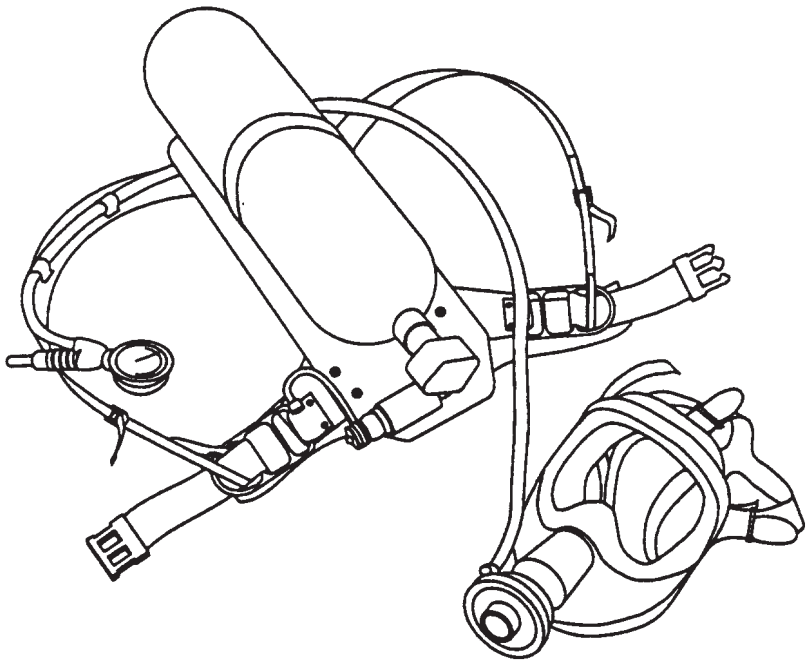
Section 14

Self-Contained Breathing Apparatus (SCBA)

Purpose

To understand the uses and limits of Self-Contained Breathing Apparatus (SCBA) for Operations-level responders working on the decon line.



Section 14

What you will find in this section...

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Task 1

- **Read the statement below.**
- **Come up with a response to the worker.**

Your group is the health and safety committee at Miracle Parts Company, a parts supplier to the Big 3. A long-time co-worker who has been trained as an Operations-level responder has come to you with the following concerns about Self-Contained Breathing Apparatus (SCBAs).

As a group, please read the statement below and Fact Sheets #1 - 6 in this section, then come up with your response to the worker.

> **"We had an adhesive resin spill the other day, and my foreman told me to put on this air tank and help decon the Haz Mat Team. I said, 'No way.'**
>
> **The last time we had a spill they brought in guys in big chemical suits to clean it up. I don't see how an air tank is going to protect me from the resin.**
>
> **The other thing is, I don't trust these SCBAs. How do I know the air inside is good? What if the air tank blows? I'd feel a lot more comfortable with one of those facepieces with cartridges. They aren't so heavy and noisy. Besides, I was just doing decon work!"**

What would your committee say to this worker? Write your response here. Please refer to at least two fact sheets in your response.

Fact Sheet #1

When to Use 'Em

Only On the Decon Line

As an Operations-level responder, you will only use SCBAs on the decon line, when you are cleaning off the Haz Mat entry team. When an operations responder is doing spill control, he/she should be in a clean area well away from the spill. You should not need an SCBA to dike or turn off valves - if you do, you're in the wrong place!

Some emergency responses are so dangerous, you need an SCBA to protect your lungs, even on the decon line. Sometimes, you only need an air-purifying respirator. Here's what OSHA law says about emergencies and respirators.

When would an Operations Responder use an SCBA on the decon line?

- ☑ SCBAs must be used if you don't know what chemicals have spilled, or how much of the chemical is in the air (using air tests).

- ☑ Even if air tests are done, SCBAs must be used if the spilled chemicals are very dangerous, such as cancer-causing substances.

- ☑ If the Haz Mat Technicians or Specialists working in the hot zone get very contaminated, they will bring a high level of chemicals into the decon area. Decon workers need to wear SCBAs for protection in this situation.

- ☑ You ***cannot*** wear an air purifying respirator to protect you from some chemicals. These are chemicals that you can't smell or taste to give you a warning that your respirator isn't working. You have to wear an SCBA if these chemicals are involved in the emergency. Look at the section on Air-Purifying Respirators (Section 13) for more information.

Fact Sheet #2

Necessary, but Not Perfect

SCBAs may be an important part of emergency response. But they should not fool us into thinking we have all the protection we need. In fact, SCBAs have **big limitations** that can cost lives in an emergency. Here is a list of the most important limitations:

1) No skin protection

SCBAs do not protect us from chemicals that can be absorbed through or damage the skin. An SCBA is not all there is to protective equipment. For example, if we find ourselves in a spill of ethyl ether with only an SCBA, we will probably be dead in about two minutes. That's because ethyl ether can easily pass through the skin into the blood stream, leading to a quick death.

2) Need frequent inspection and maintenance

SCBAs will not work unless they get a lot of inspection, cleaning, and maintenance. Here's a chilling quote from the NIOSH Guide to Industrial Respiratory Protection:

> *"Emergency escape and rescue devices are particularly vulnerable to inadequate inspection and maintenance, although they are generally used infrequently, and then in the most hazardous and demanding circumstances."*

OSHA says that all respirators must be inspected before and after each use. SCBAs and emergency escape respirators (which are not used regularly) also have to be inspected at least **once a month**. NIOSH, the health and safety research agency, recommends that SCBAs should be inspected at least **once a week**.

Respirators should also be disinfected after each use, so that they do not spread germs.

Fact Sheet #2, continued

3) Heavy, clunky, and a strain on your body

SCBAs can be heavy, awkward, and dangerous. SCBAs can weigh up to 30 pounds. This weight can put a lot of stress on your body, especially your heart, lungs, and back. Carrying all that weight can also raise your body temperature (especially inside a chemical suit). SCBAs can also get stuck if you are trying to climb out of a tight space.

4) Limited air supply

SCBAs can run low on air before you realize it. SCBA tanks provide a set amount of air. Even though the instructions say an SCBA is good for 30 minutes, that doesn't mean it will really last that long when you use it. In an emergency, your body will be working very hard, causing you to breathe faster. You may use up the air in half that amount of time. A 30-minute SCBA may last only 15 minutes. The SCBA does have a low-pressure alarm to warn you to get out. However, it can be nerve-wracking to have only about three minutes to get out, when you thought you were going to have seven minutes. Remember that you still need to go through decontamination, even if your air is running low.

5) Training and practice

If you don't practice using SCBAs, it can be difficult and dangerous to put them on. For example, if you forget to turn on the cylinder valve before putting on the SCBA and connecting the low-pressure hose, you'll find yourself gasping for air inside your respirator.

If SCBAs just sit in the corner collecting dust at your plant, don't use them.

Sources: *NIOSH, A Guide to Industrial Respiratory Protection, DHHS (NIOSH) Publication no. 87-116, 1987 and OSHA, Respiratory Protection Standard, 29 CFR 1910.134.*

Fact Sheet #3

Does it Fit *Your* Face?

The idea "one size fits all" does NOT apply to respirators. Respirators are not made to fit every kind of face. Most respirators are made to fit the average male face. Fortunately, only half of us are males, and very few of us have average faces! Scars, dentures, high cheek bones, and other things can make it hard to get a proper fit with a respirator. And remember, a respirator is only as good as its ability to create a seal with your face.

As a result, OSHA says that employers must make sure the respirators properly fit *each* of us. Your employer must *do* a fit test to find a facepiece that is right for you. The fit test must *be repeated* every year.

Try different masks until you find one that fits

Fit testing involves teaching a worker how to wear an SCBA mask. The facepiece must then be put on and adjusted so it is snug but comfortable. To get to this point, your employer may have to offer you several different sizes or models.

Fit testing with smoke or banana oil

Now you are ready for a qualitative fit test. This involves having an irritant (like smoke) that will cause coughing, or a chemical with a strong smell (like banana oil) sprayed around the respirator while you wear it. If the respirator doesn't fit, you'll cough or smell bananas. You must have a fit test for every respirator, even a disposable one.

But remember, even with a respirator that fits perfectly, all it takes is one bump "up-side-the-head" to break the seal.

Fact Sheet #4

Training Comes First

During a chemical emergency, you don't have time to figure out how the SCBAs at your plant work. You need to be able to get the respirator on fast so that the Decon Team can get to work. The response cannot proceed until the decon line is set up. That's why training and regular practice are so important. Here's a checklist for good SCBA training:

Did the training include . . .	Yes	No
Background		
Your company's policy on when to use SCBAs	___	___
When an SCBA will not protect you	___	___
The strain on your heart and lungs from wearing an SCBA	___	___
Dangers of high-pressure tanks	___	___
How it works		
The parts of an SCBA	___	___
How air goes from the tank to the mask	___	___
Pressure-demand valves	___	___
Low air alarm	___	___

Fact Sheet #4, continued

	Yes	No
Safety features		
Testing the tank	___	___
Using the two pressure gauges	___	___
Using the bypass valve	___	___
How to use it		
Practice putting on the mask	___	___
Practice putting on the tank	___	___
Practice wearing the SCBA while doing work	___	___
Practice using the bypass valve	___	___
How to keep it in good shape		
Your company's policies on:		
• cleaning	___	___
• inspections	___	___
• maintenance (who will do it, and what kinds of maintenance are they trained to do),	___	___
• storage of SCBAs	___	___
Drills and practice after the classroom training		
Practice using SCBAs at least once a month	___	___

Fact Sheet #5

What's in that Cylinder?

SCBAs are made to protect you from chemicals in the air. But how do you know the air inside your SCBA is clean? OSHA sets standards for air in SCBAs. The kind of clean air that is used in respirators is called Grade D air. Chemicals and dirt are filtered out, so the air has very little:

- carbon monoxide
- oil or dust
- chemical vapors (like gasoline)
- water

So air for respirators can't come from "plant air" or an ordinary compressor. In fact, workers have died from hooking up to lines that carried nitrogen or argon, instead of air. Grade D air has to pass through filters to make sure it is clean. Many employers buy special compressors for filling SCBAs. A few plants buy large bottles of breathing air from suppliers.

Fact Sheet #6

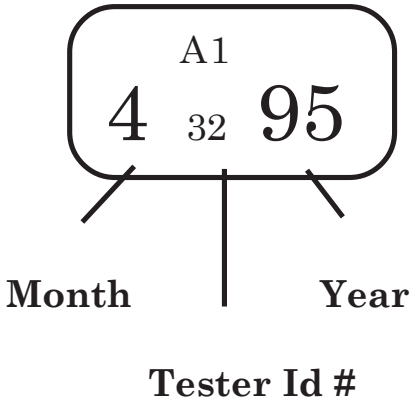
Dangers of High Pressure Tanks

You can carry a lot of air in an SCBA air tank because it's under very high pressure. Some SCBA tanks are filled to a pressure of 2,216 pounds per square inch. These are called 30-minute tanks. Some SCBA tanks hold up to 4,500 pounds per square inch (60-minute tanks). These are called high-pressure tanks. **Before you put on an SCBA, check the gauge and make sure the tank is full.**

The enormous pressure inside the tank puts a lot of strain on the walls. If the tank breaks, it will become a rocket. Compressed air tanks have been known to break through cinder block walls, knock people down, and fly hundreds of feet just from the force of the escaping air.

Cylinder Test – every 3 - 5 years

Both OSHA and DOT have rules about compressed air tanks. DOT says that tanks must be tested inside and out every five years (three years for composite tanks). Tests include filling the bottle and measuring how much it expands. If the tank is weak, it will bulge out. This test is called a hydrostatic test, or "hydro." After a tank passes the test, the date is stamped into the metal at the top of a steel cylinder, or a sticker is pasted on the side of a composite tank



This label tells us that the bottle was last hydrostatically tested in April, 1995. Look for a mark like this on the cylinder.

Fact Sheet #6, continued

Safe Handling of Compressed Air Bottles

- Don't knock the cylinder gauge or valve assembly. If this is damaged the tanks may take off like a rocket.

- Don't drop the bottle, let it down carefully.

- Chain or strap bottles down tightly when you move them in a cart or truck. (**Note: Any truck that carries compressed air is a Haz Mat vehicle. The truck needs placards, and the driver needs a special license and training.)**

- Visually check the bottle (especially the neck) for cracks or bulges every time you use it.

- **Check the hydrostatic test date stamped into or labeled on the bottle every time you use it.**

  Composite tanks — last test no more than 3 years ago
  Steel tanks — last test no more than 5 years ago

- Keep bottles away from heat — even the trunk of a car on a hot, sunny day can be hot enough to make a bottle blow.

- Anyone who fills tanks needs special training. The bottles can get very hot or even explode if they are filled to the wrong pressure. The filling hose can fly off the tank at high speed if it isn't attached right.

Task 2

- **Get to know the parts of an SCBA.**
- **Answer the following questions.**

1. Find each of the parts listed below on your SCBA. Fill in what each of these SCBA parts are used for. Use your SCBA and Fact Sheets #7 - 9 to help you. **Instructors will first walk through SCBA parts a-l with class.**

a-**Cylinder valve**
What does it do?

b-**Cylinder gauge**
What does it do?

c-**Harness**
What does it do?

d-**Tank or cylinder**
What does it do?

e-**Alarm**
What does it do?

f-**High-pressure hose**
What does it do?

g-**Regulator**
What does it do?

h-**Regulator Pressure Gauge**
What does it do?

i-**Mainline Valve**
What does it do?

j-**Emergency By-pass Valve**
What does it do?

k-**Low-pressure hose**
What does it do?

l-**Facepiece**
What does it do?

Task 2
continued

- **Get to know the parts of an SCBA.**
- **Answer the following questions.**

Your group should get an SCBA from your instructor and practice turning the cylinder valve on and off. Please do not wear the SCBA yet. As a group, please answer the questions below using Fact Sheets # 7, 8, and 9. Make sure everyone in your group gets to see what happens when you turn various valves on and off.

2. Turn the cylinder valve on. (Turn the valve counter-clockwise or left for "on" and clockwise or right for "off".) What happens? Does the reading on the cylinder gauge change?

3. What happens to the regulator pressure gauge when you turn the cylinder valve on?

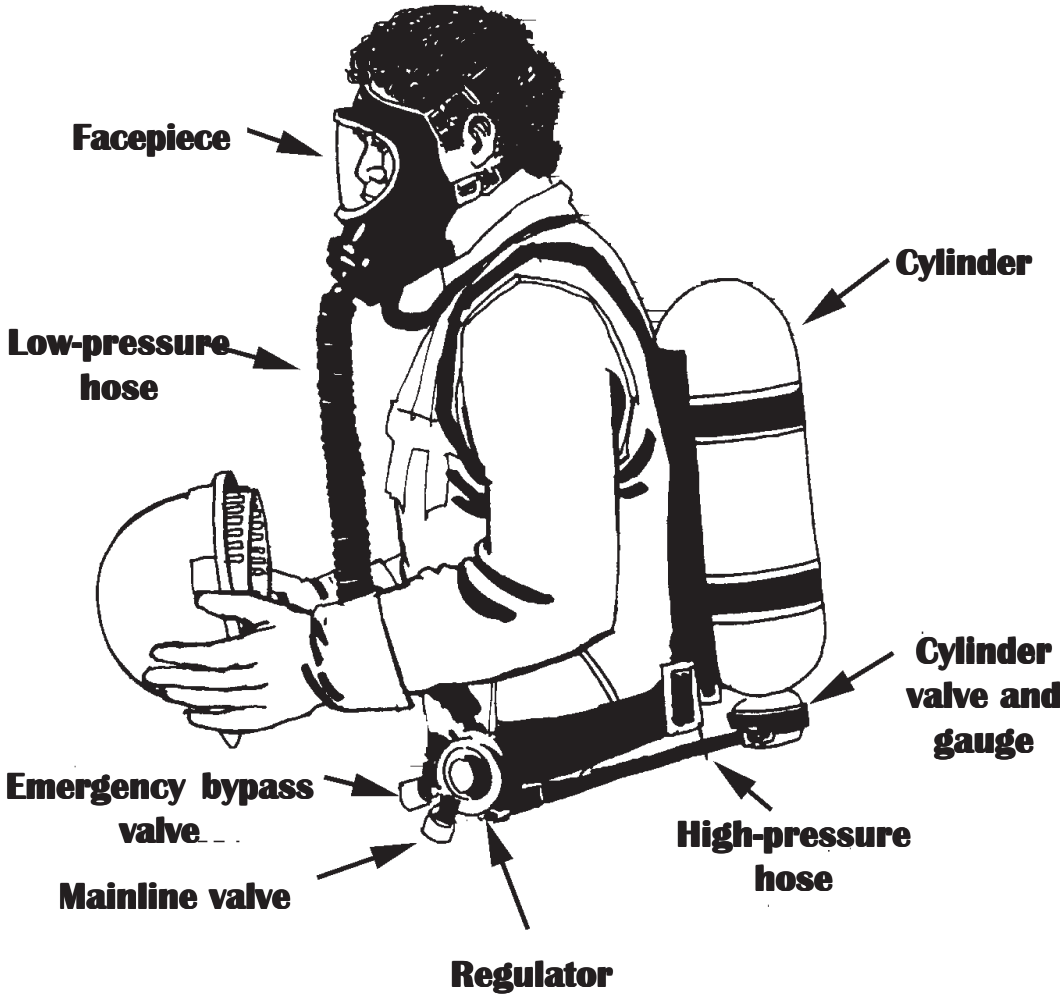
4. Make sure that the rubber cover is on the air outlet from the regulator. Turn on the round gold valve (main line valve). Now what happens to the regulator pressure gauge? Turn the gold valve off (you must press the safety catch to close the valve all the way).

5. Remove the rubber cover from the air outlet. Now turn the red valve (emergency bypass valve) on and off. What happens?

Fact Sheet #7

The Parts of an SCBA

Air in the 30-minute SCBA tank is at a pressure of 2,216 pounds per square inch (more in a 60-minute SCBA). But the air that comes to your face is only at a pressure of 100 pounds per square inch. On the front of your SCBA there is a regulator that lowers the pressure. So all of the parts of your SCBA are in two groups: the high-pressure side and the low-pressure side.



SCBA with regulator mounted on belt

Fact Sheet #8

How SCBAs Work

Here's what happens to air in the SCBA.

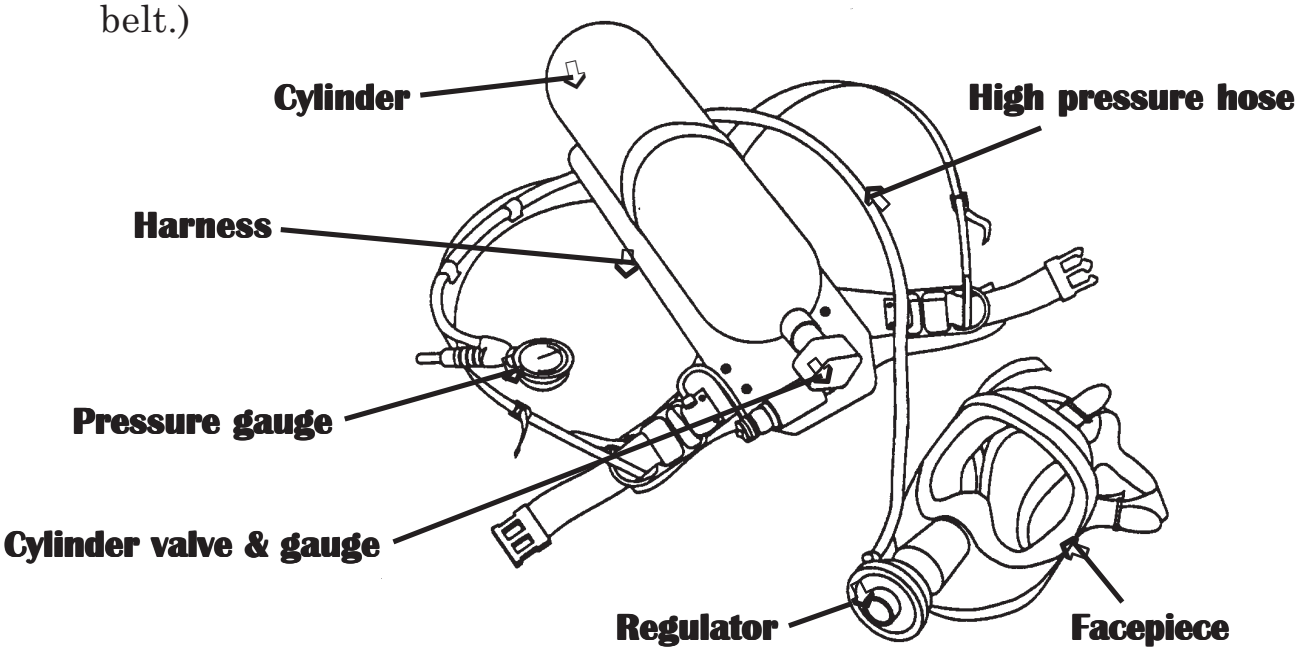
1. Air leaves the tank on the bottom through the cylinder valve.

2. It goes through a high-pressure hose (at the same pressure as the air in the cylinder) to the regulator.

3. The regulator lowers the pressure to 100 psi. Some SCBA models have the regulator mounted on the belt. Other models put the regulator on the facepiece.

4. Air leaves the regulator through a pressure-demand valve when you open the mainline valve (the "on switch").

5. Air goes through a low-pressure hose to the mask where you breathe it in. (Only on models with the regulator mounted on the belt.)



SCBA with regulator mounted on facepiece

Fact Sheet #9

Safety Features

Pressure-Demand Valve

SCBAs have a special type of valve in the regulator to prevent gases from leaking in the mask. Air is always blowing into the mask, even when you breathe out. And when you breathe in, the regulator gives you even more air. This is called a pressure-demand valve. Sometimes it is just called a positive pressure SCBA.

Some old SCBAs have an unsafe regulator called a demand regulator (or demand-only regulator). These respirators are like SCUBA equipment—you only get air when you breathe in. The problem is that chemicals can leak in around the edges of the mask when you breathe in. Other old SCBAs let you switch from pressure-demand to demand-only. All of these regulators MUST be replaced with pressure-demand.

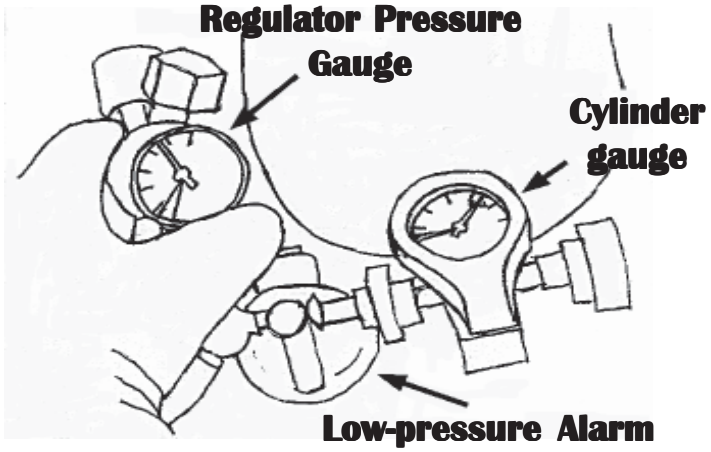
✓ **Check your SCBAs to make sure they are pressure-demand type. Get rid of the old style of SCBAs with "demand-only" regulators.**

Check Your Regulator

Regulators work under high pressure, so they can wear out. If there is a leak, the air pressure at the regulator will not be the same as the air pressure at the tank.

✓ **Check the regulator pressure gauge and the cylinder gauge every time you turn on an SCBA . The readings should be the same (plus or minus 100 psi).**

Fact Sheet #9, continued



Low Air Alarm

When your cylinder has less than 500 psi of air left, a low-pressure alarm will go off (ring or vibrate). ***Don't panic -- you still have some air left!***

If you are working on the decon line when your alarm goes off, let the decon team leader know, go through decon yourself and then take off your SCBA.

✓ **Check your low-air alarm <u>every time</u> you use an SCBA.**

Emergency Bypass Valve – if your regulator stops working

The emergency bypass valve is part of the regulator. If something happens to the regulator, you can get air straight from the tank by opening the bypass valve. You will use your air very quickly once the bypass valve is open, so proceed immediately through the decon line.

✓ **Crack open the bypass valve to make sure it's working <u>every time</u> you turn on an SCBA. Then close it again.**

Task 3

■ **In pairs, take turns inspecting an SCBA.**

Now you will get a chance to inspect an SCBA. Please pair up with another person in your group. One of you will practice with the equipment. The other person will write down whether the SCBA passes each step of the checklist as you do it. Then trade places. Note any problems that you find.

Read Fact Sheets #10 and #11 before you proceed.

1. **Spot inspection of SCBA tank, harness, and regulator.** Do a quick check on an SCBA (not the monthly inspection). Check the tank pressure, alarm, and bypass safety features. Use the checklist to help you through the steps.

Does unit pass inspection?

Checklist	Yes	No
Check tank for hydro test date, dents, scratches.	___	___
Check harness for frayed parts, missing buckles.	___	___
Check tank pressure gauge. How much air (psi) do you have?	___	___
Open cylinder valve (on bottom of tank) slowly and listen for low-pressure alarm, then open all the way.	___	___

Task 3

continued

■ **In pairs, take turns inspecting an SCBA.**

Does Unit Pass Inspection?

Checklist	Yes	No
Make sure the rubber cover is on the hole where the air comes out of the regulator. Now turn the main-line valve on. Compare regulator pressure gauge to cylinder gauge (should be the same).	___	___
Close cylinder valve, then remove rubber cover on regulator to bleed off air. Then, close mainline valve and replace cover.	___	___

Read Fact Sheet # 12 before you proceed.

2. **Masks and low-pressure hoses (no tanks yet)**. Choose a mask (most of you will fit into a Medium) and put it on chin first. Do a negative-pressure fit check (suck in) and blow out to make sure your exhalation valve works. Adjust your straps if you do not have a good fit the first time. **Note: We will not do the chemical fit test during this training. Use the checklist on the next page.**

Task 3
continued

■ **In pairs, take turns inspecting an SCBA.**

Does unit pass inspection?

Checklist	Yes	No
Inspect mask.	___	___
Inspect hose for cracks, holes.		
Put on mask chin-first.	___	___
Tighten bottom straps first, then temple straps, then the top strap.	___	___
Negative-pressure fit check (cover hose, suck in, and hold).	___	___
Check that exhalation valve works (cover hose & blow out).	___	___

Warning: If you have back problems, heart or lung disease, don't try to use the SCBA. Just help your partner to put it on and wear it. If you start to feel sick when you are wearing an SCBA, let the trainers know and take it off!

Task 3

continued

■ **In pairs, take turns wearing an SCBA.**

☞ Read Fact Sheets # 13 - 14 before you proceed.

Practice putting on and wearing SCBAs. Open the cylinder valve, put on the harness, put on the mask, and connect the mask while opening the regulator. One of you will check off each step while the other one does it. Walk around the classroom with the SCBA on. Take off the SCBA, then trade places.

Check as you complete each step

Checklist	Yes	No
Open the cylinder valve and listen for alarm.	___	___
Turn on mainline valve and check both gauges. Turn valve off.	___	___
Put on & tighten harness/tank.	___	___
Put on & tighten mask.	___	___
Screw the low-pressure hose onto the regulator as you turn on the mainline valve. (Finger-tight only!)	___	___
Check the bypass valve by cracking it open for a second. Do you feel the air come out faster?	___	___
Crack the seal of your facepiece by putting your finger inside the mask. What happens?	___	___

Task 3

continued

■ **In pairs, take turns wearing an SCBA.**

Check as you complete each step

	Yes	No
Walk around the classroom with the SCBA on for at least 5 min.	___	___
Close the mainline valve and unscrew the low-pressure hose from the regulator.	___	___
Take off the mask and harness/tank.	___	___
Loosen the straps on the harness and mask.	___	___
Close the cylinder valve.	___	___
Open the mainline valve again to bleed off the air in the hose, then close it (do not use the bypass).	___	___
Wash the mask or wipe it with a disinfectant wipe.	___	___

When you've finished using the SCBA, answer the questions on the next page.

Task 3

continued

- **Discuss the following questions with your group.**

1. Did you have any problems when you were inspecting or using your equipment? Please describe them.

2. What happened when you cracked the seal on your facepiece while you were on air? Why did this happen?

3. When and where would an operations-level responder use an SCBA?

4. When you are using an SCBA to work on the decon line, what should you do if your low-pressure alarm goes off?

5. How can you communicate with other people when you are wearing an SCBA?

Fact Sheet #10

An Ounce of Prevention

In an emergency, you need your SCBA to be in perfect shape. Dirt, chemicals, and even sunlight can damage SCBAs. Regular inspections, cleaning, and safe storage can protect this equipment when you need it in an emergency. Your employer's respirator policy must spell out who does each kind of inspection, cleaning, and maintenance, and when.

Sample inspection check list:

- ☑ Check the facepiece. Does it have cracks or scratches? Is it dirty?
- ☑ Check the hose and the points where the hose attaches to the facepiece and air tank. Is it torn, cracked, or melted?
- ☑ Check the headbands—can they be tightened to give you a good fit? Is the rubber cracked, torn, or melted?
- ☑ Check the tank harness for cracks in the metal, torn fabric, or other problems.
- ☑ Check the regulator according to the SCBA's instruction manual.
- ☑ Check the air tank for damage. Are there dents, cracks, bulges, or rust? Is the "hydro" test up-to-date?
- ☑ Check the amount of air in the tank. Make sure the cylinder is full.

Be sure that all problems are reported to management and the health and safety committee right away. SCBA manufacturers only allow certain kinds of maintenance to be done in the plant. Sensitive jobs, like taking apart a regulator, may only be done by factory-trained mechanics.

Fact Sheet #10, continued

To clean and disinfect an SCBA:

- Remove the air tank.
- Inspect each piece of the SCBA.
- Wash the facepiece and low-pressure hose with disinfectant soap and water, but never drop the SCBA into water. You may need to wash the harness, too.
- Air dry it.
- Inspect each piece of the SCBA again as you put it back together.

Store SCBAs in a clean place:

- Keep them away from dust, sun, heat, cold, humidity, and chemicals (especially solvents).
- Store tanks carefully so they can't get dented or dropped.
- Follow the manufacturer's instructions for storing your SCBA.

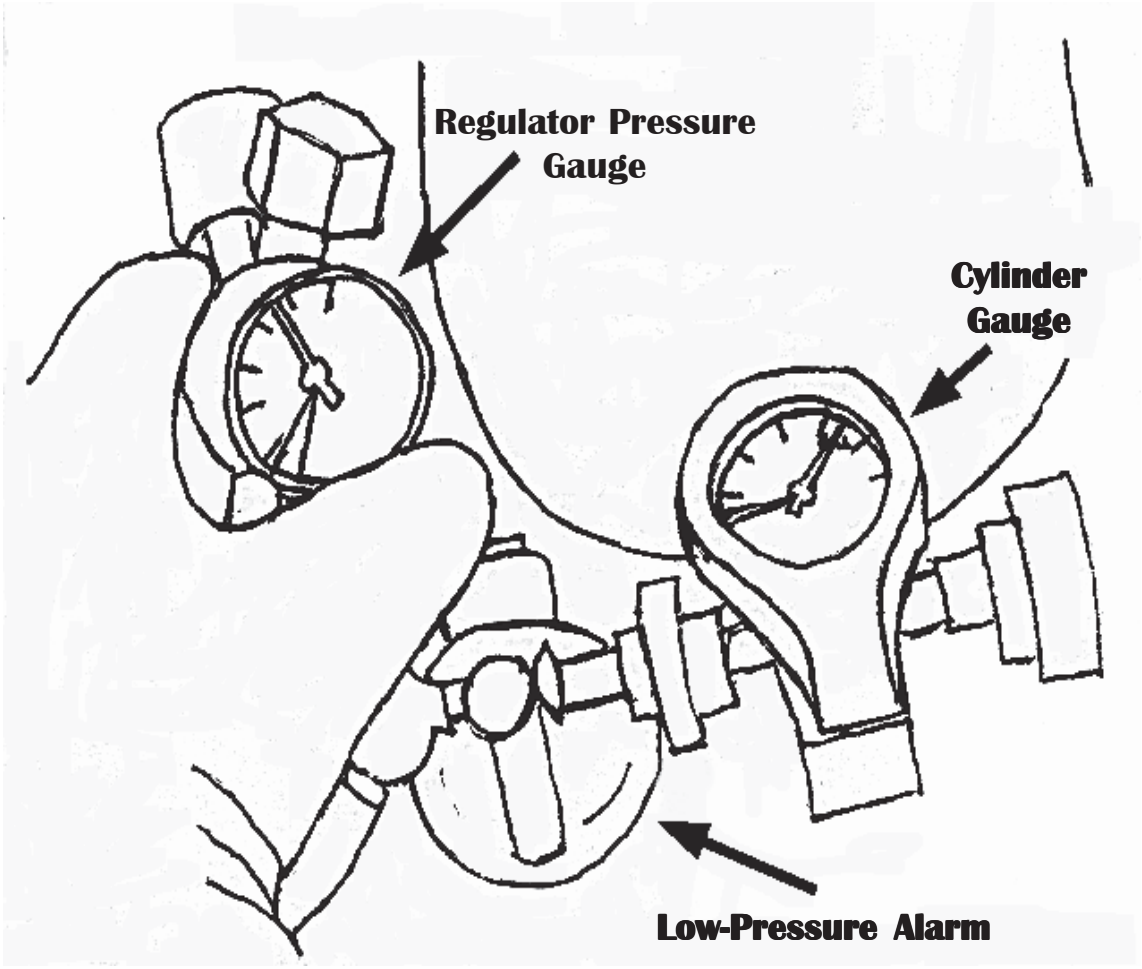
Fact Sheet #11

What Do I Look For?

Check Your Regulator

Regulators work under pressure so they can wear out easily. If there is a leak or if the regulator isn't working right, the air pressure at the regulator will not be the same as the air pressure coming out of the tank.

② Check the regulator pressure gauge and the cylinder gauge every time you turn on an SCBA. The readings should be the same (plus or minus 100 psi).



Don't forget to check the low-air alarm and the emergency bypass valve.

Fact Sheet #11, continued

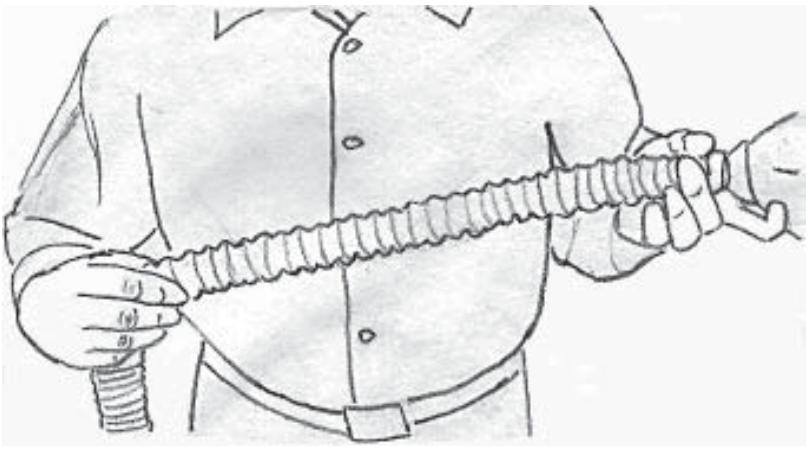
Check the Low-Pressure Hose

It's easy to get tears or holes in the soft rubber of the low-pressure hose. There's lots of places for dirt to get stuck, too. Follow these steps every time you put on your facepiece and hose:

② Make sure the fittings are tight on both ends of the hose.

② Check for the O-ring in the end that connects to the mask.

② Stretch the hose and look for cracks, tears, and dirt.



② Check the hose for leaks. Cover one end, stretch the hose and then cover the other end. Still blocking both ends, stop stretching the tube. The tube should hold the air and remain extended. If the hose collapses you have a leak.

Check the Facepiece

Inspecting the mask of an SCBA is much like inspecting an air-purifying mask.

② Look for dirt, tears, cracks, or worn spots in the rubber.

② Check the lens to see if it is cracked or badly scratched. Make sure it isn't loose in the mask.

② Pull on the headstraps to make sure they are firmly attached to the mask. Make sure the buckles hold the strap in place once it is tightened.

② Check to see if the exhalation valve is in place.

Fact Sheet #12

Fit Checking Your Mask

Putting on the mask

To get the best fit, pull the straps over the lens. Put your chin into the mask first, then pull the straps (called the "spider") over your head. Try to sweep any hair off your forehead with the top of the mask as you pull it on. To get the best fit, tighten the straps from the bottom up. Be careful to tighten both sides the same amount, so the mask isn't crooked. Putting on a respirator is sometimes called "donning."

Fit checks

These are quick do-it-yourself checks that you should do every time you put on a respirator. They are not the same as the fit tests (like the smoke test) required by OSHA.

1) The negative-pressure (suck in) fit check

To do the negative-pressure fit check, breathe out then cover the end of the low-pressure hose with the palm of your hand. Breathe in deeply, and hold for a count of 10. The mask should pull in a little towards your face and stay there the whole time. Take your hand off the end of the low-pressure hose and breathe normally.

2) The positive-pressure (blow out) fit check

(Will only work if you can cover the exhalation valve.) The idea here is to blow out and try to push the mask off your face. If the mask does not fit tightly, air will leak out around the sides. To do the positive-pressure fit check, breathe in, then cover both the end of the low-pressure hose and the exhalation valve with

Fact Sheet #12, continued

the palms of your hands (this may be awkward). Blow out gently, and hold for a count of 10. The mask should puff out a little away from your face, and stay there the whole time. Take your hands off the end of the low-pressure hose and the exhalation valve, and breathe normally.

If you can't cover the exhalation valve, just blow out to make sure it works. Make sure your hand is covering the end of the hose when you blow.

Fact Sheet #13

Going on Air

Attaching the air hose doesn't have to be a stressful moment. It only takes 3 steps:

a) Open the mainline valve (this will be very noisy).
b) Screw on the low-pressure hose (just finger tight).
c) Breathe in and get used to the noise.

In some trainings, there is a lot of pressure to do this quickly. As you get more experience, you will be able to do it faster, and save air. But for now, just take your time and get used to using the equipment. Practice hooking up and testing the bypass at least three times until you get comfortable with it.

Testing the bypass

Every SCBA has an emergency switch that connects you directly to the air tank. This safety feature "bypasses" the low-pressure regulator and uses up your air really fast. Every time you put on an SCBA, test this by cracking open the red bypass valve for a second, then twisting it shut. You should feel a big rush of air.

To summarize, it's easy to get hooked up to an SCBA:

1) Open the cylinder valve and listen for the alarm.
2) Put on the backpack.
3) Put on the mask.
4) Do the suck in and blow out fit checks.
5) Open the mainline valve (noisy).
6) Screw down the low-pressure hose and start breathing.
7) Test the bypass by cracking it open and closing it again.
   Eventually, you should be able to do all this in 75 seconds or less.

Fact Sheet #14

Shutting Down

To get out of an SCBA, just follow the steps in reverse order:

1) Close the mainline valve.

2) Unscrew the low-pressure hose.

3) Take off the mask (Remember to open the straps all the way).

4) Close the cylinder valve.

5) Open the mainline valve again to bleed off the air between the cylinder valve and the regulator. Make sure to close the valve again when you're done.

6) Take off the backpack (Remember to open the straps all the way).

7) Wipe the inside of the mask with a disinfectant wipe so you don't share any cold germs.

8) Pack the SCBA back into its case.

Summary

Self-Contained Breathing Apparatus (SCBA)

- **Operations-level responders only wear SCBAs on the decon line.**

- SCBAs are the best respirators for emergency response, but they are not perfect. They are heavy, which puts a lot of strain on the back and heart. They are noisy and bulky, which can lead to accidents.

- Wearing an SCBA does not make you chemical proof. Any chemical that can burn or absorb through your skin can still hurt you. You also need heavy-duty Chemical Protective Clothing (CPC).

- If an SCBA mask does not fit well, deadly chemicals can leak in. OSHA says your employer must do fit tests for each worker once a year. Beards and SCBAs don't mix. Workers who wear beards should have other assignments at an emergency response.

- SCBAs last from 20 to 45 minutes depending on the size of the bottle. When the alarm sounds, don't panic, just get out! If you stay calm, your air will last longer.

- Your employer has to train you on the SCBA you may use on the decon line. Training should include how to properly wear it, how it operates, and your company's policy on how to maintain and inspect it. You also need lots of practice in using SCBAs.

- SCBAs need to be inspected and cleaned every time you use them AND at least once a month. Check the last inspection date on your SCBA before you put it on. If it hasn't been inspected in the last month, don't use it.

Summary
continued

Self-Contained Breathing Apparatus (SCBA)

- A dusty SCBA may be a dangerous SCBA. This emergency equipment has to be stored carefully so that it is in perfect shape when workers need it.