



Sample Air Management SOG 7-2023

PURPOSE

The purpose of this standard operating guideline (SOG) is to provide definitions, general information, and strategies to ensure safe air management. This covers use while operating in and around a Hazard Zone/hazardous atmosphere requiring the use of self-contained breathing apparatus (SCBA). The NFPA Technical Committee on Respiratory Protection Equipment has adopted a 33% threshold of reserve air supply in "NFPA 1981: Standard on *Open-Circuit Self-Contained Breathing Apparatus for Emergency Services*." Firefighters are all responsible for our own safety and the safety of our fellow firefighters. The ability to manage our individual air supply and consumption is critical to the safety of every member working in the Hazard Zone. Poor air-management choices will adversely affect the individual firefighter. More importantly, this can impact the other firefighters in the company or crew.

The intent of this policy is not to adversely impact fireground operations but to strengthen firefighting operations with crews that have safe operating air levels. Companies can only be assigned as fast as they arrive. A pessimistic approach will provide needed replacement crews sooner, thus enabling them to follow the air-management procedures. These resources should be layered in, either working in the Hazard Zone, being On Deck, or recycling within the sector/division.

POLICY/GUIDELINE

This SOG applies to all **Blue Card** Fire Department personnel at an emergency incident or training exercise who are actively participating in operations within or near a Hazard Zone or hazardous atmosphere requiring the use of self-contained breathing apparatus (SCBA).

DEFINITIONS

Air Management—An ongoing assessment of air consumption by individual firefighters and/or teams who are breathing air from their self-contained breathing apparatus (SCBA). Firefighters in a hazardous atmosphere or in the Hazard Zone must continually check their heads-up display (HUD) or pressure gauge. This ensures the firefighter knows how much air they have left in their cylinder.

The Rule of Air Management (ROAM)—3 key issues: Know how much air you have used; manage the amount of air you have left in your cylinder; and exit the Hazard Zone **before** your SCBA low air alarm and other alerts activate.



Hazardous Atmosphere—Any atmosphere that is oxygen deficient or that contains a toxic and/or disease-producing contaminant. These atmospheres can be immediately dangerous to life or health (IDLH), or not. This can also be known as the Hazard Zone. Air is FREE! Wear your SCBA anytime you are in a possibly contaminated atmosphere. Why take the chance?

IDLH—Immediately Dangerous to Life and Health.

READY Check—Each member of a team must check with his/her partner(s) to ensure the READY check has been completed prior to entry into the IDLH environment.

R=Radio. Have one. Is it on and tuned to the right channel?

E=Equipment. Have the right equipment for the given assignment.

A=Air: No member can enter the Hazard Zone with less than 4050 or 2216 PSI.

D=Duties. The “what, when, where, how” of your assignment. Know what you and your team are assigned to do.

Y=Yes: Yes to all the above questions.

GENERAL INFORMATION

It is critical for firefighters to understand that the last 33% of the air supply in an SCBA is the *emergency reserve*. The initial 66% of the air supply is for working and exiting. This includes gaining access, working towards the tactical objectives and leaving the Hazard Zone, otherwise known as a “round trip ticket.”

If an emergency situation is encountered, the emergency reserve (remaining 33%) air supply is to be used to exit or survive until assistance can arrive. Each individual firefighter should be cognizant of their air consumption in order to safely follow this rule of air management.

GUIDELINES

A. Air Management Standard

It is the expectation that all members utilizing self-contained breathing apparatus (SCBA) will:

1. Check their air levels before they enter the hazardous atmosphere. Members must have a minimum of 4050 psi in their cylinder in order to make entry into a hazardous atmosphere or Hazard Zone. This check can be done during the pre-entry READY check. Firefighters need to understand how much time 500 psi gives them. You are entering the IDLH with less than a full tank.
2. The ability to monitor one’s air supply during firefighting operations is a learned skill and must become muscle memory. Company officers must reinforce the need to adhere to standardized



work cycles with their crews. The incident commander and the S/D/G Supervisor should ensure confidence that the work will continue. Especially as relieved crews are recycling and returning to on-deck in their S/D/G. By following the Rule of Air Management, no one should leave the Hazard Zone with their low air alarm activating. If the low air alarm sounds, the crew needs to communicate Priority Traffic to the IC or S/D/G Supervisor and provide a CAN report.

3. When the first member of the company or crew gets a 50% HUD light activation (two flashing amber lights), the officer/team leader must alert their S/D/G Supervisor via radio that the company or crew is at 50% air level. This allows the S/D/G Supervisor to preplan for replacing that crew in the hazardous atmosphere/Hazard Zone.
4. If a firefighter works into their reserve air and their low air alarm begins to activate in the Hazard Zone, the officer/team leader must alert their S/D/G Supervisor over the radio. The company officer/team leader communicates their unit ID, then declares Priority Traffic before stating that a team member's low air alarm is ringing, the crew's location, and an estimation of how close they are to the exit.

Example

"E 109 Priority Traffic: We have FF Smith with a low-air alarm sounding. We are 75 feet into the building. We will advise when we exit. No Needs." This notifies everyone, including the On Deck company, that someone is low on air.

B. How Air Management Works

1. Air management is each firefighter's responsibility and is closely related to situational awareness. Firefighters must make sure that they have a full cylinder before they enter the hazardous atmosphere or Hazard Zone. Once inside the hazardous atmosphere or Hazard Zone, firefighters must look at HUD and pressure gauge at intervals and inform their officer/team leader what their air situation is.
2. The officer/team leader should take the lead in air management. Officers and team leaders must make the decision when to exit. This ensures the company or crew is out of the Hazard Zone before the low air alarm begins to ring. There are many factors that affect the duration of the company's air supply, such as fire conditions, work rates, aerobic fitness of company members and stress.
3. Officers/ team leaders must notify the Incident Commander or their S/D/G Supervisor when their first team member's 50% HUD light activates. This allows the S/D/G Supervisor to be



informed of the team's air situation and to preplan for replacing that team with the "On-Deck" crew in the Hazard Zone.

Or

4. Crews working in the environment Hazard Zone will be notified when they have reached approximately 10 minutes by the incident commander., the Accountability Officer, or their S/D/G Supervisor. At that time, the crew's officer/team leader will determine if the crew will need to exit the Hazard Zone and be replaced with the "On-Deck" crew based on the criteria above.
5. All firefighters are expected to be out of the Hazard Zone before their Low air alarm begins to activate. If the firefighter exits the Hazard Zone prior to his low air alarm activates, he/she may replace the SCBA bottle and return to the Hazard Zone. This creates a two-cylinder rotation for firefighters. After the second round of cylinders, the firefighter **MUST** go to rehab.
6. If members hear a low air alarm ringing in the Hazard Zone and there is no immediate radio report from the team whose bell is ringing, that bell should be considered an emergency alarm. This shall be treated with the same urgency as a Mayday. This is not common on the fireground, as what we hear all too often is low air alarms ringing and PASS devices activating. It's as if the alarm sound has become so normal we have forgotten what it means.
7. Operating in an offensive strategy is the most dangerous position for firefighters. It is imperative that the IC continually evaluate the incident using the Strategic Decision-Making Model and make air management a primary factor of that assessment. The ability of firefighters to exit the Hazard Zone with a reserve of 33% air is a requirement or mandate. If crews cannot complete their assigned task with that minimum air supply, the S/D/G Supervisor must provide an adequate number of companies to replace those initial working crews or change the strategy to defensive.