

## Dangers of Propane Leaks

One of our members recently had a serious explosion which caused his trailer to blow out the bottom panels and generate a fire ball that surged through the RV. The result was serious burns that will take him at least two years to fully recover from. The trailer was totally destroyed. The member attached a Catalytic heater to a quick-release fitting, went outside and turned on the gas tank valve. He waited some time before re-entering the trailer and attempting to light the heater. Evidently, the fitting was not making a good connection and gas leaked out filling up the basement area. It appears that when the heater start button was pressed the spark ignited the leaking propane, went down into the basement and ignited the cloud of gas causing the explosion. I am not sure why the propane detector installed by the factory near the door did not function. These are usually powered by the Coach Batteries. Were the batteries removed and taken in doors for the winter?

**Fire, Propane and Carbon Monoxide Detectors do go bad with age.** Dirt, grease, etc. deposits build up on the sensors and reduce the sensitivity. New fire detectors have a 10 year life guarantee. **How old are your life protecting sensors?**

The Quick release fittings can easily get corroded and not seal correctly. My water supply and external air supply quick release connections need cleaning and lubrication every year or they sometimes leak. **It is best to use a shut off valve at the gas supply to the heater hose input and a proper screw in POL connector** similar to the type used on the propane tanks. If you are going to use a Quick Release use the **Hansen One-Way shut-off Quick Hose Coupling**, which will not let the gas flow unless it is properly sealed. This is an AGA approved coupling for both high and low pressure gas.

**Never use any coupling, fitting or hose that is not AGA certified for gas use.** Always use screw type or flared fittings on gas connections. **Do not use compression fittings.** If you have never worked with gas lines and appliances then take your rig to a professional and let them install the T-connection and proper hookups. Do not assume all dealers can handle propane and know the proper safety precautions that must be used. If you are not comfortable working on your Home Gas Heater system then your best bet are the propane dealers who have all of the proper fittings and hoses in stock. The RV environment is much worse than any home application and requires the best fittings and workmanship.

Testing your RV for propane gas leaks is one of the most important safety checks that should be done on a regular basis. The three most popular ways to **test for a gas leak are by smell, a hand held leak detector and a leak down test.** You should check your rig at least every spring before use and before and during every long trip. Rough roads and any vibration can cause a gas leak, from loose fittings to copper lines rubbing and wearing through.

It is a good idea to pay attention every time you enter your RV for the smell of propane gas. This is not the most reliable way but might alert you to a leak between other checks. If you know that you cannot easily smell a propane leak be extra thorough in the following tests.

There are low priced hand held leak detectors available through Amazon.com, Camping World and other retailers. One of them is the General Tools NGD100 Natural Gas Detector, Figure (1). Despite its name it will check for propane and other flammable gasses. It cost about thirty dollars. To use this device follow the instructions that come with it, turn on your gas bottle valve and starting at your stove have the burner lid raised and test all of the connections, then test all of the other connections that you can access from the inside. The reason I suggest starting this way is that finding a leak on the inside would not let the gas **Figure (1) Portable Gas Detector 14 Blue Beret/May 2012** build up while you were checking the outside connections. With both tanks turned on check all the connection and lines in the tank area and work your way along the gas line checking the entire line and fittings along the underside of your RV. This way the only lines that will not be checked will be those hidden in the enclosed structural area of your rig. Don't forget the connections to the hot water heater, refrigerator and furnace. This would be a good test to do every week to make sure you stay as safe as possible. Also, check at any openings in the floor that are accessible through which pipes or electrical wires are run. Propane is significantly heavier than air and will sink to the lowest level in the RV.



Figure 2 Portable Gas Detector

Another way to check for gas leaks is a leak down test. You install a gauge in series with the line at one of your tanks, turn on your tank and make sure all gas appliances are turned off. Note the reading on the gauge and turn off all of the gas supplies. Wait three or four hours and recheck the gauge. Slight variations are normal because of temperature change. Any large change could indicate a leak in an area that is not easily accessible. Figure (2) is an illustration of a propane gas gauge leak detectors. It sells in the \$25 to \$35 range.



Figure 1 Gas Gauge Leak Detector

Professional leak testers are available in the \$200 range and these are used by the Safety Group at International Convention/Rallies.