

CHAPTER NONCOAL MINES GENERAL PROVISIONS

Section 1. Applicability.

This chapter applies to every noncoal mine within this Commonwealth.

Section 2. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

Blaster, shooter or shot firer--A miner or other person who has satisfactorily demonstrated his ability to charge, and fire explosive materials in a mine with a reasonable degree of safety and has a valid blaster's license issued by the Department of Labor and Industry.

Class A magazine--The principal magazine, constructed in accordance with 34 Pa. Code Chapter 5, Subchapter D (relating to explosives), located outside of the mine and used for the storage of the main supply of explosives.

Class B magazine--A magazine constructed in accordance with 34 Pa Code Chapter 5, Subchapter D and located in remote and unused sections of a mine in the outlet airway.

Class C magazine--A magazine constructed in accordance with 34 Pa. Code Chapter 5, Subchapter D for the use of one day's supply of explosives.

Explosive or explosives--Dynamite, black powder, fuse, blasting caps, electric blasting caps or detonators, electric squibs or other squibs, and other explosives.

Mine--All underground workings and excavations, shafts, tunnels, slopes, drifts, entries and other openings in course of being sunk or driven, together with all roads, appliances, machinery and material connected with the same below the surface.

Mine foreman or Foreman--The person who is designated by the owner, operator, or superintendent to have immediate general supervision of all underground workings and operations in a mine.

Regulations on explosives--Regulations of the Department applying generally to explosives and blasting including Regulations for the Storage, Handling, and Use of Explosives and Regulations Governing Blasting Operations.

Section 11. Location of magazines.

(a) No dynamite, black powder, fuse, blasting caps, electric blasting caps or detonators, electric

squibs or other explosives shall be stored or kept inside a mine except as provided in this chapter for Class B and Class C magazines.

(b) All other supplies of dynamite, black powder, fuse, blasting caps, electric blasting caps or detonators, electric squibs, or other explosives shall be stored outside the mine in Class A magazines constructed, located and operated in accordance with 34 Pa. Code Chapter 5, Subchapter D (relating to explosives).

(c) Magazines shall be so located that gases or fumes resulting from magazine explosions cannot in any manner be drawn into the air inlets of the mine even when the air current is reversed.

Section 12. Distributing magazines.

(a) If Class B or distributing magazines are used, not more than a 24-hour supply of dynamite, black powder, fuse, blasting caps, electric blasting caps or detonators, electric squibs or other explosives shall be brought to or stored in such magazines.

(b) Class B magazines shall be located in the mine and shall be constructed and operated in accordance with 34 Pa. Code Chapter 5, Subchapter D (relating to explosives).

(c) Class B magazines shall be placed in remote and unused sections of the mine in the outlet airway.

Section 13. Transportation of explosives.

(a) No dynamite, black powder, blasting caps, electric blasting caps or detonators, electric squibs or other explosives shall be transported into a mine, except in a wagon, truck, skip, car or cage provided for that purpose, or in a strong closed nonconductive receptacle free from internally exposed nails or other metal, and fitted with a tight hinged cover.

(b) When a car, other than a special enclosed powder car, is used, there shall be two empty cars between the motor or driver and the car containing the explosives.

(c) No persons other than explosives distributors shall be allowed to ride on such trip and they shall not be allowed to ride on the car containing the explosive.

(d) When a cage is used for the purpose of transporting explosives, no person shall be allowed to ride on such cage.

(e) No person other than the driver of a wagon, cart or motor truck shall ride upon the vehicle when it is being used to haul dynamite, black powder, fuse, blasting caps, electric blasting caps or detonators, electric squibs or other explosives from Class A or Class B magazines.

Section 14. Daily supply.

- (a) Nothing in this chapter shall be construed to prohibit a person from walking into a mine carrying one day's supply of explosives provided that such supply does not exceed 50 pounds of dynamite or 25 pounds of black powder and 50 electric blasting caps or detonators, or 100 blasting caps.
- (b) No person shall carry a day's supply of explosives down any shaft.
- (c) No person shall be permitted to ride down any shaft carrying his day's supply of explosives with him on the same trip.

Section 15. Containers and slings.

- (a) No person using dynamite or black powder in a mine shall be permitted to put it into open containers or transport it in any manner except in the original container unless such transportation is effected in a closed container.
- (b) Persons carrying boxes of dynamite up raises or inclines where use of hands is needed, shall be provided with slings designed for the purpose.

Section 16. Restrictions on storage.

- (a) When dynamite, black powder, fuse, blasting caps, electric blasting caps, detonators, electric squibs, or other explosives are removed from Class A or B magazines, they shall not be stored or kept at or near the mouth of any entry nor along the sides of any entry.
- (b) When dynamite, black powder, fuse, blasting caps, electric blasting caps or detonators, electric squibs, or other explosives are removed from Class A magazines, they shall be immediately distributed to Class B magazines.
- (c) Every person who keeps dynamite, black powder, fuse, blasting caps, electric blasting caps or detonators, electric squibs, or other explosives in a mine for use in one day's work shall keep it in a suitable closed container in a Class C magazine. Such Class C magazine shall consist of a covered and hinged metal-covered or wooden box.
- (d) In all cases Class C magazines shall be located not less than ten feet from any track or electric conductor if such distance is available and not less than 50 feet from the working face. Not more than one such Class C magazine shall be kept at any one such place.
- (e) Class B magazines shall not be located at any place within a mine where accidental discharge of the explosive contained therein would cut off the escape of persons.
- (f) Matches, carbide, oil or tools shall not be kept in the same magazine with explosives.

(g) Nothing in this Chapter shall be construed to prohibit the opening of containers at Class B or C magazines for the purpose of distributing a one day's supply to any person whose daily supply is less than 50 pounds of dynamite or 25 pounds of black powder and 50 electric blasting caps or detonators, or 100 blasting caps.

Section 17. Maximum quantity in magazine.

No person shall keep more than one 25 pound keg of black powder nor more than one 50 pound box of dynamite or other explosive at any one time in any one Class C magazine unless more is necessary to accomplish one day's work.

Section 18. Compliance with regulations.

The manner of using, storing and handling dynamite, black powder, fuse, blasting caps, electric blasting caps or detonators, electric squibs, or other explosives at or in a mine shall be in accordance with 34 Pa. Code Chapter 5, Subchapter D (relating to explosives).

Section 19. Special restrictions.

(a) All blasting caps, electric blasting caps or detonators, or electric squibs used in daily work in a mine shall be carried into the mine in the container in which originally packed by the manufacturer, except that a quantity less than one full container may be carried into a mine in a suitable container.

(b) Each person using blasting caps, electric blasting caps or detonators, or electric squibs in a mine shall keep his daily supply in a safe and dry place provided that it shall not be placed in any Class B or Class C magazine containing explosives. Fuses shall be kept in a cool, dry place.

(c) If more than 25 pounds of black powder or 50 pounds of dynamite is kept at one spot in a mine, blasting caps, electric blasting caps, detonators or electric squibs, shall be kept not less than 10 feet away from such explosives.

Section 20. Construction of regulations.

(a) Nothing in this chapter shall be construed to prohibit the preparation of a primer at or in the vicinity of Class B or C magazines, nor the carrying of a charge from Class B or C magazines to the working face without a special container.

(b) Nothing in this chapter shall be construed to require any contents of a Class B magazine remaining over from a day's work to be transported back to Class A magazines. All explosives remaining after a day's work shall be used first on the next succeeding working day.

Section 21. Responsibility of blaster.

A licensed blaster shall supervise distribution of dynamite, black powder, blasting caps, electric

blasting caps or detonators, electric squibs, or other explosives inside mines.

Section 22. Records of explosives.

A record shall be kept showing the amount of explosives used each day and the amounts sent in to replace the quantities used.

Section 31. Open flame or fire prohibited.

Each person in or near a mine, before he opens a magazine or keg of black powder or box of dynamite or other explosives, or before he approaches such explosives after opening, shall first place any lamp with open flame, or any lighted pipe, cigar or cigarette, or any other thing containing open fire not less than ten feet from such magazine, keg or box and in such position that the air current cannot convey sparks to it.

Section 32. Opening containers.

(a) The use of an axe, bar, hammer, pick or other iron or steel implement to punch holes in or open containers of dynamite, black powder, blasting caps, electric blasting caps or detonators, electric squibs or other explosive is prohibited.

(b) A wooden, rubber, rawhide, fibre, zinc or babbitt mallet and a wooden wedge shall be used in opening containers of dynamite.

(c) Cardboard containers may be opened by an opener approved by the Department.

Section 33. Licensed blaster required.

(a) No person shall be permitted to blast in a mine unless he has given satisfactory proof to the mine or blaster foreman that he is a blaster licensed by this Commonwealth and is qualified and able to perform the duty of shot firer or blaster.

(b) Such foreman shall be responsible for securing such proof from each person required or permitted to fire shots. No unlicensed person shall charge or fire a blast.

(c) The mine or blaster foreman shall be responsible for insuring that the provisions of this section are complied with.

Section 34. Presence of second person.

No person shall be permitted to fire shots in any part of a mine without the presence of some other person within calling distance who can readily render assistance in event of accident or injury.

Section 35. Tamping sticks.

When charging holes for blasting, nonsparking tamping sticks shall be used.

Section 36. Charging holes.

(a) Holes shall be charged only in cartridge form, except when permission has been granted by the Department to use ammonium nitrate fuel oil or slurries. Where black powder and dynamite are used in the same hole, separate primers shall be used unless the dynamite is used to detonate the black powder or cordeau is used.

(b) All holes in mines where there is danger from dust or gas explosions shall be adequately tamped to a depth of not less than 8 inches, except where the hole itself is less than 8 inches in depth in which case the hole shall be tamped its full depth. This requirement is not mandatory in quarries or tunnels where the absence of gas or dust makes safeguarding against explosions unnecessary.

(c) Nothing in this chapter shall be construed to prohibit the slitting of dynamite cartridges nor the dividing of them into two or more pieces.

Section 37. Firing of charges.

(a) When dynamite is used in primary shooting, the Department recommends that it be fired by means of primacord, cordeau or electric current from a battery or switchboard.

(b) Nothing less than No. 6 blasting caps or electric blasting caps or detonators shall be used to explode dynamite at any time. The practice of using powder to set off blasting caps to explode dynamite is prohibited. The use of fuse and blasting caps to explode black powder charges shall be accepted.

(c) Patent squibs or other patent matches are prohibited, except squibs of the Daddow or Powell type. Each person firing explosives in a mine by the use of such squibs shall not shorten it, nor saturate it with oil, nor turn it down when placed in the hole, nor ignite it except at its extreme end, nor do anything which would tend to shorten the time that the squib will burn.

(d) Each blaster or shooter using an electric battery or switchboard, before connecting the charge to the leading wires, shall first insure that such wires have been disconnected from the switchboard or battery. The practice of connecting a charge with the leading wired before placing the charge is prohibited.

(e) Nothing in this chapter shall be construed to prohibit the use of fuse and blasting caps in primary shooting, mudcapping, blockholing or popshooting.

Section 38. Firing with fuse.

When a fuse is used, its length shall be in accordance with the specifications set forth in s 41 (relating to length of fuse). All blasting caps shall be crimped to the fuse with a crimper. The crimping of blasting caps by the use of a knife or the teeth is prohibited. No fuse shall be capped in or within 10 feet of any Class B or C magazine.

Section 39. Removal of loose material.

Prior to the firing of a charge the person in charge of such blast shall insure that all loose black powder or dynamite around the hole has been cleared away in order to prevent a premature explosion.

Section 40. Warning of blast.

(a) Prior to the firing of a blast, the person in charge of such blast shall notify all persons who may be in danger by giving sufficient alarm before igniting the charge.

(b) Such alarm shall always state the number of shots to be fired except when firing with battery or switchboard or at times when no other persons are at work in the mine. The calling out of the word "fire," followed by a statement of the number of shots to be fired shall be accepted, as for example: "Fire--Six shots."

(c) Each person in charge of a blast shall further be required to give an "all clear" signal when the round of shots is complete.

Section 41. Length of fuse.

(a) When fuse is used, the length of the fuse and the number of holes that any person shall be permitted or required to light at any one time shall be in accordance with the following table prepared from data submitted by the manufacturers of fuses:

TABLE OF FUSE LENGTHS				
Number Of Holes To Be Lighted At One Time	Length Of Fuse Per Hole			
	40 Seconds		30 Seconds	
	Inches	Time	Inches	Time
1	18	1:0	24	1:00
2	20		27	
3	22		30	1:30
4	24	1:20	33	
5	26		36	1:30

6	28		39	
7	30	1:40	42	1:45
8	32		45	
9	34		48	
10	36	2:00	51	
11	38		54	2:15
12	40		57	
13	42	2:20	60	2:30
14	44		63	
15	46		66	2:45
16	48	2:40	69	
17	50		72	3:00
18	52		75	
19	54	3:00	78	3:15
20	56		81	
21	58		84	3:30
22	60	3:20	87	
23	62		90	3:45
24	64		93	
25	66	3:40	96	4:00
(1)	(2)	(3)	(4)	(5)

(1) Column (1) indicates the various numbers of holes up to 25 which may be lighted at one time by one person, provided the length of fuse used for each hole agrees with the number of inches shown in column (2) if 40-second fuse is used or in column (4) if 39-second fuse is used.

(2) For convenience, columns (3) and (5) are included to show the burning time of 40-second and 30-second fuses respectively in steps of six inches each. Thus, for example, if 13 holes are to be lighted at one time, the first hole to be lighted must have 42 inches of 40-second fuse or 60 inches of 30-second fuse.

(b) In no case shall the length of any 40-second fuse be less than 18 inches or any 30-second fuse be less than 24 inches.

(c) If more than ten fuses per man are used, a fuse ignitor shall be used.

Section 42. Electric firing.

While shafts, slopes, winzes, drifts or other mine outlets are being sunk or driven, all blasts shall be exploded by means of an approved electric blasting circuit, unless permission is granted by the Department to use other approved means.

Section 43. Firing in gassy mines.

(a) In mines where locked safety lamps are used to detect explosive gases, the mine foreman or the foreman's assistant shall be qualified to test for gas and a blast may not be fired in the mine except by permission of the mine foreman or the foreman's assistant.

(b) Before a blast in the mine is fired, the person in charge shall examine the place and adjoining places and satisfy himself that it is safe to fire a blast before giving his permission.

Section 44. Examination after blasting.

(a) After the firing of every blast and before commencing work on the face or immediately adjacent to the face, a competent person shall examine the face of each working place, as well as the sides and roof of each place which has been shot to ascertain its condition.

(b) A person, except the person making the examination, may not enter a working face until the examination has been made.

Section 45. Misfired holes.

(a) A hole which has misfired may not have the charge withdrawn.

(b) Every workplace in which a hole has misfired shall remain idle for 1 hour before reentry is made if approved fuse was used. Otherwise, the waiting period may be not less than 6 hours.

(c) If a powder squib or electric current from a battery or switchboard was used to explode a hole which misfired, the waiting period shall be at least 15 minutes, provided that the wires have been disconnected from the battery or switchboard.

(d) Misfired holes shall be handled under the personal supervision of the mine or blast foreman and in accordance with the following specifications;

(1) If the misfired hole has 18 inches or less of tamping, nothing in this section shall be construed to prohibit the recharging of the missed hole on top of the old tamping.

(2) If the unfilled portion of the missed hole is insufficient to accommodate the new charge and tamping, or if the missed hole has been tamped the full depth, a new hole shall be drilled or compressed air may be used to clean out the tamping in the old hole. The second hole shall be at least 2 feet away from the missed hole.

Section 46. Counting number of explosions.

(a) If caps and fuse have been used for detonation, the total number of explosions in every blast shall be counted by the shot firer or by the mine or blaster foreman.

(b) If the total number of explosions is less than the number of charges that were to be fired, a report of the misfires shall be made to the mine or blaster foreman.

(c) When it is not certain that all charges have been exploded, a person may not enter the place where the charges were fired within the time limits and under the conditions enumerated in s 45 (relating to misfired holes).