

CASPER FIRE-EMS

# ENGINE



# The Multi-Rae

When responding to the all too common chirping or alarming Carbon Monoxide home detector, there are some very important things to know about using our 4 gas monitors; especially our awesome Rae 4 gas monitors that are only found on the Regional Response Trailer.

First, don't get mad at the sensor because it keeps failing calibration and you have taken your monitor to Gases Plus for the third time since we got them. For most monitors on the

market, all the sensors are manufactured by the same distributor. So, unfortunately, getting mad at a SCOTT, MSA, or other brands while thinking another brand will be better, would be incorrect. Sensors are



designed to last about 2 years. Most sensors will have this lifespan and it should be expected to replace all 3-4 sensors in our monitors every few years. Secondly, our RAE 4 gas meters are a great

tool to complement the other "tools" or instrumentation that we also bring to the incident. They should be turned on as

soon as reasonably possible to allow them to warm up. The RAE 4 gas meters on RR2 have a much longer warm up and self check mode than our MSA Orion's on our pumps.

As you may have already noticed on the regional trailer, all of the RAE instruments will be connected to their charging device. Per RAE, these monitors are designed to be on a charge all the time without "Frying" the battery (um...yeah).

Once you have turned on the meter, you must understand the capabilities and limitations of this tool.

The Multi-Rae is obviously capable of telling you whether there is Hydrogen Sulfide or Carbon Monoxide (CO<sub>2</sub>) at toxic levels in the air, in addition to how "close" you are to a flammable chemicals Lower Explosive Level (LEL). It will also tell you the Oxygen content of the air. However, it can give you more information if you know how to interpret the readings. If you have "Zero's" across the board but your Oxygen is dropping below 19.5%, this is usually a good indication that there is a dense substance in the air that you cannot detect with the Multi-Rae. Even in enclosed areas, oxygen levels are "normal" unless affected by other substances.

The major limitation of the Multi-Rae is the inability to identify other substances beyond what the sensors "see". For

example, you could see 0 H<sub>2</sub>S, 0 CO, 0 LEL, and 20.8 O<sub>2</sub>; but also be in IDLH levels of Hydrogen Cyanide (50 ppm). Another limitation of the monitor is the ability of the sensors to "stain". If you expose the meter to extremely high levels, it might take hours for the sensor to return to zero once removed from the atmosphere.

The Multi-Rae 4 gas is an excellent and well designed piece of instrumentation but must also be used as a complement to the PID, and other detectors (pH, TIC, tubes, Hazmat ID, etc) and it will continue to be a very useful tool.

If you have any questions or want more information, please contact us and we can schedule a class.

--Station Six  
C-Platoon