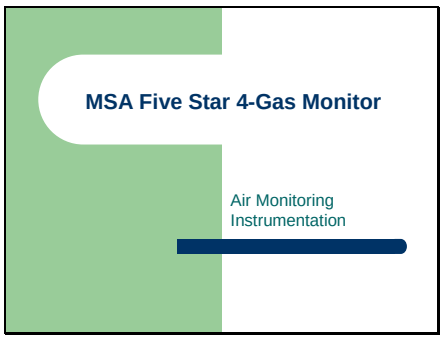
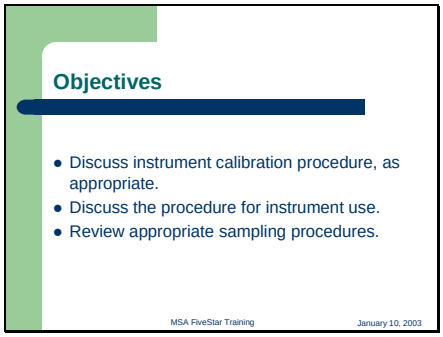
Slide 1



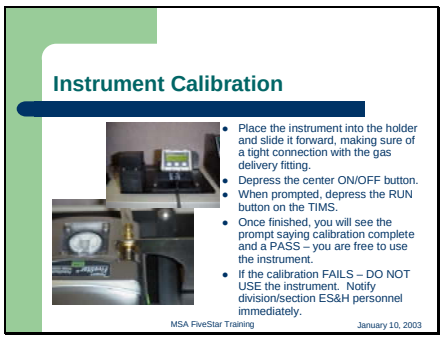
Introduce yourself and give work history.

Slide 2



Slide 3

Slide 4



The instrument shall be calibrated prior to each day's use.

The TIMS system will prompt you throughout the calibration if it runs into problems.

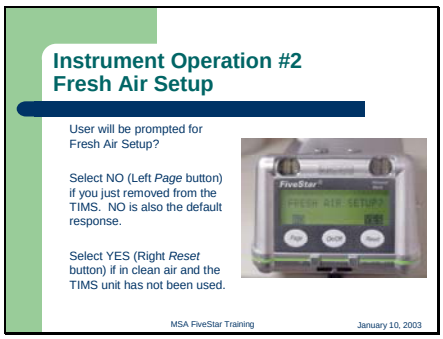
If you experience problems, contact your division/section ES&H personnel. If the instrument fails calibration, tag the instrument with a note documenting any error messages on the TIMS and notify your division/section ES&H personnel.

Do not turn the instrument off until values reach 0 for H2S, CO and COMB and about 21% for O2.

Slide 5

When you first turn the instrument on, note the instrument's audio and visual alarms.

Slide 6



Default is set to NO. If no button is selected within 5 seconds, no fresh air setup will be performed.

Fresh air setup is a feature that allows for the combustible and toxic sensors to be zeroed and the oxygen sensor can be spanned to 20.8%. For this reason, you need to be certain that you are in fresh, uncontaminated air. Otherwise, inaccurate readings can result and the instrument can falsely indicate that a hazardous atmosphere is safe.

Fresh air setup is not a substitute for daily calibration checks.

Fresh air setup is not required if the instrument has just been removed from the TIMS because the calibration or bump testing on the TIMS includes fresh air setup.

Slide 7

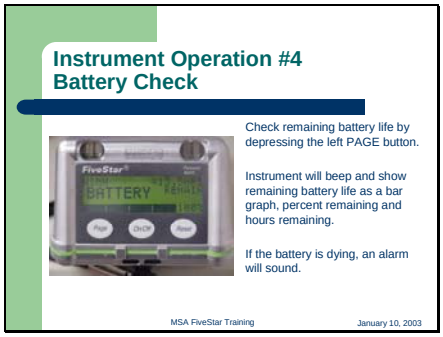
After Fresh Air Setup has been completed (refer to Step #2), the four gas values will be displayed as shown.

COMB = LEL (Alarm Setpoint = 10%)
CO = Carbon monoxide (Alarm Setpoint = 25 ppm)
O2 = Oxygen (Alarm Setpoints = 19.5%-23.5%)
H2S = Hydrogen sulfide (Alarm Setpoint = 5 ppm)

If any of the values enters the alarm range, the instrument will demonstrate a visual alarm (red flashing lights) and sound an audible alarm (the same sound as when the instrument was first turned on). The alarm will continue as

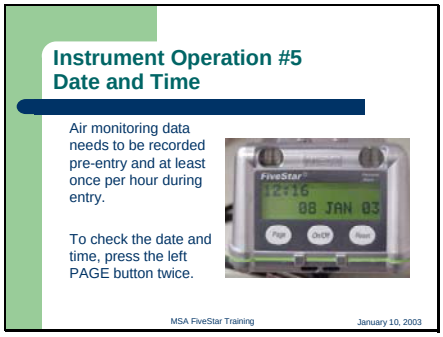
long as the gas concentration is in the alarm range and the instrument has not been reset. Users are to immediately evacuate the space and contact their division/section ES&H personnel. To RESET the instrument, press the right RESET button.

Slide 8



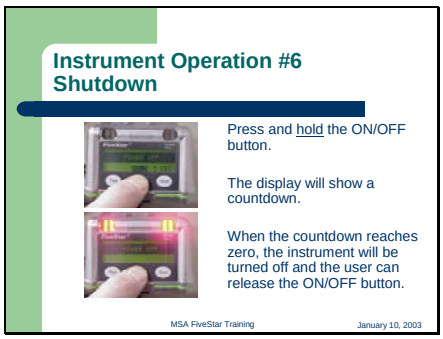
After obtaining your reading, determine whether or not the battery life is sufficient for you to perform the tasks to which you have been assigned. If it is insufficient, repeat steps with another instrument and place this one on charger. Display will default back to four gas values after a few seconds.

Slide 9



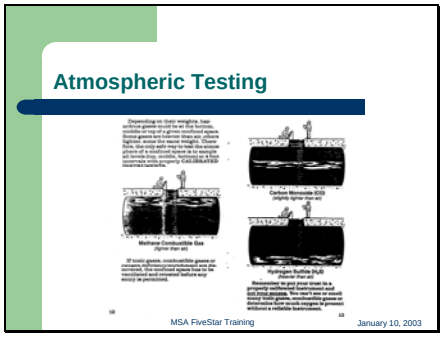
The display will default back to the four gas values after a few seconds.

Slide 10



Any and all problems with the instrument should be reported immediately to your division/section ES&H personnel.

Slide 11

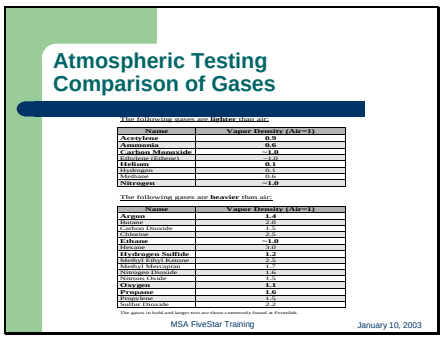


As the diagram above indicates, depending on their weights, hazardous gases could be at the bottom, middle or top of a given confined space. Therefore, all levels of the confined space must be tested.

The instrument is equipped with a 25 foot hose.

Caution: The overall response time for the instrument with a 25 foot sampling hose is approximately 1.5 minutes.

Slide 12



The table above shows gases that are lighter and heavier than air. The ratio of the gases molecular weight compared to air is called its vapor density. With air being equal to 1, gases with vapor densities below 1 are then lighter than air and gases with vapor densities greater than 1 are heavier than air. The gases in bold and larger print are those commonly found at Fermilab.

Lighter than air are:
Acetylene
Ammonia
Carbon Monoxide
Helium
Nitrogen

Heavier than air:
Argon
Ethane
Hydrogen Sulfide
Oxygen
Propane

Slide 13