

DEPARTMENT APPARATUS

FIRE DEPARTMENT APPARATUS

Purchase of equipment shall be made in accordance with the Ohio Revised Code. The District Trustees and the Chief of the Department are responsible for all purchases.

A. PURCHASING STANDARDS

1. General - The Fire Department shall consider safety and health as a primary concern in the specification, design, construction, acquisition, operation, maintenance, inspection, and repair of all Fire Department vehicles.

2. Pumper Fire Apparatus - All new pumper fire apparatus shall be specified in order to meet the applicable requirements of NFPA 1901, Standard for Pumper Fire Apparatus.

3. Initial Attack Fire Apparatus - All new initial attack fire apparatus shall be specified in order to meet the applicable requirements of NFPA 1902, Standard for Initial Attack Fire Apparatus.

4. Mobile Water Supply Fire Apparatus - All new mobile water supply fire apparatus shall be specified in order to meet the applicable requirements of NFPA 1903, Standard for Mobile Water Supply and Fire Apparatus.

5. Aerial Fire Apparatus - All new aerial fire apparatus shall be specified in order to meet the applicable requirements of NFPA 1904, Standards for Aerial Ladder and Elevating Platform Fire Apparatus.

6. Enclosed Seating Areas - Where tools, equipment, or SCBA are carried within enclosed seating areas of Fire Department vehicles, such items shall be secured by either a positive mechanical means of holding the item in its stowed position, or in a compartment with a positive latching door. The means of holding the item in place or the compartment shall be designed to minimize injury to persons in the enclosed area of the vehicle caused by loose equipment during travel and in the event of an accident, a rapid deceleration, or a rapid acceleration.

B. INSPECTION, MAINTENANCE, AND REPAIR OF VEHICLES

1. All Fire Department vehicles shall be inspected at least weekly, within twenty-four (24) hours after any use or repair, and prior to being placed in service or used for emergency purposes to identify and correct unsafe conditions. Station captains, lieutenants, or senior firefighter in charge are responsible for assuring that all vehicles are properly inspected.

This inspection should include tires, brakes, warning lights, and devices, headlights and clearance lights, windshield wipers, and mirrors. The apparatus should be started and the operation of pumps and other equipment should be verified. Fluid levels should also be checked regularly.

The safety equipment carried on Fire Department vehicles should be inspected in conjunction with the inspection of the vehicle.

2. A Preventive Maintenance Program has been established, and records shall be maintained as specified in these Standard Operating Guidelines. Maintenance, inspections, and repairs shall be performed by qualified persons in accordance with manufacturer's instructions. Manufacturer's instructions shall be considered as minimum criteria for the maintenance, inspection, and repair of equipment.

3. The Fire Department has established a list of major defects to be utilized to evaluate when a vehicle shall be declared unsafe. Any Fire Department vehicle found to be unsafe shall be placed out-of-service until repaired.

Major Defects

1. Brakes
2. Tires
3. Steering
4. Emergency Lights and Sirens
5. Electrical Components
6. Power Train
7. Pump defects and/or problems
8. Body panel or parts (i.e. doors or windows)
9. Windshield wipers
10. Mirrors
11. Fluid levels
12. Head lights

4. All repairs to the Fire Department vehicles shall be made by qualified persons experienced with the type of vehicle or the type of work to be performed in accordance with the vehicle manufacturer's instructions.

5. Fire pumps on apparatus shall be service tested annually in accordance with the applicable requirements of NFPA 1911, Standard for Service Test of Pumps on Fire Department apparatus.

6. All aerial devices shall be inspected and service tested annually in accordance with the applicable requirements of NFPA 1914, Standard for Testing Fire Department Aerial Devices.

VEHICLE INSPECTIONS AND MAINTENANCE

It is paramount for the safe operations of vehicles that proper inspection and maintenance be performed by the operator and crews on a regular scheduled basis according to department policy.

Personnel need to understand all components of the emergency vehicles. These components include: chassis, body primary function units (pumper, aerial, rescue, ambulance, etc.) and auxiliary systems.

The chassis, which includes the frame, suspension system, steering and braking systems, power train components, should be familiar to the personnel.

All body and primary function components should be reviewed with all operators by an experienced member to ensure proper inspections.

Auxiliary systems are more present than ever before. These systems include 120/240 volt electrical systems, hydraulic and air systems, communication equipment, emergency lighting and audible warning systems, breathing and/or oxygen systems and other similar systems.

All personnel will be trained in the proper operation and inspection of these systems.

There are two types of inspections of an emergency vehicle, the Pre-Trip Inspection and the Post-Trip Inspection. These inspections should include as a minimum the following:

- Cleaning of the vehicle
- Replacing missing supplies
- Refueling and checking fluid levels
- Any unusual occurrences and/or malfunctions

All inspections should be conducted the same way each time and a written checklist used noting any deficiencies found.

The Pre-Trip Inspection Checklist will include the following ten steps as a minimum:

1. **Vehicle Overview**
Approach vehicle and look for leaks.
2. **Check the Engine Compartment**
Checking fluid levels, hoses, belts, batteries and note any leaks.
3. **Start Engine and Check Inside Cab**
Start engine and note any unusual noises, check gauges for workability, check operations of all controls, check glass for breakage, adjust mirrors.

4. **Check All Lights**
This includes cab lights, running lights, parking lights, turn signals and four-way flashers, headlights (high and low beams), emergency lights, etc.

5. **Conduct Walk Around Inspection**
 - Left Front** – Check left front wheel and tire condition, tread, and inflation; observe left front suspension.
 - Front** – Check windshield, wipers, and if so equipped, washers; front bumper, appearance/cleanliness of audio devices; lamps and reflectors (clean and undamaged).
 - Right Front** – Check right front wheel and tire condition, tread, and inflation; observe right front suspension.
 - Right Side** – Cab doors and closure should work; check for body damage; check right side including any special provisions (pump panel, patient compartment door, and equipment, if any); and check compartments and compartment doors.
 - Right Rear** – Check right rear wheel and tire condition, tread, and inflation; observe right rear suspension.
 - Rear** – Check hosebed or rear patient compartment doors, or other body features, if any; lamps and reflectors (clean and undamaged).
 - Left Rear** – Check left rear wheel and tire condition, tread, and inflation; observe left rear suspension; check fuel fill.
 - Left Side** – Check compartments as well as compartment and cab doors; all closures should work properly. Check for body damage.
 - Pump Operator's Position** – Check pump panel, caps, valves, drains, and equipment, if vehicle is a fire vehicle.

6. **Check Controls and Indicators at Pump Operator's Position or Any Other Special Function Components, wherever located.**

Get in vehicle, start engine, and engage the pump (aerial, etc.). Move to pump operator's position and proceed to check out each system on the panel as follows:

 - Engine controls and indicators.
 - Fire pump controls and indicators.
 1. Prior to exiting the cab, throw road to pump switch and place transmission in drive.
 2. Pull tank to pump valve.
 3. Partially open tank fill recirculating valve.
 4. Pull primer switch for approximately five (5) seconds.
 5. Turn off pressure relief valve and crank pressure to 200 psi.
 6. Return to idle, turn pressure relief on and check that it is set at 150 psi.
 7. Turn down throttle and completely open recirculating valve and operative five (5) minutes.

Other controls and indicators, including pump panel lights, generators, and light towers if applicable. If other special function components exist, develop

inspection procedures for such components.

7. Check Brake System (Air Brakes)

Get in vehicle and start engine. Proceed to carefully check out vehicle braking system as follows: If vehicle is equipped with hydraulic brakes, move directly to steps E and F.

- a. **Test the low pressure warning signal.** Build up enough air pressure to turn off low pressure warning signal. Shut off engine, however, leave electrical system on. Step on and off the brake pedal (“pump”) to reduce air pressure. The low air pressure warning system must come on as the pressure drops below 60 psi.
- b. **Check to ensure that the spring brakes come on automatically.** Check the wheels of the vehicle, release the parking brake, and shut off the engine. Step on and off the brake pedal (pump to reduce air pressure. The parking brake knob must pop out when the air pressure falls to the manufacturer’s specification (usually in the range of 20 psi to 40 psi). The spring brakes should then come on.
- c. **Check the rate of air pressure build-up.** With the engine off, pump the brakes down to a “zero” pressure. Start the engine and measure the time it takes the brake system to build sufficient pressure so that the emergency vehicle can be moved (without brake drag). A time of more than 30 seconds indicates an unacceptable time frame for a quick build-up system as defined by NFPA.
- d. **Test the air leakage rate.** With the engine off and a fully charged air system, conduct the following two tests for air leakage.
 - Without the service brakes applied, a loss in one minute of more than 2 psi for single vehicles and 3 psi for combination vehicles indicates an **unacceptable** rate of leakage.
 - With the service brakes fully applied, a loss in one minute of more than 3 psi for single vehicles and 4 psi for combination vehicles indicates an **unacceptable** rate of leakage.Either condition indicates the need for immediate service. Place vehicle out of service.
- e. **Test the parking brake.** Check to ensure that everyone is off the vehicle and that no one is in front of or preparing to get on or under the vehicle. Apply the parking brake and put the vehicle in low gear. **Gently** apply the accelerator in order to “pull” against the parking brake. Make note and report the fact if the parking brake allows the vehicle to “creep” or fails to firmly hold the vehicle in place.
- f. **Test the service brakes.** Check to ensure that everyone is off the vehicle and that no one is in front or preparing to get on or under the vehicle. Wait for normal air pressure to build up; release the parking brake; and move the vehicle forward **slowly** (about 5 mph). Finally apply the brakes. Make note and report if the vehicle “pulls”, has an unusual “feel,” or has a

delayed stopping action.

8. Check all Self Contained Breathing Apparatus (SCBA).

- a. **Check for proper psi.** Each SCBA packs and all spare SCBA cylinders should be checked for proper psi.
- b. **Check all PASS systems.** All Personal Alert Safety Systems (PASS). All PASS Devices should be checked and operated. System shall be charged to check for high and low pressure leaks.
- c. **Check all masks.** Face pieces (masks) should be checked for seals and to ensure proper exhalation.
- d. **Check all straps.** All SCBA straps should be checked for wear and tear. They should also be fully extended.

9. Fuel Levels.

Fuel levels in all vehicles shall never be below one half (1/2) tank. All vehicles shall be fueled when necessary.

10. Water Tank Levels.

The water levels in fire apparatus shall be full. Any inspection where it is not full, the operator will top off the tank.