City of Winter Park Fire-Rescue
Standard Operating Guideline

220.04

Title: Procedures for the Maintenance and Operation of Squad 6 (Vehicle #2243)

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Purpose To establish a procedure for the regular maintenance and operations of Squad 6 (Ford Super Duty / EVI), Vehicle # 2243.

Scope: This policy will outline what maintenance is to be performed by Department personnel and what is to be referred to the garage personnel. In addition, this SOG will cover those operational considerations of this apparatus with regards to testing, training and fire / rescue operations.

General:

220.04.01. Description:

Squad 6 is a 2001 12-Foot Non-Walk-In Rescue with an extended roof built on a 2000 Ford F-550 Super-Duty 4x2 chassis. It was manufactured by Emergency Vehicles Inc. of Lake Park, Florida and is assigned to Station 61 as the Technical Rescue Vehicle.

220.04.02. Specifications:

1. Engine – 7.3 liter turbo diesel / 235 Horsepower
   a. OIL - SAE 15W40 / 15 Quarts, includes 2 qt. In the filter.
   b. ANTI-FREEZE / 32.75 Quarts
   c. POWER STEERING FLUID - MERCON ATF
   d. FUEL TANK - Aft Axle tank: 40 gallon capacity

2. Transmission - Electronic 4-Speed Automatic
   a. FLUID - MERCON ATF

3. Chassis - 2000 Ford F-550 Super Duty 4x2
   a. Front Axle - 6000 Pound rating
   b. Rear Axle - 13,500 Pound rating / 4.88 to 1 ratio
   c. Tires - LT225/70 x 19.5 F (2) Front; (4) Rear – All Terrain

d. GVWR – 17,500 Pounds

4. Electrical – 12 Volt, Negative Ground
   a. Alternator – Dual 130 Amp
   b. Batteries – Dual Heavy Duty 750 CCA

5. Measurements
   a. Overall Length – 23’ 8” Bumper to Bumper
   b. Overall Height – 98” to the top of the rescue body
   c. Width – 8’
   d. Wheelbase – 165”

220.04.03. Fire Department Performed Maintenance:

Daily Check List Items:

a. Visual Inspection / Around / Over / Under Vehicle

b. Check all fluid levels on chassis: engine, transmission, coolant, primer oil, power steering and all other fluid levels.

NOTE - If engine was running within the previous (5) minutes of the engine oil being checked it should be allowed to sit and drain into the oil pan for a proper check.

c. Check belts for wear, tension and condition.

d. Visually check fuel level tank gauge and condition of tank for any damage.

e. Check and maintain correct air inflation pressures per tire sidewall instructions.(weekly). Rims should be inspected for damage. These are steel disc rims with Stainless Steel inserts.

f. Automatic Transmission - Check shift linkage to make sure the gear selector makes the proper changes in the transmission pattern.

g. To properly check the transmission fluid level, the following should be performed in order (Vehicle should be on a level surface!):

   1. Stop Engine
   2. Set Parking Brake
   3. Place Transmission in NEUTRAL
   4. Engine should be at NORMAL OPERATING TEMPERATURE
   5. Engine RPM should be at IDLE
   6. Dipstick will show an ADD or FULL indication.

NOTE: FLUID SHOULD ONLY BE ADDED BY CITY FLEET MAINTENANCE PERSONNEL.

h. Electrical System – Check all lights and gauges

i. Check mirrors.

j. Visually check Coolant Tank level.

k. Examine all other equipment as required

l. See Ford Operators Manual for other daily and weekly checklists.

m. Washing of Apparatus - Painted surfaces may be washed as normal. Truck may be placed on the waxing rotation to maintain appearance. Avoid waxing close to the reflective striping or lettering to prevent wax build-up on the edges of the letters.

NOTE: DO NOT SPRAY COOL WATER ON RIMS OR CHASSIS COMPONENTS THAT ARE HOT. ALL SURFACES SHOULD BE ALLOWED TO COOL PRIOR TO RINSING.

220.04.04. Operations:

1. Start-Up and Normal Running / Special Operations

To start this unit, the two Master Switches located at floor level on the door side of the drivers seat, must be turned to the on position. The front CHASSIS switch controls the cab components including the ignition. The rear MODULE switch controls the rescue body including compartment lighting. The ignition switch is located on the steering column. This switch is operated by a key. To start the vehicle turn the key forward until the indicator lights in the instrument panel come on. Pause until the WAIT TO START light goes out, then, turn the key until the vehicle starts. This key is to be left in the vehicle any time the unit is in service located at one of the fire stations. If the vehicle is left for any reason in the public view it should be locked and these keys removed from the ignition.

2. Electrical Load Management

This vehicle is equipped with a Kussmaul Load Manager. This device sequentially energizes and de-energizes relays at .5 second intervals in order to reduce a shock load to the electrical system. It also detects when the electrical load is greater than the output of the alternator. When this occurs preset and prioritized loads are sequentially de-energized until the alternator output is equal to the load. The switch for the Load Manager is located on the right side of the center console. A Model 091-85 Low Voltage Alarm detects when voltages drop below 11.8 volts for more than two minutes. A Green and Red LED indicator is located on the left side of the center console and an audible alarm will sound until the voltage rises above 12.8 volts.

3. Auxiliary Idle Control

A Visteon Auxiliary Idle Control Module is located at the top of the center console. The Module is pre-programmed for Automatic Charge Protection. The unit should activate automatically any time the voltage drops to a point where damage could be done to the electrical system, but it should be activated manually by pressing the CHARGE PROTECT key or the RPM CONTROL key for high idle. The idle will return to normal by pressing the flashing function key, Pressing the brake pedal or shifting out of park.

4. Ramsey Electric Winch

A Ramsey RE 12,000 Electric Winch is mounted to the Grill Guard at the front of the vehicle. The winch is equipped with 100’ of 3/8” cable and a hook. A RAM-LOK semi-automatic clutch provides free spooling and clutch engagement of the cable drum.

To pull the cable by hand the clutch must be disengaged. With no load on the cable pull outward on the clutch handle, rotate it 90 degrees counterclockwise and release. The clutch is now locked out and the cable can be pulled by hand.

To engage the clutch, pull outward on the handle, rotate it clockwise 90 degrees and release. Run the winch in reverse until the clutch handle snaps fully in or until the cable drum starts turning. **WARNING:** Do not attempt to disengage the cable drum when there is a load on the cable.

Caution should be used when operating the winch in any situation. All personnel should wear their firefighting gloves any time the cable is handled. When a load is placed on the winch and cable, a tarp or heavy blanket should be placed mid-way in the line to prevent snap

back in the event of a broken cable. The vehicles hood should also be raised for additional protection. The area around the cable should be clear of personnel and the operator should be behind a safe object while maintaining visual contact with the rescue.

A minimum of five wraps should remain on the drum to achieve the maximum pulling power. The cable should be replaced on the drum under tension to ensure no kinks or pinching occurs in the line. Check for broken strands or damage after each pulling operation.

5. **Generator and Lighting**

A Honda EM5000SX 5000 watt Power Generator is located in the Drivers side rear compartment on a roll-out platform. This unit is hard wired to 2 – 750 Watt Quartz Telescopic Extenda-Lites on the front of the Rescue Module. A L5-20R Twist Lock 120 volt Receptacle is located over the wheel-well on each side of the truck and below each Signal light pod on the rear of the vehicle. Two removable 750 Watt Quartz Telescopic Tripod Extenda-Lites are mounted on the rear of the truck and plugged in. The circuit breaker panel is located in the compartment over the generator.

6. Generator Operations

To start the generator, the battery switch for the Rescue Module located by the drivers seat must be turned on. The AC circuit breaker should be in the off position. Turn the fuel valve on the left side of the generator to the on position (Arrow pointing up). Turn the key to the start position, after the unit starts turn the key to the ON position to run. The Auto Throttle System automatically reduces the engine speed when all loads are turned off or disconnected. When a load is reconnected the engine will return to its rated speed. This switch is located below the ignition switch. The AUTO position is recommended to minimize fuel consumption and reduce noise levels when no load is applied to the generator.

To shut the unit down, turn the AC breaker to OFF. Turn the engine switch to OFF. Turn the fuel valve to the OFF position.

7. **Breathing Air Control Panel and Cascade System**

Cascade System Operations – Located in the Right Rear Compartment is the Control Panel and Fill Station for the refilling of SCBA bottles while operating on an emergency scene. The system is supplied by (3) 6500 P.S.I. Air Bottles located at the bottom of the Rear

Compartment. The slide out drawer is capable of filling two 4500 SCBA cylinders simultaneously.

WARNING: FAILURE TO FOLLOW PROCEDURES FOR THE FILLING OF SCBA CYLINDERS MAY RESULT IN SERIOUS INJURY OR DEATH.

8. Adjusting the Pressure Reducing Regulator

To begin, make sure that the regulator adjusting knob is relieved of all pressure. Turn the knob counterclockwise until the REGULATED PRESSURE gauge reads 0. The regulator is a “self-relieving” type. This means as you decrease the pressure to the outlet side of the regulator air will bleed off into the atmosphere so an accurate reading is maintained on the REGULATED PRESSURE gauge. Close the OUTLET valve.

Open BANK 1 of the storage cylinders. The pressure gauge of BANK 1 and the SUPPLY PRESSURE gauge of the regulator should read the same. Turn the knob on the regulator clockwise slowly until the REGULATED PRESSURE gauge reads the desired setting, i.e. 4500 PSI. If you go past the intended pressure back the setting down 500 PSI below the pressure you want and then increase to the desired setting.

NOTE: The REGULATED PRESSURE can never read higher than the SUPPLY PRESSURE. Once the REGULATED PRESSURE is set, close all the valves on the fill panel.

9. Filling SCBA Cylinders

Connect SCBA fill hose to the SCBA cylinder. Open the cylinder valve on the SCBA tank fully. The Fragmentation Compartment must be fully closed and latched to activate the safety valve before filling begins.

Open the BANK 1 control valve fully. Open the OUTLET control valve slowly allowing the cylinder to fill until the air flow stops or the regulated pressure is reached. Close the OUTLET control valve. Close the SCBA cylinder valve. Close the BANK 1 control valve. Bleed air from the fill hose using the bleeder valve on the hose or on the fill panel. Disconnect the fill hose from the SCBA cylinder.

When an SCBA cylinder can no longer be filled to capacity using BANK 1, close the control valve for BANK 1 and open the control valve to BANK 2. Continue filling the cylinder from BANK 2 until capacity is reached. When BANK 2 pressure gets lower than the REGULATED

PRESSURE, close BANK 2 and open BANK 3. Continue this sequence until all SCBA cylinders have been filled or the system has been exhausted to the point it is not able to “top off” the SCBA cylinders.

10. Operational Questions

All operational questions for this vehicle shall be routed through the chain-of-command to the Battalion Chief assigned to apparatus

A copy of the Operational Manual from Emergency Vehicles Inc. is located In the Battalion Chiefs office and is available at any time to all personnel.

James E. White
Chief of Department