



# Jackson Hole Fire/EMS Operations Manual

Approved by:

  
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Title: **Air Management  
Policy**  
Division: 16  
Article: 16  
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## PURPOSE

The purpose of the air management policy is to improve firefighter safety by describing how we will manage the air in our Self-Contained Breathing Apparatus (SCBA) cylinders while operating in the hazard zone at an incident. The hazard zone will be described as an Immediately Dangerous to Life and Health (IDLH) atmosphere or where the Incident Commander has deemed it necessary to wear an SCBA.

### Section I – General Provisions

- All Jackson Hole Fire/EMS members will be familiar with and capable of utilizing the current SCBA. Two minute drills will be incorporated into crew/truck checks in order to achieve quarterly 2-minute drills. Two minute drills will be documented in the member task books.
- All Jackson Hole Fire/EMS members will perform the exercise described in this policy to calculate air consumption rate. The air consumption rate will be utilized by the individual and crew leaders in order to manage the 67% working and exiting air.
- SCBA cylinders should always be kept above 4000 psi. SCBA cylinders will be a part of the routine truck checks. If an SCBA cylinder is found under 4000 psi, the SCBA cylinder will be filled or put out of service and replaced with a full tank.
- All members operating in the hazard zone during incidents and training shall be responsible for monitoring the remaining air in their SCBA cylinder.
- 67% (3015 psi) of the air supply is the "working and exiting air" for gaining access, working toward the tactical objectives, and exiting the hazard zone.
- **33% (1485 psi) of the air supply is reserved for emergency situations such as becoming lost, trapped, or entangled upon exiting the hazard zone.** No vibe alerts should be experienced in the hazard zone without resulting in immediate action.
- Mayday should be called if unable to leave the hazard zone with 15% (675 psi) of air supply remaining.
- The Incident Commander (IC) at an incident shall be responsible for a Personal Accountability Report (PAR) every 10 minutes while members are operating in the hazard zone with IDLH atmosphere. The PAR shall include the location of all members operating at the incident and amount of air for the crew member with the least amount of air for each crew operating in the hazard zone. The IC can delegate this task to the Safety Officer at the incident.

## **Section II – Strategic Level Air Management**

The IC shall consider air management a critical fireground factor when evaluating the risk management of a building, performing size-up, and determining the strategy.

Command will seek a PAR every 10 minutes, while crews are operating in the hazard zone. The PAR should include the location of all members operating at the incident and amount of air for the crew member with the least amount of air for each crew operating in the hazard zone.

To enhance firefighter safety, command shall maintain a tactical reserve of crews on-scene. The tactical reserve of crews on scene will remain in a staging area or in the Rehab area, see Responder Rehab SOG.

The Rapid Intervention Crew (RIC) will be established as described in 14-5 Survival and RIC Policy. RIC will be available for immediate response to any Mayday.

Command can establish an Operations Section Chief that would be responsible for Strategic Level Air Management. The Incident Commander will remain ultimately responsible for safety of members on the fireground.

## **Section III – Tactical Level Air Management**

A Battalion Chief or Station Officer will be responsible for determining tactics for their designated division, assigned by the IC. The Division will conduct the PAR and report findings to the IC or Safety Officer. Divisions will request resources to maintain a tactical reserve and management of the Responder Rehab. Resources required will also include full SCBA cylinders. Additional resources will be ordered through the IC.

## **Section IV – Task Level Air Management**

All members shall participate in truck checks when available, which shall include SCBA function and condition. On the fireground and in training every member is responsible for managing their own air supply and communicating the status of their air supply to the Division when PAR requested.

Prior to entry into the hazard zone, the Division will brief his/her crew on the plan for achieving the tactical objectives including exiting the hazard zone together. This ensures the crew has a "round trip ticket" into and out of the hazard zone. All members shall be responsible for maintaining orientation within the hazard zone. Orientation shall include the distance traveled within the hazard zone to ensure that no more than 67% of the air supply is utilized for working and exiting.

**All members of the crew will exit prior to the low air alarm sounding on the SCBA at 33%.**

## **Section V – Air Emergencies**

An air emergency is defined as: *"anytime the breathing apparatus being used cannot deliver air to the user as designed; whether by mechanical failure or if the individual has consumed the air supply beyond the designed work cycle, or an individual becomes lost or trapped within an IDHL environment regardless of air supply"*.

Activation of the low-air warning, vibe alert, is an *immediate action* item for the individual and the crew involved. Immediate action is described as notifying command of low-air alarm activation and immediately exiting the IDLH atmosphere intact as a crew and notifying command that you are out with a PAR after exiting. If a crew member is unable to exit due to being lost, trapped, or injured an immediate Mayday shall be called.

When remaining air supply in the SCBA cylinder reaches 15% (675 psi) a Mayday should be called if personnel are still inside an IDLH atmosphere. The crew will include in the Mayday location, planned escape route and estimated time for escape. The IC will then be notified when the crew has safely exited the IDLH atmosphere.

### **Section VI – Air Consumption Rate**

Air Consumption Rate is the amount of air consumed per minute while the member is performing duties associated with the fireground. Each member will consume air from their SCBA at a different rate and volume. The rate at which a member consumes air will determine the amount of time that the member can expect to be in the working and exiting range.

To figure the Air Consumption Rate, each member will conduct the Air Consumption Drill initially in the Firefighter I Academy and every 3 years. The Air Consumption Drill is designed so that each station can conduct the drill at their station, indoors or outdoors. The following is the Air Consumption Drill:

1. The member will don all PPE including an SCBA.
2. The amount of air in the SCBA cylinder will be recorded in psi.
3. A loop of the following activities will be accomplished until the low-air alarm (see appendix A), vibe alert is reached:
  - a. Climb 14 foot roof ladder set up at appropriate climbing angle – touch top rung
  - b. Pick up 50 ft section of 3 inch structure hose and walk 100 feet, 50 feet to a cone and back 50 feet
  - c. Perform 20 squats while holding the 3 inch structure hose
  - d. Simulate a ceiling breach with a 8-10 foot pike pole, lifting the pike pole 20 times, hands must be above the member's head
  - e. Duck walk or crawl 50 feet to the cone
  - f. Duck walk or crawl back 50 feet from cone
4. The amount of air in the SCBA will be recorded.
5. Time will be recorded
6. Air Consumption Rate in psi/minute and total time to the low-air alarm will be recorded on the Air Consumption Rate form (see appendix B) and documented in the member's personnel file.

## Appendix A

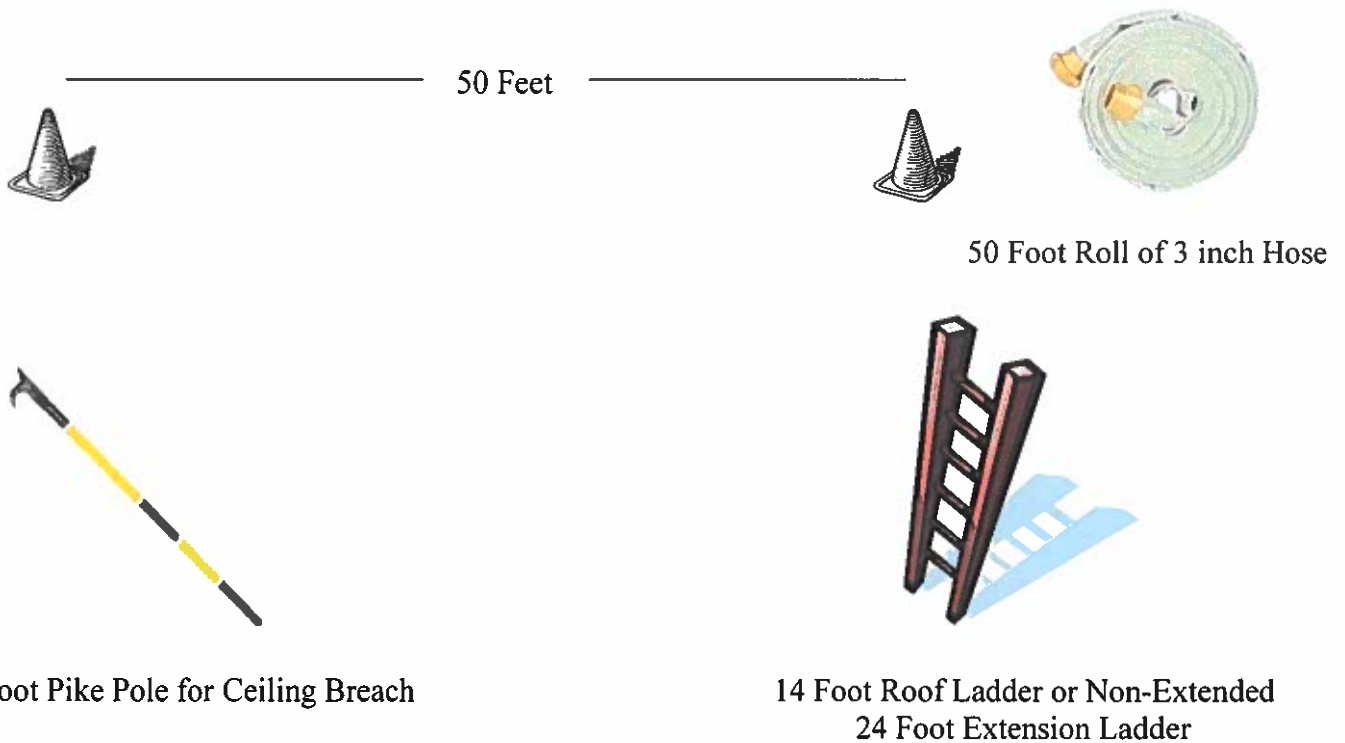


### Air Consumption Drill

#### Course

To be completed until Fire/EMS member has reached 25% or 1175 psi remaining in SCBA.

- Climb 14 foot roof ladder set up at appropriate climbing angle – touch top rung
- Pick up 50 ft section of 3 inch structure hose and walk 100 feet, 50 feet to a cone and back 50 feet
- Perform 20 squats while holding the 3 inch structure hose
- Simulate a ceiling breach with a 8-10 foot pike pole, lifting the pike pole 20 times, hands must be above the member's head
- Duck walk or crawl 50 feet to the cone
- Duck walk or crawl back 50 feet from cone





### Appendix B



## Air Consumption Rate Form

Station: \_\_\_\_\_

Date: \_\_\_\_\_

Name	Initial SCBA PSI	Ending SCBA PSI	Time (minutes)	Air Consumption Rate (PSI/min)

Time – Include seconds as a fraction (-- sec/60 sec)

Air Consumption Rate       $PSI / min = \frac{InitialPSI - EndingPSI}{Minutes}$

*Completed forms will be turned into Fire/EMS Admin Office with a Training Roster.*