2014 STATEMENTS OF FACT
MINE RESCUE
51-100 are new statements

1. Under no circumstances will the team ever alter ventilation without orders to do so from the Command Center. (MSHA 3028, pp. 3-3)

2. High temperatures (or heat) cause gases to expand, so they diffuse more quickly. (MSHA 3028, pp. 2-6)

3. The Command Center considers several factors before it orders a change in ventilation, most importantly; it has to consider how the alterations will affect ventilation into an unexplored area. (MSHA 3028 pp. 3-16)

4. A dangerous and sometimes fatal mistake that responders make is entering an unsafe or hazardous scene. (Brady First Responder, p. 165)

5. With the airway open place your ear over the patient's nose and mouth, and watch for chest movement. (Brady First Responder, p. 172)

6. If the patient is not breathing, check for a carotid pulse at the neck to determine if blood is circulating. (Brady First Responder, p. 174)

7. One of the first critical steps when fighting fire in a mine is to spray water (preferably as fog) downstream (inby the fire) into the path of (as close as possible to) the oncoming flames. (Donald W. Mitchell Mine Fires, p. 5)

8. Stopping smoke rollback is a must because if you cannot control the rollback you probably can't get close enough to fight the fire effectively. (Donald W. Mitchell Mine Fires, p. 19)

9. Gas layering is like smoke rollback with Methane and Hydrogen the likely gases to form layers during a fire. (Donald W. Mitchell Mine Fires, p. 23)

10. The IDLH of Carbon Dioxide is 40,000 ppm. (NIOSH Chemical Hazards, p. 52)

11. A smoke tube is used to show the direction and velocity of slow moving air. (MSHA 3028, pp. 3-18)

12. When taking a reading with an anemometer, a commonly used method is to traverse the airway. (MSHA 3028, pp. 3-17)

13. An airlock consists of two doors or two stoppings with flaps or doors in them which are in close proximity to each other in the same passageway. (MSHA 3028, pp. 3-22)

14. The purpose of an airlock is to separate two different atmospheres while still permitting miners to enter and exit without mixing the atmospheres. (MSHA 3028, pp. 3-22)

15. Temporary stoppings built in a crosscut should be placed at least four to six feet into the crosscut in order that sufficient space is available to construct a permanent stopping. (MSHA 3028, pp. 3-21)

16. “Pogo sticks” are devices which may be used to erect temporary stoppings. (MSHA 3028, pp. 3-21)

17. Oxygen is a supporter of combustion. (MSHA 3028, pp. 2-13)

18. Temporary seals should include provisions for collecting air samples from within the sealed area. (MSHA 3028, pp. 5-24)

19. Progressive ventilation is the re-ventilation of a sealed area in successive blocks by means of airlocks. (MSHA 3028, p. 7.6)

20. Direct ventilation is the re-ventilation of an entire sealed area at once. (MSHA 3028, pp. 7-8)

21. Sufficient time should be allowed for a fire area to cool before it is unsealed. (MSHA 3028, pp. 7-5)

22. Normal air has a specific gravity of one. (MSHA 3028, p. 2.6)

23. Besides helping you determine where to test for a gas, specific gravity also indicates how quickly the gas will diffuse and how easily it can be dispersed by ventilation. (MSHA 3028, pp. 2-7)

24. Methane is lighter than air. (MSHA 3028, pp. 2-6)

25. Carbon monoxide is explosive. (MSHA 3028, pp. 2-16)

26. The range of concentrations within which a gas will explode is known as its “explosive range.” (MSHA 3028, pp. 2-7)

27. Nitrogen dioxide has a reddish-brown color in high concentrations. (MSHA 3028, pp. 2-18)

28. Color, odor, and taste are physical properties that can help you identify a gas, especially during barefaced exploration. (MSHA 3028 pp. 2-8)

29. Clean, dry air at sea level is made up of 78 percent nitrogen and 21 percent oxygen. (MSHA 3028, pp. 2-11)

30. Oxygen has no odor. (MSHA 2102, pp. 27 & 67)

31. Hydrogen sulfide has an odor similar to rotten eggs. (MSHA 3028, pp. 2-20)

32. The explosive range of methane in air is 5 to 15 volume percent. (MSHA 3028, pp. 2-15)

33. When present in high concentrations (2 percent or higher), carbon dioxide causes you to breathe deeper and faster. (MSHA 3028, pp. 2-14)

34. Carbon monoxide can be detected by means of carbon monoxide detectors, multi-gas detectors, or by chemical analysis. (MSHA 3028, pp. 2-17)

35. The lower explosive limit of hydrogen is 4.0 percent. (MSHA 3028, pp. 2-19)

36. Hydrogen sulfide is flammable and explosive in concentrations from 4.3 to 45.5 percent in normal air. (MSHA 3028, pp. 2-20)

37. Carbon dioxide is non-explosive. (MSHA 3028, pp. 2-14)

38. Air containing 4 to 74.2 percent hydrogen will explode even when there is as little as 5 percent oxygen present. (MSHA 3028, pp. 2-17)

39. A mixture containing as little as 1 ½ to 2 percent methane, together with coal dust, may be explosive. (MSHA 3028, pp. 2-21)

40. Nitrogen is an asphyxiant in above normal concentrations. (MSHA 3028, pp. 2-17)

41. The IDLH of Hydrogen sulfide and Sulfur Dioxide is 100 ppm. (NIOSH Chemical Hazards, pp. 170 & 288)

42. The IDLH of Nitrogen Dioxide is 20 ppm. (NIOSH Chemical Hazards, p. 228)

43. The affinity of carbon monoxide for hemoglobin is 200 to 300 times that of oxygen. (MSHA 3028, pp. 2-16)

44. Carbon Dioxide is the product of oxidation including the decay of timbers. (MSHA 3028, pp. 2-14)

45. About 21 percent of normal air is oxygen. (MSHA 3028, pp. 2-11)

46. Afterdamp is a mixture of carbon monoxide, carbon dioxide, methane, oxygen, nitrogen and hydrogen. (MSHA 3028, pp. 2-27)

47. Afterdamp is usually found after a mine fire or explosion. (MSHA 3028, pp. 2-27)

48. Hydrogen can be detected with a multi-gas detector or by chemical analysis. (MSHA 3028, pp. 2-20)

49. In some mines, carbon dioxide is liberated from the rock strata. (MSHA 3028, pp. 7-6)

50. To detect oxygen deficient atmospheres teams will use an oxygen indicator. (MSHA 3028 pp. 2-14)

51. To test for methane, use a methane detector or chemical analysis. (MSHA 2102, p. 33)

52. Because fire consumes such large quantities of oxygen, there is a hazard of oxygen-deficient air in the mine. (MSHA 3028, pp. 5-18)

53. Nitrogen dioxide is produced by burning and by the detonation of explosives. (MSHA 2102, p. 37)

54. A mixture of coal dust in air reduces the explosive limit of methane. (MSHA 2102, p. 32)

55. If the mine has had an explosion, the team may encounter a great deal of debris, damage to stoppings, and hazardous roof and rib conditions. (MSHA 3028, pp. 3-22

56. Mines below the water table tend to have more methane than those above the water table. (MSHA 2102, p. 33)

57. After a fire or explosion in a mine, rescue teams are usually needed to go into the mine to assess and re-establish ventilation. (MSHA 2103, p. 5)

58. When the fresh air base is set up underground, an air lock must be built to isolate the fresh air base from the unexplored area beyond it. (MSHA 3028, pp. 4-7)

59. Any flammable gas can explode under certain conditions. (MSHA 2102, p. 15)

60. Indirect firefighting methods allow firefighters to remain a safe distance from the fire. (MSHA 2105m p. 35)

61. Temporary seals are built before permanent seals are erected in order to seal off a fire area as quickly as possible. (MSHA 2105, p. 36)

62. In mines where head coal (roof coal) is left, a fire will spread more rapidly. (MSHA 2105, p. 37)

63. One hazard of heat during a fire is that it tends to weaken the roof, especially where head coal is left. (MSHA 2105, p. 32)

64. Fires can be attacked by the use of a foam generator from a distance of 500-1,500 feet. (MSHA 2105, p. 17)

65. It is generally recommended that teams not travel through foam filled areas. (MSHA 2105, p. 17)

66. One method of indirect firefighting is flooding the sealed fire area with water. (MSHA 2105, p. 50)

67. Once an explosion has occurred, there is always the possibility of further explosions. (MSHA 2105, p. 52)

68. Mine rescue teams may find it necessary to use line brattice to sweep noxious or explosive gases from a face area. (MSHA 2103, p. 39)

69. Once ventilation has been re-established and fresh air advanced non-apparatus crews can take over the rehabilitation and cleanup effort. (MSHA 2107, p. 3)

70. Rescue teams are responsible for assessing damage to the ventilation system. (MSHA 2107, p. 4)

71. Information the team relays to the fresh-air base as it proceeds is known as the "progress report". (MSHA 2104, p. 46)

72. It is the responsibility of rescue team members to have all the information needed to do the work. (MSHA 2104, p. 23)

73. When a team locates a body, its location and position should be marked on a mine map and on the roof or rib close to the body. (MSHA 2106, p. 12)

74. The rescue team captain should regulate the team's pace according to conditions encountered. (MSHA 2104, p. 39)

75. When a body is first located, every effort should be made not to disturb any possible evidence in the area. (MSHA 2106, p. 13)

76. In situations too hazardous for teams to explore and reventilate safely, teams may be instructed to seal the area. (MSHA 2105, p. 56)

77. New mine rescue team members must have at least 20 hours of instruction on the breathing apparatus used by the team. (MSHA 2002, p. 23)

78. Before the team leaves the fresh-air base to travel inby, the captain should take note of the time of departure. (MSHA 2104 p. 23)

79. It is recommended that team checks be conducted every 15 to 20 minutes. (MSHA 2104, p. 31)

80. It is recommended that the first stop for a team check be just inby the fresh-air base. (MSHA 2104, p. 32)

81. For teams using a compressed oxygen breathing apparatus, the captain usually notes each team member's gauge reading at each rest stop and reports the lowest reading to the fresh-air base. (MSHA 2104, p. 32)

82. "Tying in" is the process by which you systematically explore all crosscuts and adjacent areas as you advance. (MSHA 2104, p. 38)

83. As the team advances underground, the captain takes the lead. (MSHA 2104, p. 38)

84. It is important that the team pace its work so that it can return to the fresh air base on time. (MSHA 2104, p. 51)

85. As the team advances, the map man records what the team encounters by marking the information on a mine map. (MSHA 2104, p. 48)

86. The team is responsible for choosing the exact sites within headings for building seals. (MSHA 2105, p. 38)

87. Smoke causes a lack of orientation which may cause a team member to lose his/her sense of balance. (MSHA 2106, p. 32)

88. Class B fires involve flammable or combustible liquids. (MSHA 2105, p. 8)

89. Class D fires involve combustible metals. (MSHA 2105, p. 8)

90. Before using a hand held extinguisher it must be checked for the type of fire you are fighting. (MSHA 2105, p. 10)

91. Solubility is the ability of a gas to be dissolved in water. (MSHA 2102, p. 67)

92. Pools of water can release water soluble gases into the air when they are stirred up. (MSHA 2102, p. 16)

93. High expansion foam is light and resilient and can travel long distances to a fire without breaking down. (MSHA 3028, pp. 5-11)

94. Low expansion foam is very wet and heavy and can only be used when you're close enough to a fire to force the foam directly onto the fire. (MSHA 3028, p. 5-10)

95. Take the carotid pulse for 5 to 10 seconds. (Brady First Responder, p. 174)

96. Blood that is bright red and spurting may be coming from an artery. (Brady First Responder, p. 174)

97. Most cases of external bleeding can be controlled by applying direct pressure to the site of the wound. (Brady First Responder, p. 311)

98. Two types of fire cannot be fought directly, fuel rich and spon com (spontaneous combustion), these will be extinguished only by remote controls. (Donald W. Mitchell Mine Fires, p. 27)

99. Team safety must not be compromised. Although "Time is never your friend" do not be in too great a hurry and do not permit others to hurry. (Donald W. Mitchell Mine Fires, p. 45)

100. Monitoring pressures and gases helps determine what is the danger of explosion, how soon firefighters have to move to safety, how effective are the techniques being used and is the fire under control. (Donald W. Mitchell Mine Fires, p. 45)