



## Training

Employee training is an important part of the respiratory protection program and is essential for correct respirator use. The OSHA respiratory protection standard requires Rio Hondo Fire Academy to provide training before the student uses a respirator. For the training to be effective, the training information must be comprehensive and presented in an understandable way.

As a result of training, the user shall understand the operation of the respirator and demonstrate the ability to properly use the respirator. Training will include a discussion of why the use of the respirator is necessary. Training shall address the identification of the potential hazards and potential health effects of such exposures.

Training shall include procedures for inspecting the respirator, donning and removing the respirator, checking the fit and respirator seal, and actually wearing the respirator. Users must understand and demonstrate proper procedures in use of the respirator in the event of emergency situations, including those in which the respirator malfunctions.

At a minimum, Rio Hondo students will conduct training on an annual basis, as required by the OSHA respiratory protection standard. Rio Hondo College understands that OSHA's minimum requirements are designed to maintain general confidence in SCBA usage.

The minimum level of performance recommended by this standard, NFPA 1404 shall be for a firefighter wearing full protective clothing to be able to don a SCBA within 60 seconds. This time performance shall be with the firefighter standing in full firefighting protective clothing and the SCBA laying on the ground and shall stop when the firefighter is properly attired in full protective clothing and properly wearing a fully operational SCBA. The cylinder must be in a closed position before starting the test.

Level of training on the Scott 4.5 SCBA air pack must be completed in the order stated on the pages below.

### *Level 1*

The first level of instruction will take place in the classroom setting, allowing the student to fully understand the SCBA by actual “hands on” training. This time will be to show all the components of the SCBA to the student. There are seven major components and three systems that make up the SCBA Rio Hondo Fire Academy currently uses. Each component and system is detailed in the Equipment Identification Section of the SCBA Manual.

1. Back frame and harness assembly
  2. Cylinder and valve assembly
  3. High pressure hose and coupling assembly
  4. Two Stage Pressure reducer assembly
  5. Remote mounted gaugeline assembly
  6. Mask mounted regulator assembly
  7. Scott-O-Vista facepiece assembly
1. Emergency Breathing Support System (EBSS)
  2. Pak Alert System (PAS)
  3. Heads Up Display (HUD)

### *Level 2*

The second level of instruction should allow the student to operate the equipment in performing general tasks such as donning and doffing the SCBA and various fire ground tasks, such as, a SCBA training maze. This task builds confidence in the students.

There are two methods of donning the SCBA that Rio Hondo has adopted;

1. Over the head method
2. The coat method

### *Level 3*

The third level of instruction should allow the student to operate the SCBA under simulated emergency conditions. Up to this point, the student should have demonstrated his/her ability to identify, operate, and use the SCBA in performing various manipulative tasks. When the student has successfully demonstrated the ability to perform fire tasks, he/she is ready to perform these same tasks under simulated emergency conditions. The third level of instruction shall include the following skills and procedures:

1. Emergency Procedures
2. Use of the Scott R.I.T. Pack

## Level 2 Training

### **Donning and Doffing SCBA**

#### **Over the head method-Donning**

\*Check the cylinder pressure gauge for “full” indication.

1. With valve end of the cylinder pointing away and flat of the back frame facing upward, grasp the back frame wire from both sides at the area of the toggle and pressure reducer.
2. Hold unit out. Right and left shoulder straps should hang freely.
3. Raise unit over the head while ensuring that the right and left shoulder straps fall to the outside and under both elbows.
4. Continue raising unit up and over and behind head while leaning forward slightly. Allow unit to slip down the back until stopped by straps on the shoulders, simultaneously positioning both thumbs under the straps to prevent twisting and so that hands end up at the 2 to 3 inch tab extension.
5. Pull the left and right tab extension to adjust to the position required.
6. Engage tongue and buckle of waist belt and adjust to fit; stow excess belt under loop provided at each waist belt adjuster.
7. Move shoulders and body as required for fit and comfort, and make final adjustment to shoulder straps and waist belts.

#### **Coat method Donning**

1. Stand with cylinder valve toward you.
2. Grab shoulder straps and swing left shoulder, allowing both arms to slip through the loops, as if putting on a jacket.
3. Reach back with both hands and grasp the heavy section of the waist strap. Lift to waist level, bend forward and connect waist strap buckle.
4. Adjust the shoulder straps; do not over tighten. Weight should be carried on the hips, not on the shoulders.
5. Continue to adjust straps to comfort.

#### **Facepiece with hood Donning**

1. Adjust the head straps to full outward position.
2. Hold the head harness out of the way with one hand, while placing the facepiece on the face with the other hand. Making sure to locate the chin in the chin pocket.
3. Pull the head harness over the head and make sure the straps are lying flat against the head and neck with no twists.
4. Tighten the neck straps by pulling on the two lower strap ends, toward the rear of the head.
5. Stroke the head harness net down the back of the head using one or both hands. Retighten the neck straps.
6. Adjust the temple straps by pulling the two upper strap ends toward the rear of the head. Overtightening may cause discomfort.

7. Retighten neck straps if required.
8. Proceed by placing the PBI hood over the facepiece, covering everything but the lens, also making sure the bottom of the hood is secured under the coat with collar fastened properly.

### **SCBA-Doffing**

1. Push inward and close cylinder valve.
2. Bleed residual pressure, using the purge valve.
3. Loosen elastic straps on facepiece to full out position and remove facepiece.
4. Stow the facepiece with the head harness covering the lens. This will afford protection for the facepiece lens.
5. Separate belt buckle and loosen shoulder straps.
6. Extend the adjustment strap to the out position, leaving 2 to 3 inch extension for the shoulder straps and approximately an 8-inch waist belt tab extension.
7. Grasp shoulder straps at the tab extension. Extend either left or right arm or move one strap off shoulder. Remove the back frame and harness by switching unit off other shoulder.
8. Make sure to return the regulator to the dust cup located on the harness belt.
9. Do not store or place harness in ready position until cylinder has been replaced and maintenance check has been performed.

### **Fit Checks**

Fit checks are to be conducted during initial selection and training, and every time a Rio Hondo student puts on a respirator before entering a contaminated atmosphere.

#### Negative Pressure Fit Check:

1. Close off the respirator inlet or inhalation valve, using the palm of the hand over the opening.
2. Gently inhale to create a slight vacuum in an attempt to cause a partial inward collapse of the facepiece.
3. Maintain the vacuum inside the facepiece for at least 10 seconds.
4. If vacuum is not present resecure facepiece seal and try again.
5. If vacuum is still not achieved, the need to have a fit test is needed for possible resizing or new facepiece.

#### Positive Pressure Fit Check:

1. Close off exhalation valve and exhale gently into the facepiece.
2. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece, without any evidence of outward leakage of air at the seal.

## Level 3 Training

Remember Murphy's Law is always in effect. The best prevention is to be aware of the scene, know your equipment, its proper use and limitations. Additionally plan your entry and exit and leave yourself a way out. If and when a problem occurs the following Emergency Procedures are guidelines to assist you.

### **EMERGENCY PROCEDURES**

**C** – Corrective Actions

**N** – Notify Partner / Notify Command

**E** - Exit

**T** – Tag Equipment Out of Service

- 1) Corrective Actions – What is the problem?
  - a) Free Flow of Air
    1. Check the purge valve
    2. Adjust mask seal
    3. Gate down the bottle and exit
  - b) No Air Flow
    1. Open purge valve
    2. Check bottle valve
    3. Utilize the E.B.S.S.
  
- 2) Notify
  - a) Your Partner – Work Together – Exit
  - b) Command – **An early radio transmission is better than a late rescue**
  
- 3) Exit – Think about exiting options before and during interior operations
  - a) Exit Problems – Always bring a forcible exit tool
    - 1) Swim Technique (used for wires or debris removal)
    - 2) Reduce Profile / Change of Profile (small area escape)
    - 3) Wall Breach (consider air and energy)
  - b) Lost or Trapped –
    - 1) Stay calm, think, Transmit Emergency Traffic  
(If you cannot get through use other channels)
    - 2) Conserve your air, keep your mask and safety gear in place
    - 3) Help your rescue
      - a) Turn on your PAS and lights
      - b) Lay down on your left side, strobe up
      - c) Monitor radio, tell us when you hear the rescue team

There are many things to consider when you are lost or trapped. Consider the following when you transmit; who are you? Who is with you? Where are you? Are you on the hoseline, nozzle, rope? Whose hoseline? Where did you go in? What is the situation? What is the fire doing? What can you hear or see? How much air do you have?

- 4) Tag equipment Out of Service
  - a) Place on or under bench in SCBA Container

### **SCBA Vibra-lert Alarm:**

The Vibra-lert alarm is located on the facepiece-mounted regulator of the Scott 4.5 SCBA. When the alarm is activated the Vibra-lert alarm gives off a vibrating motion which signals to the user that either there is a malfunction in the system or the user has  $\frac{1}{4}$  or 950-1125 psi left of usable air. When the alarm is activated the user must notify their partner immediately and exit the hazardous area together to a secure environment.

The intent of the Vibra-alert is a reserve air warning. **Plan your entry so you can leave the hazardous environment before the alarm goes off.**

## Donning and Doffing SCBA

### **Over the head method/ Coat Method- Donning**

*Check the cylinder pressure gauge for full indication.*



Push in and turn cylinder valve counter-clockwise, fully open. Compare pressure on remote gauge to pressure on cylinder.



With the valve end of the cylinder pointing away and the flat of the back frame facing upward, grasp the back frame wire from both sides at the area of the toggle lever and the pressure reducer. Raise unit over the head while ensuring that the shoulder straps fall to the outside and under both elbows. (*Note: Coat method : Grasp shoulder straps and swing SCBA around the back dropping hands through the shoulder loops.*)



Allow the unit to slip down the back until stopped by the shoulder straps. Grasp the 2-3 inch tab extension and tighten the shoulder straps. Once tight buckle and tighten the waist straps. Finally, loosen the shoulder straps slightly to allow the pack to fall on your hips.

### Face Piece with Hood Donning



Hold the head harness out of the way with one hand, while placing the face piece on the face with the other hand. Pull head harness all the way back on your head. Tighten top straps and then tighten lower straps. Check face piece seal.



Pull flash hood up and over your head. All areas of the mask should be covered except the lens, and all straps should be tucked in. Place regulator, purge valve up, into the mask opening and give a ¼ turn to the left to lock in place. Don gloves to complete evolution.

### SCBA Doffing



Push inward and close cylinder valve. Bleed residual pressure using the purge valve.



Push reset button on remote pressure gauge twice to shut off Pak Alert. Remove SCBA by undoing waist buckle and removing arms from shoulder straps.



Always return SCBA to the ready to go position, Make sure that bottle is full and regulator is placed in the protective dust cup.

## Entanglement Hazard (Swim Technique)

As a firefighter/rescuer, you become trapped or entangled in flexible spiral ductwork and cable TV wiring. In order to escape, you must successfully overcome the entanglement hazard.

- ❑ Stop forward movement!
- ❑ Take one step back and attempt to identify the entanglement hazard
- ❑ Assume a left lateral body position w/ the SCBA cylinder at or near the floor
- ❑ Rotate an arm (beginning at the waist) in a backstroke swimming motion
- ❑ Lift entanglement up and over the SCBA cylinder.
- ❑ Proceed forward.
- ❑ Notify crewmembers of the hazard and assist as necessary
- ❑ If still unsuccessful, rotate body position  $\frac{1}{4}$  turn clockwise (continue to rotate until obstruction is identified) CAUTION: Do not rotate more than half way around
- ❑ Rotate an arm again (reverse backstroke motion)
- ❑ Lift entanglement up and over the SCBA cylinder
- ❑ Proceed forward
- ❑ Notify crewmembers of hazard and assist as necessary
- ❑ If still unsuccessful, rotate body position counter clockwise  $\frac{1}{4}$  turn
- ❑ If still unsuccessful, notify command and consider activation P.A.S. alarm
- ❑ Remove the SCBA harness while keeping regulator in place and attempt to disentangle and/or cut the obstruction using lineman's pliers

## Reduce Profile/ Change Profile

As a firefighter/rescuer, you may be involved in a structural collapse in which you must assume a reduced or changed profile to proceed through a narrow opening for search or self-rescue.

- ❑ Stop forward movement
- ❑ Take one step back and attempt to identify the hazard
- ❑ Assume a left lateral body position w/ the SCBA cylinder at or near the floor
- ❑ Fully loosen the right shoulder strap
- ❑ Fully loosen the waist strap to allow the harness assembly to be rotated
- ❑ Rotate the harness assembly to the left to allow you to pass through the obstacle
- ❑ If still unsuccessful, back up and fully loosen both shoulder straps and disconnect the waist belt
- ❑ Remove the right shoulder strap
- ❑ Roll out of the harness and slide the SCBA in front of you
- ❑ Maintain a firm grip on the straps and harness (valve toward your head)
- ❑ Proceed through the obstacle bottle first
- ❑ Don the SCBA, tighten both shoulder straps and waist belt



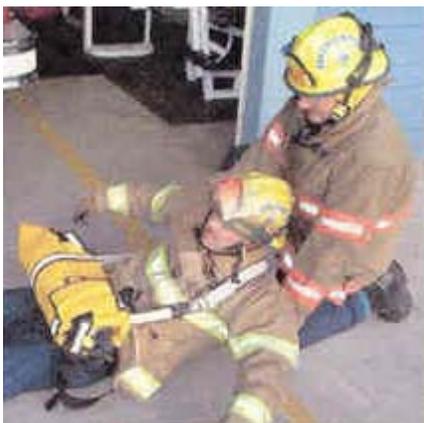
The Scott RIT-Pak portable air supply is intended for use by a Rapid Intervention Team (RIT) as an emergency source of breathing air to supply air to a respirator being used by a single person only while that person is being evacuated from an atmosphere requiring respiratory protection. The Vernon Fire Department uses a RIT Pak designed for use with 4500 psi. bottles. The RIT Pak is essentially a full functioning SCBA with a few different components. There is a high pressure air fill line with a Universal Air Connection (UAC). This connection can plug into any SCBA with the Universal Fitting. Once connected the bottle pressures will equalize, essentially filling the low bottle. Currently the RIT Pak utilizes a 30 minute bottle. Beside the High Pressure Fill Line is a pressure reducer. This component lowers the pressure to approximately 70-100 psi in the low pressure hose. The end of the line contains an EBSS fitting for "Buddy Breathing Purposes". There is also a mask and face mounted regulator attached to the EBSS fitting.

The RIT Pak is designed to accommodate a large variety of down firefighter situations. For example:

- 1) If the down firefighter has a full functioning SCBA, but is out of air, the rescuer can utilize the Universal Air Connection (UAC) to quickly fill the down firefighter's bottle, and remove him from the IDLH atmosphere.
- 2) If the down firefighter has a problem with the SCBA itself not functioning, then the rescuer can connect directly to the mask mounted regulator at the firefighters EBSS fitting and "Buddy Breathing" can begin.
- 3) If the firefighter's face mounted regulator is damaged or missing, or he does not have an EBSS fitting, then the rescuer can utilize the face mounted regulator on the RIT Pak to replace the damaged or missing one of the down firefighter.
- 4) If the down firefighter has a damaged or missing facepiece, then the facepiece from the RIT Pak can be placed on the victim to provide a fresh supply of air.
- 5) If the down firefighter has a functioning SCBA, the Hansen Extended Duration Hose may also be used to supply air to the firefighter.

For ease of use, the RIT Pak comes with a large Kevlar/Aramid strap so the Pak can be attached to the victim. This strap is also useful as a shoulder strap for carrying the Pak. The RIT Pak also contains a large handle on one end making it easy to drag.

The RIT Pak is designed to never have to leave the bag during normal operation. The High Pressure Bottle and Valve Assembly is accessible from the pull strap end of the bag. The opposite end contains a Velcro pouch, which houses the UAC Quick fill hose and coupling, as well as, the EBSS hose and Face Mounted Regulator and Mask Assemblies. To help secure the Velcro pouch, a seatbelt like strap buckles around the base of the RIT Pak.



Secure the RIT Pak to the down firefighter if possible



Name \_\_\_\_\_  
Date \_\_\_\_\_

## Rio Hondo Fire Academy Scott SCBA Test

1. Name the two methods, used by Rio Hondo, for donning the Scott SCBA air pack.  
A. \_\_\_\_\_  
B. \_\_\_\_\_
  
2. Name the seven major assemblies and the three systems that make up the Scott air pack.  
A. \_\_\_\_\_  
B. \_\_\_\_\_  
C. \_\_\_\_\_  
D. \_\_\_\_\_  
E. \_\_\_\_\_  
F. \_\_\_\_\_  
G. \_\_\_\_\_  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_
  
3. How many times per year does OSHA require respirator training?  
A. Every three months  
B. Every six months  
C. Once per year  
D. None of the above
  
4. The Vibra-alert alarm on the regulator activates between \_\_\_\_\_ psi and \_\_\_\_\_ psi, or \_\_\_\_\_ % of air left in the cylinder.
  
5. By law all air packs must be serviced a minimum of every \_\_\_\_\_ years.
  
6. Carbon Fiber SCBA cylinders are hydrostatically tested \_\_\_\_\_.  
A. Once a year  
B. Once every two years  
C. Once every three years  
D. Once every five years
  
7. The service life of a composite SCBA cylinder is.  
A. Twenty years  
B. Fifteen years  
C. Ten years  
D. Forever, as long as they pass the hydrostatic test
  
8. At what pressure must a cylinder be removed from service and refilled?  
A. 90% of the cylinder capacity  
B. 4050 psi  
C. 3500 psi  
D. Both A and B

9. An air sample is taken from the air filling station and sent to be analyzed by a laboratory every \_\_\_\_\_ months.
- A. 3
  - B. 6
  - C. 2
  - D. 12
10. Rio Hondo has a \_\_\_\_\_ check of Scott air packs in place.
- A. Daily
  - B. Weekly
  - C. Monthly
  - D. Both A and B
11. What does a yellow flashing light on the Heads Up Display indicate.
- A. The regulator is damaged
  - B. The bottle is at 50% capacity
  - C. The bottle is at 25% capacity
  - D. None of the above
12. The RIC Universal Air Connection is used for what purpose.
- A. As a means of buddy breathing with another firefighter
  - B. As a means of rapidly filling another bottle in an emergency situation
  - C. To fill SCBA air bottles during normal operations
  - D. All of the above
13. The motion sensor for the Pak Alert 1000 is located
- A. In the base of the Back Frame and Harness Assembly
  - B. In the Remote Mounted Gauge Assembly
  - C. In the Two Stage Pressure Reducer Assembly
  - D. In the Face Mounted Regulator Assembly
14. The Pak Alert 1000 sets of a pre alarm after \_\_\_\_\_ seconds of non movement and a full alarm after \_\_\_\_\_ seconds of non movement.
15. The EBSS consists of two air fittings; one for air out and one for air in. Where are they located?
- A. Air Out \_\_\_\_\_
  - B. Air In \_\_\_\_\_
16. What function does the Hansen fitting serve?
- A. Allows for air to be supplied from another air source
  - B. Acts as a "Quick Fill" for emergency RIC procedures
  - C. Allows an "air in" attachment for EBSS procedures
  - D. Both A and C
17. Medical evaluations and fit testing is ordinarily performed how often for Rio Hondo personnel
- A. One time upon hire date
  - B. Upon hire date and annually thereafter
  - C. Every 5 years
  - D. Every 2 years

18. Damaged SCBA units are sent to \_\_\_\_\_ and if cannot be repaired are sent to \_\_\_\_\_ for service.

19. What does CNET stand for?

C. \_\_\_\_\_  
N. \_\_\_\_\_  
E. \_\_\_\_\_  
T. \_\_\_\_\_

20. Rio Hondo utilizes an OSHA required \_\_\_\_\_ fit test procedure, requiring a minimum fit factor of 500 in order to pass.

- A. Quantitative
- B. Qualitative
- C. Portacount
- D. None of the above

**Rio Hondo Fire Academy**  
**Scott 4.5/ Scott *Fifty* Breathing Apparatus**

Test 1: Donning SCBA in under 60 seconds

- ❑ Checks the cylinder gauge “Full” indication
- ❑ Opens cylinder valve completely
- ❑ Checks the remote gauge “Full” indication
- ❑ Checks for Pak Alert 1000 activation “PASS”
- ❑ Dons apparatus correctly, quickly, smoothly and efficiently
- ❑ Connects waist belt
- ❑ Readjust shoulder straps- weight on hips
- ❑ Secures excess belt material
- ❑ Dons face piece properly- wipes hair net smooth
- ❑ Checks for seal
- ❑ Helmet put on correctly, chin strap tightened
- ❑ Quick efficient hook up of regulator
- ❑ Dons gloves

**Test 2: Identify Assemblies and Systems**

❑ **Cylinder and Valve Assembly**

- ❑ Back frame and Harness Assembly
- ❑ High Pressure Hose and Coupling Assembly
- ❑ Two Stage Pressure Reducer Assembly
- ❑ Remote Mounted Gauge Assembly
- ❑ Face Mounted Regulator Assembly
- ❑ Face Piece Assembly
- ❑ Pak Alert 1000 system
- ❑ EBSS system
- ❑ RIC UAC system
- ❑ Purge Valve
- ❑ Locking Tab
- ❑ Toggle Lever

# Rio Hondo Fire Academy

## Scott 4.5/ Scott *Fifty* Breathing Apparatus

### Test 3: Oral Response Questions

- Emergency Operation Question

**Question:** Should the breathing regulator fail closed (no air) what would your emergency procedure be?

*Answer: Open the purge valve to provide an acceptable flow of air. If no air check bottle valve. Notify partner, exit the building, tag the apparatus out of service.*

- Emergency Operation

**Question:** Should the system fail open (free flow) what would you do?

*Answer: Check the purge valve, close the cylinder valve to satisfy the requirements of the user. Notify your partner and then exit the building as a team and tag apparatus for repair.*

- Cylinder Replacement Procedure

**Question:** What component parts must be uncoupled or released to replace a cylinder?

*Answer: Pressure reducer hose must be uncoupled. Release small white tab to unlock Toggle Lever. Locking tab must be released.*

- Overall performance and confidence

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Date & Instructor \_\_\_\_\_ Date & Instructor \_\_\_\_\_ Date & Instructor \_\_\_\_\_

**Final Score:**

Student Name \_\_\_\_\_  
Date \_\_\_\_\_