



CHARLOTTESVILLE - ALBEMARLE RESCUE SQUAD



STANDARD OPERATING GUIDELINE

TOPIC: Squad 133 Operations	S.O.P. # 5.6
Approved by: Lair D. Haugh, Chief	Revised: 2/9/2003 Approved:

I. PURPOSE

- a. To provide a guideline for checking and operating squad 133.

II. VEHICLE ENGINE CHECK

- a. Motor Oil.
 - i. To be checked at the start of every shift.
 - ii. The dipstick is located behind the door of the engine cover on the passenger side between the seat and the dash.
 - iii. The fill spout is located beside the dipstick.
 1. Be sure to re-tighten the fill spout snugly.
 - iv. If vehicle has just been run, wait at least 15 minutes before checking the oil level.
 - v. Use 30 wt., diesel-quality motor oil only.

III. RADIATOR COOLANT LEVEL

- a. To be checked at the start of every shift.
- b. The radiator cap is located behind the cover on the front of the truck immediately below the bulldog.
- c. The engine must be cool before the radiator cap is removed.
- d. Radiator coolant level is sufficient if the coolant can be touched with your finger.
- e. A mixture of water and antifreeze (50/50) is used.
- f. Re-tighten the radiator cap and the outside door.

IV. TRANSMISSION FLUID

- a. The Fleet Operations Officer shall maintain this fluid level.
- b. Check under the vehicle for leaks from the transmission.
- c. Notify the Duty Officer if a leak exists. The Duty Officer shall notify the Fleet Operations Officer.

V. FUEL

- a. To be checked at start of every shift.
- b. Check fuel gauge for fuel level.
- c. Fuel tank should be maintained to at least $\frac{3}{4}$ full. (Diesel fuel only).

VI. DIESEL GENERATOR CHECK

- a. Oil.
 - i. The dip stick and oil fill spout is incorporated into one assembly and located on the side of the engine that you face when you open the door.
 - ii. Check engine oil while engine is cool or at least 5 minutes after shut down.

- iii. Use 30 wt., diesel-quality motor oil only.
- b. Fuel.
 - i. The fuel system is connected directly to the vehicle fuel system. The valve in the intake line must stay on (in-line with the hose) at all times.
- c. Cooling System.
 - i. The diesel generator is air cooled. Open the compartment doors to provide additional ventilation during extended use in hot weather.

VII. HYDRAULIC GENERATOR CHECK

- a. Oil.
 - i. Oil is checked by a visual inspection of the sight gauge that is located on the side of the hydra-gen (Compartment #5).
 - ii. A visual inspection of the hydra-gen system should be done to check for leaks.
 - iii. The Fleet Operations Officer will maintain this fluid level.
- b. Cooling.
 - i. This system is air cooled. Open the compartment doors to provide additional ventilation during extended use in hot weather.

VIII. VEHICLE START-UP

- a. With the gear selector in the neutral position, and brake lock on, turn the battery selector switch to "both", turn ignition switch to on, and depress one of the start buttons until engine starts.
- b. If engine does not immediately start, check the "engine shut down knob" to make sure it is fully depressed.
- c. Do not press accelerator until the oil pressure has risen to at least 30 psi.
- d. Air pressure must exceed 60 psi before vehicle can be moved.

IX. VEHICLE SHUT-DOWN

- a. Place gear selector in the neutral position.
- b. Set the parking brake.
- c. Allow the engine to run at idle until the pyrometer indicates that the exhaust temperature is no higher than 350 degrees.
- d. Pull the engine shut down knob until the engine stops then reset knob.
- e. Turn ignition switch to off.
- f. Then turn battery selector switch to off.

X. DIESEL GENERATOR START-UP

- a. Starting from the cab.
 - i. Depress the pre-heat switch for approximately 45 seconds and then while holding the pre-heat switch, depress the generator start switch.
 - 1. Once the generator is running release the start and pre-heat switches.
 - ii. A green indicator light located on the dash located on the dash will glow indicating that the generator is running.
- b. Starting at the generator.
 - i. Push the pre-heat switch down for approximately 45 seconds and while holding the pre-heat switch push the start-stop switch up and hold both switches until generator is running.
- c. Run the generator a short period before applying a load to it.

- i. This assures that the generator is warm and running smoothly.
- d. The vehicle does not have to be running, and the battery switch does not have to be on to start the diesel generator.

XI. DIESEL ENGINE SHUT DOWN

- a. Disconnect any load that the generator is handling.
- b. Depress the start-stop switch in the cab, or the start-stop switch on the generator and hold it in the stop position until the generator has come to a complete stop.
 - i. The green indicator light in the cab will go off.

XII. HYDRAULIC GENERATOR START-UP

- a. Stop vehicle
- b. Set brakes
- c. While the engine is at idle speed, engage the power take off (PTO) switch.
- d. Place gear selector in the neutral position, the PTO will now engage.
 - i. The orange indicator light located on the dash will glow and a whine will be heard from the motion of the hydra-gen.
- e. Depress the fast idle switch.
 - i. This will bring the engine, PTO, and the hydra-gen up to the correct operating speed.
- f. The hydra-gen main breaker can now be placed in the on position and the electrical circuit breakers can be used as needed.

XIII. HYDRAULIC GENERATOR SHUT-DOWN

- a. Shut off the circuit breakers and disconnect the main breaker.
- b. Shut off the fast idle and allow the engine to return to an idle.
- c. While the engine is at idle, shut off the PTO switch.
- d. The vehicle is now ready to be driven.

XIV. OPERATIONS

- a. Diesel generator.
 - i. The diesel generator is rated at 6,000 watts, (6 Kw).
 - ii. At night, start the generator while waiting for engine oil pressure to build because this is a two handed operation. This will allow you to keep both hands on the steering wheel while driving, allow oil to supply the turbocharger before placing a load on the engine, and assure a warm and smooth running generator to be used upon arrival at the scene for initial lighting.
 - iii. The diesel generator will supply only:
 - 1. The front and rear 1,500 watt quartz lights
 - 2. The 120 volt receptacle in compartment #1
 - 3. The 220 volt receptacle in compartment #6.
 - a. This receptacle can be used to power up the electrical Hurst power plant.
 - iv. Switching for the front and rear quartz lights is located in the cab of the vehicle on the panel to the right of the driver.
- b. Hydraulic Generator.
 - i. The hydra-gen is rated at 25,000 watts (15 kW).
 - ii. The hydra-gen can be used any time the vehicle is not in transit.

- iii. The hydra-gen supplies 120 volt current to the four (4) receptacles located at the outside corners on the box. There are also two (2) 120 volt receptacles up in the interior of the box. In addition, there is a 120 volt cord reel located in compartment #5 and compartment #8. The generator also supplies 220 volt power to the receptacle in compartment #6 & compartment #1, the right and left side 500 watt quartz lights and the front and rear 1,500 watt quartz lights.
 - iv. The 110 volt cord reels may be converted to 220 volts with the proper junction box.
 - v. The hydra-gen is the main power supply for the electrical Hurst power plant. The diesel generator can be used as a back-up power source for the electrical Hurst power plant.
 - c. Winches.
 - i. Both front and rear winches are Warn electrical winches. They are rated at single line, 12,000 pound pull. The winch controller plugs the small receptacle near the winch. The control allows you to power in and out with the cable. For free-wheeling, the control on the winch must be directed to the appropriate position.
 - ii. Any time the winches are used, throttle the truck up by depressing the high idle switch in the vehicle cab.
 - d. High Idle Switch.
 - i. Anytime the vehicle is running other than during normal driving, throttle the engine up with the high idle switch. This ensures that the engine is properly lubricated, normal operating temperatures are maintained, and the electrical system is operating at sufficient output.

XV. SAFETY

- a. Always leave the vehicle's gear selector in the neutral position before leaving the vehicle's cab.
- b. Always activate the parking brake control before leaving the vehicle's cab whether the engine is running or not. The transmission does not have a park position.
- c. Always put the wheel chocks in position. One (1) chock in front of the rear wheels and one (1) chock behind the rear wheels. This is the proper position regardless of the slope and direction of travel of the vehicle.
- d. Always position the vehicle so that the personnel can work in and out of the compartments with as little exposure to traffic as possible. This will help ensure their safety.
- e. Always use a spotter to watch for you when backing the vehicle. The Intec TV system is to be used when no spotter is available.
- f. Always drive the vehicle with due regard to height (11'), width (8'), and speed.
 - i. This vehicle's center of gravity is a lot higher than the other vehicles in the CARS fleet.
 - 1. Hence, its road speed should not be the same.
 - 2. Slow down and arrive alive!