

<b>PALATINE RURAL FIRE PROTECTION STANDARD OPERATING GUIDELINES</b>	
<b>SUBJECT: SCBA/PASS Device</b>	<b>SOG # SG-10</b>
INDEXED AS: Safety Guidelines	EFFECTIVE DATE: <b>May 15, 2006</b>
APPROVED BY: Hank Clemmensen, Fire Chief	REPLACES: <b>January 1, 2003</b>

## **PURPOSE**

The scope of this policy is to define the standard operating procedures, daily safety checks, and usage of Self-Contained Breathing Apparatus (SCBA) and PASS devices.

In order to provide greater firefighter safety, the District will assign an SCBA mask and regulator to each full time member of the Department that may be expected to perform firefighting duties. This policy will provide for a better system of inventory control and checking/testing of masks, Regulators and PASS devices.

## **POLICY**

- 1) All firefighters and officers that may be expected to perform structural firefighting duties shall be assigned their own personal S.C.B.A. mask & regulator.
- 2) All personnel assigned their own mask are responsible for the care and condition of their mask & regulator.
- 3) All S.C.B.A. masks will be tested annually for fit.
- 4) All S.C.B.A. masks will be tested annually according to manufacturer's specifications by the SCBA Division Head and/or his designees.
- 5) If you have a problem with your personal S.C.B.A. mask or regulator, there will be a spare(s) available. See the SCBA Division Head or his designee for issue of a replacement while your mask is being repaired. Once the repair is complete, your issued mask will be returned to you when you turn in the spare mask.

Self Contained Breathing Apparatus shall be used by all personnel operating in, but not limited to:

1. a contaminated atmosphere
2. an atmosphere which may suddenly become contaminated
3. an atmosphere which is oxygen deficient
4. an atmosphere which is suspected of being contaminated or oxygen deficient

This includes all personnel operating:

1. in an active fire area
2. directly above an active fire area
3. in a potential explosion or fire area, including gas leaks and fuel spills
4. where products of combustion are visible in the atmosphere, including vehicle fires and dumpster fires
5. where invisible contaminants are suspected to be present (i.e. carbon
6. monoxide during overhaul)
7. where toxic products are present, suspected to be present, or may be
8. released without warning
9. in any confined space which has not been tested (according to IDOL standards) to establish respiratory safety

In addition to the above, SCBA shall be worn by all personnel operating at fire incidents above ground, below ground, or in any other area which is not, but which may become contaminated by products of combustion or other hazardous substances. In these circumstances only, the SCBA may be worn with the face piece removed. Authorization from the Incident Commander must be approved for removal of the SCBA mask. The wearing of SCBA in these situations provides that it will be immediately available for use if conditions change or if personnel are to enter an area where the use of SCBA is required.

Premature removal of SCBA must be avoided at all times and only authorized by the Incident Commander. This is particularly significant during overhaul when smoldering materials may produce increased quantities of carbon monoxide and other toxic products. In these cases, SCBA must be used or the atmosphere must be changed.

Self Contained Breathing Apparatus features a unique aspect in that the wearer need not be connected to a stationary air source. The wearer carries enough air supply for up to thirty minutes. This type of respirator provides protection against all types of atmospheric contaminants in any concentration, which can be endured by the skin.

## **OUTLINE**

- I. Definition
- II. Selection of employees and SCBA
- III. Safety and Training
- IIII Daily check of SCBA
- V. Daily check of PASS
- VI. Areas of requirement to use Mask
- VII. Maintenance of mask and PASS

### **I. DEFINITIONS**

- 1. NFPA- National Fire Protection Association
- 2. The Scott NxG2 SCBA is a respirator which when properly maintained & properly used is intended to provide respiratory protection to an individual when entering into a possible oxygen deficient or toxic atmosphere.
- 3. The integrated PASS device is a personal alert system intended to assist in locating a user who is incapacitated or in need of assistance.

### **II. SELECTION OF EMPLOYEES AND RESPIRATORS**

Normally, a SCBA places a physiological stress upon the wearer. Wearers must not have a history of any lung disease at present or past such as asthma, emphysema or bronchial spasms, a history of heart disease, high blood pressure or artery disease unless the wearer has been certified by medical doctor that their medical condition does not prohibit the wearing and use of SCBA. Other conditions may also apply. The employee shall not be allowed to wear a SCBA if he/she has claustrophobia or any other abnormality that would keep the face mask from sealing.

- A. All employees who are required to wear a respirator must first be medically evaluated to determine that the employee is physically able to perform this work and wear respirator equipment per the NFPA.
- B. Palatine Rural Fire Protection District Physician will have the knowledge of the physical requirements of the jobs requiring the usage of a respirator.
- C. Medical evaluations will include but not be limited to: (NFPA 1500)

1. Health history with particular emphasis on any previous respiratory or heart disease.
  2. Chest X-ray, if required by department physician.
  3. Pulmonary function tests (FVC and FEV).
  4. "Hands on" physical evaluation.
  5. Any other tests the department physician deems necessary.
  6. A physician will submit written commentary of findings to the Palatine Rural Fire Protection District.
- D. Annual physical exams will be provided from the Fire District per NFPA 1500.
- E. Files will be maintained on all employees required to wear a respirator and the type of respirator used.
- F. The expense for the complete physical exam will be paid in accordance to the current policy and Labor Contract

### III. **SAFETY AND TRAINING IN THE USAGE OF SCBA AND PASS DEVICES**

It is the policy of the Palatine Rural FPD that all personnel expected to respond and function in areas where the air is contaminated, may become contaminated, is toxic, is suspected of being contaminated or toxic, or is oxygen deficient shall be equipped with self-contained breathing apparatus (SCBA) with an integrated PASS device and trained in their proper use.

Each member shall be accountable for the SCBA located on his/her assigned vehicle position. Personnel shall check the condition of his/her SCBA at the beginning of each shift, after each use, and at any other time it may be necessary to render the equipment in a ready state of condition.

Each member shall be responsible for the proper use and function of his/her SCBA mask, regulator, and SCBA unit. If a SCBA is found to be functioning improperly, it shall be taken out of service, tagged, reported, and replaced immediately. A replacement unit shall be assigned to the member by the officer in charge.

The intent of the SCBA is to avoid any respiratory contact with products of combustion, superheated gases, toxic products or other hazardous contaminants and to provide a way to locate downed firefighters.

#### IV. DAILY CHECK OF SCBA

The following procedure shall be used for the daily inspection of all SCBA units on front line apparatus:

- A. Visually inspect the complete SCBA for worn or aging parts and/or damaged components and to insure the unit is clean and free of debris.
- B. Visually inspect the cylinders for large dents or gouges. Cylinders which show signs of exposure to high heat and/or flame, such as paint turning brown or black, decals charred or missing, plastic pieces melting, etc. shall be tagged and removed from service immediately.
- C. Check air cylinder gauge and make sure cylinder is at a minimum of 4300 psi. If the cylinder is below 4300 psi then it must be filled.
- D. Open the cylinder slowly, checking the harness mounted gauge to ensure that the cylinder is full and the gauge works and agrees with the cylinder gauge. The integrated Pass Device distress alarm will be activated when cylinder is opened. The Vibralert alarm shall activate and then stop. The heads up display will initialize with all five (5) lights on for twenty (20) seconds followed by display of cylinder supply level. If the low battery light at the far right of the display remains lit or begins to flash, replace battery.

##### Heads up Display Guide

- Two green lights= Full cylinder
- One green light=  $\frac{3}{4}$  cylinder
- One yellow light flashing once a second=  $\frac{1}{2}$  cylinder
- Red light flashing at 10 times a second=  $\frac{1}{4}$  cylinder and user must leave the atmosphere immediately

**There should be no air escaping during testing.**

**Remove and place the cylinder out of service if it leaks.**

- E. Don the face piece to affect a good seal. Inhale sharply to automatically start the flow of air. Breathe normal from the face piece to ensure proper operation. Remove face piece and air shall flow freely. Depress the air saver/donning switch on top of regulator and the air flow shall cease. Rotate purge valve ½ turn clockwise. Air shall flow freely. Turn purge valve off.
- F. Close the cylinder valve.
- G. Gradually reduce the system pressure by slightly opening the purge valve to slowly vent air from the system. As the residual air pressure vents from the system the remote (chest) pressure gauge needle will swing from full and move towards empty. Observe the lights on heads up display to insure they light properly in descending order. Close the purge valve at ¼ mark but before beginning of red (empty). The Vibalert service indicator shall activate. The red light on far left of heads up display shall flash. After verifying that all alarms are functioning, open purge to vent remaining air from the system. When the air is bled out of the system, make sure the purge valve is turned to the off position.
- H. Fully extend the harness straps.
- I. Make sure the face piece is clean and sanitized.
- J. The Palatine Rural Fire Protection District will do a qualitative mask fit in accordance with NFPA 1500 5-3.9 on an annual basis. Each Department member with his/her face piece will conduct the test in accordance to ANSI Z 88.5 Section 7, 1981. The test will consist of normal and deep breathing, turning of the head from side to side, nodding up and down, talking and frowning. The exercise will be conducted in a non-toxic, aromatic environment.
- K. Repairs that cannot be done in house to masks will be done by an authorized repair facility.

**IF THERE ARE ANY QUESTIONS, ALWAYS REFER TO THE SCOTT MANUAL FOR INFORMATION AND/OR CLARIFICATIONS.**

V. **PASS DEVICE**

**Battery Test**

With cylinder valve closed and no air in system, check batteries by depressing and holding reset button. A green light on PASS device will appear followed by a white light on harness. A final green light will appear on PASS batteries. If this happens, the device is working properly. If a red light appears after the white light you must replace batteries.

### **Daily Inspection**

- Inspect for damage, broken lenses or loose wires. If damage is found, take unit out of service
- Verify back frame lights are operating
- Depress manual alarm button. Will sound three (3) loud chirps accompanied by flashing red lights on PASS device and harness
- Open cylinder. PASS device will sound three (3) quick chirps and the lights on the PASS and harness will begin to flash green approximately once a second.
  
- Check pre-alarm by leaving SCBA motionless for 20 seconds. The green light will be replaced by red flashing lights. An ascending/descending tone will sound increasing in volume. Within twelve (12) seconds of audible alarm move SCBA to activate sensor module. PASS device will reset with green light and without audible tones.
- Check manual reset of pre-alarm by leaving SCBA motionless. Then within twelve (12) seconds press and hold reset button. Three (3) chirps will sound. The PASS device distress alarm will reset to auto mode.
- Check full alarm by leaving motionless until pre-alarm. Do not reset. Within ten (10) seconds a three (3) tone chirp shall begin accompanied by flashing red lights on PASS and harness. Reset alarm.