

FIREHOUSE®

Weekly Drill

DRILL #132: SCBA SAFETY

Introduction

There are many different manufactures of self contained breathing apparatus (SCBA). It doesn't matter who the manufacturer is; what matters is that they meet or exceed the National Fire Protection Association (NFPA) standards. The SCBA is the most important piece of safety equipment the firefighter relies on when working in an immediately dangerous to life or health (IDLH) environment. Failure of a firefighter to know how to use his SCBA will result in injury or, quite possibly, death.

Fire incidents are not the only time firefighters should wear their SCBA. Whenever one of these other conditions exists the firefighter should don their SCBA.

- Any toxic environment
- Where temperatures are elevated
- Oxygen-deficient environment
- Where there are by-products of combustion or smoke

Toxic environments

Toxic environments can cause acute and chronic health issues for firefighters, should they breathe in the toxic air. How often have you heard the fire department dispatcher send a company to investigate an unknown odor? I know for a fact that every community has its share of hazardous material rolling through them; either on the railroad or highway. Many of these chemicals are extremely hazardous when released. Other toxic substances can be found in many of the homes in our districts. Do you know anyone with a swimming pool?

Elevated temperatures

Elevated temperatures can have negative effects on our lungs. In addition to affecting the lungs, elevated temperatures when breathed in can alter the firefighter's heart rate and blood pressure. Depending on the temperature, firefighters could experience pulmonary edema and asphyxiation.

Oxygen-deficient environments

Oxygen-deficient environments are classified as having less than 19.5% oxygen. The side effects on the human body, from a lack of oxygen, can range from muscular impairments to death. The only way to protect firefighters from this deficiency is to breathe air from an SCBA.



By-product residue

Smoke environments and areas that have any residue of by-products from a fire are some of the more dangerous positions to be in. A good Incident Commander will have the Safety Officer take readings for carbon monoxide levels and oxygen levels immediately after the fire has been extinguished and before allowing firefighters to remove their SCBA.

Many times firefighters are too quick to remove their SCBA after the fire has been knocked down. This is one of the most toxic times during a fire because of the unburned products of combustion. These are just a few of the chemicals produced that firefighters can breathe in during the overhaul process if the air monitor has not been checked assuring the air environment is safe:

- Carbon monoxide
- Carbon dioxide
- Hydrogen cyanide
- Hydrogen chloride
- Nitrogen dioxide
- Phosgene

—Prepared by Russell Merrick