

“Your Last Breath”

by *The Purification X-Pert*™ CAPTAIN JOSEPH C. SMITH

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In today's world of plastics and PVC materials, firefighters have to be much more cautious than they were twenty years ago. This, however, seems to be only a dream. The fire service has neglected to respond to the threats which require our awareness and response.

The air which is being used in Self Contained Breathing Apparatus (SCBA) is far more important than other pieces of equipment. Some personnel take better care of their handlight than their SCBA. How many flashlights have saved a life in a gas-filled room? Firefighters are challenged to take a minute to think about the SCBA and whether or not it could pass all test procedures.

The air that is breathed through the SCBA is more important than the SCBA itself. Without clean air firefighters are wearing a death mask. Regulations which require a specified grade of air meeting or exceeding their standards for respiratory use are put forth through the Occupational Safety and Health Act (OSHA), The Compressed Gas Association (CGA) and the National Fire Protection Association (NFPA).

These standards are the ticket to a longer life and firefighters must be in compliance with these laws. This is a little price to pay for a life.

Breathing air compressors come in many forms and designs to meet individual fire department needs. Any fire department which has a compressor must take the

responsibility to see that it is kept in good operation and the quality of air it is producing meets the recognized standards. The compressor is often times the most neglected piece of equipment in the fire station.

Each breathing air package (BAP) must have sufficient purification to produce at least Grade D air for fire department use and Grade E air for sport diving to 130 feet. According to the Compressed Gas Association and adopted by the



A firefighter's life depends on the quality of air in the breathing apparatus.

NFPA and OSHA, there are four contaminants which are tested in Grade D air which include Carbon Monoxide, Carbon Dioxide, Oil Vapor or Hydrocarbons and Water Vapor or Moisture in PPM. Anyone breathing in the air beyond the threshold limit can be fatal to the user.

OSHA also requires other specifications such as high temperature switch, belt guards, necessary safety and standby devices. Each BAP and/or storage cylinder must be tested every three months to

ensure their compliance with OSHA and the NFPA regulations.

Fire departments which are under contract or buy compressed air from a supplier should be sure that the air quality meets their specific needs. Each system should be maintained and serviced on a regular basis. Most people do not understand the principles of operation to maintain a specified level.

Personnel who do not often use the equipment and feel that this is a measure of air purity are mistaken. The elements used in the purification have a specified life of non-use as well as a life of strenuous use, meaning cubic feet per minute passing over these elements.

The life is also shortened when there is a parts failure or there are mechanical problems with the unit. These problems often go undetected if the equipment is not properly inspected by a trained technician. Just because the unit is pumping pressure does not mean that the air standards are being met.

Personnel are encouraged to do all that is necessary to maintain the breathing equipment in a safe manner so that their lives will not be shortened by breathing unsafe air.

Note: The preceding material was based on the following references: OSHA 29 CFR 1910.134.D (Respiratory Protection), OSHA 29CFR-1910.69 (Air Receivers), CGA Pamphlet G-7.1, and NFPA 1500 (Firefighter Safety).

