these regulations he held an unexpired Initial or Re-admission Certificate under Part XIV of the revoked regulations or an unexpired Certificate under the Mine Workers' Relief Act, 1932; or
- (b) he has previously been employed as a mine worker in Western Australia and in the opinion of the Mines Medical Officer the pneumoconiosis may be reasonably attributed to that previous employment.

(3) Where a person initially examined under the provisions of this Part for admission as a mine worker is found to have pneumoconiosis or to be suffering from active pulmonary tuberculosis or is otherwise medically unsuitable for employment as a mine worker, the Mines Medical Officer shall issue him with a Notice of Rejection as a Mine Worker in Form 12, or, if that person has special professional or scientific qualifications or training for work of a specific nature or there is any other sufficient reason, the Mines Medical Officer may, on the recommendation of the Ventilation Board, issue him with a Form 8 exempting him from the requirements as a mine worker.

9.8. (1) Subject to regulation 9.10 of this Part a Mine Worker's Health Certificate or a Certificate of exemption in Form 8 shall expire—

- (a) if the holder works in a Class A mine, two years; and
- (b) if the holder works in a mine or mining operation that is not a Class A mine, five years,

after the date of the most recent medical examination endorsed thereon by a Mines Medical Officer. Mine Worker's Health Certificate expiry dates.

(2) If during the period of five years following the date of the most recent medical examination by a Mines Medical Officer endorsed on his Mine Worker's Health Certificate or Certificate of exemption in Form 8 the holder of that Certificate works in a Class A mine, the Certificate shall expire two years after the date of commencing such employment, or five years after the date of the most recent medical examination, whichever is the sooner.

9.9. (1) A person who works in a Class B or Class C mine, who has previously worked in a Class A mine for a period of two years or more, may, if he so desires, present himself for medical examination after the end of two years from the date of the last medical examination endorsed on his Mine Worker's Health Certificate or Certificate of exemption in Form 8, when he shall be so examined by the Mines Medical Officer. Examination may be requested.

(2) A person who works in a mine may, for any reasonable cause, make an appointment for a medical examination by the Mines Medical Officer at any time.

## X-Rays.

9.10. (1) The holder of a Mine Worker's Health Certificate, a Provisional Health Certificate or a Certificate of exemption in Form 8 shall submit himself to a Mines Medical Officer or officer in charge of the mobile X-Ray unit when in the course of conducting local X-Ray examinations of the workers at a mine for the purposes of these regulations—

- (a) not later than three months after the expiration date of that Certificate; or
  - (b) at any earlier time when required to do so by a Mines Medical Officer or officer in charge of the mobile X-Ray unit.
- (2) Failure by the holder to submit himself for examination as required by this regulation will render his Certificate invalid.
- (3) The owner or Manager shall on request—
- (a) furnish to the Mines Medical Officer or to the officer in charge of the mobile X-Ray unit a list of all mine workers and persons working under a Certificate of exemption currently employed on the mine;
  - (b) afford to all mine workers and to persons employed under a Certificate of exemption all reasonable facilities to submit themselves, without loss of pay, to medical examination required under this Part;
  - (c) permit the Mines Medical Officer and the person in charge of the X-Ray unit to have access to the mine for the purposes of and in execution of his duties under this Part.

## Provisional Health Certificates.

9.11. (1) If it is impracticable for a person to be medically examined by the Mines Medical Officer, the Mines Medical Officer, following receipt of a Certificate from a medical practitioner certifying that he has examined and found the person in his opinion to be medically fit as a mine worker, may, at his discretion, issue a Provisional Health Certificate in Form 11 to that person which shall entitle the holder to be employed in any mine.

(2) A Provisional Health Certificate issued under subregulation (1) shall expire after a period of one year from the date of its issue and shall not be renewed.

(3) Where the holder of a Provisional Health Certificate is examined by a Mines Medical Officer and found not to be suffering from active pulmonary tuberculosis nor to have pneumoconiosis, and to be medically fit for employment as a mine worker, the Mines Medical Officer shall issue him with a Mine Worker's Health Certificate.

(4) Where the holder of a Provisional Health Certificate is examined by a Mines Medical Officer and found to have pneumoconiosis, but is found not to be suffering from active pulmonary tuberculosis and to be otherwise medically fit for employment as a mine worker, the Mines Medical Officer shall issue him with a Mine Worker's Health Certificate if in the Mines Medical Officer's opinion—

- (a) he did not have pneumoconiosis when that Provisional Health Certificate was issued to him; or
- (b) the pneumoconiosis may reasonably be attributed to his employment as a mine worker in Western Australia before he received that Provisional Health Certificate.

## Prohibition notices.

9.12. Where a person examined under the provisions of this Part is found to be suffering from active pulmonary tuberculosis, the Mines Medical Officer shall withdraw any Health Certificate held by him and shall issue him with a Notice of Prohibition as a Mine Worker in Form 13, and he shall be prohibited from employment in any mine.

## Advice of pneumoconiosis.

9.13. Where a mine worker examined by a Mines Medical Officer is found to have pneumoconiosis the Mines Medical Officer shall issue him with a Pneumoconiosis Notice in Form 14.

9.14. The Mines Medical Officer shall submit monthly reports in writing to the Secretary to the Ventilation Board and to the Commissioner of Public Health stating particulars of examinations carried out and notices issued under this Part during the preceding month, including the name and address of every person found to be suffering from active pulmonary tuberculosis or to have pneumoconiosis and not previously reported. Monthly reports.

9.15. An owner or Manager who employs a person as a mine worker in a Class A or Class B mine shall— Employers' records

- (a) notify the Commissioner of Public Health, within three calendar months from the date on which the person was first employed, giving details of—
  - (i) the mine worker's name and address;
  - (ii) the Mine Worker's Health Certificate or Provisional Health Certificate held by the mine worker; and
  - (iii) the class of mine in which the mine worker is employed.
- (b) keep at the mine office the Mine Worker's Health Certificate, the Provisional Health Certificate or the Certificate of exemption of the worker and return that Certificate to him when he terminates his employment;
- (c) record on the Mine Worker's Health Certificate of each mine worker the dates on which he commenced and ceased employment on each class of mine and have that record signed by a responsible person; and
- (d) cause the Mine Worker's Health Certificates, Provisional Health Certificates and Certificates of exemption in Form 8 held by him in respect of all workers in his employ to be made available to the officer-in-charge of the mobile X-Ray unit when in the course of conducting local X-Ray examinations of the workers at the mine under the provisions of this Act, or to the Mines Medical Officer or Inspector upon request.

#### PART 10.—SURVEYS AND PLANS.

10.1 (1) The surveys and plans of mine and quarry workings required under the Act shall be made by persons possessing the qualifications prescribed by this Part. Survey qualifications required.

(2) Surveys and plans of the underground workings of a mine shall be made and drawn by—

- (a) a Licensed Surveyor whose name appears on the register maintained pursuant to the Licensed Surveyors Act, 1909; or
- (b) an Authorized Mine Surveyor.

(3) The provisions of this Part are subject to the discretionary authority of the Mines Survey Board established under these regulations to examine the qualifications of applicants for a Certificate as an Authorized Mine Surveyor.

(4) Surveys and plans of quarry workings shall be made and drawn by a competent person appointed by the Manager and approved by the District Inspector for the district in which the quarry is situated.

10.2. (1) The Mines Survey Board shall consist of—

- (a) the person holding or acting in the office of State Mining Engineer, who shall be chairman; and
  - (b) two persons appointed by the Minister, of whom—
    - (i) one shall be a person who is an Authorized Mine Surveyor nominated by the body known as the Institute of Mining and Engineering Surveyors Western Australia (Incorporated); and
    - (ii) one shall be a person nominated by the Surveyor General.
- Mines Survey Board.

(2) A question arising at a meeting of the Board shall be decided by a majority of the members of the Board.

(3) The Board may co-opt any person having relevant specialised knowledge or experience, but a person so co-opted is not entitled to a vote.

(4) For the period until the initial appointment to the Board of an Authorized Mine Surveyor the quorum shall be two persons, but thereafter the Board shall be constituted by three persons in accordance with subregulation (1).

- Authorized Mine Surveyor's Certificate. 10.3 (1) An application to the Mines Survey Board for a Certificate as an Authorized Mine Surveyor shall be made in Form 15.
- (2) An applicant for a certificate shall supply with his application documentary evidence satisfactory to the Board as to—
- (a) his technical qualifications;
  - (b) his having made underground surveys of a nature and under supervision acceptable to the Board for a period of not less than twelve months; and
  - (c) his sobriety and character.
- (3) The Board shall examine the qualifications of each applicant for an Authorized Mine Surveyor's Certificate and, if satisfied with his qualifications, experience and character, shall issue him with a Certificate as an Authorized Mine Surveyor for the State.
- (4) Subject to subregulation (3) a person is qualified to hold a Certificate as an Authorized Mine Surveyor if—
- (a) he holds—
    - (i) the Diploma in Mine Surveying Technology from the School of Mines of Western Australia;
    - (ii) the Diploma of Mining Surveying from the Technical Education Division of the Education Department of Western Australia; or
    - (iii) surveying qualifications from any School of Mines, University or Technical College deemed by the Mines Survey Board to be equivalent; and
  - (b) he has made underground surveys of a nature acceptable to the Board for a period of not less than twelve months under the supervision of—
    - (i) a Licensed Surveyor;
    - (ii) an Authorised Mine Surveyor; or
    - (iii) a person who is qualified to be, or is deemed by the Board to possess qualifications equivalent to, an Authorized Mine Surveyor.
- Existing registration. 10.4 A person who—
- (a) was registered under the Mines Regulation Act, 1906-1945; or
  - (b) is the holder of a current Certificate under the revoked regulations,
- as a person authorized to make surveys and draw plans is entitled, on making application to the Board, to the grant of a Certificate as an Authorized Mine Surveyor under these regulations.
- Cancellation or suspension. 10.5 The Mines Survey Board may, at any time, cancel or suspend the operation of an Authorized Mine Surveyor's Certificate if satisfied that the holder—
- (a) is incompetent or guilty of improper practice; or
  - (b) has furnished inaccurate or deceptive surveys or plans.
- Extent of authorization. 10.6. An Authorized Mine Surveyor's Certificate does not empower the holder to carry out surveys under the provisions of the Land Act, 1933, the Transfer of Land Act, 1893, or the Mining Act, 1904, and any person who carries out or attempts to carry out or holds himself out by reason of holding the Certificate as authorized to carry out surveys under those provisions, is guilty of an offence against this regulation and liable to a penalty for that offence in addition to the penalties which he may incur under the provisions of those Acts.
- Instruments and accuracy. 10.7. All surveys shall be made with instruments and equipment of precision, and in the case of underground surveys every survey traverse shall be performed and calculated to show a closing error of not more than 1 in 4 000.

10.8 The Minister may require a copy of any survey calculations, field notes, or traverse sheets, and when so required the Manager or owner shall thereupon supply that copy.

Calculations, field notes, and traverse sheets.

10.9. (1) A datum station shall be established in the general vicinity of the mine, to which a co-ordinate system shall be related for plan reference.

Datum Station and Co-ordinator.

(2) The datum station shall also be related to the Australian Map Grid in those cases where the original tenement survey or any subsequent tenement survey has been made with that grid.

(3) A survey of a mine or quarry workings shall be made using the bearing of a boundary line of the mining tenement as a base azimuth.

10.10. (1) Survey bearings shall be carried from the surface traverse to the underground workings by a method which shall ensure that an accuracy of 1 in 4 000 is achieved.

Surveys of underground workings.

(2) Level surveys shall be made and, wherever practicable, such traverses shall be checked for closure by direct traverses through connecting headings or stope workings.

(3) Accurate levels shall be carried from each plat in every shaft, and from the entrance of every adit or tunnel into the face of every drive and crosscut in the mine.

10.11. Notwithstanding the provisions of this Part, the Senior Inspector may give approval, in writing, to the survey of a small mine by compass where he is satisfied that sufficient accuracy will be achieved.

Surveys by compass.

10.12. Plans and sections shall show the true size and shape of all excavations whether underground or on the surface.

Excavations to be shown accurately.

10.13. (1) All copies of plans, sections and traverse sheets submitted to the Minister shall be certified to be correct.

Survey plans to be certified.

(2) In relation to underground workings a Certificate in the following form shall be endorsed on the plans—

“I certify that this survey has been made and the plan drawn in strict accordance with the requirements of the Mines Regulation Act, 1946, and the regulations made thereunder.

DATED the                      day of                      19                      .

.....  
Authorized Mine Surveyor”.

(3) In relation to a quarry the Certificate may be signed by the competent person appointed and approved to make and draw the plans.

10.14. The plans to be forwarded to the Minister as required by the Act shall include—

Plans to be forwarded.

(a) a plan of the lease or tenement in which the mine or quarry is situated showing on a scale not smaller than 1:2500—

(i) the survey pegs and tenement boundary lines giving true bearings of those boundary lines;

(ii) the mine co-ordinate lines;

(iii) the deviation between the assumed mine grid azimuth and the true bearing; and

(iv) the relationship between the datum point and the origin of the mine co-ordinates;

(b) in regard to quarries, a plan showing the true size and shape of all excavations and sufficient cross sections showing advances made in the mining operations and the areas reclaimed or again filled in;

(c) a general plan or plans of the underground levels to a scale not greater than 1:250 nor less than 1:1000 showing the true size and shape of each level excavation, but a composite plan may be accepted where each level on that plan can be clearly seen;

- (d) where practicable, longitudinal sections or projections to a scale not less than 1:1000 showing all underground workings;
- (e) where practicable, sufficient cross sections or projections to a scale not less than 1:1000 to clearly show the ore bodies and the parts thereof mined out; and
- (f) the date when the survey was made.

Survey plan extensions may be accepted. 10.15. After complete plans of the mine have been forwarded to the Minister in accordance with the provisions of the Act, the owner, agent or Manager may, should he so desire, forward on subsequent occasions tracings of extensions of the workings carried out during the previous year so long as they show enough of the old work to enable the additions to be correctly connected with the original plans.

#### PART 11.—HYGIENE AND SANITATION.

- Cleanliness and sanitation. 11.1. Adequate provision shall be made for cleanliness and sanitation, including the eradication of vermin.
- Sanitary conveniences. 11.2. (1) Sufficient latrine accommodation shall be provided reasonably near the working places for the use of employees.  
 (2) In underground workings at least one pan shall be provided in each level, screened from observation and, where practicable, placed in a return airway.  
 (3) The accommodation shall be provided and maintained to the satisfaction of the Inspector and shall conform with the requirements of the Public Health Department.  
 (4) When pans are used an ample supply of suitable deodorant shall be maintained alongside each pan.
- Cleansing of pans. 11.3. Each pan shall be emptied at intervals not greater than one week, or more frequently if required by the Inspector, and each pan shall be thoroughly cleansed each time it is emptied before being returned, and shall after each cleansing be thoroughly washed inside and out and disinfected.
- Pollution of workings. 11.4. A person who pollutes the workings, or wantonly misuses or fouls the latrine accommodation, is guilty of an offence.
- Eating places. 11.5. (1) One or more suitable places shall be provided where employees may eat their meals.  
 (2) In underground workings an eating place situated in a dry, well ventilated area shall be set aside in each level where the employees shall be required to congregate to eat their meals at the recognised crib time unless authorized by the shift boss to stay at the work place.  
 (3) Every eating place shall be maintained free from dust and vermin and in a clean condition, adequate seating and tables shall be provided, and water for washing shall be made available within a reasonable distance.  
 (4) An impervious receptacle with a suitable lid shall be provided at the eating place and all waste food, paper and other rubbish shall be deposited in that receptacle which shall be emptied and thoroughly cleaned at frequent intervals.  
 (5) In underground workings the contents of the waste receptacle shall be sent to the surface daily.
- Drinking water. 11.6. (1) A sufficient supply of clean, cool potable drinking water shall be provided for and be readily accessible to all employees.  
 (2) Where water unsafe for drinking purposes is provided for use in industrial purposes, or for fire protection, conspicuous notices shall be posted at points of supply clearly marked "Unfit for drinking" or words to that effect.

(3) In underground workings a drinking water supply shall be maintained on each working level, and where employees are working in places remote from that supply suitable containers shall be provided.

11.7. (1) A change house shall be provided for all underground workings and for all other workings unless it is a condition of employment that all workmen shall be transported to their lodgings or some other place where they can wash and change at the completion of their shift. Change rooms.

(2) The floor area to be provided shall not be less than 0.6 square metre for every employee using the change house in any one shift, in addition to the floor space required for passageways, heating pipes, drying racks, seating or cupboards.

(3) An ample supply of fresh hot and cold water shall be provided for the workmen for washing purposes, and for the purposes of this regulation water shall be considered "hot" when it has a temperature of 60°C or more.

(4) Provision shall be made for the drainage or removal of all waste water in a manner approved by the Public Health Department.

(5) A change house shall be well ventilated and lighted and shall be provided with sufficient appliances for drying wet clothes, where necessary.

(6) Provision shall be made for warming the change house in cold weather.

(7) Provision shall be made for the separate storage of clean and working clothes.

(8) Safety helmets, belts, and boots may be left as directed by the Manager but otherwise every man using the change house shall, at the end of each week, remove his dirty clothes therefrom and bring back clean ones on his return to work.

(9) Any clothes left in a change house at the end of a week shall, if the Manager so requires, be burned.

(10) A change house shall be cleaned out at least once a week, and the floors shall be washed daily.

(11) A change house shall be so constructed as to be free from draughts, and the entry doors shall be provided with sufficient screening to break the wind when the doors are open.

(12) A change house for underground employees shall be as near the travelling shafts or adit as, in the opinion of the Inspector, it is reasonably practicable to have it.

11.8. In every change house—

(a) showers shall be provided for the employees at the rate of one for every ten or part thereof; and

(b) wash basins shall be provided for the employees at the rate of one for every twenty or part thereof,

calculated on the basis of the number of employees using the change house in any one shift. Showers and wash basins.

### **Division B—Regulations to be Observed in Underground Mining.**

#### **PART 12.—SAFETY AND PROTECTION (UNDERGROUND).**

12.1. A person shall not work, or be employed or permitted to work, underground unless— Workers to be experienced or instructed.

(a) he has been instructed in the type of work required of him; or

(b) he has satisfied the Manager or person in charge of underground operations of his competence to do that work.

- Men working alone. 12.2. (1) Where there is any man employed underground who is working alone and not in frequent communication with or within easy hearing of other employees, the Registered Manager, Underground Manager or other person for the time being in charge of underground operations in the mine shall direct and ensure that such man is inspected, visited or communicated with at least every two hours.
- (2) In dangerous ground conditions—
- (a) a workman shall not be employed alone; and
- (b) men working together shall at all times be able to see one another.
- Lamps for workers. 12.3. (1) A miner's battery operated electric lamp for use underground shall contain at least two sources of light, in that it shall be fitted with two independent globes or with one globe containing two independent lighting filaments.
- (2) When carbide lamps are issued calcium carbide shall not be taken underground unless it is in a lamp or in a water tight container.
- (3) Calcium carbide shall not be stored underground.
- (4) Spent carbide shall be placed in a suitable container and transported to the surface daily.
- Shaft to have alternative method of travel. 12.4. Every shaft used by persons as a normal means of entry or exit into a mine shall have, in addition to any mechanical means of conveyance, at least one proper ladder or footway extending from the surface to all working levels unless—
- (a) two winding plants are available for immediate use; and
- (b) two independent sources of power are available for those plants.
- Two means of entry and exit. 12.5. (1) In every mine where a shaft has been sunk or an adit driven, provision shall be made for a means of escape from the mine workings in addition to the hoisting shaft or the opening normally used as a means of entry or exit to the mine.
- (2) The way of escape shall be properly maintained and properly marked.
- (3) During the time when a shaft or adit is the only means of entry or exit into mine workings, work on the alternative escape travelling way shall be carried out diligently and concurrently with the general development of the mine, in order that the alternative escape travelling way will be completed before normal stoping operations commence.
- (4) If the alternative means of escape involves travelling through an adjacent mine that means of escape requires to be approved in writing by the Senior Inspector for the district in which each of those mines is situated.
- Stope to have two travelling ways. 12.6. (1) Except in relation to initial stope preparation or leading stopes, and subject to subregulation (2), two separate travelling ways shall be provided into all working stopes underground.
- (2) When any travelling way is temporarily closed for any reason, no further work shall be carried out in the stope except for the purpose of clearing that travelling way.
- Workers to be withdrawn in danger. 12.7. (1) If at any time in the opinion of the person for the time being in charge of a mine, or part of a mine, any part of the mine is dangerous from any cause he shall have every man withdrawn forthwith from that part and shall report the matter to the underground Manager, Registered Manager or owner.
- (2) The Underground Manager or a qualified person appointed for the purpose by the Registered Manager, owner or agent shall inspect the part considered dangerous and shall make a true report on the condition of that part to the Registered Manager, owner or agent.
- (3) Workmen shall not, except insofar as is necessary for investigation into the cause of the danger, and for the removal of it, be re-admitted into the part found dangerous, until the Underground Manager or Registered Manager records in the Record Book in writing that he is satisfied that the danger no longer exists.



- 12.8. Every underground excavation in which persons work or travel shall be scaled and maintained in a safe condition. Excavations to be kept safe.
- 12.9. (1) Suitable lighting shall be provided at the shaft plat of every working level and at every loading station in a shaft where men are working. Lights in working levels etc.
- (2) The upper entrance to every winze, chute or pass on each level shall be suitably fenced, covered or illuminated to the satisfaction of the inspector.
- 12.10. (1) Unless exempted in writing by the Senior Inspector, direct telephonic communication shall be provided in a mine between the surface and convenient places underground in that mine. Telephones.
- (2) The Senior Inspector may direct that a telephone shall be installed in a particular place and a telephone shall be installed there accordingly.
- 12.11. The Registered Manager, Underground Manager or other person for the time being in charge of the mine shall ensure that provision is made at all working levels for the safe entry and exit of men entering or leaving a cage, skip, kibble or ladderway. Levels to have safe entry.
- 12.12. The top and every level entrance to a shaft shall be kept securely fenced or protected by a gate, but this provision shall not be taken to forbid the temporary removal of a fence or gate for the purpose of repairs or other operations if proper precautions are taken. Shaft entrances to be fenced.
- 12.13. (1) The provisions of this regulation apply in addition to the provisions contained in Part 4 relating to general safety. Safety belts.
- (2) A person shall not go into any pass or chute on top of broken rock unless he is wearing a safety belt with a rope attached thereto and to a secure anchorage above.
- (3) Every man working on a bench in an open stope or similar workings with an opening below exceeding three metres shall be provided with a safety belt with a rope attached thereto and to a secure anchorage above.
- (4) Every man working on a rill or steep slope shall be supplied with a safety belt with a rope attached thereto and to a secure anchorage above.
- (5) A person who neglects to wear the belt and to use the rope provided is guilty of an offence.
- 12.14. (1) In every underground working in a mine approaching a place likely to contain a dangerous accumulation of water, bore holes shall be kept in advance of the face and at such angle from the working as may be necessary to ensure safety. Approaching dangerous water.
- (2) No drive or other excavation shall be made until the ground has been tested in accordance with subregulation (1).
- (3) No rise shall be allowed to approach within three metres of any portion of a winze or other working in which there is a dangerous accumulation of water, unless and until that winze or working is first unwatered by bailing or pumping, or by means of a bore from the rise.
- 12.15. No dam or plug, other than an open dam on a level, shall be constructed underground until plans and specifications have been approved by the District Inspector. Dams and plugs.
- 12.16. (1) Every winze shall be sunk clear of a travelling way wherever practicable. Winze sinking operations.
- (2) The brace of every winze shall be constructed in a way which will prevent loose rock or material from accidentally falling down the winze.
- (3) Verbal communication shall not be made up and down any winze exceeding 20 metres in depth.
- (4) Where hoisting appliances are utilized a knocker line or other contrivance approved by the Inspector shall be provided in every winze to enable signals to be communicated to the driver from every part of the winze.

- (5) A chain ladder or other form of ladderway shall be provided in a winze in the course of construction to ensure a safe means of exit from the bottom.
- (6) Ladders shall be securely fastened to bearers at intervals not greater than five metres.
- (7) Tools shall not be raised or lowered in any winze or other confined place in which men are working, except in a bucket or other approved receptacle, and any projecting tool shall be secured so as to prevent it falling out of the bucket or receptacle.
- (8) At the beginning of each shift and after every blast the walls of a winze shall be inspected for loose rock and scaled if necessary.
- Raise operations. 12.17. (1) Before any new method of raising is undertaken, the method to be employed and the type of equipment to be used shall be approved by the Senior Inspector.
- (2) In every raise under construction where normal travel to and from the face is by mechanical means—
- (a) an alternative means of travel to and from the face shall be provided for the purpose of inspecting the raise and in case of accident;
- (b) a person working at the face of the raise shall be provided with a signalling device or other suitable means of communication to the level below, except in the case of a bore hole stage raise when he shall be provided with suitable means of communicating with the level above.
- Travelling ways in shafts. 12.18 Where one compartment of a shaft is used for the ascent and descent of persons by ladders and another compartment of the same shaft is used for raising persons, materials or counterweights, the ladderway compartment shall be close timbered or otherwise securely sealed from the other compartment.
- Travelling ways to be safe. 12.19. If in the opinion of the Inspector the natural rock walls of a winze or shaft used for travelling are not safe they shall be securely timbered, lined, or otherwise made safe.
- Travelling ways to have safety nooks. 12.20. (1) Pedestrian safety nooks shall be provided at intervals of not more than 100 metres in all haulage drifts underground along which trackless vehicle equipment operates, and in locomotive drifts when sufficient clearance has not been provided for the safety of persons walking or working along the drift.
- (2) Where a safety nook is required, it shall be of a minimum depth of 1 metre from the wall of the drift, at least 2 metres long and at least 2 metres high.
- (3) Every safety nook shall be constantly kept clear, and a person shall not so place anything as to prevent safe access thereto.
- Ladderways and footways. 12.21. In every working place underground a proper ladderway or footway or other means of travel shall be provided for safe entry and exit.
- Ladderway platforms. 12.22. (1) Every ladder constructed and fixed in a shaft for the ascent and descent of persons working in the mine shall be inclined at the most convenient angle which the space allows.
- (2) Such a ladder in any shaft or part of a shaft shall have substantial platforms at intervals of not more than 10 metres and spaces for foothold of not less than 150 millimetres from the wall.
- (3) Such a ladder shall project at least 600 millimetres above the platform or, should this be impracticable, hand grips shall be provided at the top of each ladder.
- (4) In every shaft or part of a shaft sunk before the coming into operation of this regulation in which the ladders do not comply with the provisions of this regulation, any parts of the ladderway which are repaired shall be altered so as to comply therewith.
- (5) All such ladderways shall be kept in a safe condition.

- 12.23. (1) When a pass in a stope is used as a travelling way—
- (a) the top ladder shall extend at least 600 millimetres above the top of the pass;
  - (b) the top ladder shall be supported at the top of the pass by two strong ladder hooks from a firm ladder bolt; and
  - (c) the ladders shall be securely supported at intervals not greater than 5 metres.
- (2) A chain or similar type of ladder may be used in a pass not exceeding 15 metres in depth.
- Ladders  
in passes.
- PART 13.—LOADING AND TRANSPORT (UNDERGROUND).
- 13.1. When locomotive or other vehicle haulage is used underground all passes and chutes shall be so constructed that no part will project into the haulage way in such a manner as to endanger the driver when he is seated in the locomotive or other vehicle.
- Passes and  
chutes to  
be clear of  
haulage way.
- 13.2. Ore shall not be drawn from a stope worked on the shrinkage system unless and until every person working in or travelling through that stope has been notified of the intention to draw off ore.
- Drawing  
ore from  
shrink  
stopes.
- 13.3. A chinaman chute or similar loading platform chute shall be of sufficient dimensions to provide adequate safety for workmen working thereon.
- Loading  
from  
chinaman  
chutes.
- 13.4. (1) When clearing a chute, millhole, or stope draw point of rock or material which is jammed or "hung up", a person shall not go into the stope beneath the obstruction, unless and until he has been instructed to do so by the shift boss.
- Clearing  
chutes.
- (2) The shift boss shall be responsible for the action to be taken to remove the obstruction.
- 13.5. (1) When clearing an underground pass which is jammed or "hung up" with rock or other material, a person shall not go up into the pass beneath the obstruction for any purpose.
- Clearing  
passes.
- (2) When normal methods have failed the matter shall be reported to the Manager or his representative who shall be responsible for having the pass cleared from above.
- 13.6. Mechanical loaders shall not be used underground unless—
- (a) the area of operation is of sufficient size and height to ensure the free and safe movement of the operator; and
  - (b) all safety equipment relevant to the loader is properly fitted and used by the operator.
- Loading,  
mechanical  
equipment.
- 13.7. When required by the District Inspector every trackless vehicle used underground shall be fitted with the following equipment, all of which shall be maintained in proper working condition—
- (a) effective lights that enable travelling in forward and reverse directions and which adequately indicate the width of the vehicle;
  - (b) an audible warning signal device;
  - (c) effective brakes;
  - (d) a speed indicator so placed as to be readily seen by the driver;
  - (e) a fixed seat for the driver, and a safety seat belt which shall be worn by the driver at all times whilst driving the unit;
  - (f) a suitable type of fire extinguisher so placed as to be within easy reach of the driver;
  - (g) protection for the driver, including overhead protection of a type approved by the District Inspector; and
  - (h) suitable attachments on loader buckets for the anchorage of safety belt ropes.
- Trackless  
vehicles,  
equipment.

Trackless vehicles, condition and maintenance requirements.

- 13.8. (1) Where any trackless vehicle is operated underground—
- (a) the Manager shall have a notice displayed on every vehicle, other than pneumatically operated loaders of tare weight not exceeding 2 tonnes, indicating the maximum load to be carried;
  - (b) to ensure that they are operable, the driver shall test the brakes of his vehicle on a level surface prior to commencing work on each shift, and before resuming work after the mid shift crib break; and
  - (c) the Manager shall be responsible for maintaining each vehicle in good order and condition, and shall appoint a competent person to carefully test, and, if necessary, adjust brakes at least once a week to ensure effective operation.
- (2) Where any vehicle operates on a grade steeper than 1 in 12 brake testing and adjustment shall be carried out daily, and shall include a practical braking test.
- (3) Any defect found in the braking or steering system of a trackless vehicle, together with the action taken to remedy the defect, shall forthwith be recorded by the examiner in a book kept at the mine for this purpose.

Trackless vehicles, speed limits.

- 13.9. (1) A trackless vehicle underground shall not exceed a speed of 30 kilometres per hour, or such lesser speed as the Inspector may determine for a particular location.
- (2) When so required by the Inspector the Manager shall blank off the high gears or high range of the vehicle transmission, or both, to ensure that the speed of the vehicle is restricted.
- (3) A trackless vehicle shall be operated underground with the transmission engaged.
- (4) Coasting downhill is prohibited.

Trackless vehicles, haulage way-conditions.

- 13.10. (1) The Manager shall have warning notices posted in any haulage way underground in which special precautions are necessary for the safe running of trackless vehicles.
- (2) The roadway of a haulage way shall be regularly watered and graded to ensure that it is maintained in a good and safe condition.
- (3) Dimensions of main haulage ways and adits shall be sufficient to provide a total horizontal clearance of not less than 1.8 metres and a total vertical clearance of not less than 600 millimetres.
- (4) In all cases the widest and tallest dimension of any vehicle used in the haulage way shall be considered when determining clearances, but when the driver's overhead protection canopy is the highest point of the vehicle, an overhead clearance of 600 millimetres shall be provided above that canopy.
- (5) Rock or material shall not be transported up or down a haulage way underground during the mid shift crib break or at the beginning or the end of the shift when men are walking or driving along the haulage way.

Trackless vehicles, movement control.

- 13.11. (1) Where trackless vehicle haulage or transport is used underground and more than one unit is used in a haulage way or level, when required by the Senior Inspector a system of signals shall be used or installed and maintained in order to control the movement of traffic.
- (2) The signals system installed shall be subject to the approval of the Senior Inspector.
- (3) When so required by the Senior Inspector haulage ways or travel ways shall be equipped with suitable devices to warn of approaching mobile equipment.

Unattended trackless vehicles.

- 13.12. Trackless haulage or transport vehicles shall not be left unattended unless and until the power has been switched off and the brakes applied.

13.13. (1) A person shall not drive a trackless diesel vehicle underground unless he has first been examined by a competent person appointed by the Manager in a thorough practical trial in the use of the vehicle under underground conditions, and has received a Certificate from the Manager that he is competent to drive the vehicle.

Trackless diesel vehicles, driver to be certificated.

(2) The Certificate shall state the full name of the person to whom it is issued, his age, his address, the name of the mine, the date and place of issue, and the type or types of vehicle for which the Certificate is issued.

(3) The Certificate shall be signed by the holder and the person who examined him.

(4) A copy of the Certificate shall be forwarded to the Senior Inspector for registration purposes.

(5) A person who takes charge of a trackless diesel vehicle underground without a Certificate as required by this regulation, and any owner, agent, Manager or supervisor who knowingly allows that person to take charge of the vehicle is guilty of an offence.

(6) A person shall not drive any trackless diesel vehicle underground which is unsafe, or apparently in an unsafe condition, and he shall immediately report such condition to the Manager or his representative who shall have the matter investigated and take appropriate action.

(7) A person shall not drive a trackless diesel vehicle underground in a dangerous or unsafe manner.

(8) An Inspector may, at any time, suspend a Certificate for a period not exceeding one month if in the opinion of the Inspector the holder should not be entrusted with the charge of a trackless diesel vehicle underground.

(9) The holder shall, on demand, deliver his Certificate to the Inspector.

(10) The Inspector shall notify the Manager and the Senior Inspector in writing of his decision, but the Manager may vary or revoke that decision with the approval of the Senior Inspector.

(11) The Senior Inspector may cancel a Certificate or suspend the Certificate for such a period as he thinks fit.

13.14. A person shall not drive or attempt to drive any trackless diesel haulage or transport equipment under power unless he is properly seated in the correct driving seat.

Trackless diesel vehicles, driver to be correctly seated.

13.15. (1) Subject to subregulation (2), a person other than the driver shall not ride on any trackless haulage or transport equipment except for the purposes of training, examining or testing, or, with the permission of the Manager, for other purposes.

Trackless diesel vehicles, unauthorized riding prohibited.

(2) Subregulation (1) does not apply to persons properly seated in a transport motor vehicle provided for the purpose.

13.16. A locomotive shall not be used on any track underground where the gradient exceeds 1 in 12.

Locomotives, track gradient.

13.17. Where a locomotive is used underground the rail track shall have adequate strength and rigidity and shall be properly laid and maintained.

Locomotives rail tracks.

13.18. The locomotive driver or some other competent person shall, at least once in every working day, inspect the whole of every rail track in use underground with respect to its clearance, freedom from obstructions, state, and general safety and shall report any defects to the supervisor or Manager.

Locomotives, track to be unobstructed.

13.19. Every locomotive underground shall be provided with—

Locomotives, safety equipment.

(a) effective brakes;

(b) an effective headlight or headlights fitted in a manner to throw a strong beam of light ahead of the movement of the locomotive; and

(c) a means of giving a distinct audible warning signal.

- Locomotives, tall light. 13.20 When an underground locomotive is pushing or pulling more than one truck, in addition to the locomotive headlight an effective tail light shall be placed on the end truck.
- Locomotives, overlength loads. 13.21. A truck or other tracked vehicle with material extending over its length shall be drawn by an underground locomotive and not pushed.
- Locomotives, weekly examination. 13.22. To ensure that it is in safe working condition, once at least in every week each underground locomotive shall be examined by a competent person appointed by the Manager.
- Locomotives, defective. 13.23. A locomotive shall not be used underground if it has any defect liable to affect its safe running.
- Locomotives, electrical equipment. 13.24. All parts of the electrical equipment of an underground locomotive shall be contained in substantial enclosures designed to resist rough usage, and the battery box shall be fitted with suitable ventilators to disperse the gases evolved.
- Locomotives, control lever. 13.25. The control lever of an underground storage battery or trolley locomotive shall be so arranged that the lever cannot be removed accidentally when the power is on.
- Locomotives, unattended. 13.26. (1) A locomotive shall not be left standing unattended underground unless the brakes have been applied and the control lever placed in the neutral position.  
(2) The main switch of an unattended storage battery locomotive shall be placed in a non-operating position.
- Locomotives, storage battery. 13.27. No part of the structure of a storage battery locomotive shall form part of or be connected with the electrical circuit.
- Locomotives, drivers to be certificated. 13.28. (1) A person shall not drive a locomotive underground in a mine unless and until he has first been examined by a thorough practical trial in the use of the machine by a competent person appointed by the Manager and has received a Certificate from the Manager that he is competent to drive the locomotive.  
(2) A duplicate of every Certificate shall be sent by the Manager to the District Inspector forthwith after it is issued.  
(3) The Certificate shall state the full name of the person to whom it is issued, his address, his place of birth, his age, the name of the mine and the mine owner, the date and place of issue.  
(4) The holder shall sign his name on both the original and duplicate Certificate in the presence of the Manager or his representative, who shall—  
(a) certify that the signature is that of the person examined by him to whom the Certificate is issued; and  
(b) sign the Certificate.  
(5) Any person who takes charge of a locomotive underground without a Certificate as required by this regulation and any owner, agent, Manager or supervisor who knowingly allows the person to take charge of the locomotive, is guilty of an offence.  
(6) An Inspector may, at any time, suspend a Certificate for a period not exceeding one month if in the opinion of the Inspector the holder should not be entrusted with the charge of a locomotive.  
(7) The holder shall, on demand, deliver his Certificate to the Inspector.  
(8) The Inspector shall notify the Manager and the Senior Inspector in writing of his decision, but the Manager may vary or revoke that decision with the approval of the Senior Inspector.  
(9) The Senior Inspector may cancel a Certificate or suspend the Certificate for such period as he thinks fit.
- Locomotives, driver to be correctly seated. 13.29. A person shall not drive or attempt to drive or move an underground locomotive under power unless he is correctly seated in the driving seat of the locomotive.

13.30. (1) Subject to subregulation (2), a person other than the driver shall not ride on any underground locomotive or train except with the permission of the Manager for the purposes of training, testing or shunting. Locomotive, unauthorized riding prohibited.

(2) Subregulation (1) does not apply to persons properly seated in cars provided for the purpose.

13.31. (1) Where a haulage track underground leads up to a shaft a sufficiently strong stop block or device shall be installed on the track to prevent a locomotive or any part of a train from accidentally colliding with the shaft supports or from entering the shaft. Shaft entrances to be protected.

(2) The person opening the stop block shall be responsible for closing it immediately after the locomotive, truck or train, has cleared the stop block.

13.32. (1) Batteries shall be charged underground only at charging stations constructed for the purpose. Battery charging stations.

(2) Each battery charging station shall be adequately ventilated to render harmless the gases evolved, and the charging apparatus shall be installed on the intake side of the battery racks so that the ventilation passes from the battery racks direct into the return airway.

(3) Flammable material shall not be used in the construction of any underground charging station.

(4) Adequate means for extinguishing fire shall be kept constantly available at each charging station.

(5) Naked lights shall not be used, nor shall any person smoke in or within ten metres of an underground charging station.

(6) A copy of subregulation (5) shall be kept posted up at each charging station.

13.33. (1) A person shall not ride on an underground conveyor other than a manlift approved by the State Mining Engineer. Conveyor haulage.

(2) Where practicable, there shall be an audible warning device which shall be sounded before starting a conveyor belt to warn persons that it is to start.

(3) When an Inspector so directs, a means of stopping a conveyor belt by a device that is not capable of re-starting the conveyor belt shall be provided so as to be available to every person along its course.

(4) A person shall not go or clean under a moving conveyor belt unless protected from the belt by a screen approved by the Inspector.

(5) Every conveyor way underground shall be equipped with a suitable walkway or travelway to allow safe access for maintenance or other purposes.

#### PART 14.—DIESEL ENGINES (UNDERGROUND).

14.1. No internal combustion engine, other than a compression-ignition diesel engine which uses low volatile fuel, shall be used underground in a mine. Diesels only to be used.

14.2. Any case of unconsciousness caused by exhaust gas fumes from a diesel engine shall be treated as a serious injury for the purposes of the Act, shall be recorded in the Accident Record Book, and shall be notified accordingly. Accidents caused by diesel fumes.

14.3. (1) A diesel engine shall not be installed or used underground in a mine until the owner or Manager has received a written permit to do so from the Senior Inspector. Permit required for diesel engine.

(2) The Senior Inspector may impose conditions relative to the use of a diesel engine or the vehicle in which it is installed, or both, and those conditions may be varied at any time.

(3) When an Inspector ascertains that any condition of a permit is not complied with and in the opinion of the Inspector any person is likely to be thereby endangered, he shall report the facts to the Senior Inspector who may thereupon suspend or cancel that permit.

(4) The Senior Inspector shall keep a register of all diesel engine permits issued, and the conditions imposed.

Specifica-  
tions, tests  
and analyses  
required.

14.4. (1) The Senior Inspector shall, before issuing a permit for a diesel engine to be installed or used underground, have tests made to ensure that the diesel engine is safe for use underground, and the cost of those tests shall be borne by the applicant.

(2) Applications for a permit shall be accompanied by complete engine identification data, full specification, of the engine and an analysis of its undiluted exhaust gas composition with respect to carbon monoxide, oxides of nitrogen and carbon dioxide.

(3) The determination of the analyses of exhaust gas composition required by this regulation shall be made when the engine is operating—

(a) at normal operating temperature and minimum rated power output; and

(b) at maximum rated speed and maximum rated power output.

(4) The undiluted exhaust gas produced by a diesel engine intended for use underground shall not contain more than 2 500 parts per million of carbon monoxide or more than 2 000 parts per million of oxides of nitrogen under any condition of engine operation.

Ventilating  
air require-  
ments.

14.5. (1) A diesel engine shall not be taken or used underground in any part of a mine unless the air for the ventilation of that part of the mine is drawn from the purest possible source.

(2) The quantity of air supplied to ventilate any part of a mine underground in which a diesel engine is used shall be sufficient to dilute the final exhaust gases so that the concentration of any of the following constituents in the diluted mixture shall not be more than—

(a) 5 000 parts per million of carbon dioxide;

(b) 50 parts per million of carbon monoxide;

(c) 10 parts per million of hydrogen sulphide;

(d) 5 parts per million of nitrogen dioxide;

(e) 5 parts per million of sulphur dioxide;

(f) 5 parts per million of aldehyde (as formaldehyde).

(3) The oxygen content of the diluted mixture shall be not less than 20% by volume.

(4) Each diesel engine permit shall specify the minimum quantity of air per minute which shall be supplied to dilute the engine exhaust gases to the standard required by subregulation (2).

(5) In calculating the quantity of air required to dilute the exhaust gases, 3.8 cubic metres of air per minute shall be supplied per kilowatt engine output, based on the manufacturer's maximum rating, but—

(a) the figure may be reduced by the Senior Inspector for a particular diesel engine if it can be established that, because of special design features, a lesser quantity of air will dilute the exhaust gases to the acceptable standard; and

(b) in no case shall less than 1.9 cubic metres per minute per kilowatt be supplied.

(6) Where more than one diesel engine is operating in an underground working place at the same time the volume of ventilating air required to be supplied shall be the aggregate of the volumes shown on the respective permits issued by the Senior Inspector with regard to those engines.



14.6. (1) Unless exempted by the Senior Inspector in writing, every diesel engine used underground shall be fitted with an exhaust gas cooling device capable of reducing the temperature of the undiluted exhaust gases under any condition of operation to less than 93°C. at the point of discharge from the device.

Exhaust cooling device.

(2) Any proposed change or modification to an approved exhaust cooling device, and any proposed modification to a diesel engine, which could affect the characteristics of the exhaust gas emission shall be made known to the Senior Inspector.

14.7. (1) A diesel engine used underground shall be fitted with an exhaust scrubber or other apparatus approved by the Senior Inspector as suitable for rendering toxic exhaust gases harmless or for reducing the toxic content of such gas to comply with the provisions of this Part.

Exhaust scrubber.

(2) When a water type scrubber is used the tank of that exhaust gas scrubber shall be cleaned and filled with fresh water at the beginning of each working shift, or more frequently if necessary.

(3) Approved exhaust gas scrubber apparatus other than a water type scrubber shall be examined and cleaned as frequently as may be required by the Inspector.

14.8. (1) The Manager shall be responsible for testing the composition of the exhaust atmosphere in any place underground where a diesel engine or diesel engines are working.

Exhaust atmosphere testing.

(2) The tests shall be taken in the return airway and on the exhaust side of the engine or engines, and may be taken at the primary or secondary ventilation exhaust outlets or at both.

(3) The tests shall be made daily to determine the quantity of carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and nitrogen dioxide (NO<sub>2</sub>).

(4) If as a result of the tests the concentrations of the components in the diluted exhaust gas do not conform with the requirements of this Part further operation of that diesel engine or engines in the working place so tested shall be suspended until the cause of the high gas concentration has been discovered and remedied.

14.9. (1) The undiluted exhaust gas produced by a diesel engine underground shall be sampled and analysed at intervals of not more than one week, or at such lesser intervals as the Inspector may require.

Undiluted exhaust gas sampling.

(2) If when sampling the undiluted exhaust gas produced by a diesel engine it is found that the exhaust gas contains more than 2 500 parts per million of carbon monoxide or more than 2 000 parts per million of the oxides of nitrogen the diesel engine shall be immediately withdrawn from service and shall not be used until the fault has been remedied.

14.10. (1) The Manager shall be responsible for the cost of all testing of exhaust atmosphere and the sampling and analysis of undiluted exhaust gas.

Testing costs, methods and equipment.

(2) The methods and equipment used for testing exhaust atmosphere or sampling and analysis shall be such as to be acceptable to the Inspector and conform with such standards as he may require.

14.11. A copy of the permit for each diesel engine, issued pursuant to this Part, and a record of each exhaust atmosphere test and undiluted exhaust gas analysis shall be kept at the mine in a Record Book of a type acceptable to the Inspector.

Records.

14.12. (1) In every mine or part of a mine in which a diesel engine is used underground there shall be installed one or more devices to warn persons immediately there is an interruption to or breakdown in the power system or main ventilation fans.

Ventilation breakdown warning.

(2) As soon as practicable after the warning system or device indicates an interruption to or breakdown in the power or ventilation, every diesel engine underground in the part of the mine so affected shall be stopped and shall not be re-started until all ventilation faults have been remedied.

(3) Notices shall be installed in prominent positions to ensure that the driver of any diesel engine vehicle is aware of the nature of the warning and his responsibilities.

- Fuelling and servicing.** 14.13. (1) Diesel engines shall not be fuelled or serviced at an underground fuel storage place.
- (2) Diesel engine vehicles shall be fuelled and serviced at a service station.
- (3) The location, method of construction and means of ventilation of a service station shall be subject to the approval of the District Inspector, and plans for any such installation shall be submitted to the District Inspector for approval prior to installation.
- (4) Fuelling underground shall be by means of pump and hose or other method approved by the Inspector.
- (5) A naked light shall not be used in, and persons shall not smoke in or within ten metres of, any service station or fuel storage place that is underground and the Manager shall cause signs to that effect to be erected in conspicuous places.
- (6) Every service station and fuel storage place shall be kept in a clean state, and waste oil and grease shall be collected and sent to the surface daily.

**Fire extinguishers.** 14.14. Fire extinguishers of a type and capacity approved by the W.A. Fire Brigades Board shall be installed on each diesel engine and at fuel storage places and service stations underground in a mine.

**Fuel specification.** 14.15. (1) Diesel engine fuel for use underground shall have a flash point of not less than 61°C. as determined in the manner prescribed in regulation 6 of the Flammable Liquid Regulations, 1967, under the Explosives and Dangerous Goods Act, 1961.

(2) The sulphur content of such diesel fuel shall not exceed 0.5%.

**Fuel transport and storage.** 14.16. (1) Fuel oil and lubricants shall only be taken underground in strong containers that do not leak.

(2) Fuel oil and lubricants for use underground shall be stored in a place approved by the Inspector and constructed and ventilated to his requirements.

(3) The quantity of fuel oil stored on a level shall not exceed the quantity required for one week's work on that level.

#### PART 15.—WINDING, WINDING ROPES AND SIGNALS.

**Interpretation.** 15.1. For the purposes of this Part—

“factor of safety” used in relation to any rope or part of machinery means the ratio of the breaking force or strength of that rope or part of machinery to the maximum total static force on it including the component of its own weight;

“winding engine” means the machinery used to haul, by means of a rope or ropes, conveyances in a shaft or winze for the transport of persons, materials, or rock, but does not include any lifting machine, endless rope haulage or scraper winch installation.

##### *Head I.—Regulations of General Application.*

**Application.** 15.2. Regulation 15.2 to 15.55, inclusive, of this Part apply to all winding operations.

**New haulage installations.** 15.3. (1) Prior to the installation of any haulage system or any other means of man or rock transportation in a shaft or from underground to the surface, the owner, agent or Manager shall notify the State Mining Engineer in writing of his intention to construct the installation and shall submit—

- (a) a plan or plans showing the location of the shaft or other mine opening together with the general layout of the proposal;

- (b) details including the factors of safety of winding machinery and shaft conveyances;
  - (c) details of rope types and sizes and all attachments to be used, including details of the duties and factors of safety; and
  - (d) design details of the headframe and associated surface bins, with provision to be made against overwinds.
- (2) The State Mining Engineer may request further design information and any such further information shall be forwarded by the owner, agent or Manager within one month of that request.

15.4. The owner, agent or Manager shall not cause or permit to be used any machinery plant or apparatus for haulage in a shaft, or hauling up an underground incline, unless the machinery plant and apparatus have been approved by the State Mining Engineer and, in the case of a winding engine, by the Chief Inspector of Machinery.

Approval  
prior to use.

15.5. The Manager shall forthwith after the occurrence of any breakage of any essential part of the winding machinery at any mine or any accident of any kind in connection with the winding arrangements or causing damage to the winding rope or its attachments, cages or skips, detaching gear, safety catches, shaft timbers, guides or runners, or the headframe, report the facts to the District Inspector and shall also record particulars of the occurrence in the Record Book.

Winding  
accidents  
to be  
reported.

15.6. (1) In every winding engine room a Record Book shall be kept in which the winding engine driver in charge of each shift shall record any peculiarities in the running of the engine and any defects in any of the engines, boilers or accessories under his charge which he considers warrants repair or alterations.

Winding  
engines,  
shift records.

(2) Every entry shall be properly signed and dated by the winding engine driver in charge of that shift.

(3) Where two or more drivers are employed on the same engine in rotation of shifts, any defect in the working of the machinery recorded in the Record Book shall be confirmed or otherwise by the driver or drivers who followed the driver making the original entry.

(4) The Manager, or a person authorised in writing by him, shall examine the Record Book daily and check every entry, recording in a suitable manner any repair or alteration that has been effected, and any entry made by him shall be signed and dated by him.

15.7. Where the usual means of exit from the underground workings of a mine is by winding engine—

Winding  
engine to be  
available.

(a) that engine shall be kept ready for use; and

(b) unless push button automatically controlled winding is provided, a winding engine-driver shall remain in control or have effective supervision of the winding engine whilst any person is underground or during the time that engine is required to be used.

15.8. A person shall not take charge of a winding engine other than a hoist unless—

Winding  
engine  
drivers to be  
certificated.

(a) he is a certificated winding engine-driver under the provisions of the Inspection of Machinery Act, 1921-1969 or any Act repealing or replacing that Act; or

(b) he is a person who has been exempted by the Minister in the circumstances that it is impracticable to employ a certificated engine-driver and that all reasonable precautions are taken for safety.

15.9 (1) Every application for exemption, in the circumstances that it is impracticable to employ a certificated engine-driver and that all reasonable precautions are taken for safety, shall be made in writing in Form 16 by the applicant personally to the District Inspector.

Exemptions.

(2) An applicant shall state his full name, address, the length of his experience with machinery and the nature of that experience, the

length of time during which he has had experience in working the particular machinery in respect of which the exemption is desired, and a full description of the machinery in respect of which the exemption is desired.

(3) Each application shall be accompanied by a fee of five dollars for a certificate of exemption, but should the application be refused the fee will be returned to the applicant.

(4) Every certificate of exemption issued by the Minister is subject to revocation at his discretion should he become convinced—

- (a) that the person to whom it was granted is incapable or is in any way unsuitable to have a certificate of exemption granted to him;
- (b) that there has been a breach of any of the conditions on which the exemption was granted; or
- (c) that in the circumstances, the employment of a certificated engine-driver is necessary.

Hoist drivers  
to be  
certificated.

15.10. (1) A person shall not take charge of a hoist for hoisting purposes unless he has been examined—

- (a) by the Manager, or some competent person appointed by the Manager for the purpose, and by a winding or first class certificated engine driver;
- (b) where no winding or first class certificated engine driver is available to conduct an examination at the mine, by the District Inspector,

in a thorough practical trial in the use of that machinery and has as a result of that examination been granted a Hoist Driver's Certificate.

(2) A Hoist Driver's Certificate shall be signed by the person or persons who conducted the examination of the applicant.

(3) Where the applicant desires to be examined by the District Inspector he shall make application in Form 17.

(4) A duplicate of every certificate issued by a Manager under sub-regulation (1) shall be sent by the Manager to the Inspector forthwith.

(5) A Hoist Driver's Certificate shall be in Form 18 and shall state the full name of the person to whom it is issued, his address, his place of birth, his age, the name of the mine and mine owner, and the date and place of issue.

(6) The holder shall sign his name on both the original and the duplicate certificate in the presence of the Manager, or of the person appointed by him to conduct the examination, who shall certify that the signature is that of the person examined by him and to whom the certificate is issued.

(7) A person who takes charge of a hoist without a Hoist Driver's Certificate and any owner, agent or Manager who knowingly allows any such person to take charge of a hoist is guilty of an offence.

Hoist  
Driver's  
Certificate  
may be  
suspended  
or cancelled.

15.11. (1) An Inspector may, at any time, suspend a Hoist Driver's Certificate for a period not exceeding one month if in the opinion of the Inspector the holder should not be entrusted with the charge of a hoist.

(2) The holder shall, on demand, deliver his Certificate to the Inspector.

(3) The Inspector shall notify the Manager and the Senior Inspector in writing of his decision, but the Manager may vary or revoke that decision with the approval of the Senior Inspector.

(4) The Senior Inspector may cancel a Certificate or suspend the Certificate for such period as he thinks fit.

Winding  
engine-  
drivers  
to be  
medically  
examined.

15.12. (1) This regulation does not apply—

- (a) to the holder of a certificate of exemption issued pursuant to an application made under regulation 15.9; or
- (b) to the driver of a hoist.

(2) Subject to subregulation (1) every person in charge of a winding engine used for raising or lowering men or materials, or under which men are working, shall present himself to a medical practitioner registered or deemed to be registered under the Medical Act, 1894, for medical examination,

(a) in the month of June; or

(b) as required by the medical practitioner; or

(c) before taking charge of a winding engine if more than twelve months have elapsed since his previous medical examination,

and shall forward to the State Mining Engineer within seven days thereafter, in Form 19, a Medical Certificate stating that he is not suffering from deafness, defective vision, epilepsy, disease of the heart, diabetes or other infirmity to such an extent as would, or would be likely to, render him unfit for his duties or liable to become suddenly incapable of controlling his engine.

(3) Where a person has attained the age of sixty-five years he shall not take charge of a winding engine if more than six months have elapsed since his previous medical examination.

(4) On receipt of each Medical Certificate, the State Mining Engineer shall cause an acknowledgment to be sent to the engine-driver who shall retain it for production when so required by a duly authorized person.

(5) Where, in the opinion of the medical practitioner, a winding engine driver is not in a fit state of health to have charge of a winding engine, that winding engine driver shall not take charge of a winding engine.

(6) Any engine-driver who does not comply with or contravenes the provisions of this regulation and any owner, agent or Manager who knowingly employs such an engine driver is guilty of an offence.

15.13. Every winding engine shall be capable of raising the maximum unbalanced load from the bottom of the shaft or winze. Winding engine, power required.

15.14. In no case shall the source of power to a winding engine or hoist be cut off unless and until it is safe to do so. Power cut off.

15.15. (1) Every winding engine and hoist shall be fitted with a gauge or other suitable instrument in proper working order which will indicate to the driver whether or not power is available at the engine. Indicators and gauges.

(2) Subject to subregulation (3), every winding engine other than a hoist shall be provided with a depth and speed indicator driven from the driving sheave or drum shafting.

(3) Except in relation to a friction winding engine, the State Mining Engineer may grant an exemption from the requirements to use a speed indicator.

(4) A winding engine shall not be used for winding whilst a depth or speed indicator is disconnected.

15.16. Unless exempted in writing by the State Mining Engineer, every winding engine shall be provided with an effective automatic contrivance, in full and fixed engagement with the winder, to prevent overwinding and over-speeding and so constructed as— Speed Control.

(a) to prevent the shaft conveyance from exceeding a speed ten per cent greater than the approved maximum designed speed;

(b) to control the speed of the shaft conveyance in any part of the shaft to predetermined limits; and

(c) to prevent the shaft conveyance from exceeding a speed of 2 metres per second when being landed at the lowest entrance to, or at the bottom of the shaft.

- Brakes.** 15.17 (1) All winding engines used for raising or lowering men or for the haulage of material shall be provided with adequate brakes which—
- (a) in the case of a hoist, shall be subject to the approval of an Inspector;
  - (b) in the case of a drum winder, shall comply with the requirements of regulation 15.62; and
  - (c) in the case of a friction winder, shall comply with the requirements of regulation 15.77.
- (2) A person operating a winding engine shall ensure that while any persons are embarking or disembarking the brake is fully applied.
- Persons or material not to be lowered by the brake.** 15.18. (1) No person or material shall be lowered by means of the brake alone.
- (2) A person shall not enter or remain, or be permitted to enter or remain, in any cage, skip or kibble held or suspended by the brake alone when the winder drum is unclutched.
- Stop switch.** 15.19. (1) Every winding engine shall be provided with a stop switch for the purpose of stopping the engine and applying the brakes.
- (2) The stop switch shall be placed within easy reach of the winding engine-driver.
- Driver not to be spoken to on duty.** 15.20. A person shall not speak to the driver of a winding engine while his machine is in motion, except for the purpose of stopping the engine in an emergency.
- Acceleration control.** 15.21. A cage or skip in which men are travelling shall not be accelerated or decelerated by the winding engine at a rate greater than 1.5 metres per second per second, except in the case of an emergency when deceleration shall not be less than 2 metres per second per second nor more than 5 metres per second per second.
- Control selection.** 15.22. Where it is provided that the winder may be controlled by either a manual or an automatic method the device for selecting the control method shall be available only to persons authorised by the Manager.
- Push button controls.** 15.23. (1) When a winder is being used for carriage of persons and its operation is under push button control it shall be incapable of motion unless all shaft doors and the cage doors in connection with that winder are properly closed.
- (2) Provision may be made to open shaft doors when a winder is being used for the carriage of materials provided that the conveyance is within 10 metres of a landing and the winder subject to inching control only.
- (3) Push button controls located at a landing shall only be accessible to a person inside the cage when the cage door is open.
- (4) Where it is arranged for push button control of the winder from within the cage a stop button shall be provided which, when operated, will cause the winder to stop.
- Repairs, cage to be supported.** 15.24. On all occasions when repairs are being effected to the clutches or brakes of a winding engine and where ropes are attached to the drums, the skip or cage shall be removed or firmly supported while the work is in progress.
- Overwind preventer.** 15.25. There shall be provided in the shaft headframe, or tower, such devices as will remove the power from the winder and, by automatic application of the brakes, bring the winding drum or driving sheave to rest before any shaft conveyance, counterweight or rope attachment reaches any permanent obstruction to its passage.
- Backing out devices.** 15.26. Any device provided to permit backing out from an overwound position shall respond to manual control only, and shall permit withdrawal from the overwind position only.
- Winding engine fire precautions.** 15.27. (1) In every winder room there shall be provided and maintained suitable and sufficient apparatus to extinguish any fire which may break out.

- (2) Where a winder is situated in a head frame or tower of a shaft—
- (a) suitable and sufficient apparatus shall be provided to automatically extinguish any fire which may break out, unless otherwise approved by the Senior Inspector; and
  - (b) effective precautions shall be taken to prevent any flammable liquid used in connection with the winder or any apparatus installed in the head frame or tower from entering the shaft.

15.28. (1) Every working shaft in which a cage or skip is used and every division of such shaft in which persons are raised or lowered, shall be provided with some proper means of communicating distinct and definite signals— Signalling system.

- (a) from the bottom working level of the shaft, from every entrance for the time being worked between the surface and the bottom working level, and from the surface brace to the winding engine room; and
- (b) from the winding engine room to the surface brace and to the bottom working level of the shaft, and to every entrance for the time being worked between the surface and the bottom working level of the shaft.

(2) The owner, agent or Manager shall appoint competent persons to be platmen, bracemen or skipmen who shall be responsible for communicating signals to the winder driver, and except for signalling the accident signal other persons shall not communicate signals to the winder driver.

(3) Nothing in this regulation shall prevent employees other than platmen, bracemen and skipmen from communicating signals on a separate interplat signal system installed for that purpose.

15.29. (1) Every person employed underground in a mine shall make himself acquainted with the Code of Signals. Signals to be known.

(2) A person shall not be employed as a winder driver, hoist driver, platman, skipman or braceman in any mine unless and until, before being so employed, he satisfies the owner, agent or Manager that—

- (a) he knows the Code of Signals as prescribed by these regulations, and his duties and obligations under the provisions of the Act and these regulations; and
- (b) he can perform efficiently his duties and obligations in that employment.

15.30 (1) All methods of signalling shall be clear and distinct. Signals to be clear and correct.

(2) Verbal or visual signals shall not be directed to the winding driver by the braceman or any other person on the surface.

(3) A clear view shall be kept for the engine driver between his station and the shaft at the surface brace, or, in lieu thereof, indicators shall be provided which will efficiently provide for safety.

(4) A person shall not—

- (a) give or cause to be given any wrong signal; or
- (b) ride in or upon any cage, skip or kibble at a time when signals have informed the driver that no person is so riding.

15.31. (1) This regulation does not apply when automatic winding is used. Signals to be returned.

(2) Subject to subregulation (1) and subregulation (3), on receiving a signal, a winding engine driver shall, before beginning to wind, give a return signal, repeating the signal as received by him.

(3) The driver shall not be required to return the signal "one"—to stop when the skip or cage is in motion, nor shall he be required to return the signal as provided for in the sinking signals.

(4) On returning a signal, the winding engine driver shall not move the cage, skip or kibble until a period of at least six seconds has elapsed when

raising or lowering men or at least two seconds have elapsed when raising or lowering materials.

Communi-  
cation by  
voice.

15.32. No communication of signals by word of mouth shall be made up or down any shaft or winze exceeding 20 metres in depth, or when hoisting appliances are used, except—

- (a) through a telephone properly fitted and isolated in a compartment not used for hoisting; or
- (b) by radio installed for the purpose of that communication.

Code of  
Signals.  
Reg. 15.33  
amended by  
G.G. 2/7/76,  
p.p. 2346-7.

15.33. (1) A copy of the Code of Signals prescribed by these regulations shall be posted and maintained in clear and legible form in the Winding Engine Room at the surface brace and at each working plant underground.

(2) Signals shall be in accordance with the following Code—

| Knocks or Rings   | Shall Signify.                                                                                                                                                                |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                 | Stop—Signal to be returned by driver when the conveyance is or has been brought to rest.                                                                                      |
| 2                 | Lower.                                                                                                                                                                        |
| 3                 | Raise.                                                                                                                                                                        |
| 4                 | Hoist to surface.                                                                                                                                                             |
| 5                 | Danger signal—The conveyance must not be moved until release signal 8 has been given.                                                                                         |
| 6                 | Materials or equipment to be conveyed (cautionary signal). Signal to be returned by driver before a command signal is given when the driver shall move the conveyance slowly. |
| 7                 | Firing warning.                                                                                                                                                               |
| 8                 | Release conveyance from "Danger" signal 5. Signal to be returned by driver before a command signal is given.                                                                  |
| 12                | Accident signal—to be followed after a pause by the signal for the level where the conveyance is required.                                                                    |
| 1 pause 2 pause 3 | Change to wind from a different level (throw in or out of gear). Signal shall not be given while the conveyance is in motion.                                                 |

Winding signals—Change of level.

The shaft conveyance shall be raised or lowered, as required, in accordance with the following signals—

|           |                  |
|-----------|------------------|
| 1 pause 1 | To No. 1 level.  |
| 1 pause 2 | To No. 2 level.  |
| 1 pause 3 | To No. 3 level.  |
| 1 pause 4 | To No. 4 level.  |
| 1 pause 5 | To No. 5 level.  |
| 2 pause 1 | To No. 6 level.  |
| 2 pause 2 | To No. 7 level.  |
| 2 pause 3 | To No. 8 level.  |
| 2 pause 4 | To No. 9 level.  |
| 2 pause 5 | To No. 10 level. |
| 3 pause 1 | To No. 11 level. |
| 3 pause 2 | To No. 12 level. |
| 3 pause 3 | To No. 13 level. |
| 3 pause 4 | To No. 14 level. |
| 3 pause 5 | To No. 15 level. |



4 pause 1 To No. 16 level.  
 4 pause 2 To No. 17 level.  
 4 pause 3 To No. 18 level.  
 4 pause 4 To No. 19 level.  
 4 pause 5 To No. 20 level.  
 5 pause 1 To No. 21 level.  
 5 pause 2 To No. 22 level.  
 5 pause 3 To No. 23 level.  
 5 pause 4 To No. 24 level.  
 5 pause 5 To No. 25 level.  
 6 pause 1 To No. 26 level.  
 6 pause 2 To No. 27 level.  
 6 pause 3 To No. 28 level.  
 6 pause 4 To No. 29 level.  
 6 pause 5 To No. 30 level.  
 7 pause 1 To No. 31 level.  
 7 pause 2 To No. 32 level.  
 7 pause 3 To No. 33 level.  
 7 pause 4 To No. 34 level.  
 7 pause 5 To No. 35 level.  
 8 pause 1 To No. 36 level.  
 8 pause 2 To No. 37 level.  
 8 pause 3 To No. 38 level.  
 8 pause 4 To No. 39 level.  
 8 pause 5 To No. 40 level.

Unless preceded by the cautionary signal (6 knocks or rings) indicating that materials or equipment are to be conveyed, all signals from level to level, surface to level and level to surface shall be regarded as meaning that men are being raised or lowered and the engine driver shall drive accordingly.

The pause between signals in the Code shall be the space of time required to give two knocks or rings.

Winding signals—firing signals in shafts and winzes.

When safety fuse is used for firing in a shaft or winze sinking operation the following firing signals shall be used—

| Knocks or Rings | Shall Signify                  |
|-----------------|--------------------------------|
| 7               | Firing warning.                |
| 3               | Hoist men to surface or brace. |

Upon receiving the signal 7 (firing warning) the winder or hoist driver shall raise the conveyance by giving the drum of his engine at least one full revolution and shall then lower it again as a sign that he is ready to hoist. He shall then stand ready at his engine until he receives the signal 3 when he shall hoist carefully. He shall not return the signal 3 before hoisting.

Winding signals—repairing shafts.

When men are engaged in repairing or timbering any shaft, special notice shall be given to every engine-driver who comes on duty on the winding engine. The signals 3-raise, and 2-lower, shall then be taken as meaning that men are to be raised or lowered and the winding shall be done slowly and with great care.

15.34. (1) Except when shaft sinking, in every vertical shaft over 50 metres in depth in which men or materials are transported by machinery, other than machinery operated by hand labour, guides approved by the Inspector shall be provided to within 20 metres from the bottom of the shaft and there shall be provided and used efficient means and appliances for steadying the load. Shaft guides.

(2) Where rope guides are used the rope shall not be spliced.

15.35. (1) Before any winding rope is placed in service in a mine the owner, agent or Manager shall deposit with the Inspector a true copy of the maker's Certificate giving full details of the construction of the rope, the class of steel used, and the breaking force of the rope. Winding rope, specifications.

(2) If the Inspector is not satisfied that the maker's Certificate supplied to him is authentic and applies to the particular rope in question, he may

- require a Certificate to be obtained by means of a test of the breaking force, and the Manager shall thereupon obtain such a Certificate and forward it to the Inspector before using the rope.
- (3) The test of the breaking force of a rope shall be carried out on a sample cut off the end of the rope and shall be conducted at a testing station approved by the State Mining Engineer.
- Winding ropes, history. 15.36. Before a rope which has previously been in service may be used for any other winding purpose, a complete history of the rope and the details of the proposed duty shall be submitted to the Inspector and his approval obtained.
- Winding ropes, records. 15.37. (1) There shall be entered in the Record Book a history of all winding ropes used in the mine.  
(2) The record of the history of a rope shall include—  
(a) the name of the shaft or winze in which the rope is used;  
(b) the compartment of the shaft in which the rope is used;  
(c) the date on which the rope was put on;  
(d) the dates on which the rope was shortened;  
(e) the dates on which the rope was re-capped;  
(f) the dates of destructive and of non-destructive rope testing;  
(g) the result of destructive or non-destructive rope testing;  
(h) the date when the rope was taken off and the reason; and  
(i) the dates of the examination, cleaning and oiling of the rope as required by these regulations.  
(3) The Record Book shall also include entries as to the dates of the examinations, cleaning and oiling of appliances as required by these regulations.  
(4) Every entry in the Record Book shall be signed by the person making the entry.
- Winding ropes, splicing. 15.38. (1) Splicing for rope attachment may be used with the approval of the Senior Inspector.  
(2) Subject to subregulation (1), ropes which have been spliced shall not be used for hoisting in a shaft or winze.
- Winding ropes, capping. 15.39. (1) The means of securing a winding rope to a shaft conveyance or counterweight shall be subject to the approval of the Senior Inspector and shall be of a proven design which has a minimum factor of safety of 7 as applied to the rope.  
(2) A winding rope which is capped to secure the rope to a shaft conveyance or counterweight by means of a capel or socket shall not be used at any time unless that capping has been made within the period of six months immediately preceding that time.  
(3) A rope which has been recapped shall not be used on any winder unless on the last occasion on which it was recapped the capping was moved a distance of not less than 150 millimetres along the rope towards the standing end of the rope.
- Winding ropes, factors of safety. 15.40. A rope used in a mine hoisting or haulage installation shall have a factor of safety—  
(a) in the case of drum winding, in accordance with regulation 15.57 and  
(b) in the case of friction winding, in accordance with regulation 15.67.
- Winding ropes, required discarding. 15.41. A rope used in a mine hoisting or haulage installation shall forthwith be withdrawn from use when—  
(a) a physical inspection shows that the rope appears to be unsafe for the use to which it is subjected; or  
(b) the breaking force of the rope by tensile test is less than 90% of the breaking force of that rope when new.

15.42. A rope used in a shaft or winze shall be cleaned and oiled or dressed in a manner approved by the Inspector.

Winding ropes, maintenance.

15.43. (1) Guide ropes and rubbing ropes shall be of locked coil or round rod construction, unless otherwise approved in writing by the Senior Inspector.

Guide ropes and rubbing ropes.

(2) Guide ropes or rubbing ropes shall not be used before the number, size, length, disposition, method and type of attachment of the rope and the tension weight used with the ropes has first been approved in writing by the Senior Inspector.

(3) The minimum factor of safety of every guide and rubbing rope shall be 5.

15.44. (1) The Manager, or some competent person appointed by him in writing, shall carefully examine—

Winding installations, inspection.

- (a) at least daily, the winding rope or ropes whilst they are travelling at a speed not exceeding one metre per second, and their attachments to the conveyances and counterweights, the brakes, depth indicators, cages, skips, head sheaves, safety devices and all and every external part of the winder installation upon the proper working of which life depends;
- (b) at least weekly, the shaft guides, including guide ropes and the winding compartments generally, the balance ropes while they are travelling at a speed not exceeding one metre per second, the automatic winding controls, and the signalling arrangements generally;
- (c) at least monthly, the structure of all hoisting and balance ropes for the purpose of discovering the amount of deterioration, and all detaching and suspending hooks and safety devices which shall then be cleaned and oiled;
- (d) at least half yearly, every detaching hook by dismantling, cleaning, gauging for deformation, checking for corrosion and other imperfections, and testing with approved crack detection equipment;
- (e) at least yearly, the winding engine and auxiliary equipment and every item of attachment in the following manner, namely—
  - (i) in the case of chains, chain links, shackles, pins and pin holes by measurement for wear;
  - (ii) in the case of every attachment, by checking for deformation, corrosion or other imperfections, and by testing with approved crack detection equipment; and
  - (iii) in the case of each winder brake, every component the failure of which would render the brake inoperative by testing with approved crack detection equipment.

(2) For the purposes of the monthly inspection of a rope under paragraph (c) of subregulation (1)—

- (a) the rope shall be thoroughly cleaned at all places that are particularly liable to deterioration and at other places not more than 30 metres apart; and
- (b) the person inspecting the rope shall note the condition of the rope externally, and as far as possible internally, and the diameter of the rope and the lay length of the rope at any point of reduced diameter.

(3) Where any serious weakness or defect in a rope or winding appliance is discovered in the course of or as a result of examination, the defect shall be immediately reported to the owner, Manager or other responsible person, and no person shall be lowered or raised by the rope or appliance until the defect is made good.

(4) A test shall be made prior to placing in commission any new, remodelled or repaired skip, cage or other conveyance, and after any alteration to the shaft timber or head frame, for clearance and free travel in all parts of the shaft in use up to the overwind detaching device.

(5) The results of all inspections and tests required by this regulation, together with action taken to remedy any defects found, shall be recorded in the Record Book.

Shaft conveyances, coupling.

15.45. (1) A chain shall not be used in a shaft in lieu of a winding rope when persons are being raised or lowered, but short coupling chains may be used to attach the shaft conveyance to the rope in a vertical shaft.

(2) Coupling chains which are attached to a shaft conveyance shall—

- (a) be at least two in number;
- (b) be of identical dimensions;
- (c) be parallel and vertical; and
- (d) have a combined factor of safety of not less than twenty, however many chains are used.

(3) This regulation does not apply to the suspension of kibbles in shaft sinking, which shall be effected in accordance with regulation 16.11.

Shaft conveyances, testing after repairs.

15.46. A cage, skip or other shaft conveyance shall not be used for raising or lowering persons until it has made at least one complete trip up and down the working portion of the shaft following:—

- (a) any stoppage for repairs which may affect the safe running of the winding engine;
- (b) any repairs to the shaft or shaft conveyance or counterweight;
- (c) any stoppage in shaft hoisting exceeding four hours duration; or
- (d) the occurrence of any seismic event.

Shaft conveyances, overhead protection.

15.47. Every person working or travelling in or on a conveyance in a shaft shall be protected overhead from falls of rock or material down the shaft.

Shaft conveyances, design.

15.48. (1) The design and construction of each shaft conveyance shall be submitted to the Senior Inspector for approval before the conveyance is used.

(2) A shaft conveyance used for carrying men shall comply with the following requirements:—

- (a) a cage shall have a minimum clear height of 2 metres from the floor to the underside of the moving parts of the safety appliances, or to the top cover, whichever is the lower;
- (b) an overhead cover having a strength at least equivalent to that of steel plate 5 millimetres thick securely hung on hinges, in a sloping position, and capable of being readily lifted from within the cage shall be provided;
- (c) a multi deck cage shall have a trap door fitted in each intermediate deck with a ladder or rungs so as to provide access between decks;
- (d) the sides of each deck of a cage shall be so covered with metal plate or approved mesh as to protect any part of any person or material from protruding outside the cage;
- (e) every cage shall be provided with a securely fastened gate or gates that extend to a height not less than 1.4 metres above the floor of the cage, and the design of every gate shall be such as will prevent any part of any person or any part of any tools or equipment and the gate itself from protruding **outside the cage**;
- (f) provision shall be made to ensure adequate ventilation for persons travelling in the cage or skip; and
- (g) a cage shall be provided with a distinguishing number.

(3) The load bearing components of every shaft conveyance and counterweight shall have a minimum factor of safety of 10.

Shaft conveyances, embarking and disembarking facilities.

15.49. Provision shall be made at all working levels for men to embark and disembark from a shaft conveyance safely.

15.50. (1) Except during shaft sinking operations, whenever a mine shaft exceeds 60 metres in depth a suitable cage or skip shall be provided to raise or lower men. Cages to be used in shafts.

(2) The maximum number of persons allowed to ride at one time in a cage or other conveyance shall be fixed by the Inspector and shall be posted up at the brace.

(3) There shall be at least 0.2 square metres of floor space for each person in the cage.

(4) Except in the case of—

- (a) men inspecting or repairing a shaft; or
- (b) an automatic lift,

no person shall travel in any cage or skip unless he is accompanied by the platman or skipman, save that at the change of shifts the platman or skipman may remain on a level plat if a load of men is to be sent to the surface directly from that plat or lowered from the surface directly to that plat.

(5) The Manager shall ensure that a securely fastened gate or gates is or are used on every cage in which a person is travelling and the platman or skipman shall be responsible for the safe entry and exit into and from the cage or skip and for the proper fastening of the shaft and cage gate or gates.

(6) Except in the case of an automatic lift, the owner, agent or Manager shall appoint a competent person to be platman, or skipman, who, except in the circumstances referred to in subregulation (4), shall accompany any person who travels in the cage or skip.

15.51. A person shall not be raised or lowered in an **ore skip in a vertical** shaft unless he stands on the bottom of the skip or a platform provided in the skip for that purpose and provision is made for his safe entry and exit. Use of ore skip by men.

15.52. (1) Subject to subregulation (2), a person shall not travel, or cause any person to travel, in a shaft or winze in or on any cage, skip, kibble, or other conveyance which contains timber, pipes, rails, explosives, ore, waste rock or similar material, or tools. Men not to travel with material.

(2) This regulation shall not prevent—

- (a) a person repairing a shaft from travelling in or on a cage or skip with tools or materials necessary for repairing the shaft;
- (b) a person from carrying small tools in a suitable container approved by an Inspector;
- (c) a person from travelling with his instruments;
- (d) a driver from travelling with his locomotive or vehicle; or
- (e) a platman travelling in a cage or skip with tools, explosives or materials in accordance with subregulation (3).

(3) A platman shall not—

- (a) travel with any material that is not securely fastened or secure in the conveyance; or
- (b) travel upwards with drill steel, timber, pipes or material of similar form.

(4) A person shall not ride in a deck of a multi-deck cage while a load other than passengers is in a higher deck.

(5) A person shall not ride in a shaft conveyance when equipment, long timber, rails or material of similar form is slung below the conveyance.

15.53. (1) The components of the attachments between the winding ropes, or balance ropes, and the cage, skip, kibble or counterweight shall each have a minimum factor of safety of 10. Cage and skip attachments, design.

(2) A screwed suspension member in tension shall not be used.

(3) Attachments shall not have any main component welded.

(4) An open hook shall not be used in any hoisting operation.

(5) A King or Humble detaching hook shall be of the thickened plate type.

(6) No hook or shackle shall be used for hoisting unless it is approved by an Inspector in writing.

Cage and  
skip  
attachments,  
materials  
specifica-  
tion.

15.54 (1) Every item used for the attachment of a rope to the body of a shaft conveyance or counterweight (including draw bar, capel, socket, detaching hook, shackle, link, chain, pin, swivel) and other such items of attachment shall—

- (a) be made of 1.5% manganese steel as specified in British Standard 2772, Part 2, with the exception of—
  - (i) interlocking wedges in a capel; and
  - (ii) those components of a detaching hook especially defined in Australian Standard CM1;
- (b) in the case of every shackle and chain be designed, constructed and tested in accordance with Australian Standard CM2, and in the case of every detaching hook be designed and constructed in accordance with Australian Standard CM1, but so that the metal composition and heat treatment shall be in accordance with British Standard 2772, Part 2;
- (c) be certified by the manufacturer as having been—
  - (i) hardened and tempered in accordance with the requirements of British Standard 2772, Part 2; and
  - (ii) proof loaded to 2.5 times the safe working load without permanent deformation;
- (d) be stamped on a part least subject to working stresses in accordance with the requirements of Australian Standards CM1 and CM2 to show—
  - (i) the safe working load;
  - (ii) identification of the manufacturer's Certificate;
- (e) be stamped with the date of installation in service; and
- (f) be discarded on or before completion of a period of 12 years in service.

(2) An item of attachment shall not be subjected to any heat treatment other than the initial heat treatment performed by the manufacturer.

(3) Items of attachment in service at the coming into operation of this regulation and which have been normalised by the manufacturer in accordance with the requirements of British Standard 2772, Part 2, may remain in service for a total period not exceeding five years from that date, at which time they shall be replaced with items which are hardened and tempered in accordance with the requirements of this regulation.

Cage and  
skip  
attachments,  
records.

15.55. (1) There shall be entered in the Record Book a history of all shaft conveyance attachments used in a mine which shall include—

- (a) the name of the shaft or winze in which the attachment is used;
- (b) the compartment of the shaft in which the attachment is used;
- (c) the identification number of the attachment;
- (d) the date on which the attachment was installed in service;
- (e) the dates of the examinations, cleaning and oiling of attachment required by these regulations;
- (f) the date and result of each testing of the attachment required by these regulations; and
- (g) the date of the removal of the attachment from service.

(2) Every entry in the Record Book shall be signed by the person making the entry.

*Head II—Drum winding operations.*

Application.

15.56. Regulation 15.56 to regulation 15.65, inclusive, apply to all drum winding operations.

Ropes,  
factors of  
safety.

15.57 (1) The provisions of this regulation apply in addition to the requirements of these regulations that a rope be withdrawn from use if it fails to pass physical inspection or a tensile test.

(2) The load applied to any rope used for drum winding shall not at any time in its working life result in a factor of safety which is less than the minimum factor, where L equals the depth of wind in metres, specified in

relation to the relevant proposed use, namely—

| Proposed Use.                                                                                | Minimum Factor of Safety |
|----------------------------------------------------------------------------------------------|--------------------------|
| Transporting men, or whereby the safety of men is involved                                   | 7.5 — 0.001L             |
| Transporting rock or materials, whereby the safety of men is not involved                    | 5.5 — 0.0003L            |
| Transporting rock in a shaft used exclusively for that purpose                               | 4.5                      |
| Transporting a machine or part of a machine at a speed of less than two metres per second .. | 5                        |

15.58. (1) A rope used on a drum winder shall—

- (a) be recapped at intervals of not more than six months, or at such shorter intervals as may be prescribed by the Inspector;
- (b) at intervals of not more than six months have 2 metres cut from the shaft conveyance or counterweight end and sent to an approved testing station for destructive tensile test; and
- (c) if required by the Senior Inspector at the end of the first year after it has been installed, have a sufficient length cut from the shaft conveyance or counterweight end to enable a breaking and elongation test to be made of 2 metres of the rope which has repeatedly passed over the head sheave, at an approved testing station.

Ropes, testing and maintenance.

(2) Where there are two or more layers on the drum, a rope used on a drum winder shall be cropped at yearly intervals at the drum end in a manner that will ensure that the position of the crossover points of the rope on the drum are changed.

(3) Where at any time the Senior Inspector requires that the structure of the drum winding rope shall be examined over its entire working length by an approved non-destructive method for the purpose of determining any deterioration, the Manager shall forthwith cause such tests to be made and the condition of the rope as found to be recorded in the Record Book.

15.59. Winding ropes shall be lubricated with a suitable lubricating compound at intervals of not more than one month.

Ropes, lubrication.

15.60. On the drum of every winding engine used for raising or lowering persons there shall be such horns, flanges, or other appliances as are sufficient to prevent the rope from slipping off the drum.

Flanges on drums.

15.61. (1) Unless otherwise approved in writing by the State Mining Engineer, the diameter of a drum or head sheave shall not be less than—

- (a) in the case of a locked coil rope, 100 times the diameter of the rope; and
- (b) in the case of any other rope, 80 times the diameter of the rope.

Drum and head sheave diameters.

(2) The depth of the rope groove in the head sheave wheel shall not be less than twice the diameter of the rope.

15.62. (1) Each drum of every double drum winding engine shall be provided with one or more brakes, and the drum of every single drum winding engine other than a hoist shall be provided with two or more brakes, which—

Drum winder brakes.

- (a) howsoever applied shall act directly on the winder drum;
- (b) shall be designed, adjusted and maintained safely to stop and hold the cage or skip under all conditions of loading, direction of travel and speed;
- (c) can be applied manually by the winding engine-driver irrespective of the action of any safety device that may act to apply the brake or brakes;

- (d) will be automatically applied when the supply of power to the winder fails, or when the pressure of any fluid or other medium used as a means of controlling the brakes falls below a predetermined level;
- (e) will be automatically applied if an earth fault occurs in the electrical control circuit of push button controlled winding engines;
- (f) when applied to that drum shall be capable of supporting a load equivalent to two times the maximum static load normally hoisted by that drum from the lowest operating position in the shaft; and
- (g) wherever practicable, shall be provided with a steel tension member between individual sole plates of brake shoes.

(2) The braking system of every drum winding engine shall be designed in such a way that the failure of any one component in that system will not prevent the winding engine from being brought safely to rest.

(3) Push button and automatically controlled drum winders shall also be provided with a suitable device which will automatically apply the brake before it becomes worn sufficiently to affect its safe operation.

(4) Every part of every braking system of a drum winder shall have a minimum factor of safety not less than 10, and screwed members in tension the failure of which would render the brake inoperative shall have a minimum factor of safety not less than 15.

Rope  
detaching  
appliances.

15.63. (1) Provision shall be made in every drum winding installation for a suitable appliance to detach the rope from the conveyance in the event of an overwind and to prevent the conveyance once detached from falling down the shaft.

(2) The distance between the detaching device on the head frame and the matching portion on the conveyance shall be at least 3 metres when the conveyance is in its highest normal operating position.

Drum  
winding in  
single gear.

15.64. (1) Where a winding engine is provided with two drums no person, other than in an emergency, shall be raised or lowered in a shaft conveyance connected with the engine while one of the drums is out of gear and loose on the drum shafting on which it operates.

(2) In the case of a double drum winding engine with one drum out of gear that drum shall be prevented from revolving whilst out of gear.

Cage safety,  
appliances  
and testing.

15.65. (1) Unless used with rope guides, or exempted in writing by the Senior Inspector, every cage and skip in which men are transported shall be fitted with a suitable appliance to prevent its sudden fall down the shaft in the event of rope or winding system failure.

(2) When such safety appliances are not required, the Manager shall have the structure of the winding rope examined by a competent person over its entire working length by an approved non-destructive method for the purpose of determining any deterioration in such rope at least once in every three months.

(3) The test required by subregulation (2) is additional to the other tests required by these regulations, and the Manager shall cause the result of the test to be entered in the Record Book.

(4) A new or rebuilt cage shall not be used in a shaft until proof loaded with 2 times the static load normally hoisted, and until provided with the safety appliances if so required by this regulation.

(5) The safety appliances required by this regulation shall be tested by a drop test every two weeks.

#### *Head III.—Friction Winding Operations.*

Application. 15.66. Regulation 15.66 to regulation 15.85, inclusive, apply to all winding operations in which the rope or ropes are driven by friction.

Ropes,  
factors of  
safety.

15.67. (1) The provisions of this regulation apply in addition to the requirements of these regulations that a rope be withdrawn from use if it fails to pass physical inspection or a tensile test.



(2) The load applied to any rope used for friction winding shall not at any time in its working life result in a minimum factor of safety which is less than the factor specified in relation to the relevant proposed use, namely—

| Proposed Use                                                                                 | Minimum Factor of Safety. |                     |                     |
|----------------------------------------------------------------------------------------------|---------------------------|---------------------|---------------------|
|                                                                                              | Single rope.              | Two or three ropes. | Four or more ropes. |
| Transporting men, or whereby the safety of men is involved ....                              | 7.5                       | 6.9                 | 6.3                 |
| Transporting rock or materials, whereby the safety of men is not involved ....               | 6.8                       | 6.2                 | 5.6                 |
| Transporting rock in a shaft used exclusively for that purpose ....                          | 6.3                       | 5.7                 | 5.1                 |
| Transporting a machine or part of a machine at a speed of less than 2 metres per second .... | 5                         | 5                   | 5                   |
| Balance ropes ....                                                                           | 6                         | 6                   | 6                   |

15.68. (1) The provisions of this regulation apply in addition to the requirements of these regulations that winding installations be inspected. Ropes, testing.

(2) Every hoisting rope used on a friction winding engine shall be non-destructively tested, in a manner approved by the Senior Inspector, at intervals of three months or such lesser intervals as the Senior Inspector may require.

(3) A measurement of every hoisting rope in a friction winding installation shall be made at intervals not greater than one month, or such lesser intervals as the Senior Inspector may require, to determine the total stretch of that rope.

15.69. (1) Except with the approval in writing of the Senior Inspector the period of service of any rope used for friction winding shall not exceed two years. Ropes, period of service.

(2) Except with the approval in writing of the Senior Inspector the period of service of any rope used as a balance rope shall not exceed three years.

(3) A rope shall be discarded before reaching the period of service specified by this regulation when it shows—

- (a) more than six broken wires in any section equal to the length of one external lay;
- (b) a rapid increase in the rate of stretch over the normal stretch noted during service;
- (c) marked corrosion; or
- (d) any other unsafe condition.

15.70. Samples shall be cut from significant parts along the length of discarded winding ropes as required by the Senior Inspector, and the samples shall be subjected to such tests as may be determined by the Senior Inspector. Ropes, testing after discarding.

15.71. Rope dressing which would in any way increase the danger of slippage on the driving sheave shall not be used. Ropes, dressing restricted.

15.72. A spliced rope shall not be used as a winding or a balance rope in friction winding. Ropes, splicing prohibited.

15.73. (1) Multiple winding ropes on friction winders shall be attached to the cage, skip or counterweight through apparatus designed to load the ropes as uniformly as practicable. Ropes, tension adjustment.

(2) Where the attachments are connected directly to the cage, skip or counterweight there shall be provided means for adjusting the length of the attachment and means for indicating unequal tension between ropes.

- Safety grippers.** 15.74. In friction winding, no appliance to prevent a shaft conveyance from falling down the shaft following a winding rope failure shall be installed or used until it has been approved in writing by the State Mining Engineer.
- Driving sheave.** 15.75. (1) Unless otherwise approved in writing by the State Mining Engineer, the driving sheave diameter of a friction winder when measured at the bottom of the rope grooves shall not be less than—
- (a) 100 times the diameter of the winding rope when locked coil ropes are used; and
  - (b) 90 times the diameter of the winding rope when flattened strands are used.
- (2) The grooves of a multigrooved sheave shall be of substantially the same root diameter.
- Deflection sheave.** 15.76. (1) The diameter of any friction winding deflecting sheave shall be not less than 0.9 times the diameter of the corresponding driving sheave.
- (2) The angle of contact of the rope on a deflecting sheave shall be sufficient to prevent the rope slipping on the sheave.
- Friction winder brakes.** 15.77. (1) The driving sheave of every friction winding engine shall be provided with two or more brakes which—
- (a) howsoever applied shall act directly on the driving sheave;
  - (b) shall be designed, adjusted and maintained safely to stop and hold the cage or skip under all conditions of loading, direction of travel and speed;
  - (c) when applied by the means provided for use by the winding engine driver, other than the stop switch provided in pursuance of sub-regulation (2), will be capable of producing a braking torque—
    - (i) when transporting men, of not less than three times; and
    - (ii) when transporting rock or materials, of not less than two times.

the maximum out of balance static torque which will be applied to the driving sheave by the normal loads to be carried by the winder;
  - (d) when applied by any means will produce a braking torque not greater than 70% of that which will cause the winding rope to slip on the driving sheave, based on the minimum sliding coefficient of friction between the rope and sheave;
  - (e) can be applied manually by the winding engine driver irrespective of the action of any safety device that may act to apply the brake or brakes;
  - (f) will be automatically applied when the supply of power to the winding engine fails, or when the pressure of any fluid or other medium used as a means of controlling the brakes falls below a predetermined level;
  - (g) will be automatically applied if an earth fault occurs in the electrical control circuit of push button controlled winding engines; and
  - (h) wherever practicable, shall be provided with a steel tension member between individual sole-plates of brake shoes.
- (2) The braking system of every friction winding engine shall be designed in such a way that the failure of any one component in that system will not prevent the driving sheave from being brought safely to rest.
- (3) Push button and automatically controlled winding engines shall also be provided with a suitable device which will automatically apply the brake before it becomes worn sufficiently to affect its safe operation.
- (4) Every part of every braking system shall have a factor of safety not less than 10, and screwed members in tension the failure of which would render the brake inoperative shall have a minimum factor of safety not less than 15.

- 15.78. Detaching appliances for cages, skips or counterweights shall not be provided in a friction winding operation. Rope detaching appliances.
- 15.79. (1) Every friction winding engine shall be provided with a device which will automatically synchronise the depth indicator and the automatic speed control contrivance required by regulation 15.16 with the position of the conveyance in the shaft. Synchronising devices.
- (2) The synchronising adjustment shall take place only while the brakes are applied and the winding engine is stationary.
- 15.80. Every friction winding engine shall be provided with— Slip and direction indicators.
- (a) a device which will indicate slip of the rope relative to the driving sheave and stop the winder if a predetermined rate of slip is exceeded; and
- (b) a device for indicating in which direction the driving sheave is turning.
- 15.81. A friction winder shall not be loaded to the extent that will require more than 70% of the available braking torque to stop and hold the driving sheave. Loading limitations.
- 15.82. In friction winding no chairing device shall be provided in a shaft or on a cage without the written approval of the Senior Inspector. Cage chairing devices.
- 15.83. (1) There shall be provided in the headframe or tower and in the part of the shaft below the lowest landing for the time being in use, apparatus so designed and constructed as to ensure that, in the event of overwinding with a friction winder, the cage, skip or counterweight, as the case may be, is brought to rest without danger. Overwound conveyance arrester.
- (2) There shall also be provided in the headframe or tower of the shaft safety devices so designed and constructed as to prevent a cage, skip or counterweight which has been brought to rest by apparatus provided in pursuance of subregulation (1) from falling down the shaft.
- 15.84. When friction winding is used, the shaft sump shall be kept clear of water, debris or other material to an extent that will prevent the balance ropes from contacting that water, debris or other material. Shaft sump to be kept clear.
- 15.85. When friction winding is used, the space between the lowest stopping point and the shaft sump shall be equipped with ladders or other suitable means of access to permit proper inspection and maintenance of that part of the shaft and the equipment. Shaft sump, inspection.
- PART 16.—SHAFT SINKING.**
- 16.1. Regulation 16.1 to regulation 16.18, inclusive, apply to all shaft sinking operations. Application.
- 16.2. The provisions contained in this Part of these regulations apply to shaft sinking operations in addition to, and not in substitution for, the provisions of Part 15, but where there is any inconsistency in the requirements of those provisions the regulations contained in this Part shall prevail. Part 15 provisions, inconsistency.
- 16.3. For the purposes of this Part, “factor of safety” used in relation to any rope or attachment means the ratio of the breaking force or strength of that rope or attachment to the maximum total static force on it including the component of its own weight. Interpretation.
- 16.4. (1) Prior to sinking any new shaft or extending any existing shaft, the owner, agent or Manager shall notify the Senior Inspector in writing of his intention so to do and shall submit plans and specifications showing— New shaft sinking operations.
- (a) the location of the shaft;

- (b) the general layout of the sinking project;
- (c) details of the sinking and hoisting equipment and the conveyances, rope type and size and attachments to be used; and
- (d) the ventilation arrangements.

(2) The Senior Inspector may request further details relevant to the proposed operation and any such further information shall be forwarded by the owner, agent or Manager within one month of that request.

Approval  
prior to  
commence-  
ment.

16.5. The owner, agent or Manager shall not cause or permit any shaft sinking operation to be commenced unless the Senior Inspector has given his approval in writing.

Use of  
crane.

16.6. (1) Subject to subregulation (3) and to the written approval of the Senior Inspector a crane may be used to hoist the broken rock from the initial surface excavation and from the shaft, to a maximum depth of 50 metres.

(2) The Senior Inspector may impose conditions under which a crane may be operated, and may at any time withdraw his approval if in his opinion the use of a crane could create a danger.

(3) A crane shall not be used when the shaft perimeter has been traversed by dividers or any other structure which could be an obstruction to the free passage of the shaft conveyance.

(4) The load lifted by a crane in shaft sinking operations shall not exceed 50% of the normal safe working load as provided in Australian Standard CB2, Crane and Hoist Code.

(5) The crane shall be of a slewing type and shall be located in a fixed position during the hoisting and dumping operations.

(6) The crane driver and the crane are each required to be certificated under and are subject to the requirements of the Inspection of Machinery Act, 1921, or an Act repealing or replacing that Act.

(7) Where a crane is used, an effective method of signalling approved by the Inspector shall be installed to communicate with the driver.

(8) A person may not be raised or lowered from a shaft excavation by means of a crane unless—

- (a) he travels in a kibble or similar conveyance;
- (b) he wears a safety belt attached to the rope or conveyance if more than one-third of his body is outside the conveyance; and
- (c) he is within sight of a person stationed in a place to communicate with the crane driver.

(9) A person shall not remain in the shaft excavation while the crane is used to hoist broken rock by means of a grab.

Alternative  
means of  
travel.

16.7. (1) During shaft sinking operations, unless there is an alternative winding plant available for the raising or lowering of men in an emergency in the event of power failure or winding plant failure, a substantial ladderway securely supported at intervals of not more than 5 metres shall be installed from the surface to the bottom of the shaft but the lower end of that ladderway may be constituted by a chain ladder.

(2) Where a sinking stage is used provision shall be made by means of a chain ladder or otherwise to permit travel from the shaft bottom to that stage.

Factors of  
safety.

16.8. The minimum factors of safety to be used in shaft sinking operations shall be—

- (a) for ropes hoisting men and materials or rock  $7.5 - 0.001L$  where  $L$  equals the depth of wind in metres;
- (b) for ropes raising and lowering a sinking stage—6;
- (c) for chains used for the suspension of a kibble, a combined factor of 20;
- (d) for all components of attachments—10.

16.9. The provisions of Part 15 relating to the history, inspection, maintenance and discarding of winding ropes and attachments shall apply to winding ropes used in shaft sinking operations, but for the winding ropes used to support a shaft sinking stage the following inspection and maintenance procedures shall apply—

Ropes,  
inspection  
and main-  
tenance.

- (a) at least monthly the structure of every rope shall be examined for—
  - (i) the incidence of broken wires;
  - (ii) any obvious increase in the lay length;
  - (iii) any obvious corrosion; and
  - (iv) any other unsafe condition,
- (b) at least monthly each rope shall be lubricated with a suitable lubricating compound;
- (c) when a physical inspection of the rope shows that it appears to be unsafe for the use to which it is subjected it shall be discarded; and
- (d) the period of service of any such rope shall not exceed two years.

16.10. When the depth of a shaft exceeds 50 metres—

- (a) a kibble and monkey or crosshead arrangement; or
  - (b) some other conveyance,
- each of a design approved by the Senior Inspector and provided with an overhead cover for the protection of men when travelling, shall be used for haulage purposes in the shaft.

Monkeys,  
crossheads  
and other  
conveyances.

16.11. (1) A kibble used in shaft sinking operations shall be of robust construction and of a shape which will prevent it from catching on any obstruction during its travel in the shaft.

Kibbles and  
attachments.

(2) The kibble may be suspended by a bridle, or by means of at least three chains equally spaced around the perimeter of the kibble top.

(3) Chains used for the suspension of the kibble shall be of identical dimensions and strength and shall be of sufficient length to ensure that the included angle at the apex of the suspension of any two chains is not greater than 60 degrees.

16.12. A kibble or skip used in shaft sinking shall not be over filled with loose rock above its brim.

Overfilling  
of kibbles  
or skips.

16.13. Unless otherwise authorised in writing by the Senior Inspector, firing in shaft sinking operations shall be by means of electricity initiated from the surface or some other safe location.

Firing.

16.14. (1) When a shaft is to be sunk below any level which is being worked it shall be protected below that level by a securely constructed pentice to the satisfaction of the Inspector.

Pentices.

(2) The plans of any proposed pentice shall be submitted for approval to the Senior Inspector who shall arrange for it to be inspected during its construction.

16.15. Where timber is used to line a shaft, bearer sets or other means of support shall be provided between working levels or at distances of not more than 60 metres apart.

Timber,  
bearer sets.

16.16. (1) During shaft sinking operations adequate provision shall be made and maintained to prevent spillage from falling down the shaft during dumping operations.

Protection.

(2) A door or doors for covering the sinking compartment shall be provided and maintained at the collar of every shaft while sinking operations are in progress.

(3) Unless suitable alternative protection is provided to prevent spillage from falling down the shaft, the doors shall be kept closed at all times when men, tools or material are being loaded into or unloaded from the kibble or skip at the collar of the shaft, or when the kibble or skip is being dumped.

Warning of obstruction. 16.17. Any doors or other shaft protective devices which, when moved into the haulage way or travel area of a shaft, would interfere with the free passage of the conveyance shall be so equipped that their position is positively indicated to the winder driver.

Signals. 16.18. With the approval in writing of the Senior Inspector, signals in addition to those specified in Part 15 may be used in a shaft sinking operation.

### Division C.—Regulations to be Observed in and about Quarries.

#### PART 17.—SAFETY AND PROTECTION (QUARRIES.)

Worker to be experienced or instructed. 17.1. A person shall not work, or be employed or permitted to work, in a quarry unless—  
 (a) he has been instructed in the type of work required of him; or  
 (b) he has satisfied the manager or person in charge of the quarry operations of his competence to do that work.

Power shovel operators to be certificated. 17.2. (1) For the purposes of this Part, "power shovel" means a structure equipped with mechanical means for moving, transporting and placing a load of rock which is normally of fixed volume, the prime mover of that structure being essentially in a fixed position during these operations; the term includes an excavator equipped with a jib or boom, but does not include a crane, hoist, lift, escalator, conveyor, front end loader, bulldozer or other similar earth moving machinery.  
 (2) A person shall not take charge of a power shovel in a quarry or other surface mining operation unless he is the holder of—  
 (a) a Provisional Power Shovel Operator's Certificate or a Certificate of Competency as a Power Shovel Operator issued under this regulation; or  
 (b) a Crane and Hoist Driver's Certificate under the Inspection of Machinery Act, 1921, issued prior to the coming into operation of this regulation and which entitles him to drive a power shovel.  
 (3) A person who takes charge of a power shovel in a quarry or other surface mining operation without a Certificate as required by this regulation, and any owner, agent or Manager who knowingly allows such a person to take charge of a power shovel is guilty of an offence.

Application for Certificate. 17.3. An applicant for a Certificate of Competency as a Power Shovel Operator shall make application to the Senior Inspector in Form 20 and shall produce to him—  
 (a) satisfactory evidence of his good character and sobriety;  
 (b) satisfactory evidence that he can speak, read and write the English language;  
 (c) satisfactory evidence that at the date of application he is not under the age of nineteen years or over the age of fifty years;  
 (d) satisfactory evidence signed by the Manager and the certificated Power Shovel Operator under whom he has been practising, that the applicant has had 300 hours experience on or about an operating power shovel of which period 160 hours has been spent, at a rate of not more than 8 hours per day, practising to drive a power shovel under the supervision of a certificated Power Shovel Operator,

17.4. (1) On receiving an application the Senior Inspector, when satisfied that all particulars submitted to him are correct, shall examine the applicant orally in safe operating practice and by a practical trial in the use of a power shovel or shall have such an examination made by a District Inspector or Special Inspector for machinery. Issue of Certificate.

(2) If after the examination the examining Inspector is of the opinion that the applicant is competent to operate a power shovel safely, he shall forthwith issue him with a Provisional Power Shovel Operator's Certificate in Form 21.

(3) A Provisional Power Shovel Operator's Certificate entitles the holder to operate a power shovel in any mine in the State for a period of sixty days from the date of issue.

(4) A duplicate of each Provisional Certificate issued shall be retained by the examining Inspector in book form.

(5) Within sixty days after the issue of the Provisional Certificate the Senior Inspector shall issue to the holder of that Certificate a Certificate of Competency as a Power Shovel Operator in Form 22.

(6) The particulars endorsed on a Certificate of Competency shall be typed.

(7) The Senior Inspector shall maintain a register of all Certificates issued under this regulation and that register shall contain all relevant particulars.

17.5. (1) If at any time representation is made to the Minister by an Inspector, owner, agent or Manager that the holder of a Certificate of Competency as a Power Shovel Operator is incompetent or otherwise should not be entrusted with the charge of a power shovel, the Minister shall investigate and, if he thinks fit, cause inquiry to be made by the State Mining Engineer into the conduct of the holder of that Certificate. Cancellation or suspension of Certificate.

(2) The State Mining Engineer shall upon the conclusion of the inquiry forward to the Minister a report containing a full statement of the case and his opinion thereon, and the Minister on the recommendation of the State Mining Engineer may cancel or suspend the Certificate or admonish the holder of it.

(3) A person shall, if ordered in writing to do so by the Minister, deliver his Certificate to the Senior Inspector.

(4) A person shall not act, or be employed or permitted to act, as a Power Shovel Operator during any period in which his Certificate is suspended.

(5) Any person failing to comply with, or acting in contravention of, this regulation is guilty of an offence.

Penalty: \$40 for each day the offence occurs.

(6) An order for the cancellation or suspension of a Certificate takes effect at the time it is made unless a later time is specified in the order.

(7) Where a Certificate is ordered to be cancelled, the order may prohibit an application under these regulations by the former holder for the grant of a Certificate until the expiration of such period from the date of the order as may be specified in the order.

17.6. (1) A person shall not drive, or be employed or permitted to drive, a motor vehicle in a quarry unless— Motor vehicle drivers.

(a) he holds a current driver's license for that motor vehicle;

(b) he has satisfied the Manager or his representative that he is competent to drive that motor vehicle.

(2) A person who drives, and any owner, agent or Manager who knowingly employs or permits a person to drive a motor vehicle contrary to this regulation is guilty of an offence.

Penalty: \$40 for each day the offence occurs.

Motor  
vehicle  
brakes.

17.7. (1) A motor vehicle shall not be driven in a quarry unless it is equipped and maintained with suitable brakes capable of effectively stopping and holding that vehicle fully loaded under any conditions of operation in the quarry when driven in accordance with the Manager's instructions.

(2) The Manager shall be responsible for maintaining each motor vehicle in good order and condition and shall appoint a competent person to test and, if necessary, to adjust the brakes to ensure effective operation.

(3) A motor vehicle shall not be left unattended unless the controls are in the correct position for parking and the parking brakes fully applied.

Motor  
vehicle  
safety  
equipment.  
Amended by  
G.G. 28/5/76,  
p. 1167.

17.8. (1) All motor vehicles in a quarry shall be equipped with—

(a) effective headlights and tail lights; and

(b) an effective audible warning signal, which shall be sounded when the vehicle is about to be moved if clear vision immediately in front of and behind the vehicle is not available to the driver.

(2) The Manager shall not allow to be driven nor shall any person drive a motor vehicle unless the brakes, steering, warning signal and lights are in good working condition.

(3) Any person who finds any defect which could make the operation of a motor vehicle unsafe shall report the defect to the Manager or his representative.

Loading  
precautions.

17.9 (1) The driver's cab of any vehicle used for rock haulage shall be so constructed or reinforced as to resist damage by rock spillage.

(2) A driver shall not enter or leave his cab during loading operations.

(3) The bucket of any shovel or loader shall not be traversed over the driver's cab of a truck or other motor vehicle during loading operations.

(4) All persons shall keep clear of the area between the loading unit and the quarry pit face, and the area traversed by the loading bucket during loading operations.

Dumping  
precautions.

17.10 (1) Rock or other material shall not be dumped from a motor vehicle over a bank or into a bin unless there is an effective back stop provided or a person suitably stationed to guide and direct the driver of the motor vehicle to a safe dumping position.

(2) When dumping is carried out whether by day or by night, marker guides or other effective signs shall be placed to give the driver of the motor vehicle the limit of his safe approach to the tipping area.

(3) When dumping is carried out by truck during the hours of darkness the area shall be illuminated by stationary lights so placed as to give effective illumination to the working area and to the edge of the dump area.

Lighting.

17.11. (1) Every working place in a quarry shall be illuminated during the hours of darkness.

(2) A person shall not enter an unlighted part of a quarry unless—

(a) in a lighted vehicle; or

(b) he or a person accompanying him carries a light adequate to ensure safety.

(3) The safe driving zones on roads in quarries shall be marked by lights or other marker guides which are clearly visible at night, and all quarry pit edges and similar precipitous places near the road in use shall be clearly illuminated or effectively marked.

Bench and  
road widths.

17.12. (1) Quarry benches shall be of sufficient width to provide safe conditions for all vehicles, equipment and persons working or travelling thereon, and the safe travelling width between any bench face and shoulder of that bench shall be demarcated to the satisfaction of the Inspector.

(2) The width of quarry roads shall be such as will adequately contain the vehicles using them.



(3) The gradient or radius of curvature of any part of a quarry road shall be such that vehicles can travel safely over the road.

(4) The Manager shall cause to be erected such signs as may be necessary to control the speed and movement of vehicles using quarry roads.

17.13. (1) The vertical height of a quarry bench face being worked shall not exceed 20 metres unless the District Inspector after an inspection of the area in question has given his approval in writing permitting a higher face to be worked where the nature of the rock being mined, the method of working and the equipment used in his opinion allow a face higher than 20 metres to be safely worked.

Bench heights and pit slopes.

(2) This regulation shall not prevent a quarry from being worked with two or more benches, where the face height of each bench does not exceed that provided for in subregulation (1) and each bench has separate loading arrangements.

(3) The Manager shall ensure that the overall pit slope of benches and walls formed in mining a quarry pit shall not exceed an angle which in his opinion could reasonably be expected to cause a collapse of the benches or walls.

(4) If in the opinion of the District Inspector the quarry pit slope could cause a collapse, he may require that the pit slope shall be flattened to an angle specified by him.

17.14. (1) In quarries where the vertical height of the face exceeds 3 metres and where explosives are used, bench drilling shall be carried out from the top of the bench, but this regulation shall not prevent the drilling and firing of toe or other holes authorized by the Manager.

Methods of working.

(2) A quarry face shall not be drilled or otherwise worked in a manner which will create an overhang of the face, and where unconsolidated rock is mined the face and sides shall be battered to prevent a collapse.

(3) A quarry face shall not be undercut by the excavation of a slot at the toe of the face, but this regulation shall not prevent a tunnel or adit being driven into the face.

(4) Where a person on foot is required to work at the toe of a quarry face or on the face itself, the face shall be scaled of any loose rock which could fall on him.

17.15. Regulation 17.13 and regulation 17.14 do not apply to a quarry where the rock is being mined or sluiced by jets of water or like material but in such a quarry a person shall not approach the top of the quarry face within a distance equal to twice the height of the quarry face.

Sluicing operations.

17.16. (1) An Inspector at any time by entry in the Record Book may require the registered Manager, owner or agent to cause a quarry pit or part thereof to be fenced against inadvertent access to the pit faces and upon such a requirement being recorded in the Record Book the registered Manager, owner or agent shall forthwith cause suitable fencing to be erected.

Fencing and access.

(2) Before a quarry pit is abandoned or discontinued in the Metropolitan Area of Perth or in any other area where required by the Inspector, the registered Manager, owner or agent shall cause the pit faces to be battered to a safe angle of repose or fenced against inadvertent access to the pit faces, or both, to the satisfaction of the Inspector.

17.17. (1) A person shall not walk or climb on top of any active surge stockpile of broken rock to which broken rock is fed from above and from which the rock is withdrawn from a chute below unless—

Stockpile safety precautions.

- (a) he has been instructed to do so by the quarry Manager or his representative;
- (b) the feed to and from the stockpile has been stopped;
- (c) it has been established that the chute below is not hung up;
- (d) he is wearing a safety belt attached to a rope of correct length securely fixed to an anchorage above him; and

- (e) he is assisted by another person stationed at a safe vantage point above him.
- (2) Unless the Manager or his representative is satisfied that it is safe to do so, earthmoving equipment shall not be used on a surge stockpile.
- Stockpile tunnel exits.** 17.18. A tunnel under a surge stockpile of broken rock or other unconsolidated material shall have two entrances, except where there is only one feed chute from the stockpile and that is located at the end of the tunnel.
- Withdrawal from danger.** 17.19. (1) Where at any time in the opinion of the person for the time being in charge of a quarry, or any part thereof, any part of that quarry is dangerous for any reason he shall have every man withdrawn forthwith from that part and shall report the matter to the quarry Manager, registered Manager or owner.
- (2) The quarry Manager or a qualified person appointed for the purpose by the registered Manager, owner or agent shall inspect the part thought to be dangerous and shall make a true report on the condition of that part to the registered Manager, owner or agent.
- (3) Workmen shall not, except insofar as is necessary for investigation into the cause of danger and for the removal of it, be re-admitted into the part thought to be dangerous until the quarry Manager or registered Manager, when satisfied that the danger no longer exists, so reports in writing in the Record Book.
- Sand pits.** 17.20. (1) Any sand pit to be excavated in the vicinity of a built up area shall be securely fenced prior to the commencement of mining.
- (2) Unless otherwise approved in writing by the Inspector, the maximum height of any individual sand pit working face shall not exceed the vertical reach of the excavating equipment working at the face, or 10 metres, whichever is less.
- (3) Where the total depth of any sand pit excavation will exceed the vertical reach of the excavating equipment to be used, the pit shall be worked by a series of benches.
- (4) Each bench shall have separate loading arrangements, shall be of sufficient length and breadth to provide safe working conditions for the vehicles and equipment to be used thereon, and shall comply with sub-regulation (2).
- (5) Sand pit faces shall be worked over as large a width as practicable, and at the end of each days' work all pit faces shall be sloped to prevent any further slump of sand.
- (6) For the purpose of this regulation the walls of a sand pit excavation shall be considered to be working faces.
- (7) This regulation applies in addition to, and not in substitution for, the other requirements of this Part.

#### **Division D—Regulations to be Observed in Dredging Operations.**

##### **PART 18.—SAFETY AND PROTECTION (DREDGING).**

- Construction.** 18.1. Nothing in this Part shall be construed as limiting or affecting the operation of the provisions of—
- (a) the Western Australian Marine Act, 1948;
  - (b) the Shipping and Pilotage Act, 1967; or
  - (c) the Jetties Act, 1926,
- or any regulations made under any of those Acts.
- Interpretation.** 18.2. For the purposes of this Division, the term "dredge" includes any floating vessel used for cutting, pumping or treatment purposes or other similar vessel, but does not include a barge, workboat, tender, anchor punt or other boat ancillary to dredging operations; and "dredging operations" shall be construed accordingly.

18.3. A person shall not work, or be employed or permitted to work, in any dredge or dredging operation unless—

- (a) he has been instructed in the type of work required of him; or
- (b) he has satisfied the Manager or person in charge of the dredging operations of his competence to do that work.

Worker  
to be experi-  
enced or  
instructed.

18.4. (1) A person shall not act, or be permitted or employed to act, as a winchman or winch or cutter operator unless he is the holder of a Winchman's Certificate.

Winchmen  
to be  
certificated.

(2) A person who acts as a winchman or winch or cutter operator without a Certificate as required by this regulation, and any owner, agent or Manager who knowingly permits or employs any such person so to act, is guilty of an offence.

(3) An application for a Winchman's Certificate shall be made to the Manager who shall cause the applicant to be examined in the use of the machinery by a thorough practical trial under the supervision of the person in charge of dredging operations.

(4) A Winchman's Certificate shall state the full name, address, and age of the person to whom it is issued, the name of the mine and the mine owner, and the date and place of issue.

(5) A Winchman's Certificate shall be signed, in duplicate, by the person to whom it is issued, and also by the Manager and the person conducting the examination who shall certify that the signature of the person to whom it is issued is the signature of the person examined.

(6) The duplicate of every such Certificate issued shall be sent by the Manager forthwith to the Senior Inspector.

(7) The Inspector may, at any time, suspend any Winchman's Certificate for a period not exceeding one month if in the opinion of the inspector the holder should not be entrusted with the charge of that machinery.

(8) The holder shall, on demand deliver his Certificate to the Inspector.

(9) The Inspector shall notify the Manager and the Senior Inspector in writing of his decision, but the Manager may vary or revoke that decision with the approval of the Senior Inspector.

(10) The Senior Inspector may cancel a Certificate or suspend the Certificate for such period as he thinks fit.

18.5. (1) No person shall use, or cause or permit to be used, any dredge in mining operations unless the dredge has been approved in writing by the State Mining Engineer.

Dredges  
to be  
approved.

(2) Dredges to be used in rivers, harbours, estuaries or the open sea and which are registered and approved by the Harbour and Light Department shall be deemed to be approved by the State Mining Engineer.

18.6. (1) The owner, agent or Manager shall, when applying to the State Mining Engineer for approval of any dredge to be used in mining operations, furnish to him—

Information  
to be  
supplied.

- (a) details of the design and construction;
- (b) buoyancy calculations made by a qualified naval architect; and
- (c) the results of buoyancy tests.

(2) The owner, agent or Manager shall, if required by the State Mining Engineer, supply him with any relevant information he may require in addition to that prescribed in subregulation (1).

18.7. The owner, agent or Manager of every dredge shall from time to time notify the Senior Inspector, in writing, of the name of the person employed in charge of the dredging operations.

Master's  
name to be  
supplied.

18.8. (1) The hull of a dredge or other vessel used for mining shall be kept sound and watertight to the satisfaction of the Inspector.

Dredges to  
be water-  
tight.

(2) The interior of the hull compartments shall be kept clean and, except for those compartments in which the storage of ballast has been approved by the Inspector, reasonably free of water.

(3) All dredges for mining purposes constructed after the coming into operation of this regulation shall have not less than 230 millimetres of freeboard at any point of the deck under its worst working conditions, and all hatches shall be placed as far in board as is practicable.

(4) A dredge used for mining purposes built prior to the coming into operation of this regulation may have a freeboard of less than 230 millimetres at any point of the deck under its worst working conditions if such precautions as the Inspector considers necessary are taken to prevent the flooding of the dredge or vessel but such freeboard shall not be less than 150 millimetres.

(5) Hatchways and all other deck openings shall be fitted with water-tight seals or safeguarded by coamings not less than 300 millimetres in height, unless otherwise approved in writing by the Senior Inspector.

(6) Except at the bows, the edge of the deck at all parts of every dredge where not otherwise protected shall be fitted with stanchions not more than 2.5 metres apart and also with two substantial handrails or tightly stretched wires or chains, the lower rail, wire or chain not being more than 250 millimetres above the deck, which may be removed for the purpose of taking material on board the dredge or temporarily for any other necessary operation.

(7) Sounding pipes or other devices shall be fitted in each hull compartment to indicate the water level in that compartment.

(8) Soundings of compartments shall be recorded at least once each day and entered in the log book or sheets kept for that purpose.

**Life saving appliances.**

18.9. (1) A dredge approved by the Harbour and Light Department and used in mining shall be provided with life saving appliances as required by that Department.

(2) A dredge used for mining and which does not work under the approval of the Harbour and Light Department shall be provided with life saving appliances as follows:—

- (a) a lifebuoy, a light line not less than 20 metres in length, and a boathook near the bow and the stern;
- (b) a boat or punt, containing a light line not less than 20 metres in length and a boathook, equipped ready for use with oars and rowlocks or some other method of propulsion approved by the Inspector; and
- (c) a looped wire or other substantial line securely fastened around the outside of the pontoons to the satisfaction of the Inspector.

(3) All lifesaving appliances shall be kept in conspicuous places within easy reach and when damaged or lost shall be forthwith repaired or replaced.

(4) Except for the purpose of saving life no unauthorised person shall interfere in any way with the life saving apparatus.

**Safety appliances.**

18.10. (1) A dredge used for mining shall be fitted—

- (a) with a warning system or device to advise persons that machinery is about to be started;
- (b) with a pendulum to show at all times the list of the vessel;
- (c) with an automatic electrical or mechanical device to ensure immediate stoppage of the bucket line or cutter in the event of an overload; and
- (d) with such other safety appliances as the Inspector may, by notice in writing, require.

(2) Significant variations of the pendulum shall be recorded in the log book or sheet.

**Safety of employees.**

18.11. (1) A person working on a dredge approved by the Harbour and Light Department used for mining shall observe the safety regulations required by that Department.

(2) A person working on a dredge used for mining purposes, which does not work under the approval of the Harbour and Light Department, shall observe the following safety requirements—

- (a) every member of a dredge crew when employed in outboard work on the dredge shall use safety belts or life jackets;
- (b) a person shall not step or ride on any bucket or chain in motion;
- (c) all exposed gearing, belting or machinery shall be guarded to the satisfaction of the Inspector;
- (d) in the event of a man overboard, the bucket line or cutter and suction equipment shall be stopped immediately and the alarm given.

18.12. Warning notices shall be posted in conspicuous places to warn persons of danger from head or side lines.

Head and side lines, warning.

18.13. (1) Nothing in this regulation prevents the use of a deflecting sheave between the anchor and dredge if that sheave is securely anchored.

Head and side lines, obstruction.

(2) Unless exempted in writing by the Inspector, the head and side lines of every dredge shall have free and unobstructed play between the anchor and the dredge.

(3) It is the duty of the owner, agent or Manager of every dredge and of every person in charge of a dredge to remove all obstacles likely to impede the free play of the head lines or to elevate the head lines over such obstacles.

18.14. (1) Whilst a dredge is operating no work shall be allowed in the vicinity of any head or side lines or within the danger zones thereof, that is, the triangle formed by the head or other line and the traverse of the dredge across the face.

Head and side lines, danger zones.

(2) Nothing in this regulation shall be construed to prevent authorised persons travelling in the vicinity of such lines.

18.15. Every anchor for a head line or side line shall be of adequate strength.

Head and side lines, anchors.

18.16. (1) Every place where men are working shall be adequately illuminated during the hours of darkness.

Illumination.

(2) A person shall not enter an unlighted part of a dredging operation unless he or a person accompanying him carries a light adequate to ensure safety.

18.17. (1) When a dredge is working close to a bank it shall be provided with a gangway not less than 600 millimetres wide and of sufficient length to reach from the bow of the dredge to a firm and stable position on the bank, or from the stern of the dredge to the tailings dump, as the Inspector may direct.

Gangway.

(2) The gangway shall be provided with a substantial handrail and shall be secured to the deck of the dredge.

18.18. An unauthorised person who interferes with any machinery, line or other appliance accessory to a dredging operation is guilty of an offence.

Misuse of equipment.

18.19. (1) Signals used in a dredging operation shall be suitable for that operation and shall be approved by the Inspector.

Operating provisions.

(2) After a significant list of the dredge has been noted the winchman or other person in charge of the dredge—

- (a) shall forthwith cease digging and take all necessary measures to correct the attitude of the dredge; and
- (b) shall not recommence digging until the dredge is on an even keel.

(3) After the operation of an automatic overload stopping device, digging shall not recommence until the winchman has ascertained to his satisfaction that the overload has been cleared.

Checks and records.

18.20. (1) A competent person shall be appointed by the owner, agent or Manager to carry out each day the following checks—

- (a) soundings of all hull compartments;
- (b) freeboard, bow and stern both port and starboard;
- (c) in a bucket dredge where the dredging depth is not recorded automatically, the dredging depth or ladder angle.

(2) The person who makes the checks shall record the results forthwith in a logbook to be kept in the dredge.

(3) The log book shall be available at all reasonable times for examination by the Inspector.

**Division E.—Regulations to be Observed in Treatment and Processing Plants.**

**PART 19.—SAFETY AND PROTECTION (TREATMENT AND PROCESSING PLANTS).**

Interpretation.

19.1. For the purpose of this Division, "treatment plant" means any treatment or processing works on a mine or quarry where mine products are crushed, screened, concentrated, beneficiated, treated chemically or by other means, pelletised, smelted or refined.

Worker to be experienced or instructed.

19.2. No person shall work, or be employed or permitted to work in a treatment plant unless—

- (a) he has been instructed in the type of work required of him; or
- (b) he has satisfied the Manager or person in charge of the plant of his competence to do that work.

Safe working conditions.

19.3. (1) Sufficient room and safe footing shall be provided in working places where persons are normally employed in a treatment plant.

(2) A person shall not work on, or close to, any moving machinery or equipment in a treatment plant unless he is wearing close fitting garments.

(3) The owner, agent or Manager of a treatment plant shall maintain the buildings of that plant in such a condition as will not constitute a hazard to persons employed in that plant.

(4) The owner, agent or Manager of a treatment plant shall cause the floors of that plant—

- (a) to be of sound construction suitable for the process carried on in that part of the plant;
- (b) to be maintained in a good and serviceable condition; and
- (c) to be so drained as to facilitate the removal of any water or liquid falling on them.

(5) The floors of the treatment plant shall be kept free from any obstruction likely to cause a person to fall, trip, slip or stumble.

(6) Where an opening in a wall or floor or a break in the floor level in a treatment plant could constitute a hazard that opening or break shall be properly guarded.

Workers to be protected. Amended by G.G. 28/5/76, p. 1668.

19.4. (1) Where in the opinion of the Manager an operation in a treatment plant is such that a person employed on it should be protected with special protective equipment or clothing, the Manager shall provide that equipment or clothing.

(2) Where in the opinion of the Inspector the protective clothing or equipment provided is insufficient or inadequate, or both, he may require that additional or more suitable equipment or clothing be provided, and the owner, agent or Manager shall forthwith comply with that requirement.

(3) A person to whom protective equipment or clothing is issued for use in any operation who does not use it when engaged in that operation or who wilfully or negligently damages or misuses it is guilty of an offence.

19.5 (1) Where required by the Senior Inspector, at every treatment plant where poisonous or dangerous compounds, solutions or gases are used or produced, there shall be kept a sufficient supply of satisfactory antidotes, washes and showers for treating injuries received from those compounds, solutions or gases in a conspicuous place as near the compounds, solutions or gases as is practicable.

Antidotes  
and washes.

(2) The antidotes and washes shall be properly labelled with instructions for their use.

19.6. (1) In any part of a treatment plant where a person is employed or travels, and in all stairways, passageways and places in or attached to the plant which are used by such persons, the owner, agent or Manager shall make provision for adequate natural or artificial lighting, and that lighting shall be maintained to standards appropriate for the task or location.

Lighting.

(2) Where the failure of artificial lighting could cause a hazard in a treatment plant, the owner, agent or Manager shall provide emergency lighting sufficient for the safety of the persons working or travelling in that plant.

19.7. (1) Nothing in this regulation shall be construed as affecting or limiting the provisions of these regulations relating to ventilation and the control of dust and atmospheric contaminants.

Temperature.  
and  
ventilation.

(2) Having regard for the operation or process carried on in a treatment plant, the owner, agent or Manager shall take measures to suitably ventilate and maintain a reasonable temperature and air movement in that plant by either natural or mechanical means.

(3) Unless a system of mechanical ventilation is installed and in operation, every plant and every room in a plant used by employees shall be provided with means of ventilation, by fixed openings, for the inlet and outlet of air.

(4) The owner, agent or Manager of any treatment plant in which heating is employed as part of any process carried on therein, shall—

- (a) cause any steam, fumes or products of combustion which are created by or are emitted as the result of that heating and which are or may be injurious to persons exposed to them to be removed from the plant by a flue or duct in such a manner as to prevent the escape of the steam, fumes or products of combustion into any part of the plant where persons are working or travelling; and
- (b) so far as is practicable, having regard to the nature of the process carried on and the design and structure of the plant, cause heating appliances to be insulated, separated, or partitioned off from any room or working area used by persons employed in the plant.

19.8. (1) When handling molten materials in a treatment plant care shall be taken to minimise the possibility of spillage or explosion which could create a hazard to the safety of persons.

Handling  
of molten  
materials.

(2) Every effort shall be made to prevent molten material from coming into accidental contact with cold, damp or rusty surfaces where the contact could cause an explosion.

(3) Adequate precautions shall be taken at all ash pits, ash heaps and other places where there are hot or molten materials to ensure that any person is not endangered by these materials, and notices shall be posted in conspicuous places warning persons of the danger.

19.9. A person shall not enter, or be permitted to enter, a tank in a treatment plant—

Precautions  
before  
entering  
a tank.

- (a) until due precautions have been taken to ensure that the atmosphere in the tank is safe to breathe; or
- (b) unless that person is protected by a suitable respiratory apparatus.

**Division F—Regulations to be Observed in the Operation of  
Railways on Mines.**

PART 20.—RAILWAY OPERATIONS ON MINES.

- Application.** 20.1. (1) The regulations of this Division do not apply to the operations of the Western Australian Government Railways nor do they apply to railways underground in mines.
- (2) Subject to subregulation (1), the regulations of this Division apply to all railway operations conducted in or about a mine.
- Inter-pretation.** 20.2. For the purposes of this Division—
- “locomotive” means a vehicle propelled by its own motive power and running on rails which is used primarily for the haulage of wagons or other rolling stock, but the term does not include a special vehicle used solely for the maintenance or inspection of the rail track and which does not haul other rolling stock;
- “main line” means that part, or those parts, of a rail track used primarily for ore transport purposes, the limits of which are clearly marked by fixed signs in the ground adjacent to the track;
- “train” means a locomotive or coupled locomotives with or without railway wagons or other rail track vehicles attached thereto;
- “train controller” means a person appointed by the Manager of a mine to control the movement of trains on that mine.
- Main line limits.** 20.3. The Manager shall submit to the Minister for his approval a plan or plans showing that part or parts of the railway system which it is proposed shall be the main line of the railway and no train shall operate on that line until the main line limits have been so approved.
- Operating rules.** 20.4. (1) The Manager shall submit to the Minister for his approval a copy of all the railway operating rules, including signals and signal codes, which it is proposed will apply to the railway operations under his control and, subject to the provisions of this regulation, no train shall operate until those operating rules have been so approved.
- (2) Subject to subregulation (4) operating rules shall not be amended, suspended or cancelled unless and until the approval in writing of the Minister has first been obtained, except that in the event of an unforeseen occurrence which makes the application of any operating rules temporarily impracticable or indicates a dangerous defect or deficiency in such rules the Manager or a person appointed by him may take such action or make a provisional rule to remedy the defect or deficiency as he considers necessary to meet the requirements of that situation.
- (3) Where any action is taken under subregulation (2) of this regulation to meet an unforeseen occurrence or to make a provisional rule to remedy a dangerous defect or deficiency the action so taken shall be reported forthwith to the Senior Inspector and if required by him shall be confirmed in writing within one week of the occurrence but where a provisional rule is made under this regulation and the Manager desires to make a permanent change to the operating rule the provisions of subregulation (4) apply save that the provisional rule may continue to have effect unless the Senior Inspector notifies the Manager in writing that he does not approve of that provisional rule.
- (4) Where a permanent change in an operating rule has become necessary for any reason, the owner or Manager shall make a provisional rule or rules to meet the situation, but any such provisional rule shall first be submitted in writing to the Senior Inspector for his approval prior to operation and the Senior Inspector shall lay down the period during which the provisional rule may be operated before the approval of the Minister in writing becomes necessary.
- (5) In relation to a railway which was in use immediately prior to the coming into operation of this regulation, the operating rules shall be submitted to the Minister for approval within twelve months thereafter.
- Inspection.** 20.5 (1) Pursuant to the provisions of the Act the Governor may appoint as a Special Inspector of Mines any suitable officer from the Western Australian Government Railways for the purpose of inspecting a railway operation on a mine and to determine whether or not the approved operating rules for that mine are adequate and are being observed.
- (2) In addition to the recording of the result of his inspection in the mine Record Book as required by the Act, such a Special Inspector of Mines shall also submit a copy of his report to the State Mining Engineer.

Amended by  
G.G.  
29/10/76,  
p. 4182.



(3) Inspections made pursuant to this regulation by officers from the Western Australian Government Railways shall be in addition to those made by other Inspectors under the Act.

20.6. (1) Every person employed on railway operations on a mine whose duties are prescribed by the operating rules shall have access to a copy of the operating rules, signals and signal codes applicable to that mine. Employees to know operating rules and signals.

(2) Before any person may be employed as a train controller, locomotive driver, member of a train crew or as driver of any rail track vehicle he shall satisfy the Manager or his deputy that he is fully conversant with the relevant operating rules, signals and signal codes and is competent to discharge his duties.

(3) A person shall not be employed on a main line on which a train is running in any capacity unless he is under the supervision of some person who is fully conversant with the relevant operating rules, signals and signal codes.

20.7 (1) Except where the provisions of subregulation (1) of regulation 6.9 apply, a person shall not, and shall not be employed or permitted to, take or have charge of any locomotive on a mine railway unless— Locomotive drivers to be certificated and medically examined.

(a) he holds the required Locomotive Driver's Certificate under the Inspection of Machinery Act, 1921, or any Act repealing or replacing that Act, or a Certificate thereby deemed to be equivalent;

(b) he has been medically examined as is required by that Act; and

(c) he has forwarded his medical Certificate to the Chief Inspector of Machinery.

(2) Notwithstanding subregulation (1) of this regulation, a person undergoing instruction may operate a locomotive under the supervision of a certificated locomotive driver.

(3) A person who takes or has charge of a locomotive on a mine railway in contravention of this regulation, and any owner, agent or Manager knowingly employing or permitting a person so to do, is guilty of an offence.

20.8. (1) A person shall not drive, or be employed or permitted to drive, a rail track vehicle on a mine railway unless— Rail track vehicle drivers to be certificated.

(a) he holds the required Certificate under the Inspection of Machinery Act, 1921 or any Act repealing or replacing that Act or a Certificate thereby deemed to be equivalent; or

(b) he has been examined by the owner or manager, or by some competent person appointed by him for the purpose, by a thorough practical trial in the driving of a vehicle of that type, and class, and has been issued by the owner or Manager with a Certificate that he is thoroughly competent and fit to take charge of the vehicle.

(2) A Certificate issued under this regulation shall state the type and class of vehicle, the full name of the person to whom it is issued, his address, age, the name of the mine and the mine owner, and the date and place of issue and shall be signed by the person examining him.

(3) The holder shall sign his name on the Certificate in the presence of the examiner who shall certify that the signature is that of the person examined by him and to whom the Certificate is issued under this regulation.

(4) The owner or Manager shall keep a duplicate of each Certificate issued under this regulation and at the end of every calendar month shall forward to the Senior Inspector a record of all the Certificates issued by him during that month giving the full name of each person concerned, the type and class of each machine for which a Certificate was issued, and the date of issue.

(5) An Inspector may, at any time, suspend a Certificate issued under this regulation for a period not exceeding one month if in the opinion of the Inspector the holder should not be entrusted with the charge of a rail track vehicle.

(6) The holder shall, on demand, deliver a Certificate issued to him under this regulation to the Inspector.

(7) The Inspector shall notify the Manager and the Senior Inspector in writing of his decision, but the Manager may vary or revoke that decision with the approval of the Senior Inspector.

(8) The Senior Inspector may cancel a Certificate or suspend the Certificate for such period as he thinks fit.

(9) A person who takes charge of a rail track vehicle on a mine railway without a valid Certificate, and any owner, agent or Manager knowingly employing or permitting any such person to take charge of the vehicle, is guilty of an offence.

Medical  
examina-  
tions.

20.9. (1) Every train controller, member of a train crew or other person employed in any capacity requiring a full knowledge of the operating rules, signals and signal codes shall present himself to a medical practitioner registered pursuant to the Medical Act, 1894, for medical examination as to deafness and defective vision at least once in every two years, or more frequently if required by the medical practitioner or Inspector.

(2) If the examination is satisfactory the employee shall obtain a Certificate, in Form 23, that he is not suffering from deafness or defective vision to such an extent as would be likely to render him unfit for his duties, and that Certificate shall be kept at the mine in which he is employed.

(3) Where in the opinion of the medical practitioner the person examined is not in a fit state of health to carry out the duties required of him and he does not furnish a Certificate in Form 23, the person examined shall not, and shall not be employed or permitted to, undertake any such employment.

(4) A person who fails to comply with or contravenes this regulation, and any owner, agent or Manager who employs or permits a person so to do, is guilty of an offence.

Tracks and  
structures.

20.10. Every rail track and the bridges, culverts and other structures supporting it, shall have adequate strength and rigidity and shall be properly constructed, regularly inspected and maintained in a safe operating condition.

Locomotives  
and equip-  
ment to be  
safe.

20.11. (1) Locomotives, rolling stock and all other equipment used in operating railway systems shall be maintained in a safe condition.

(2) Except for movement to enable repairs to be made, no locomotive, rolling stock or equipment shall be used if it has any defect liable to affect its safe running or operation.

Trains  
to have  
effective  
brakes.

20.12. (1) Every train shall be equipped with an effective braking system.

(2) Subject to this regulation every locomotive, rail car, truck, wagon, trolley, track machine or other rail track vehicle, shall be provided with effective brakes which shall be capable of being operated individually by hand and when part of the train by the train braking system.

(3) The need to have vehicle brakes operable by the train system when that vehicle is part of the train shall not apply to—

(a) a single vehicle attached to the end of a train; or

(b) a self propelled vehicle,  
the brakes of which are adequate to hold that additional single vehicle.

(4) Except where there are vehicles being recovered for repair or other exceptional circumstances, in normal railway operations up to 10 per cent of the vehicles in a train may have non-operative brakes if that is consistent with safe braking operation of the train.

(5) A train shall be subjected to at least one full brake test on each normal mainline round trip, and there shall be a continuity test in accordance with the operating rules whenever the brake pipe continuity has been altered in any way other than by detaching vehicles from the rear end of the train.

(6) A record of every test and examination of a braking system shall be entered in a Record Book to be kept on the locomotive, giving details of any defects found and when those defects have been remedied.

20.13 (1) A train shall not be left unattended unless sufficient brakes to hold the train have been applied. Braking of unattended trains and vehicles.

(2) A rail car, truck, wagon or other rail track vehicle shall not be left detached from a train unless the brake is applied or it is otherwise secured to prevent an uncontrolled runaway, but gravity shunting in accordance with the operating rules is permitted.

20.14. Except on a storage line provided for the purpose, no trolley, track machine or other similar rail vehicle which can be readily removed from the railway line shall be left unattended on a railway line without approval from the train controller. Removable rail track vehicles.

20.15. Other than in cases of accident or emergency, no persons other than the driver, observer, employees in the discharge of their duties, Inspectors, or other persons authorised by the Minister in the course of their duties or persons authorised by the Manager shall ride on a train. Unauthorised persons.

20.16. Every locomotive shall be provided with—

- (a) an effective head light at each end;
  - (b) a whistle or siren capable of giving clear and distinct warnings and signals;
  - (c) adequate fire extinguishers; and
  - (d) an adequate first aid outfit, when manned.
- Locomotive safety appliances.

20.17. A locomotive driver in charge of a locomotive in use on—

- (a) a main line; or
- (b) a shunting or marshalling operation,

shall at all times remain in control or have effective supervision of the locomotive until relieved by a person who is the holder of a Locomotive Driver's Certificate, except when the locomotive is left unattended and sufficient brakes to hold the train have been applied. Locomotive driver to remain in control.

20.18. (1) A competent person or persons appointed by the Manager shall at least once in each week inspect every operating locomotive for safety with particular attention to the brakes. Locomotives to be inspected.

(2) Every defect found which could affect the safe operation of the locomotive and the action taken to remedy that defect shall be recorded in a Record Book kept for the purpose.

20.19. (1) A locomotive shall not be used to propel any vehicle except—

- (a) within yard limits which are not part of the main line; or
  - (b) where specially authorised by the train controller; or
  - (c) under the provisions of the operating rules where assisting on up-grades; or
  - (d) in the case of rail maintenance equipment.
- Propelling by locomotive.

(2) Where a locomotive is used to propel a vehicle on a main line—

- (a) an observer shall ride in a safe position in, or be located near, the leading vehicle and shall by an effective means of communication give signals to the driver who shall be prepared to act on any signal given by the observer for the purposes of controlling the movement of the train;
- (b) failure of the effective method of communication between the observer and driver shall be taken by the driver as a stop signal;
- (c) the observer shall instruct the driver to sound his whistle at all cuttings, at all level crossings, when his vision ahead is obscured, and when approaching work parties, in order to warn employees and others of the approach of the train;
- (d) all persons employed on that section of the line where it is desired to propel a vehicle shall be given advance warning;
- (e) the locomotive shall be fully coupled to the vehicle or vehicles to be propelled and shall remain coupled until the vehicles are brought to rest and made secure; and
- (f) the speed of propelling shall be limited to that speed that will enable the train to be brought to rest within one-half of the distance visible by the observer.

(3) The provisions of subregulation (2) do not apply to a pusher locomotive used only for the purposes of assisting a train.

Train movements.

20.20. (1) Train and other rail track equipment on main lines shall at all times operate only under the instruction and control of the train controller on duty.

(2) A train controller shall not absent himself from duty unless or until relieved by another train controller.

(3) Subject to subregulation (11), train movement on main lines shall be controlled by train movement orders issued and signed by the train controller.

(4) Every train movement order shall be written in full and shall be written in ink or typed.

(5) Additions, alterations or erasures on a written train movement order shall not be permitted.

(6) Any variation of a train movement shall be the subject of a new train movement order.

(7) Whenever practicable, written train movement orders shall be handed to the train driver and all persons who are to execute or observe them.

(8) When it is not practicable to hand written orders to the train driver or other persons train movement orders may be transmitted by the train controller by radio or other means if the orders so transmitted can be correctly received and verified by the train driver and every other person concerned, prior to implementation, but where communication fails before verification of the order is completed the order shall be of no effect and shall be treated as if it had not been sent.

(9) At the change of shift or when relieved of his duty, every train controller shall make known to the officer relieving him any unfulfilled train order and the position of all train movements.

(10) When a driver or observer is relieved of his duty before the completion of a trip, the driver shall deliver any train movement order in his possession to his relieving driver and the observer shall deliver any train movement order in his possession to his relieving observer.

(11) The provisions of subregulation (3) to subregulation (10), inclusive, do not apply to a train when on that part of a railway which is controlled by a centralised traffic control or similar system in accordance with the operating rules.

Signals.

20.21. The common and uniform code of signals set out in Part 21 shall be used on all railways operating under the Act and that code shall be incorporated in the railway operating rules of each such railway.

#### PART 21.—COMMON CODE OF SIGNALS AND SIGNALLING PRACTICE.

##### *Hand Signals.*

Use of signals.

21.1. (1) All signals shall be clear, distinct and free from obstruction.

(2) Suitably coloured flags shall be used for day signals and suitably coloured lights shall be used for night signals.

(3) Day signals shall be displayed and used from sunrise to sunset; but when day signals can not be plainly seen night signals shall also be used.

(4) Night signals shall be displayed and used from sunset to sunrise.

Hand signals.

21.2. (1) A person making hand signals shall do so with flags by day and with lamps by night or in foggy weather, but these signals may be given by use of arms in—

(a) an emergency; or

(b) shunting operations in daylight.

(2) When arm signals are used—

- (a) both arms raised above the head denotes DANGER—STOP;
- (b) one arm raised above the head denotes CAUTION—MOVE SLOWLY;
- (c) one arm held in horizontal position denotes CLEAR—PROCEED; and
- (d) in the case of a person riding in or on a vehicle, either arm waving up and down denotes STOP.

(3) A person using a hand lamp or flag as a signal shall hold it in his hand, except where he is using it for the purpose of marking the actual point of an obstruction.

(4) A person signalling by hand shall face the locomotive and give every signal from such a position and in such a way that there can be no misunderstanding as to the purpose of the hand signal by the driver of the train, locomotive or shunt for which the hand signal is intended, except that during shunting operations when the conditions of working do not permit a person signalling to face the driver continuously while giving the signal that person shall satisfy himself that the signal given can be readily seen by the driver.

(5) A person shall not use hand signals where the proper signal can be exhibited by means of a fixed signal.

(6) The use of hand signals may be dispensed with when the person responsible for signalling a driver of a locomotive is able to transmit instruction by use of radio, but only if the driver's acknowledgement is received for each instruction as transmitted.

21.3. When hand signals are permitted the following signals shall be used—

Hand  
signalling  
code.

#### HAND SIGNALS

| Signal by Day                                                                                                                                                                                       | Signal by Night or in Foggy Weather                                                                                                                                                    | Indication of Signal                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| (a) Red Flag                                                                                                                                                                                        | Red light or any other light waved violently.                                                                                                                                          | DANGER—STOP.                                                                                                                              |
| (b) Green Flag waved slowly from side to side.                                                                                                                                                      | Green light waved slowly from side to side.                                                                                                                                            | CAUTION—proceed slowly.                                                                                                                   |
| (c) Green Flag held steadily.                                                                                                                                                                       | Green light held steadily.                                                                                                                                                             | CLEAR—proceed.                                                                                                                            |
| (d) Green Flag held steadily above the head by authorised signaller.                                                                                                                                | Green light held steadily above the head by the authorised signaller.                                                                                                                  | Signal to driver to start a train.                                                                                                        |
| (e) Green Flag held steadily in the hand given from the main line facing points.                                                                                                                    | Green light held steadily in the hand given from the main line facing points.                                                                                                          | Where fixed signals are not provided and a train entering a main line is not required to stop.                                            |
| (f) Red Flag held steadily in the hand until the driver acknowledges the signal, the signal then a green flag waved slowly from side to side. Signals to be given from the main line facing points. | Red light held steadily in the hand until the driver acknowledges the signal, then a green light waved slowly from side to side, signals to be given from the main line facing points. | Where fixed signals are not provided and a train entering a main line is required to stop, also when a train is required to enter a loop. |

|                                                                                       |                                                                                     |                                                                                                                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| (g) Green Flag waved slowly from side to side given from the main line facing points. | Green light waved slowly from side to side, given from the main line facing points. | Where fixed signals are provided for the main line only and a train is required to be admitted to loop or siding. |
| (h) Green Flag moved in a vertical circle by authorised signaller.                    | Green light moved in a vertical circle by authorised signaller.                     | To indicate to driver that train is divided.                                                                      |
| (i) Green Flag held steadily in the hand at the signal.                               | Green light held steadily in the hand at the signal.                                | To indicate to the driver in foggy weather that the signal is at proceed.                                         |
| (j) Green Flag held steadily in the hand at the signal.                               | Green light held steadily in the hand at the signal.                                | To indicate to the driver that he may pass a fixed signal at stop.                                                |
| (k) Green Flag held steadily in the hand by authorised signaller.                     | Green light held steadily in the hand by authorised signaller.                      | To authorise a driver to make a shunting movement for which a fixed signal is not provided.                       |

## SHUNTING HAND SIGNALS

| Signal by Day                                                                              | Signal by Night or in Foggy Weather                                                  | Indication of Signal                                                                |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| (aa) The arm waved outwardly from the body.                                                | White light waved slowly up and down.                                                | Move away from the person giving the signal.                                        |
| (bb) The arm waved inwardly across the body.                                               | White light waved slowly from side to side across the body.                          | Move towards the person giving the signal.                                          |
| (cc) The arm waved outwardly from the body, the other arm in the caution position.         | Green light waved slowly up and down.                                                | Move away slowly from the person giving the signal.                                 |
| (dd) The arm waved inwardly across the body, the other arm in the caution position.        | Green light waved slowly from side to side across the body.                          | Move slowly towards the person giving the signal.                                   |
| (ee) The one arm extended outward and upward hand closed and moved quickly from the elbow. | White light held downward at arms length and flashed rapidly by wrist movement only. | Accelerate speed prepared to stop (i.e. to hit up).                                 |
| (ff) Both arms raised above the head to form an arch and then separated.                   | Green light moved slowly from side to side by wrist movement only.                   | To uncouple.                                                                        |
| (gg) Clear hand signal.                                                                    | Green light held steadily in the hand.                                               | To indicate to authorised signaller when points may be moved for shunting purposes. |

**Danger  
signal.**

21.4. The signal of DANGER—STOP may be denoted—

- (a) by exhibiting a red light or red flag;
- (b) by waving violently any light, where no red light is available;
- (c) by raising both arms above the head, where no red flag is available;
- (d) in shunting, by three whistles;
- (e) on a locomotive whistle, by three shorts; and
- (f) by detonators, in accordance with this Code.

*Sound Signals.*Sound  
signals.

21.5.(1) The following sound signals by means of whistles shall be used in signalling to drivers engaged in shunting operations, that is to say—

- (a) one whistle denoting—go ahead;
- (b) two whistles denoting—set back;
- (c) three whistles denoting—DANGER—STOP.

(2) The following locomotive whistles and no other shall be used by drivers, that is to say—

- (a) one long denoting—warning or challenge;
- (b) two long one short one long—to be repeated approaching level crossing;
- (c) one short denoting—acknowledgement or moving off;
- (d) two shorts denoting—setting back;
- (e) three shorts denoting—DANGER—STOP;
- (f) series of short whistles denoting—unable to create brake;
- (g) two long is a signal from driver of front locomotive to driver of back locomotive in rear to start and an acknowledgement from driver of back locomotive;
- (h) two shorts, one long is a signal from driver to recall observer;
- (i) series of long and short is a warning of fire alongside line;
- (j) continued whistling indicates assistance required.

21.6. (1) A detonating signal shall be used for the purpose of attracting the attention of a driver.

(2) A driver or person in charge of work on a line shall be provided with detonators and shall always have them ready for use when on duty.

Detonating  
signals.

(3) Every person in charge of a terminal shall keep a supply of detonating signals, in a suitable place known by and easy of access at all times to every person connected with the terminal.

(4) A book shall be kept at the terminal showing the date detonators are tested, number tested and results.

(5) Each of the persons mentioned in subregulation (2) and (3) is responsible for keeping up a proper supply of detonators.

(6) Where the use of detonators is prescribed by any regulation or instruction, the detonators shall be used by day and by night unless otherwise directed.

(7) A person required to place a detonator on a line shall—

- (a) secure it on one rail of the line to be protected, as near as possible to the centre of the rail; and
- (b) insert between the detonator and the rail a piece of folded white paper the width of the rail and of sufficient length and stiffness to permit the end being turned up vertically to a height of not less than 90 millimetres so as to be visible to the driver.

(8) Where more than one detonator is used, they shall be placed at least 10 metres apart.

(9) After fixing a detonator or detonators on the rail at the distance prescribed by any regulation or instruction, the employee whose duty it is to exhibit the hand signal shall—

- (a) place himself between the detonator or detonators and the fixed signal or obstruction in respect of which he is signalling; and
- (b) so exhibit the hand signal that it may be seen by the driver, immediately after his locomotive or train has exploded the detonator or detonators.

(10) When detonating signals have been placed upon the line and a train or vehicle is approaching which will explode them—

- (a) employees in the vicinity of the detonators, with the exception of the flagmen, shall take up positions which will ensure the train, locomotive or vehicle will have passed by them before exploding the detonators, and if that is not practicable shall place themselves at least 30 metres from the detonators in a position that will afford them protection from flying particles; and

- (b) the flagman shall take up a position which will afford him the best possible protection, but he shall be ahead of and visible to the driver of the train or vehicle at the time of explosion and shall be at least 30 metres from the detonators.

Track main-  
tenance and  
other  
temporary  
obstruc-  
tions.

21.7. (1) A person shall not place a trolley or any track maintenance machine on the main line until the approval of the train controller has been obtained and all information relating to other trolleys and trains has been received.

(2) Unless radio or telephone communication is maintained between the location of an obstruction and the train controller, the employee in charge of any track maintenance or other work which causes a temporary obstruction shall—

- (a) appoint a competent person to act as a distant flagman who shall—
- (i) place on the line one detonator at least 400 metres from the obstruction, one detonator at least 800 metres from the obstruction, and three detonators at least 10 metres apart, not less than 1 200 metres from the obstruction;
  - (ii) stand at the place at which he has placed the three detonators farthest from the obstruction and exhibit a Stop hand signal; and
  - (iii) continue to exhibit the Stop hand signal and keep detonators on the line until he receives an order from the foreman or ganger to withdraw the signal and detonators;
- (b) station near to the working party a second flagman, who shall exhibit a Stop hand signal; and
- (c) where the distant flagman is out of sight of the flagman stationed near to the working party and radio or telephone communication cannot be maintained between the flagmen, station one or more flagmen, as required, between them for the purpose of repeating to the distant flagman the signals exhibited by the second flagman.

(3) Where a distant flagman and detonators are placed to attract the attention of a driver to a temporary obstruction the employee in charge shall not order the removal of the hand signal and detonators until the obstruction is completely removed.

Speed  
restrictions.

21.8 (1) Except in relation to temporary or special restrictions, the permissible speeds are shown by the following track signs exhibited in series—

*Speed Restriction Board:*

This board which is rectangular, at least 300 x 250 millimetres, of a yellow reflectorised material with black figures and mounted on a post, is placed at the start of a restriction.

*End of Speed Restriction Board:*

This board, which is similar to the speed restriction board but showing white reflectorised colour, is placed at the finish of a restriction.

(2) Trains entering or leaving loops, or otherwise diverging from a straight road, shall be restricted to the following maximum speeds:—

| Serial | Detail                                                | Maximum speed<br>km.p.h. |
|--------|-------------------------------------------------------|--------------------------|
| 1      | 1 in 14 standard gauge turnouts.                      | 48                       |
| 2      | 1 in 14 dual end narrow gauge turnouts.               | 40                       |
| 3      | 1 in 10 standard gauge turnouts.                      | 32                       |
| 4      | Where main line diverges through a turnout.           | 16                       |
| 5      | Turnouts with a lead curvature of 12 degrees or more. | 16                       |

(3) Subregulation (2) does not apply in relation to any turnout which is designed for a higher speed and the designed speed restriction is clearly indicated to the driver.



21.9. (1) Where the necessity for trains to travel at reduced speed continues for a lengthy period the Manager or other authorised person may dispense with the placing of detonators on the rails and also with the exhibition of the hand Caution signal, and in that event he shall ensure that special permanent way "Warning" boards and "Caution" boards are fixed not less than 800 metres or 200 metres respectively from the place to be protected, in both directions, and the boards shall be maintained in those positions until the need to travel at reduced speed no longer exists.

"Warning"  
boards and  
"Caution"  
boards.

(2) Special permanent way "Warning" boards and "Caution" boards shall be brought into use only after due notice has been given indicating the position of those signals and the places to which they refer.

(3) The person in charge of the operations shall keep the distance between the "Caution" boards to a minimum and when they are being used over a section of track must move them to suit the work as it progresses.

(4) "Warning" boards and "Caution" boards shall not be placed in any position where they are liable to conflict with fixed signals.

(5) Where "Warning" and "Caution" boards are used—

- (a) they shall be exhibited in such positions as to be clearly seen by drivers;
- (b) during the hours of darkness reflectorised boards shall be used or lights exhibited as indicated in the following table—

| Board            | Position of Lights | Lights to be Exhibited                                                         |
|------------------|--------------------|--------------------------------------------------------------------------------|
| "Warning" boards | Front of board     | Two yellow lights side by side or two yellow reflectorised spots side by side. |
|                  | Rear of board      | Two white lights side by side or two white reflectorised spots side by side.   |
| "Caution" boards | Front of board     | One yellow light or one yellow reflectorised spot.                             |
|                  | Rear of board      | One white light or one white reflectorised spot.                               |

(6) The front of each board shall be painted yellow with a horizontal black band into which the light or spot is inserted, and the rear of each board shall be painted white.

(7) "Warning" boards shall be diamond shaped and "Caution" boards shall be circular shaped.

(8) "Caution" boards are intended to effect reduced speeds and where this reduced speed is required both by day and night the boards shall also be clearly visible at night.

(9) Speed indicators, indicating the speed restriction applying, shall be affixed to the "Caution" board, and the "Caution" board facing in the opposite direction indicates where the speed restriction terminates.

(10) When a reduction of speed is notified, it shall be taken as the maximum permissible speed for all trains.

(11) A driver shall not increase speed until the whole of his train has passed beyond the limits of the restriction.

(12) Where at any time it is necessary for a train to travel at reduced speed, or where repairing, lifting, slewing the line or other operation is being carried out during foggy weather or on sharp curves, or under any condition where a driver cannot get a good view of the permanent way "Warning" boards and "Caution" boards before passing them, the person in charge of that operation shall not rely upon those boards, but shall in addition, provide hand signals.

Boards and hand signals may not be required. 21.10. The exhibition of "Warning" and "Caution" boards and the need to provide hand signals shall not be required when particulars of speed restrictions are notified to a train driver by train order or transmitted by radio or telephone to each driver and his acknowledgement obtained.

Amended by  
G.G. 28/5/76,  
p. 1668.

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SCHEDULE FORMS.

1. Application for First Class Mine Manager's Certificate of Competency.
  2. Application for Quarry Manager's Certificate of Competency.
  3. Application for Underground Supervisor's Certificate of Competency.
  4. Application for Restrictive Quarry Manager's Certificate of Competency.
  5. Application for Quarry Manager's Certificate of Service.
  6. Application for Restricted Quarry Manager's Certificate of Service.
  7. Application for Certificate of Exemption from Part 9.
  8. Certificate of Exemption from Part 9.
  9. Application for Mine Worker's Health Certificate.
  10. Mine Worker's Health Certificate.
  11. Provisional Health Certificate.
  12. Notice of Rejection as a Mine Worker.
  13. Notice of Prohibition as a Mine Worker.
  14. Pneumoconiosis Notice.
  15. Application for Certificate as an Authorised Mine Surveyor.
  16. Application for Certificate of Exemption from Requirement to employ Certificated Engine Driver.
  17. Application for Hoist Driver's Certificate.
  18. Hoist Driver's Certificate.
  19. Winding Engine Driver's Health Certificate.
  20. Application for a Certificate of Competency as a Power Shovel Operator.
  21. Provisional Power Shovel Operator's Certificate.
  22. Certificate of Competency as a Power Shovel Operator.
  23. Health Certificate for Railway Workers.
-

Form 1

MINES REGULATION ACT. 1946

(Regulation 3.4)

APPLICATION FOR FIRST CLASS MINE MANAGER'S CERTIFICATE OF COMPETENCY.

Secretary,  
Board of Examiners,  
W.A. School of Mines,  
Egan Street,  
KALGOORLIE, W.A. 6430

I, (name in full).....of.....  
make application for a First Class Mine Manager's Certificate of Competency.  
In support of this application I enclose the sum of \$10.00 as required by regulation 3.12 and submit  
the following information :—

- (a) I have attained the age of 25 years (attach Extract of Birth certificate).
- (b) I have had practical experience in or about a mine for a period of not less than five years, of which period at least three years has been general underground mining experience (attach supporting evidence).
- (c) I am of good character (attach evidence).
- (d) I have received satisfactory training in First Aid (attach certificate).
- (e) I am the holder of the following degrees, diplomas or certificates (attach proof).....  
.....  
.....
- (f) I have passed a separate examination in Mining Law set by the Board.

Reverse of Form 1

STATUTORY DECLARATION

I, (name in full).....of.....  
declare that the foregoing particulars are true and correct in every detail, and I make this solemn  
declaration by virtue of section 106 of the Evidence Act, 1906.

DECLARED before me at..... }  
on..... 19..... }  
..... }  
J.P., or Classified Civil Servant. (Signature of Applicant)

Board of Examiners

Decision : Approved/not approved

..... Chairman  
..... Member  
..... Member  
..... Member  
..... Member

Certificate Issued—Number..... Date..... }  
Applicant Advised..... Date..... } Secretary.

MINES REGULATION ACT, 1946

(Regulation 3.5)

APPLICATION FOR QUARRY MANAGER'S CERTIFICATE OF COMPETENCY.

Secretary,
Board of Examiners,
Department of Mines,
Mineral House,
66 Adelaide Terrace,
PERTH, W.A. 6000.

I, (name in full).....of.....
make application for a Quarry Manager's Certificate of Competency. In support of this application I
enclose the sum of \$10.00 as required by regulation 3.12, and submit the following information :—

- (a) I have attained the age of 24 years (attach Extract of Birth certificate.)
(b) I have had experience in or about a quarry for a period of not less than two years (attach
supporting evidence).
(c) I am of good character (attach evidence).
(d) I have received satisfactory training in First Aid (attach certificate).
(e) I am the holder of the following degrees, diplomas or other qualifications (attach proof).....
(f) I have passed a separate examination in Mining Law set by the Board.

Reverse of Form 2

STATUTORY DECLARATION

I, (name in full).....of.....
declare that the foregoing particulars are true and correct in every detail, and I make this solemn
declaration by virtue of section 106 of the Evidence Act, 1906.

DECLARED before me at.....
on.....19.....
J.P., or Classified Civil Servant.
(Signature of Applicant)

Board of Examiners

Decision : Approved/not approved

Chairman
Member
Member
Member
Member

Certificate Issued—Number.....Date.....
Applicant Advised.....Date.....
Secretary

Form 3.

MINES REGULATION ACT, 1946.  
(Regulation 3.6.)

APPLICATION FOR UNDERGROUND SUPERVISOR'S CERTIFICATE  
OF COMPETENCY.

The Secretary,  
Board of Examiners,  
W.A. School of Mines,  
Egan Street,  
KALGOORLIE, W.A. 6000.

I, (name in full).....of.....  
make application for an Underground Supervisor's Certificate of Competency. In support of this application I enclose the sum of \$5.00 as required by regulation 3.12, and submit the following information.

Date of Birth (attach Extract of birth certificate).....

Place at which the Applicant desires to be examined.....

Degrees, diplomas, or certificates held (submit proof).....

First Aid (Certificate to be attached).

Evidence of good conduct (Statement to be attached).

Practical experience. (Minimum of five years required).

Supporting evidence must be attached. (Original references will be returned).

| Name of Mine | Nature of Work | Total Period of Employment |        | Checked (Office use only) |
|--------------|----------------|----------------------------|--------|---------------------------|
|              |                | Years                      | Months |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
| .....        | .....          |                            |        |                           |
|              | TOTAL ....     |                            |        |                           |

Reverse of Form 3.

STATUTORY DECLARATION.

I, (name in full)....., of.....  
hereby declare the foregoing particulars are true and correct in every detail, and I make this solemn  
declaration by virtue of section one hundred and six of the Evidence Act, 1906.

DECLARED before me at..... }  
on.....19..... } (Signature of Applicant)  
..... Date.....  
J.P., or Classified Civil Servant.

REPORT BY SECRETARY.  
.....  
Secretary.

REPORT BY EXAMINERS  
Mining Paper.....  
Mining Law Paper.....  
Oral.....  
.....  
Recommendation.  
..... }  
..... } Signatures  
..... } of  
..... } Examiners  
Date.....

BOARD'S DECISION.  
....., Chairman  
....., Member  
....., Member  
....., Member  
Date.....  
....., Member

CERTIFICATE ISSUED—No..... Date..... }  
APPLICANT ADVISED Date..... } Secretary

Form 4.

MINES REGULATION ACT, 1946.

(Regulation 3.7.)

APPLICATION FOR RESTRICTED QUARRY MANAGER'S CERTIFICATE OF COMPETENCY.

Secretary,  
Board of Examiners,  
Department of Mines,  
Mineral House,  
66 Adelaide Terrace,  
PERTH, W.A. 6000.

I, (name in full) ..... of .....  
make application for a Restricted Quarry Manager's Certificate of Competency. In support of this application I enclose the sum of \$5.00 as required by regulation 3.12, and submit the following information :—

- (a) I have attained the age of 21 years (attach Extract of birth certificate).
- (b) I have had experience in or about a quarry for a period of not less than two years, of which period at least one year has been in close association with quarry pit operators including not less than three months' practical experience in the use of explosives and blasting agents in a pit (attach supporting evidence).
- (c) I am of good character (attach evidence).
- (d) I have received satisfactory training in First Aid (attach certificate).
- (e) I have/have not (delete inapplicable item) passed examinations in Quarrying or the Mining Laws of Western Australia applicable to quarrying, set by the Board.

STATUTORY DECLARATION

I, (Name in full) ..... of .....

declare that the foregoing particulars are true and correct in every detail, and I make this solemn declaration by virtue of section 106 of the Evidence Act, 1906.

DECLARED before me at ..... }  
 on ..... 19 ..... }  
 ..... }  
 J.P., or Classified Civil Servant } (Signature of Applicant)

Report by Secretary

.....  
Secretary

Report by Examiners

Mining Paper.....

Mining Law Paper.....

Oral.....

.....

Recommendation

.....  
.....  
.....  
.....  
} Signatures  
of  
Examiners.

Date.....

Board's Decision

.....Chairman

.....Member

.....Member

.....Member

.....Member

Date.....

Certificate Issued—Number.....Date.....  
Applicant advised.....Date.....  
} Secretary



Form 5.

MINES REGULATION ACT, 1946.

(Regulation 3.10 (1).)

APPLICATION FOR QUARRY MANAGER'S CERTIFICATE OF SERVICE.

Secretary,  
Board of Examiners,  
Department of Mines,  
Mineral House,  
66 Adelaide Terrace,  
PERTH, W.A. 6000.

I, (name in full).....of.....  
make application for a Quarry Manager's Certificate of Service. In support of this application I enclose  
the sum of \$10.00 as required by regulation 3.12 and submit the following information:—

\*(a) On 5th April, 1976, I had the control and daily supervision of a quarry in Western Aus-  
tralia where twenty-five or more men were employed in or about the quarry by the owner of the  
quarry and where explosives were used (submit evidence of name of quarry, owner, location,  
number of men employed, nature of operation).

\*(b) For a period or periods aggregating not less than twelve months during the five years preced-  
ing 5th April, 1976, I had the control and daily supervision of a quarry in Western Australia  
where twenty-five or more men were employed in or about the quarry by the owner of the  
quarry and where explosives were used (submit evidence of name of quarry, owner, location,  
number of men employed, nature of operation).

\* Delete if inapplicable.

STATUTORY DECLARATION

I, (name in full).....of.....

declare that the foregoing particulars are true and correct in every detail, and I make this solemn  
declaration by virtue of section 106 of the Evidence Act, 1906.

DECLARED before me at.....  
on.....19.....  
.....  
J.P., or Classified Civil Servant. (Signature of Applicant).

Reverse of Form 5.

Report by Secretary

Secretary.

Board's Decision

Approved/not approved

Chairman

Member

Member

Member

Member

Date.....

CERTIFICATE Issued—Number.....Date.....  
Applicant advised.....Date.....  
Secretary.

Form 6.

MINES REGULATION ACT, 1946.  
(Regulation 3.10 (2).)

APPLICATION FOR RESTRICTED QUARRY MANAGER'S CERTIFICATE OF SERVICE.

Secretary,  
Board of Examiners,  
Department of Mines,  
Mineral House,  
66 Adelaide Terrace,  
PERTH, W.A. 6000.

I, (name in full).....of.....  
make application for a Restricted Quarry Manager's Certificate of Service. In support of this application I enclose the sum of \$5.00 as required by regulation 3.12 and submit the following information:—

- \*(a) On 5th April, 1976, I had the control and daily supervision of a quarry in Western Australia where—
  - (i) less than twenty-five men were employed by the owner of the quarry ; or
  - (ii) where explosives were not used,  
(submit evidence of name of quarry, owner, location, number of men employed, nature of operation).
- \*(b) For a period or periods aggregating not less than twelve months during the five years preceding 5th April, 1976, I had the control and daily supervision of a quarry in Western Australia where—
  - (i) less than twenty-five men were employed by the owner of the quarry ; or
  - (ii) where explosives were not used,  
(submit evidence of name of quarry, owner, location, number of men employed, nature of operation).

\*Delete if inapplicable.

STATUTORY DECLARATION

I, (name in full).....of.....  
declare that the foregoing particulars are true and correct in every detail, and I make this solemn declaration by virtue of section 106 of the Evidence Act, 1906.

DECLARED before me at..... }  
 on..... 19..... } (Signature of Applicant).  
 ..... }  
 J.P., or Classified Civil Servant

Reverse of Form 6

Report by Secretary .....  
Secretary.

Board's Decision  
 Approved/not approved. .... Chairman  
 ..... Member  
 ..... Member  
 ..... Member  
 Date..... Member

CERTIFICATE Issued—Number..... Date..... }  
 Applicant advised..... Date..... } Secretary.

Form 7.

MINES REGULATION ACT, 1946.

(Regulation 9.2 (1).)

APPLICATION FOR CERTIFICATE OF EXEMPTION FROM PART 9.

Secretary,  
Ventilation Board,  
Department of Mines,  
Mineral House,  
66 Adelaide Terrace,  
PERTH, W.A. 6000.

I, (name in full).....of.....  
make application for a Certificate of Exemption from the requirements of Part 9 of the Regulations  
applicable to mine workers.

- (a) I have special professional or scientific qualifications or training<sup>f</sup> or work of a specific nature  
(submit proof).
- (b) I wish to be exempted for other reasons (state reasons).

STATUTORY DECLARATION

I, (name in full).....of.....  
declare that the foregoing particulars are true and correct in every detail, and I make this solemn  
declaration by virtue of section 106 of the Evidence Act, 1906.

DECLARED before me at..... }  
 on.....19..... }  
 ..... }  
 J.P., or Classified Civil Servant. } (Signature of Applicant).

Board's Decision

Recommended/not recommended

Conditions of employment

.....Chairman.  
 .....Member.  
 .....Member.  
 .....Member.  
 .....Member.

Date.....

Form 8.  
MINES REGULATION ACT, 1946.  
(Regulation 9.2 (2).)

CERTIFICATE OF EXEMPTION FROM PART 9.

I have examined..... and I certify that I found him to—  
\*(a) have pneumoconiosis,  
\*(b) be medically unsuitable for employment as a mine worker.

On the recommendation of the Ventilation Board I issue him with this certificate which expires on  
....., and which entitles the holder to be employed on a mine or mining  
operation, subject to the following conditions:—.....  
.....  
.....  
.....

.....  
Signature of Examinee (to be made  
in presence of Medical Officer)

.....  
Mines Medical Officer

Date.....

\*Delete inapplicable item.

*Note:* Reg. 9.2 (4). The Mines Medical Officer may at any time withdraw a Certificate of Exemption if any of the imposed conditions is breached or for any medical reason.

Form 9.

MINES REGULATION ACT, 1946.

(Regulation 9. 5(1).)

APPLICATION FOR A MINE WORKER'S HEALTH CERTIFICATE.

To be submitted by—

- (a) persons making initial application to be a mine worker; or
- (b) persons seeking re-admission as a mine worker.

To the Mines Medical Officer.

I, (1).....of (2).....  
in the State of Western Australia make application for (3) admission as a mine worker/re-admission  
as a mine worker and request that the Certificate be posted to me at:—

Dated this.....day of.....19.....

.....  
Signature of Applicant.

STATUTORY DECLARATION

I.....of.....do declare that:—

- 1. I, (4) was/was not employed in a mine in Western Australia within two years prior to the date of my above application.
- 2. The last mine in which I was employed during the said period was a Class..... mine (5).
- 3. I was last examined by the Mines Medical Officer at (6).....  
on (7)..... and was issued with a (8).....  
Certificate No.....
- 4. I have not been examined by the Mines Medical Officer (9).

DECLARED at.....this }  
.....day of..... }  
19..... (10)..... }

Before me.....  
J.P., or Classified Civil Servant.

- (1) Christian names and surname of applicant in full;
- (2) Address;
- (3) Delete words not required;
- (4) Delete inapplicable item;
- (5) Insert A, B or C as is applicable;
- (6) Insert name of place;
- (7) Insert date of previous examination;
- (8) Insert class of Certificate previously issued;
- (9) Delete if inapplicable;
- (10) Ordinary signature of applicant.



Reverse of Form 10.

Class A Mine—means—

- (a) the underground workings of any mine; and
- (b) any mine which is worked for asbestos, manganese, lead, vanadium, talc, mica, or a radioactive substance.

Class B Mine—means any quarry or other surface mining operation other than a Class A or Class C mine.

Class C Mine—means—

- (a) a surface mining operation or quarry which is worked for clay, gypsum, limestone, salt, natural sand or gravel;
- (b) a sinter plant, pellet plant, smelter, refinery, blast furnace, privately owned railway built to transport the mine ore or material, or a wet sluicing or wet dredging operation.

This Medical Certificate expires two years from the date of the most recent examination endorsed on it by the Mines Medical Officer if the holder works as a mine worker on a Class A mine, and expires five years from such date if the holder works as a mine worker in a mine other than a Class A mine.

If during the period of five years following the date of the most recent medical examination by a Mines Medical Officer the holder of this Certificate works as a mineworker in a Class A mine, this Certificate shall expire two years after the date of commencing such employment, or five years after the date of the most recent medical examination, whichever is the sooner.

When directed by the Mines Medical Officer a mine worker is required to submit himself for a medical examination.

MINES REGULATION ACT, 1946.

NOTICE.

This certificate is of no value to any person other than the owner.

Any person finding same is requested to forward it to the Mines Medical Officer, Public Health Department, Perth.

To Employees.

1. This health certificate to be handed to your employer before commencing work on the mine.
2. Obtain your certificate from the office before leaving the mine.
3. Guard this Certificate carefully, delay and difficulty may arise in obtaining another.

To Employers.

1. Certificate to be completed and returned to the employee when leaving your mine.
2. If the employee leaves without receiving this certificate, please forward to—

Mines Medical Officer,  
Public Health Department,  
PERTH, W.A. 6000.

Name.....No.....

Form 11.

MINES REGULATION ACT, 1946.  
(Regulation 9.5 (2); 9.11.)

PROVISIONAL HEALTH CERTIFICATE.

This is to certify that:—

(name in full)..... Record No.....

(address).....

is entitled to be employed as a mine worker in any mine for a period of twelve months from the date of issue of this Certificate.

Date of issue.....  
Mines Medical Officer.

This Certificate is not renewable.

Form 12.

MINES REGULATION ACT, 1946.  
(Regulation 9.7 (3).)

NOTICE OF REJECTION AS A MINE WORKER.

To :—

(name in full)..... Record No.....

(address).....

You are hereby notified that your medical examination held on the.....day of

.....19....., pursuant to regulation 9.6 of the regulations I found you to (1) have pneumoconiosis/be physically unfit for employment as a mine worker and I am unable to grant you a Mine Worker's Health Certificate. You are therefore, not eligible for employment on, in or about a Class A or Class B mine.

Further details with regard to your rejection may be obtained from the undersigned or on request a report will be sent to a Doctor of your own choice.

.....  
Mines Medical Officer.

(1) Delete inapplicable item

.....  
Date

Form 13.

MINES REGULATION ACT, 1946.  
(Regulation 9.12.)

NOTICE OF PROHIBITION AS A MINE WORKER.

To :—

(name in full).....

(record no.).....

(address).....

you are hereby notified that you have been medically examined and found to be suffering from active pulmonary tuberculosis and are therefore prohibited from employment in any mine.

Date of issue.....  
Mines Medical Officer.



Form 14.

MINES REGULATION ACT, 1946.  
(Regulation 9.13.)

PNEUMOCONIOSIS NOTICE.

(name in full)..... Record No.....

(address).....

You are hereby notified that at your medical examination on \*.....  
you were found to have pneumoconiosis.

Further medical information may be obtained from the undersigned or on request a report will be  
sent to a Doctor of your own choice.

Date.....

.....  
Mines Medical Officer

\*Insert date of medical examination.

Form 15.

MINES REGULATION ACT, 1946.  
(Regulation 10.3.)

APPLICATION FOR CERTIFICATE AS AN AUTHORISED MINE SURVEYOR.

Chairman,  
Survey Board,  
Department of Mines,  
Mineral House,  
66 Adelaide Terrace,  
PERTH, W.A. 6000.

I,..... (full name) of.....

.....make application for a Certificate  
as an Authorised Mine Surveyor. In support of this application I submit the following information,  
Degree, Diploma or Certificate relative to surveying held (Submit certificate or photocopy).....

Nature of practical underground surveying experience (To be confirmed by letter from the authorised  
surveyor under whom underground surveys were made).....

.....

Sobriety and character (attach documentary evidence).  
.....

STATUTORY DECLARATION

I, (name in full)..... of.....  
declare that the foregoing particulars are true and correct in every detail and I make this solemn declara-  
tion by virtue of section 106 of the Evidence Act, 1906.

DECLARED before me at..... }  
on..... 19..... }

.....  
(Signature of Applicant).

J.P., or Classified Civil Servant.

Reverse of Form 15.

## Survey Board's Decision

Approved

Not approved

.....Chairman

.....Member

.....Member

Certificate Issued—Number..... Date.....

Applicant advised..... Date.....

.....Secretary.

Mines Regulation Act Regulation 10.3 is as follows:—

- (1) An application to the Mines Survey Board for a Certificate as an Authorised Mine Surveyor shall be made in Form 15.
- (2) An applicant for a certificate shall supply with his application documentary evidence satisfactory to the Board as to—
  - (a) his technical qualifications;
  - (b) his having made underground surveys of a nature and under supervision acceptable to the Board for a period of not less than twelve months; and
  - (c) his sobriety and character.
- (3) The Board shall examine the qualifications of each applicant for an Authorised Mine Surveyor's Certificate and, if satisfied with his qualifications, experience and character, shall issue him with a Certificate as an Authorised Mine Surveyor for the State.
- (4) Subject to subregulation (3) a person is qualified to hold a Certificate as an Authorised Mine Surveyor if—
  - (a) he holds—
    - (i) the Diploma in Mine Surveying Technology from the School of Mines of Western Australia;
    - (ii) the Diploma of Mining Surveying from the Technical Education Division of the Education Department of Western Australia; or
    - (iii) surveying qualifications from any school of Mines University or Technical College deemed by the Mines Survey Board to be equivalent; and
  - (b) he has made underground surveys of a nature acceptable to the Board for a period of not less than twelve months under the supervision of—
    - (i) a Licensed Surveyor;
    - (ii) an Authorised Mine Surveyor; or
    - (iii) a person who is qualified to be, or is deemed by the Board to possess qualifications equivalent to, an Authorised Mine Surveyor.

Form 16.

MINES REGULATION ACT, 1946.  
(Section 46 (5). Regulation 15.9.)

APPLICATION FOR CERTIFICATE OF EXEMPTION FROM REQUIREMENT TO  
EMPLOY CERTIFICATED ENGINE-DRIVER.

Place).....

Date).....

To the District Inspector

.....  
(name in full of applicant).....of

.....in the State of Western Australia,  
make application to be exempted from paragraph (b) of subsection (1) of Section 46 of the Mines Regu-  
lation Act, 1946, or Section 53 of the Inspection of Machinery Act, 1921 (strike out whichever is in-  
applicable) in respect of taking or having charge of the machinery specified hereunder on the (name of  
mine,..... on

.....(number of lease, P.A., or other mining tenement on which the machinery is  
situated), in the.....(name of goldfield or mineral field) (strike out  
whichever is inapplicable). I submit the following information as required by regulation 15.9:—

Duration and nature of applicant's experience in working machinery generally.....

Duration and nature of applicant's experience in working the particular machinery in respect  
of which exemption is desired.....

Full description of the machinery in respect of which exemption is desired .....

I enclose the sum of five dollars, being the fee required to be deposited with my application. I  
attach a statement from the owner of the machinery that in the circumstances it is impractic-  
able to employ a certificated engine driver and that all reasonable precautions are taken  
for safety.

Signature of applicant.....

I, (name in full of owner of machinery or his agent).....of (address)

.....in the State of Western Australia,

declare that it is impracticable to employ a certificated engine driver to have charge of the machinery  
referred to in the application of (name of applicant).....

for the following reasons.....

.....

.....

.....

I declare that all reasonable precautions are taken for safety.

Signature of owner or agent.....

Form 17.

MINES REGULATION ACT, 1946.  
(Regulation 15.10.)

APPLICATION FOR HOIST DRIVER'S CERTIFICATE.

Place.....

Date.....

To the District Inspector

.....

I, (name in full).....of  
.....in the State of Western Aus-  
tralia, make application for a Hoist Certificate pursuant to Regulation 15.11 in respect to taking or  
having charge of the hoist specified hereunder on the (name of mine).....  
on.....(number of lease, P.A. or other mining tenement on  
which the machinery is situated) in the.....(name of  
goldfield or mineral field). I submit the following information:—

Duration and nature of applicant's experience in working machinery generally.....

Duration and nature of applicant's experience in working the particular hoist in respect of which  
exemption is applied for.....

Full description of machinery in respect of which application is made.....

Signature of applicant.....

Form 18.

MINES REGULATION ACT, 1946.  
(Regulation 15.10.)

HOIST DRIVER'S CERTIFICATE.

.....of.....has been examined in  
the practical operation of driving a.....hoist and I am satisfied that he  
is capable of operating a hoist of that type on the.....mine at  
.....

Age.....

Name of Mine.....

Place of Issue.....

Date of Issue.....

This certificate is valid only for operating the machinery as above whilst on the.....  
.....mine.

\*Full name of manager or manager's representative.....

\*Full name of winding or first class engine driver who examined the applicant.....  
or

\*.....District Inspector of Mines.

\*To be completed by the inspector or other persons conducting the examination.

Form 19.

MINES REGULATION ACT, 1946.  
(Regulation 15.12.)

WINDING ENGINE DRIVER'S HEALTH CERTIFICATE.

Place.....

Date.....19.....

I have examined (full name in block letters).....  
I certify that he is not suffering from deafness, defective vision, epilepsy, disease of the heart, diabetes, or other infirmity to any such extent as would, or would be likely to, render him unfit for his duties or liable to become suddenly incapable of controlling his engine.  
Any defects in hearing, vision or physical condition to be stated.

Hearing is.....

| Eyesight          | Right Eye | Left Eye | Both Eyes |
|-------------------|-----------|----------|-----------|
| (without glasses) | 6/.....   | 6/.....  | 6/.....   |
| (with glasses)    | 6/.....   | 6/.....  | 6/.....   |

Colour vision is.....

Blood pressure.....

Further remarks.....

Signature of Examinee  
(To be made in presence of Medical Practitioner)

Signature of Medical Practitioner.

Address.....

Address.....

Certificate: No. ....

Class.....

Reverse of Form 19.

MEDICAL EXAMINATION OF WINDING DRIVERS.

(Regulation 15.12.)

- (1) This regulation does not apply—
  - (a) to the holder of a certificate of exemption issued pursuant to an application made under regulation 15.9; or
  - (b) to the driver of a hoist.
- (2) Subject to subregulation (1) every person in charge of a winding engine used for raising or lowering men or materials, or under which men are working, shall present himself to a medical practitioner registered or deemed to be registered under the Medical Act, 1894, for medical examination—
  - (a) in the month of June; or
  - (b) as required by the medical practitioner; or
  - (c) before taking charge of a winding engine if more than twelve months have elapsed since his previous medical examination,
 and shall forward to the State Mining Engineer within seven days thereafter, in Form 19, a Medical Certificate stating that he is not suffering from deafness, defective vision, epilepsy, disease of the heart, diabetes or other infirmity to such an extent as would, or would be likely to, render him unfit for his duties or liable to become suddenly incapable of controlling his engine.
- (3) Where a person has attained the age of sixty-five years he shall not take charge of a winding engine if more than six months have elapsed since his previous medical examination.
- (4) On receipt of each Medical Certificate, the State Mining Engineer shall cause an acknowledgement to be sent to the engine-driver who shall retain it for production when so required by a duly authorised person.
- (5) Where, in the opinion of the medical practitioner, a winding engine driver is not in a fit state of health to have charge of a winding engine, that winding engine driver shall not take charge of a winding engine.
- (6) Any engine driver who does not comply with or contravenes the provisions of this regulation and any owner, agent or Manager who knowingly employs such an engine driver is guilty of an offence.

Form 20.

MINES REGULATION ACT, 1946.  
(Regulation 17.3.)

APPLICATION FOR A CERTIFICATE OF COMPETENCY AS A POWER  
SHOVEL OPERATOR.

Senior Inspector

.....  
(Insert name of district).

I,..... of..... make application  
for a Certificate of Competency as a Power Shovel Operator.

- (a) I attach evidence of my good character and sobriety.
- (b) I can speak, read and write the English language.
- (c) I am not under the age of nineteen years or over the age of fifty years (Extract of birth certificate required).
- (d) I have had 300 hours experience on or about an operating power shovel of which period 160 hours has been spent, at a rate of not more than 8 hours per day, practising to drive a power shovel under the supervision of a certificated Power Shovel Operator.
- (e) I attach evidence signed by the Manager and certificated Power Shovel Operator, under whom I have been practising, as to my experience.

Reverse of Form 20.

STATUTORY DECLARATION.

I, (name in full)..... of (address).....  
hereby declare that all representations contained in the foregoing statement are true, and I make this solemn declaration by virtue of section one hundred and six of the Evidence Act, 1906.

|                                    |         |                         |
|------------------------------------|---------|-------------------------|
| DECLARED before me at .....        | } ..... | Signature of Applicant. |
| on.....19.....                     |         |                         |
| J.P., or classified Civil Servant. | .....   | Date.                   |

Application appears in order  
not in order

.....  
Senior Inspector of Mines.

Report by Examining Inspector

Decision—Pass—Fail

No. of Provisional Certificate issued.....

Date.....

.....Signature.

.....Title

Certificate of Competency issued

No.....

Date.....

.....  
Senior Inspector of Mines.

Form 21.

MINES REGULATION ACT, 1946.  
(Regulation 17.4.)

PROVISIONAL POWER SHOVEL OPERATOR'S CERTIFICATE.

Number.....

I have examined (full name)..... of..... and  
authorise him to be employed as a power shovel operator in any mine in Western Australia for a period  
of sixty days from the date of issue.

Date of Issue.....

Place of Issue.....

.....Examiner

.....Title

This Certificate expires sixty days from date of issue.



Form 22.

MINES REGULATION ACT, 1946.  
(Regulation 17.4.)

CERTIFICATE OF COMPETENCY AS A POWER SHOVEL OPERATOR.

Number.....

This is to certify that..... of..... in the  
State of Western Australia, being the holder of a Provisional Power Shovel Operator's Certificate, has  
this day been entered on the register as the holder of a Certificate of Competency as a Power Shovel  
Operator.

Dated this.....day of.....19.....

.....  
Senior Inspector.

Form 23.

MINES REGULATION ACT, 1946  
(Regulation 20.9(2).)

HEALTH CERTIFICATE FOR RAILWAY WORKERS.

Place.....

Date.....19.....

I have examined (full name in block letters).....

I certify that he is not suffering from deafness or defective vision to such an extent as would be likely to render him unfit for his duties.

Any defects in hearing, vision or physical condition to be stated.

Hearing is.....

| Eyesight          | Right Eye | Left Eye | Both Eyes |
|-------------------|-----------|----------|-----------|
| (without glasses) | 6/.....   | 6/.....  | 6/.....   |
| (with glasses)    | 6/.....   | 6/.....  | 6/.....   |

Colour vision is.....

Blood pressure.....

Further remarks.....  
.....

Signature of Examinee  
(To be made in the presence of the Medical Practitioner)

Signature of Medical Practitioner

Address

Address

Reverse of Form 23.

MINES REGULATION ACT, 1946.  
(Regulation 20.9.)

(1) Every train controller, member of a train crew or other person employed in any capacity requiring a full knowledge of the operating rules, signals and signal codes shall present himself to a medical practitioner registered pursuant to the Medical Act, 1894, for medical examination as to deafness and defective vision at least once in every two years, or more frequently if required by the medical practitioner or Inspector.

(2) If the examination is satisfactory the employee shall obtain a Certificate, in Form 23, that he is not suffering from deafness or defective vision to such an extent as would be likely to render him unfit for his duties, and that Certificate shall be kept at the mine in which he is employed.

(3) Where in the opinion of the medical practitioner the person examined is not in a fit state of health to carry out the duties required of him and he does not furnish a Certificate in Form 23, the person examined shall not, and shall not be employed or permitted to, undertake any such employment.

(4) A person who fails to comply with or contravenes this regulation, and any owner, agent or Manager who employs or permits a person so to do is guilty of an offence.