MJSA MENTOR & APPRENTICESHIP PROGRAM SAFETY PROTOCOLS

Gas Tank Safety Checklist

By Charles Lewton-Brain

Handling & Storage of Gas

✓ Make certain you are using only gases approved for use. Check with your fire department business unit for correct information. (Many cities prohibit the use of acetylene and/or propane.)

✓ Keep cylinders of compressed gas away from heat sources–including sunlight–and 10 feet away from flammable materials. The cylinders should also be chained. As one jeweler I know puts it, "Compressed gas cylinders are potential rockets or bombs. If mishandled, cylinders, valves, or regulators can break or rupture, causing damage as far as 100 yards away."

✓ Secure cylinders to a fixed object, an approved cart, or an approved rack. Cylinders must be attached and standing upright. As one jeweler I know puts it, "Compressed gas cylinders are potential rockets or bombs. If mishandled, cylinders, valves, or regulators can break or rupture, causing damage as far as 100 yards away."

✓ Make sure gas cylinders not in use have approved protective caps or collars.

✓ Do not store or use gas cylinders in temperatures above 125°F (51°C).

✓ Move gas cylinders away from corrosive chemicals.

✓ Consider using an oxygen generator instead of compressed oxygen tanks. These systems don't require external tanks and can be used in locations that prohibit the use of pressurized gas tanks.

Properties of Gases

✓ Although acetylene does not irritate the skin or mucous membranes, it can form an explosive mixture in air at a 3 percent concentration. A torch left leaking overnight can be enough to do considerable harm. A teacher I know lit up a pipe in a large shop and encountered a gigantic flash as all the air in the shop leapt into flame. He was surrounded by yellow light and singed, but luckily the concentration wasn't enough to blow out the walls of the building.

✓ Propane sinks, so it tends to pool at the feet and go down stirs, where it can settle in the basement and ignite the pilot light on the water heater. If propane isn't being piped in from outside, the indoor tank should be less than a 5 lbs. Fire marshals often recommend that any propane tank be at least 6 feet from an ignition source, such as a pilot light or an electrical motor. [Note: Many cities forbid the use of propane.]

✓ Hydrogen gas is very flammable and requires that extra precautions be taken. The business's insurer and the local fire department can provide specific regulations. [Note: Some cities require that only

odorized hydrogen be used, with a hydrogen warning placard posted.]

✓ Some trade jewelers have switched from compressed fuel gases in tanks to "water torches"—that is, torch systems that break down distilled water (or "special" water with additives) to make hydrogen and oxygen for the torch flame. This eliminates the need to store fuel gases on premises and reduces insurance premiums.