Facts about Gasoline Generators and Carbon Monoxide (CO)

- Carbon Monoxide (CO) is a colorless, odorless, tasteless, toxic gas that is produced by the incomplete combustion of fossil fuels.
- Carbon Monoxide can escape from any fuel-burning appliance, such as the furnace, water heater, stove, oven or generator.
- Emissions from gasoline-driven generators are a significant source of Carbon Monoxide. LP-fired generators also produce CO, but at lower levels than conventional gasoline generators (uncatalyzed).
- Carbon Monoxide is usually a minor component of the air it is contained in and will only rise if warmer than the surrounding air or propelled there by a fan or pump.

***Common Mild Exposure Symptoms*: Flu-like symptoms, dizziness, slight headache, nausea, vomiting, fatigue. *Common Medium Exposure Symptoms*: Throbbing headache, drowsiness, confusion, fast heart rate. *Common Extreme Exposure*: Convulsions, unconsciousness, heart and lung failure. Characteristic of CO poisoning is a pink to rosy-red coloration of the skin. In addition, bright red patches may appear on the abdomen, inner surfaces of the thighs, and other areas where blood vessels are close to the surface.**

Tips to Avoid Harmful Levels of CO Accumulating Inside Your RV

- RVs are not "air tight." Care must be exercised to limit CO from entering the unit.
- All entry doors, compartment doors, windows and exhaust vents should be closed and all latches and locks secured.
- Exhaust fans should never be used when the generator is operating as they will create "negative pressure" which can cause CO to be drawn inside the trailer.
- Always test the CO detector(s) before starting the generator to verify proper operation.
- All slide-outs must be in the fully open or closed position to assure proper seal. Check all seals to be sure slide-outs are sealed properly.
- Adequate ventilation outside of the RV is critical during use of the generator to eliminate the possibility of CO build-up around the RV.
- Operating the generator when the RV is in a "Confined Area" can limit air flow around the exhaust and lead to increased levels of CO inside the vehicle.
- Parking close to other RVs can restrict air flow and allow CO to accumulate. For example, parking in a confined area with other RVs running generators can create a build-up of CO gases.
- Operating the generator in woods with significant natural covering can create "pockets" of carbon monoxide which potentially can infiltrate the trailer.
- High humidity levels or similar weather conditions can provide a covering that can allow CO to linger and slows dispersal.
- Damage or modifications done to the exhaust system can cause back pressure which can cause increased or harmful levels of CO within the RV.

Excerpt from Onan Mobile GenSet (Generator) Operator's Manual

Engine Exhaust Is Deadly!

Learn the symptoms of carbon monoxide poisoning in this manual and never sleep in the vehicle while the genset is running unless the vehicle is equipped with a working carbon monoxide detector.

The exhaust system must be installed in accordance with the genset Installation Manual. Engine cooling air must not be used for heating the working or living space or compartment.

Inspect for exhaust leaks at every startup and after every eight hours of running.

Make sure there is ample fresh air when operating the genset in a confined area.[1]

Exhaust Gas Is Deadly!

Exhaust gases contain carbon monoxide, an odorless, colorless gas. Carbon monoxide is poisonous and can cause unconsciousness and death. Symptoms of carbon monoxide poisoning include:

- Dizziness
- Muscular Twitching
- Headache
- Inability to Think Clearly
- Nausea
- Vomiting
- Weakness and Sleepiness
- Throbbing in Temples

If you or anyone else experiences any of these symptoms, get out into the fresh air immediately. If symptoms persist, seek medical attention. Shut down the genset and do not operate it until it has been inspected and repaired.

Primary protection against inhaling carbon monoxide, however, is proper installation of the exhaust system, daily (every eight hour) inspection for visible and audible exhaust system leaks.[2]

Conducting General Inspections

Inspect the genset before the first start of the day and after every eight hours of operation.

Oil Level

Check engine oil level.

Exhaust System

Look and listen for exhaust system leaks while the genset is running. Shut down the genset if a leak is found and have it repaired before operating the genset again.

Look for openings or holes between the genset compartment and vehicle cab or living space if the genset engine sounds louder than usual. Have all such openings or holes closed off or sealed to prevent exhaust gases from entering the vehicle.

Replace dented, bent or severely rusted sections of the tailpipe and make sure the tailpipe extends at least 1 inch (25.4 mm) beyond the perimeter of the vehicle.

Park the vehicle so that genset exhaust gases disperse away from the vehicle. Barriers such as walls, snow banks, high grass and brush and other vehicles can cause exhaust gases to accumulate in and around the vehicle.

Do not operate power ventilators or exhaust fans while the vehicle is standing with the genset running. The ventilator or fan can draw exhaust gases into the vehicle.

Check all CO monitors to assure proper operation.

Exhaust Gas is Deadly! Do not operate the genset if there is an exhaust leak or any danger of exhaust gases entering or being drawn into the vehicle.[3]

[1]Onan Mobile GenSet Operator's manual, page 2
[2]Onan Mobile GenSet Operator's manual, page 8
[3]Onan Mobile GenSet Operator's manual, page 16