

MINES VOCATIONAL TRAINING RULES, 1966

CONTENTS

CHAPTER 1 :- Preliminary

1. Short title, application and commencement
2. Definitions

CHAPTER 2 :- Persons to be trained

3. Application of rules
4. Disputes regarding training to be decided by the Chief Inspector
5. Standard of training

CHAPTER 3 :- General Vocational Training

6. Scope and standard
7. Training of persons previously employed

CHAPTER 4 :- Refresher Training

8. Scope and standard
9. Training of persons already employed
10. Training of persons employed below-ground in gassy mines
11. Arrangement for refresher training

CHAPTER 5 :- Training of Special Categories of Employees

12. Training of timber mistries
13. Training of persons in handling of explosives
14. Training of persons on shot-firing
15. Training of other categories of persons
16. Time-limit in respect of the training of persons already employed on handling of explosives
17. Periodical training in gas-testing

CHAPTER 6 :- Training Centres and Arrangements for Training

18. Training Centre
19. Arrangements for the training centre
20. Training Officer
21. Duties of Training Officer
22. Trainers
23. Qualifications of trainers
24. Duties of trainers and persons undergoing training
25. Training allowance

CHAPTER 7 :- Allowances of Trainees and Issue of Certificates

26. Trainees

27. Stipend to trainees

28. Certificate to trainees

29. Duplicate certificate

30. Certificate to be delivered to the management

CHAPTER 8 :- Miscellaneous

31. Inspection

32. Power to relax

SCHEDULE 1 :- FIRST SCHEDULE

SCHEDULE 2 :- SECOND SCHEDULE

SCHEDULE 3 :- THIRD SCHEDULE

SCHEDULE 4 :- FOURTH SCHEDULE

SCHEDULE 5 :- FIFTH SCHEDULE

SCHEDULE 6 :- SIXTH SCHEDULE

SCHEDULE 7 :- SEVENTH SCHEDULE

SCHEDULE 8 :- EIGHTH SCHEDULE

MINES VOCATIONAL TRAINING RULES, 1966

G.S.R. 473, dated the 22nd March, 1966 -In exercise of the powers conferred by Sec. 58 of the Mines Act, 1952 (35 of 1952), the Central Government hereby makes the following rules the same having been previously published and referred to the Mining Boards as required by sub-sections (1) and (4), respectively of Sec. 59 of the said Act, namely :

CHAPTER 1

Preliminary

1. Short title, application and commencement :-

(1) These rules may be called the Mines Vocational Training Rules, 1966.

(2) Except as otherwise expressly provided, these rules shall apply to every mine of whatever description to which the Mines Act, 1952, applies.

(3) They shall come into force on such date as the Central

Government may, by notification in the Official Gazette, appoint and different dates may be appointed for different provisions of these rules or for different classes or groups of mines or for different classes of persons or for different areas.¹

1. Published In the Gazette of India. Pt. II. Sec. 3 (iii. dated 28th June, 1969. The Central Government hereby appoints the first day of September, 1969. as the date on which the provisions of rule 9 shall come into force in respect of all categories of persons employed in mines other than those who were in employment in mines for a period not exceeding one year on the 1st June, 1968. vide S.O. 2526, dated the 13th June. 1969.

2. Definitions :-

In these rules, unless there is anything repugnant In the subject or context,-

(a) "Act" means the Mines Act, 1952 (35 of 1952):

(b) "form" means a form appended to these rules:

(c) "manager" means any person who Is responsible for control, management, supervision and direction of a mine, and includes a mine superintendent who is appointed by the owner or the agent of a mine under Sec. 17 of the Act:

(d)"metalliferous mine" means any mine other than a coal or an oil mine;

(e) "Regional Inspector" means the Inspector of Mines in charge of-
(i) the region or local area or area in which the mine is situate. or
(ii) the group or class of mines to which the mine belongs and over which he exercises powers under the Act;

(f) "Schedule" means a Schedule appended to these rules.

CHAPTER 2

Persons to be trained

3. Application of rules :-

(1) These rules shall apply to all persons employed or to be employed in a mine, other than the person specified herein, namely :

(a) Persons employed or to be employed for the purpose of saving life or property or dealing with circumstances arising out of an accident : Provided that the owner, agent or manager of the mine shall forthwith give written notice of every such employment to the

Chief Inspector and the Regional Inspector.

(b) Persons holding positions enumerated below, being persons employed in a confidential capacity or In a position of supervision or management, namely,-

(i) manager, under-manager, underground-manager, assistant manager, ventilation officer and safety officer,

(ii) mining, electrical and mechanical engineer:

(iii) overman, foreman, sirdar and mate;

(iv) mechanical and electrical foreman and electrical supervisor:

(v) surveyor and assistant surveyor:

(vi) medical officer, chemist, assayer, metallurgist, and welfare or personnel officer: and

(vii) any other person who. In the opinion of the Chief Inspector, holds a position of supervision or management by whatever name called.

(c) Short-firers and blasters.

(d) Clerks, Accountants and Register-keepers.

(e) Persons who have undergone a course of training which is a part of study at an institution approved by the Central Government in this behalf.

(f) Persons undergoing a course of training in the mine as mining apprentices, provided they work under the personal supervision of an official of the mine.

(g) Apprentice mechanics or apprentice electricians, if they have undergone an approved course of training at a mine mechanization centre or other institution approved by the Chief Inspector in this behalf: Provided that the exemption granted to the person specified in CIs. (d), (e), (ft and (g) shall be subject to the condition that the said person shall undergo a course of refresher training as specified in rule 8.

(2) The Chief Inspector may, by order, for reasons to be recorded in writing and subject to such conditions as he may specify therein, exempt any person or class or category of persons from undergoing any training under these rules.

4. Disputes regarding training to be decided by the Chief Inspector :-

If any question arises as to whether a particular person or class or category of persons is required by these rules to undergo training or not, the same shall be referred to the Chief Inspector for decision.

5. Standard of training :-

The Chief Inspector may issue such instructions, not inconsistent with these rules, as he may deem fit, to ensure that the training imparted under these rules at the various training centres conforms to certain uniform standards and every such training shall be in accordance with such instructions.

CHAPTER 3

General Vocational Training

6. Scope and standard :-

(1) Every person proposed to be employed in a mine on the surface or in open-cast working (other than a person who has held any such previous employment) shall, before he is so employed, undergo a course of theoretical and gallery training as specified in the First Schedule: Provided that in respect of such class or kind of work as the Chief Inspector may from time to time, by notification specify, every person proposed to be employed thereto shall, before he is so employed, undergo a further course of practical training on actual operations for a period of not less than six working days.

(2) Every person proposed to be employed below-ground in a mine (other than a person who has held any such previous employment) shall before he is so employed, undergo-

(a) a course of theoretical and gallery training as specified in the Second Schedule, and

(b) a course of practical training on actual operations for a period of not less than twelve working days : Provided that every such person proposed to be employed in a mine where in safety lamps are required to be used (hereinafter called gassy mine) shall, before he is so employed, undergo a further course of training about the dangers of inflammable gas and methods of dealing with the same as specified in the Third Schedule. mines. The training is both theoretical as well as practical and also in the use of safety

laws, etc.

7. Training of persons previously employed :-

Before a person who has previously worked in mines only on the surface or in open cast working, is employed below-ground, or before a person who has previously worked below-ground in non-gassy mines only is employed below-ground in a gassy mine, he shall undergo such additional courses of training as specified in sub-rule (2) of rule 6.

CHAPTER 4

Refresher Training

8. Scope and standard :-

Whenever a person returns to employment on the surface or In open-cast workings or to employment below-ground in a mine, after an absence from work for a period exceeding one year he shall, within one month of his joining duty, undergo refresher training as detailed in the Fourth Schedule which shall include a minimum of-

(1) three safety lectures and demonstrations in the case of persons working on the surface or in open-cast workings;

(2) six safety lectures and demonstrations, in addition to the training specified in Cl. (1), in the case of persons working below ground in a non-gassy mine;

(3) six further lectures and demonstrations about the dangers of inflammable gas and methods of dealing with the same, in addition to the training specified in Cls. (1) and (2), in the case of persons working below-ground in a gassy mine.

9. Training of persons already employed :-

Every person in employment In a mine at the date of commencement of this rule shall undergo the refresher training as specified in rule 8, and it shall be sufficient compliance with this rule if before the expiry of every year from such commencement, at least one-fifty of the persons so employed are given such training.

10. Training of persons employed below-ground in gassy mines :-

Notwithstanding anything contained in these rules, every person employed below-ground in a gassy mine shall, within a period of one year from the commencement of this rule, undergo at least that part of the refresher training as specified in the Fourth

Schedule under the heading "3. Additional for gassy-mine workers."

11. Arrangement for refresher training :-

The refresher training shall be so arranged that the persons who have to undergo training can attend the same conveniently either before or after their normal working hours.

CHAPTER 5

Training of Special Categories of Employees

12. Training of timber mistries :-

Every person who-

(i) is newly employed as timber mistry in a mine, or

(ii) has not worked as a timber mistry in a mine for a period of six months immediately preceding his employment or re-employment as the case may be, shall, before he is so employed or re-employed, undergo a course of training in timber as specified in the Fifth Schedule in addition to the course of training specified under Chapter III or Chapter IV as may be applicable to him.

13. Training of persons in handling of explosives :-

(1) Every person other than a qualified short-firer or blaster, who is likely to be employed on a job. which involves handling of explosives shall, before he is so employed, in addition to the course of training specified under Chapter III or Chapter IV, as the case may be, undergo a course of training In the handling and use of explosives, as detailed in the Sixth Schedule Every person who has undergone the said training shall undergo the training again before re-employment If he has not worked In handling explosives for a continuous period of six months or more before such re-employment. The training under this rule shall be so arranged that the persons concerned can attend the same conveniently either before or after their normal working hours.

(2) Notwithstanding anything contained in sub-rule (1), In the case of metalliferous mines having open-cast working only. the course of training may be confined to not less than four lectures and demonstrations covering only such items of the Sixth Schedule as refer to open-cast workings and general principles of shot-firing.

14. Training of persons on shot-firing :-

(1) Every person eligible to appear at the Shot-firer's Certificate of Competency Examination and who intends to appear at the said

examination within the succeeding three months shall, before he appears for the examination and in addition to the training specified in rule 13, undergo a course of training, as detailed in the Seventh Schedule. The training under this rule shall be so arranged that the persons concerned can attend the same conveniently either before or after their normal working hours.

(2) Notwithstanding anything contained in rule 3, the training specified in the Seventh Schedule shall also be undergone within one month of employment or re-employment, as the case may be, by-

(i) every shot-firer or blaster on employment in another mine except in cases where he has already undergone such training; and

(ii) every person, who though qualified to fire shots has not worked as a shot-firer for a continuous period of six months or more, on re-employment as a shot-firer.

(3) Notwithstanding anything contained in sub-rules (1) and (2), in the case of persons, working in metalliferous mines having open-cast working only, or holding blaster's restricted certificate, it shall be sufficient if the course of training is confined to not less than eight lectures and demonstrations and covering only such items of the Seventh Schedule as refer to open-cast workings and general principles of shot-firing.

15. Training of other categories of persons :-

The Chief Inspector may, by general or special order, require that every person, other than those specified in Cis. (a) to (g) of sub-rule (1) of rule 3, to be newly employed in a mine in such kind or class of work, as may be specified therein, shall undergo a specified course of training.

16. Time-limit in respect of the training of persons already employed on handling of explosives :-

Notwithstanding anything contained in these rules, every person employed on handling of explosives shall undergo the training specified in rule 13 within a period of one year from the date of commencement of this rule.

17. Periodical training in gas-testing :-

Every person holding a gas-testing certificate shall once in every year, and every person eligible to appear at the Gas- testing Certificate Examination and who intends to appear at the said

examination within the succeeding three months shall, before he appears for the examination, undergo a course of training as detailed in the Eighth Schedule. The training under this rule, shall be so arranged that the persons concerned can attend the same either before or after normal working hours.

CHAPTER 6

Training Centres and Arrangements for Training

18. Training Centre :-

The owner, agent or manager of every mine shall provide and maintain a training centre which shall be adequate for the purpose of Imparting the training required to be undergone by the persons who are employed or to be employed in that mine : Provided that the Chief Inspector may, by order, for reasons to be recorded in writing and subject to such conditions as he may specify therein, authorize that a common training centre may be provided and maintained In respect of two or more mines by the owners, agents or managers, thereof.

19. Arrangements for the training centre :-

Every training centre shall have such staff, equipment and other facilities as may be approved by the Chief Inspector or as may be required by him, from time to time, by order in writing.

20. Training Officer :-

(1) Every training centre shall be placed under the charge of a whole-time or part time Training Officer as may be specified by the Chief Inspector. The Chief Inspector may further specify the qualifications and experience required for such Training Officer.

(2) Notwithstanding anything contained in sub-rule (1). where the Training Officer is unable to perform his duties by person of temporary absence, illness or other cause, the owner, agent or manager, as the case may be, may authorize in writing any other person to act in his place : Provided that. except in a case where t h e person so authorized possesses the qualifications and experience specified by the Chief Inspector under sub-rule (1), the authority to act as Training Officer shall cease to have effect on the expiry of 30 days from the date of the authorization, unless an order in writing has been obtained from the Chief Inspector or the Regional Inspector for the continuance of such person beyond the said period.

(3) A written notice of every appointment, authorization, discharge, dismissal, resignation or termination of service of a Training Officer and of the date thereof, shall be sent by the owner, agent or manager to the Chief Inspector and the Regional Inspector within seven days from the date of such appointment, authorization, discharge, dismissal, resignation or termination of service, as the case may be.

21. Duties of Training Officer :-

(1) It shall be the duty of the Training Officer-

(i) to organise and supervise the training of every person undergoing training under him in pursuance of these rules;

(ii) to maintain records of the training given to every person and to furnish weekly reports to the manager on the progress of the persons undergoing training;

(iii) to maintain records of the supervision in respect of the practical training on actual operations referred to in rule 6: and

(iv) to discharge such other duties as may be necessary for the proper compliance of these rules.

(2) Every Training Officer shall keep a record of his work and shall, at the end of every year, forward to the Chief Inspector, through the owner, agent or manager of the mine concerned, a summary of the report of this work during the year.

22. Trainers :-

For the purpose of the practical training referred to in rule 6, every person to be employed In a mine shall be placed under the direct personal supervision of an experienced workman of an appropriate category, employed on actual operations, hereinafter referred to as the trainer.

23. Qualifications of trainers :-

(1) No person shall function as a trainer unless he has attended not less than six lectures on safety in mines, as may be specified for the purpose and approved by the Chief Inspector.

(2) Trainers shall be selected only from amongst persons, who in the opinion of the owner, agent or manager of the mine, are safety-minded, skilled and experienced workmen who have an aptitude for giving guidance and practical training to other persons.

24. Duties of trainers and persons undergoing training :-

- (1) The trainer shall be responsible for the safety of the persons undergoing training under him.
- (2) The trainer shall, apart from discharging his normal duties, see that the persons put under his charge for training, pick up work. understand the dangers inherent In the job and develop habits which would ensure safety in mines.
- (3) The trainer shall see that the persons undergoing training under him move within the mine along with him.
- (4) Every trainer shall show to the person undergoing training under him, the quickest and safest routes of exit from the sections where he is likely to work. Every person undergoing training shall, whilst under training, comply with the directions of the trainer under whom he Is put in charge.

25. Training allowance :-

Every trainer shall, in addition to his normal wages, be paid by the owner, agent or manager a training allowance of fifty paise per trainee for every day, a trainee has worked under his supervision. Not more than two trainees shall be placed under the charge of a trainer at a time.

CHAPTER 7

Allowances of Trainees and Issue of Certificates

26. Trainees :-

Every person to be newly employed in a mine, while undergoing training in accordance with these rules, shall for all purposes be considered only as a trainee.

27. Stipend to trainees :-

- (1) Every person while undergoing training under Chapter III and under rule 12 , rule 15 shall be paid by the owner, agent or manager, a daily allowance, for each day of attendance, of an amount equivalent to the wages (inclusive of allowances) which will be payable to him on employment after completion of training, subject to a maximum of Rs. 1.50 paise per day: Provided that the maximum aforesaid shall not apply In case of a person already working in a mine while undergoing training in accordance with rule 7.

- (2) Every person undergoing training under Chapter IV and rule 13

, rule 14 , rule 17 shall be paid by the owner, agent or manager, an allowance of Re. 0.50 paise per lecture attended by him.

28. Certificate to trainees :-

(1) Every person who undergoes a course of training prescribed in these rules, shall, on completion of the training be interviewed by the Training Officer and if the said officer is satisfied as to the progress and performance of the trainee, he shall grant a certificate in Form A or Form B. as the case may be. The certificate so granted-shall be counter-signed by the owner, agent or manager. Where the Training Officer is not satisfied with the progress or performance of any trainee shall report the same to the manager, who may either discharge him or, If he thinks fit. arrange to give him further training.

(2) The cost of the photograph to be fixed on the certificate in Form or Form B shall be borne by the owner or agent.

(3) A person who has obtained a certificate on successful completion of the training shall be eligible for absorption, in any mine, to the category of the post for which he has been trained.

29. Duplicate certificate :-

If any person proves to the satisfaction of the Training Officer that he has lost the certificate granted to him under rule 28 the Training Officer may, on payment of the cost of the photograph to be affixed on the certificate, grant to him a copy of the certificate. The word "Duplicate" shall be stamped across the copy.

30. Certificate to be delivered to the management :-

Every person employed in a mine shall,-

(i) if he obtained the certificates prior to such employment, at the time of the employment : and

(ii) If he obtained the certificates during the course of employment, within such time as may be specified by the manager of the mine, deliver the certificate issued to him under these rules, to the manager of the mine who shall keep the certificate in safe custody and issue a receipt for the same. On the termination of employment, the certificate so deposited shall be returned to the employee.

CHAPTER 8

Miscellaneous

31. Inspection :-

The Chief Inspector or any Inspector may, enter, inspect and examine any training centre or any part thereof and make such examination or inquiry as he thinks fit in order to ascertain whether the provisions of these rules and of any orders made thereunder are being complied with.

32. Power to relax :-

Where, in the opinion of the Chief Inspector, the conditions pertaining to a mine or part thereof are such as to render compliance with any provision contained in these rules, unnecessary or impracticable, he may, by order in writing and subject to such conditions as he may specify therein, exempt the mine or part thereof, as the case may be, from the said provisions.

SCHEDULE 1

FIRST SCHEDULE

[See rule 6(1)] Course of theoretical and gallery training for surface and open-cast workers 1st Day (Surface) Talk: Organization, time keeping, the need for discipline and punctuality: other matters of general interest. Training in First-aid Visit: Attendance room, pit-head bath, canteen, rest shelter, creche. 2nd Day (Surface) Talk: Rules, standing orders, etc., in force at the mine: safety in the vicinity of surface machinery. Training in First-aid Visit : Tramways and sidings, haulage rooms, winding room, boilers, electrical gears, workshop. 3rd Day (Surface) Talk: Benching in quarries, dressing of overhangs, fencings, first-aid and hygiene. Training in First-aid Visit : Quarries, medical centres. Practical work : Tub manipulation, coupling, tramming, lockering. re- railing of tubs. 4th Day (Surface) Talk : Shot-firing and safety regulations. Training in First-aid Visit : Practical demonstration of taking shelter, etc. Practical work: Building of sand-bag stoppings. 5th Day Talk: legislation and duties of work persons. Training in First-aid Visit: "What's Wrong." Practical work : Laying of tracks. 6th Day Talk: Mine officials and their duties, oral test.

SCHEDULE 2

SECOND SCHEDULE

[Sec rule 6(2)(a)] Course of theoretical and gallery training for workers below ground 1st Day Talk: Method of transport below-ground, signalling, manholes and other safety appliances on haulage roads. Training in First-aid Visit: Underground pit bottom, travelling road-way, second outlet, haulage and tramming roadways, stations and fencings below ground. Practical work : Tub manipulation, coupling, tramming, lockering, rerailing of tubs and signalling, laying of pipes and track. 2nd Day Talk: Face work, roof control, testing of roof, support regulations, first-aid and hygiene. Training in First-aid Visit : Underground working faces, underground latrines, first-aid stations. Practical work : Prop setting, chock building and withdrawal. 3rd day Talk : Ventilation, lighting, listening and duties of work person. Training in First-aid Visit: Underground ventilation and lighting devices, fan house, air crossings, stoppings, regulator doors, etc. Practical work . Erecting brattices, ventilation of blind ends. practical demonstration of fire -

fighting device, detection of noxious gases. 4th Day Talk : Shot-firing and safety regulations, causes and prevention of fire underground, care of lamps. Training in First-aid Visit : Underground practical demonstration of taking shelter, etc. Practical work : Building of sand-bag stoppings. 5th Day Talk: Mine gases (particularly carbon monoxide, carbon dioxide and methane) and dangers therefrom. Testing for the same. General revision. Training in First-aid Practical work : Cleaning of galleries. 6th Day Talk: Mine officials and their duties oral test. Visit : Underground "What's Wrong."

SCHEDULE 3

THIRD SCHEDULE

[See rule 6(2)(b)] Course of special additional training for entrants to gassy mines 1st Day Talk : Dangers of inflammable gas, effects of inflammable gas in different percentages. Gas caps. Difference between combustion and explosion. After damp-its effect. Methods of testing for inflammable gas with flame safety lamp. Demonstration : Gas caps. Difference between combustion and explosion. Visit : Visit to safety lamp cabin to see how lamps are maintained, cleaned, etc., and to study construction of safety lamps. 2nd Day Talk : Principle of construction of flame safety lamps and of flame proof electrical equipment. Assembly of flame safety lamps. Care of safely lamps during use. Dangers of opening or tampering with safety lamps. Demonstration : Effects of wire gauze or flame. Practical work : Testing for gas. Visit : Visit to workshop to see flame-proof equipment. 3rd Day Talk: Duties of workers in gassy mine and where inflammable gas exists. Dangers of smoking. Contrabands. Visit : Visit (1) to lamp cabin to see arrangements for checking lamps before issue and after receipt and (2) to the mine entrance to see arrangement for checking safety lamps and for searching of contrabands. Practical work : Cleaning and assembling safety lamps. 4th Day Talk : Explosion and health hazards from dust. Methods of suppressing dust water sprays. Cleaning and stone dusting. Wet cutting. Wet drilling. Use of respirators. Occurrences of inflammable gas. Methods of removing gas. Necessity for good ventikador at the face. Ventilation devices. Visit : Underground visit to see dust suppression arrangements and measures. Surface and underground visit to see ventilation devices. Practical work : Erection of brattices, ventilation of blind ends. 5th Day Talk : Dangers of shot-firing in gassy mines, Precaution : Underground visit to see shot-firing. 6th Day General revision: Oral test.

SCHEDULE 4

FOURTH SCHEDULE

[See rule 8 , rule 10] Course for refresher training (Each talk to be followed by discussion. Duration of each talk and discussion to be not less than two hours.) 1. For surface open-cast workers. Talk 1 : Mine organization, time keeping, need for discipline and punctuality and other matters of general interest. Talk 2 : Rules, standing orders in force at the mine. Safety in the vicinity of machinery. Talk 3 : Benching in quarries. Dressing of overhangs. Fencing. First-aid and hygiene. 2. Additional for underground workers Talk 4 : Dangers from haulage. Manholes and other safety appliances. Signalling. Talk 5 : Testing of proof. Dressing of roof and overhangs. Supports, checks, bars and proofs. Talk 6 : Ventilation. Control devices. Danger from old workings. Causes and prevention of fires. Noxious gases. Talk 7 : Dangers of shot-firing. Safety precautions. Talk 8 : Legislation. Duties of workmen. Fencings. Talk 9 : General revision and discussion. 3. Additional for gassy mine workers Talk 10 : Occurrence of inflammable gas. Danger from

inflammable gas. Combustion and explosion. After damp. Its effects. Talk 11 : Principle of construction of flame safety lamps and of flame-proof equipment. Gas caps. Methods of testing for gas. Talk 12 : Duties of workers where inflammable gas exists. Contrabands. Dangers of tampering with safety lamps. Methods of removing gas. Necessity of good ventilation at the face. Talk 13 : Explosion and health hazard from dust. Methods of suppressing dust Talk 14 : Dangers of shot-firing in gassy mines. Precautions. Talk 15 : General revision and discussion.

SCHEDULE 5

FIFTH SCHEDULE

(See rule 12) Course of training for timber mistries (Training in First-aid to be given to every trainee who has not already undergone such training) 1st Day Talk : Type of rocks and their characteristics. Dangers from fall ground-Need for artificial support. Use of protective equipment. Talk and Practical work : Handling and transport of timber including lowering in inclines and shafts. Correct methods of lifting and shifting. Stacking of timber. 2nd Day Talk : Different material for support, their strength and characteristics, application. Fire danger from timber and cuttings. Talk and Practical work : Tools of timbermen, their selection, care and maintenance. Sylveston prop withdrawal. 3rd Day Talk : Type of support in galleries drives. Support faulted, disturbed and weak grounds. Clearing of falls of roof and erecting supports. Roof support. Side support. Talk and Practical work : Taking measurements for putting supports. Selection of timber size. Preparing lids. Laggings and packings. 4th Day Talk : System of supports in depillaring areas slopes and longwall faces. Systematic timbering rules both in development and depillaring area. Talk and Practical work : Saving of timber. Erection of short props and cogs. Withdrawal of supports. 5th Day Talk : Type of supports in shaft (including sinking shafts), raises and winzes: repair of such supports. Erection of barricades. Erection of brattices and temporary stoppings. Erection of fences. Talk and Practical work : Erection of all props and cogs. Lagging of sides. 6th Day Talk : Maintenance of supports. Tightening. Testing of roofs and sides. epical accidents in (imbering and to timbermen. Talk and Practical work : Erection of timber on steep gradients and supporting irregular places. Miscellaneous jobs for timbermen.

SCHEDULE 6

SIXTH SCHEDULE

(See rule 13) Course of framing in (he handling and use of explosives 1st Day Talk : What is an explosive ? General composition of explosives. Differences between low and high explosives. Low explosive and their firing. Safety and its burning speed. 2nd Day Talk : High explosives, their detonation. Electric shot-firing. 3rd Day Talk : Danger from explosive, charging and firing of shots. Clearing of fumes produced during shot-firing. 4th Day Talk : Dangers from blasting in gassy mines. Cracks in shot holes. Permitted explosives. 5th Day Talk : Dangerous nature of explosives. Care in handling explosives. Taking shelter. Storage of explosives on surface and below ground. Issue of explosives. Return of unused explosives. 6th Day Talk: General revision and discussion.

SCHEDULE 7

SEVENTH SCHEDULE

(See rule 14) Course of training on shot-firing 1st Day High and low explosives. Difference between them. Their constituents. 2nd Day Shot-firing accessories. Safety fuse and its burning speed. Detonators. 3rd Day Provisions of regulations, etc., relating to transport handling and use of explosives. 4th Day Storage of explosives, both above and below ground. Issue of explosives. Return of unused explosives. 5th Day Correct drilling and placing of shot-holes. Charging and firing of shots. 6th Day Danger from explosives in gassy mines. Permitted explosives. Precautions during shot-firing in gassy mines. Danger from cracks in shot-holes. 7th Day Dealing with misfires. Provisions of regulations relating to duties of shot-fires. 8th Day Examining working places and roadways after shot-firing. Clearing roadways of dust and fumes after shot-firing. 9th Day Firing of shots singly and in rounds. Use of delay action detonators. Testing of circuits. 10th Day Blasting with ammonium nitrate. Fuel oil explosive. Precautions. 11th Day Heavy blasting in open-cast mines. Blasting with liquid oxygen. Precautions. 12th Day General revision and discussion. Writing of reports.

SCHEDULE 8

EIGHTH SCHEDULE

(Sec rule 17) Course of training in gas-testing (Demonstrations to be arranged with every talk and each talk to be followed by discussion. The duration of each talk and discussion to be not less than two hours.) 1st Talk Physical and chemical properties of inflammable gas. Occurrence of inflammable gas. Gas outbursts. Danger from inflammable gas in different percentages. Difference between combustion and explosion. 2nd Talk Other mine gases; their properties and effects. After damp, its composition and effects. 3rd Talk What makes a safety lamp safe ? Construction and assembly of safety lamps, both of flame and electric type. Care of safety lamps. Opening, cleaning, assembling and testing of safety lamps. 4th Talk Methods of testing for inflammable gas with flame safety lamps. Gas caps. Accumulation and percentage tests. Precautions where gas is present. 5th Talk Provisions of regulations relating to safety lamps, and to the presence of inflammable gas. Other means of testing for inflammable gas. 7th Talk General revision and discussion.