

Unit 7:

Knowing What You Breathe

- **Oxygen Analyzers**
- **Analyzing Your Gas**
- **Cylinder Labeling**
- **Filling Out The Logbook**



Student Performance

By the end of this lesson, you will be able to:

- **Describe oxygen analyzers and why analysis is necessary.**
- **State how to analyze your nitrox list.**
- **Describe how your cylinder should be labeled after it is filled.**
- **Explain why a fill station logbook is kept and how to enter your fill information in the log.**

How Oxygen Analyzers Work

- Oxygen analyzers come in all sizes
- Most have digital readouts, but analog readouts are also available
- Analyzers should have an accuracy of one-tenth of one percent (e.g., 31.7% vs. 32%)



How Oxygen Analyzers Work

continued

- **The sensor commonly used in nitrox analysis is electrochemical**
 - They are rugged, portable and relatively less expensive than other types
- **An essential operation in using any analyzer is calibrating it**
 - Must be calibrated before each use
 - Nitrox analyzers are normally calibrated using standard air (20.9% or 21%)
- **Generally accepted that mix be within $\pm 1\%$ of target value**



Analyzing Your Gas

- Accurate analysis depends on the reliability of the analyzer and the flow rate through the oxygen sensor.
- Acceptable flow rate is about 1 liter per minute and should be between $\frac{1}{2}$ and 2 liters per minute.



Analyzing Your Gas continued


- **Accurate oxygen analysis depends on accurate calibration of the analyzer.**
 - **Use a known source such as an air cylinder to ensure proper calibration.**
- **Once calibrated, attach the analyzer to your nitrox cylinder, confirm that flow rate is the same as during calibration and allow analyzer to stabilize.**
- **Record this information on your cylinder contents label.**

Tracking Your Nitrox Cylinder

- **Cylinder Labeling**
 - Every nitrox cylinder must be properly labeled with contents and other pertinent information.
 - Prepare cylinder label immediately after analyzing to avoid forgetful errors.
 - Data should include fill date, oxygen percentage, maximum operating depth, cylinder pressure, and name of analyzer/end-user.

Enriched Air Contents Data	
Fill Date	3/12
Oxygen %	31.9
Bar/Psi	3000 psi
Max. Depth	112 ft
Fill by	Carl
Analyzed by	Pat
User	Pat

CAUTION: This cylinder contains gas other than air. Observe maximum operation depth limit. Use only with appropriate procedures for the mix indicated. Breathing this gas at depths greater than the Maximum Operating Depth could cause a serious accident or death.



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Tracking Your Nitrox Cylinder

continued

- **Filling Out The Logbook**
 - **Once you have analyzed your cylinder and labeled it, you will be asked to complete the permanent Fill Station Logbook and sign that you have received the cylinder.**
 - **Enter your name, date, your certification, cylinder's serial number, pressure, oxygen mix, maximum operating depth, signature.**
 - **Logbook tracks all nitrox cylinders leaving facility.**
 - **Logbook verifies that you either analyzed the contents or knew the particulars of the fill when you received your cylinder.**

End of Unit 7

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