

# Grand Forks Fire Department

## Standard Operating Procedures

<b>SOP#</b> <b>501.01</b>	<b>Section</b> <b>Maintenance</b>	<b>Title</b> <b>Apparatus and Motorized Vehicles</b>
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<b>Effective date: 8/31/03</b>	<b>Implementation date: 8/31/03</b>	<b>Revision date:</b>

### I. Scope

This standard establishes a schedule for the inspection and maintenance of all apparatus and motorized vehicles owned or operated by the Grand Forks Fire Department. It was promulgated to:

- A. Ensure that emergency response vehicles are maintained in a constant state of readiness.
- B. Implement a preventative maintenance schedule for all motorized vehicles.
- C. Establish procedures for the daily inspection of apparatus, equipment, and support vehicles

### II. General

- A. Apparatus and support vehicles shall be:
  - 1. Kept clean by washing at or around 1800 hrs or as needed.
  - 2. Maintained in a constant state of readiness.
  - 3. Refueled whenever the fuel level drops below 3/4 of a tank. Oil and ancillary fluid reservoirs shall also be kept full at all times.
- B. All engine-powered equipment shall be kept clean and their fuel tanks and oil and fluid reservoirs shall be refilled whenever the level drops below 3/4 of a tank.

### III. Daily Inspections

- A. Every vehicle garaged in a station shall be inspected by station personnel at the beginning of each shift. The FAS or SFF performing the inspection shall record his findings on the Daily Checklist.

- B. The individual(s) performing the inspection shall correct the defects that are found, provided that, the individual has the expertise, tools, and supplies to do so. The items that are corrected shall be noted in the comments section of the checklist.
- C. Defects that cannot immediately be corrected shall be noted on an Equipment Repair Order.
- D. Whenever a defect requires that a vehicle be placed out of service, the FAS or SFF shall place the vehicle out of service in accordance with the provisions of SOP 501.03, Declaring a Vehicle Unsafe to Operate.
- E. The completed checklists and service requests shall be forwarded to the station Captain for review and disposition. The station Captain shall review the work that was performed to ensure that the repairs have been satisfactorily made and shall review each checklist to ensure that it is complete and accurate.
- F. The completed and signed checklists and service requests shall be forwarded to the FF/Mechanic on a regular basis. The FF/Mechanics in conjunction with the Battalion Chiefs shall schedule the repairs and shall notify the officer of when to deliver an apparatus or vehicle for maintenance, as necessary.

#### IV. Weekly Maintenance

The following items shall be performed at least once each week as indicated on the Daily Work Schedule (See SOP 200.05, Daily Work Schedule). The officers shall note in their Daily Log the performance of all weekly maintenance activity.

- A. Staff vehicles: Automobiles, pickups, and utility vehicles shall be checked and serviced at least once each week. The member assigned to perform the service shall complete a Weekly Checklist on each vehicle serviced and shall forward the completed form to the FF Mechanic. In addition to inspecting the items on the checklist, each staff vehicle shall:
  - 1. Be thoroughly washed.
  - 2. Have its windows cleaned.
  - 3. Have its interior vacuumed and cleaned; the vehicle operator is required to remove litter/waste/clutter from his/her vehicle daily.
- B. Aerial devices: The following tasks shall be performed on Saturday of each week, after every major repair and after each use on the fire or training ground:
  - 1. A visual inspection of all systems and components.
  - 2. The aerial shall be set up and operated to check the function of the outriggers, turntable, and aerial device.
  - 3. All defects shall be noted on the weekly checklist. If major, report it to the FF Mechanic.

C. Reserve apparatus: The following tasks shall be performed on Saturday of each week, after every major repair and after each use on the fire or training ground:

1. Any item that needs repair shall be recorded on the weekly checklist.
2. All reserve apparatus shall be started and run on every Saturday to ensure the proper function of all mechanical systems and to circulate all fluids.

D. Fire pumps:

1. The following tasks shall be performed on Saturday of each week, after every major repair and after each use on the fire or training ground. The operator shall:
  - a. Open all pump drains and flush out the sediment.
  - b. Check and clean the intake strainers.
  - c. Check the gearbox oil level.
  - d. Operate the pump primer with all valves closed.
  - e. Operate the transfer valve while pumping from the booster tank.
  - f. Check the pump seals for leaks.
  - g. Operate all valves.
  - h. Operate the relief valve.
  - i. Check all gauges and flow meters for proper operation.
2. The FAS or SFF shall fill out the weekly checklist and list any items that do not function properly.

#### V. Quarterly (90-day) Maintenance

- A. In, addition to routine daily maintenance, apparatus and motor vehicles shall undergo the quarterly maintenance listed on the Preventive Maintenance Worksheet.
- B. 90-day maintenance shall be completed during that vehicle's or apparatus' scheduled maintenance month with the following items be performed during that maintenance.
  1. A complete degreasing, including a hot-water wash of the undercarriage, frame, axles, motor, pumps, spring shackles, tie rod ends, and turntable assemblies.
  2. The motor oil and filter shall be changed and the vehicle shall be lubricated.
  3. The fluid levels of the transmission, pump transmission, differential, power steering, primer reservoir, battery, radiator, hydraulic systems, and brake fluid shall be checked and replenished as needed.
  4. The fuel and air filters shall be changed, as needed.
  5. All moving rods and linkages shall be lubricated as required.
  6. Nuts and bolts, including the lug nuts, shall be checked and tightened as needed.
  7. Auxiliary generators shall be serviced.
  8. All work performed during the quarterly maintenance cycle shall be noted on the checklist along with the amount of parts and supplies used and the personnel hours

required to complete the task. The completed form shall be reviewed and signed by the station officer and then forwarded to the Battalion Chiefs.

- C. FASs or SFFs shall record the performance of any quarterly maintenance activity in their Daily Log. The FF Mechanics are responsible for ensuring that the work is performed. The completed paperwork shall be forwarded to the Battalion Chiefs. The paperwork shall include a list of all parts and supplies used in performing the work and the number of personnel hours involved. Items that are still in need of repair shall be recorded on the Work Repair Order and the requests shall be forwarded to the Battalion Chiefs.

#### VI. Semi-annual Maintenance

The following items shall be performed on a semi-annual basis:

- A. These items shall be accomplished during the last week of March and the first week of September each year.
- B. All apparatus and support vehicles shall be washed, compounded as needed, and waxed.
- C. All apparatus and support vehicles shall be taken to a scale, to ensure that no vehicle or apparatus is in excess of its maximum allowable vehicle weight.

#### VII. Annual Maintenance

The following items shall be performed on an annual basis:

- A. Aerial devices shall undergo an annual service test in accordance with NFPA 1914, Testing Fire Department Aerial Devices. A qualified, independent testing firm shall perform the test.
  - 1. The annual test shall include a visual inspection before an operational or load testing to note any visible defects, damage, or improperly secured parts.
  - 2. An inspection of all the visible welds shall be made, as well as an inspection of all the bolts, cables, rollers, pins, slides, and washers. Bolts shall be torqued to the manufacturer's specifications.
  - 3. A nondestructive test of the aerial device shall also be performed.
  - 4. The test shall be scheduled and supervised by the Battalion Chiefs.
- B. Fire pumps:
  - 1. A service test shall be conducted on all fire pumps at least once a year or whenever a pump has undergone extensive repair.

2. Service tests shall include a dry vacuum test, a priming test, a capacity (150-psi) test, a tachometer and engine rpm check, a relief valve test, an overload test, a 200-psi test, a 250-psi test, and a tank-to-pump flow test.
3. These tests will be scheduled and conducted by the FF/Mechanic and the on-duty shift personnel. The results of the tests shall be recorded on the Annual Fire Pump Service Test Form.

C. Apparatus and motor vehicles:

1. The annual service shall be conducted on all apparatus and motor vehicles in accordance with the Preventive Maintenance Worksheet.
2. The Battalion Chiefs shall schedule and supervise the performance of the maintenance.

VIII. Responsibilities

- A. Officers are responsible for the care and maintenance of all motorized vehicles assigned to their command and shall adhere to all established maintenance schedules.
- B. FAS s and SFF s are responsible for the readiness of their assigned vehicles and shall perform all daily, weekly, and 90-day maintenance tasks as indicated on the maintenance and daily work schedules. FAS s and SFF s are responsible for the performance of daily, weekly, and 90-day maintenance on all reserve vehicles garaged at their station.
- C. FF/Mechanics are responsible for assuring the readiness of their assigned vehicles in conjunction with the operators of those vehicles. They are responsible for 90-day, semi-annual and annual maintenance tasks as indicated on the maintenance and work schedules. They are also responsible for the performance of scheduled maintenance on all reserve vehicles.
- D. The Battalion Chiefs are responsible for reviewing all checklists and repair requests to monitor the status of the fleet. They and the FF/Mechanics shall schedule all repair work and shall be responsible for ensuring that the work has been satisfactorily performed. They shall prepare a written report each month for the Fire Chief summarizing the maintenance activity performed during the previous month.