Job Performance Requirement #1
Perform a Walk-Around
Routine Maintenance Inspection

Trainee: ____________________________ Notes: ______________________________
Department: _________________________  ______________________________
Test Site: ___________________________  ______________________________
Evaluator: __________________________  ______________________________
Date: ______________________________

References
NFPA 1002, General Requirements 2-2.1, 2-2.2

Task
Perform a walk-around routine maintenance inspection.

Given
• Two driver/operators, one to inspect and one to assist
• Wheel chocks
• Apparatus operator’s manual
• Tire pressure gauge
• Apparatus maintenance log/forms
• Writing implement

Performance outcomes
The driver/operator shall perform a walk-around routine maintenance inspection, given a fire department vehicle and its manufacturer’s specifications, so that the operational status of the vehicle is verified.
1. If the weather permits, park the vehicle outdoors. 

2. Set up inspection area.  
a. If indoors, proper ventilation equipment is in place all doors are open  
to vent vehicle exhaust  

3. Check the vehicle’s wheels. 

4. Begin inspection when approaching the vehicle.  
a. Looking for readily apparent damage  
b. Looking beneath vehicle for spots that indicate leakage  

**FRONT LEFT – AND RIGHT – SIDE INSPECTION**

5. Check the left (driver’s) side of the cab for any damage. 

6. Check the right (passenger’s or officer’s) side of the cab for any  
damage. 

7. Check the cab doors to ensure that they are in proper working order.  
a. Doors close tightly  
b. Latch works as it was designed  
c. Latches operate with little or no play  
d. All door and window glass is intact and clean  

8. Check the condition of all steps, platforms, handrails, and ladders.  
a. Securely mounted  
b. Not deformed  

9. Check the saddle fuel tanks beneath the door opening (if vehicle is so  
equipped).  
a. For leaks or other problems with the tank  

10. Check the saddle fuel tank fill cap (if tank is so equipped).  
a. Tightly in place  

11. Check the condition of the tire/wheel assembly on the front left and  
right sides of the vehicle.  
a. No missing, bent, or broken studs, lugs, or clamps  
b. Tight lug nuts (checking each lug nut by hand)  
c. No cracks or damage that would prevent sealing of the tire or rim  
d. No unusual accumulations of brake dust on the wheel  
e. No trails of fluid on the wheel or tire indicating axle gear oil leaks  

√ **Note:** Seals that retain axle gear oil show slight seepage and still  
be serviceable, but trails of fluid on the wheel or tire are  
unacceptable.
12. Visually inspect the suspension components found behind the front left and right wheels.
   a. No defects involving the springs, spring hangers, shackles, U-bolts, or shock absorbers ______
   b. No springs with cracked or otherwise broken leaves ______
   c. No uneven spring deflection when the vehicle is on a level surface ______

13. Check that front tires are properly inflated.
   a. Using pressure gauge and checking reading against pressure noted on side of tire ______

14. Check the front tire valve stems.
   a. No cracks or looseness ______

15. Check the front tires.
   a. Proper tire type ______
   b. Proper tread depth (varies according to state or provincial inspection requirements) ______
   c. No tread separation ______
   d. No excessive sidewall wear ______
   e. No cuts or objects impaled in the tire ______

16. Check equipment in the rear portion of the cab.
   a. All onboard and complete ______
   b. All in proper working order and securely stowed ______

FRONT INSPECTION

17. Approach the front of the vehicle.
   a. Noting any body damage not present in previous inspections ______

18. Take a quick look beneath the vehicle.
   a. Noting any obvious damage to front axle, steering system, or pump piping (if present) ______
   b. Noting any loose, bent, worn, damaged, or missing parts ______

19. Check the windshield.
   a. Free of defects and clean ______

20. Check the wiper blades.
   a. Held appropriately against windshield ______
   b. Intact ______
   c. In good condition ______
21. Start the apparatus engine, or hook the apparatus into the electrical charging system.

22. (Second firefighter) Operate all front running and emergency light switches in the cab one at a time.
   a. Calling out switch type to inspecting firefighter

23. Check all front running and emergency lights as they are activated.
   a. Functioning properly
   b. All bulbs working
   c. Lenses in place and not cracked or broken

24. Visually inspect any audible warning devices on the front of the vehicle (electronic siren speakers, mechanical sirens, and air horns).
   a. No visible damage

**Emergency Equipment on Front Bumper Area**

25. Check the pump intakes and discharges.
   a. Intake cap tight enough to prevent air leaks but not too tight for easy removal
   b. Preconnected intake hose firmly attached
   c. Intake valve (if provided at location) fully closed
   d. Intake hose in good physical condition and properly stowed

26. Check any front-loaded hose.
   a. Properly loaded
   b. Secure for road travel
   c. Nozzles clean and in place

27. Check front-mounted winch if apparatus is so equipped.
   a. Operates properly
   b. No damage to winch components (remote control, cable, chains, hooks, and clasps)

28. Check all front-mounted hydraulic rescue tool systems.
   a. All operate properly
   b. Clean and undamaged

29. Check front-mounted fire pump if apparatus is so equipped.
   a. Operates properly
LEFT AND RIGHT REAR SIDE INSPECTIONS

√ Note: This part of the inspection should cover everything from the rear of the cab to the tailboard on each side of the apparatus.

TIRES AND WHEELS

30. Notes any obvious body damage that has occurred since the previous inspection.

31. Check the condition of the tire/wheel assembly on the front left and right sides of the vehicle.
   a. No missing, bent, or broken studs, lugs, or clamps
   b. Tight lug nuts (checking each lug nut by hand)
   c. No cracks or damage that would prevent sealing of the tire or rim
   d. No unusual accumulations of brake dust on the wheel
   e. No trails of fluid on the wheel or tire indicating axle gear oil leaks

√ Note: Seals that retain axle gear oil show slight seepage and still be serviceable, but trails of fluid on the wheel or tire are unacceptable.

32. Make a quick visual inspection of the suspension components found behind the back left and right wheels.
   a. No defects involving the springs, spring hangers, shackles, U-bolts, or shock absorbers
   b. No springs with cracked or otherwise broken leaves
   c. No uneven spring deflection when the vehicle is on a level surface

33. Check that rear tires are properly inflated.
   a. Using pressure gauge and checking reading against pressure noted on side of tire

34. Check the rear tire valve stems.
   a. No cracks or looseness

35. Check the rear tires.
   a. Proper tire type
   b. Proper tread depth (varies according to state or provincial inspection requirements)
   c. No tread separation
   d. No excessive sidewall wear
   e. No cuts or objects impaled in the tire
   f. Dual tires not in contact with each other or other parts of the apparatus
   g. Splash guards in place, properly attached, and in good condition
36. Inspect the automatic snow chains if apparatus is so equipped.
   a. All chains present and in good condition

**EQUIPMENT COMPARTMENTS**

37. Check all equipment compartments.
   a. All equipment that is supposed to be in each compartment is actually there and properly stowed
   b. Compartment and equipment it contains are neat and clean
   c. Each compartment door opens and closes properly and latches tightly

**HOSE**

38. Examine any hose stored midship or on the side of the vehicle.
   √ Note: This inspection should include reconnected attack lines that traverse the midship area of the apparatus or are on top of the fender compartments. Top-mounted booster reels may also be checked at this time.
   a. Secure and properly stowed

39. Check top-mounted booster hose and reels.
   a. Secure and properly stowed

40. Check the water level in the booster tank through the top vent opening or sight glass.
   a. Noting low water level and replenishing, if necessary, after visual inspection.

**EXTERIOR EQUIPMENT AND CONDITION**

41. Check any equipment stored on the exterior of the vehicle (ladder, intake hose, hose in the hose bed, forcible entry tools, SCBA and/or spare cylinders, hand lights, floodlights, cord reels, portable water tanks, portable fire extinguishers, and other portable equipment).
   a. In good physical condition and properly stowed

42. Check equipment stored above the pump panel area.
   a. In good physical condition and properly stowed

43. Check the reflective striping on the side of the apparatus.
   a. In good condition

44. (Second firefighter) Operate the side warning light switch in the cab.
   a. Calling out to inspecting firefighter when activated
45. Check the side-mounted warning lights.
   a. Functioning properly
   b. All bulbs working
   c. Lenses in place and not cracked or broken

REAR INSPECTION

46. Check the rear bumper or tailboard.
   a. Noting any new damage

47. (Second firefighter) Operate all rear running and emergency light switches in the cab one at a time.
   a. Calling out switch type to inspecting firefighter

48. Check all running and emergency lights as they are activated.
   a. Functioning properly
   b. All bulbs working
   c. Lenses in place and not cracked or broken

49. Check any equipment contained in the rear compartment.
   a. Present
   b. Clean
   c. Operable
   d. Properly stowed

50. Check the rear compartment doors.
   a. Open and close properly

51. Check that any equipment stored on the outside of the rear of the apparatus (portable fire extinguishers, spanner wrenches, hydrant wrenches, hydrant valves, portable master stream devices, etc.).
   a. Proper working order
   b. Securely stowed

52. Check any towing attachments.
   a. Free of defects

53. Inspect the hose loads and cover in the main hose bed.
   a. Adequate amount of hose
   b. Hose loaded and finished correctly
   c. Cover in good condition

54. Check the solid hose bed doors if the apparatus is so equipped.
   a. Stay open when necessary
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

55. Check any other equipment stored in the hose bed area (ground ladders, portable water tanks, intake hose, and pike poles).
   a. In working condition
   b. Properly stowed

   ______    ______

   Total Score ______

Total points possible = 108
Total points needed to pass = 75

☐ Pass ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #2
Perform an In-Cab Operational Inspection

<table>
<thead>
<tr>
<th>Trainee: ____________________________</th>
<th>Notes: ______________________________</th>
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<tbody>
<tr>
<td>Department: _________________________</td>
<td>_______________________________</td>
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<td>Test Site: __________________________</td>
<td>_______________________________</td>
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<td>Evaluator: __________________________</td>
<td>_______________________________</td>
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<td>Date: ______________________________</td>
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</table>

<table>
<thead>
<tr>
<th>References</th>
<th>NFPA 1002, General Requirements 2-2.1, 2-2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task</td>
<td>Perform an in-cab operational inspection.</td>
</tr>
<tr>
<td>Given</td>
<td>• One firefighter</td>
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<tr>
<td></td>
<td>• Ear protection</td>
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<tr>
<td></td>
<td>• Apparatus operator’s manual</td>
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<tr>
<td></td>
<td>• Apparatus maintenance log/forms</td>
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<tr>
<td></td>
<td>• Writing implement</td>
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<tr>
<td>Performance outcomes</td>
<td>The driver/operator shall perform an in-cab operational inspection, given a fire department vehicle and its manufacture’s specifications, so that the operational status of the vehicle is verified.</td>
</tr>
</tbody>
</table>
CAB

1. **Check the seatbelts/restraints.**
   a. Securely mounted
   b. Operate freely without binding
   c. Webbing not damaged, cut, or frayed
   d. Buckles open and close freely

2. **Check the mirrors.**
   a. Not missing or broken

3. **Check the tilt/telescopic steering wheel.**
   a. Suitable position

4. **Adjust the seat and mirrors.**
   a. Suitable position

5. **Turn off all electrical switches.**

6. **Start the vehicle.**

7. **Run the engine.**
   a. Under light load
   b. Until it has warmed to its operating temperature

**DASHBOARD GAUGES**

8. **Check all dashboard gauges.**
   a. All gauges below functioning in the normal operating range
      - Speedometer/odometer
      - Engine speed (rpm)
      - Oil pressure
      - Fuel gauge
      - Ammeter/Voltmeter
      - Air pressure
      - Coolant temperature
      - Vacuum gauge
      - Hydraulic pressure gauge

9. **Check the speedometer.**
   a. At or very near zero with apparatus parked

10. **Check the fuel gauge.**
    a. Reads at least three-quarters full
11. Check all other gauges.
   a. Each registers within limits specified in operator’s manual

CONTROL OPERATION

12. Briefly operate all controls located in the cab.
   a. Checking each system below
      • Electrical equipment switches
      • Turn signal switches
      • High beam headlight switches
      • Heating and air-conditioning controls
      • Radio controls
      • Audible warning device controls (sirens, auto warning horns, air horns, back-up alarms, etc.)
      CAUTION! Before testing audible warning devices, don’t appropriate hearing protection. Do not test the operation of any audible warning devices if anyone is standing in front of or near the apparatus. This can cause hearing damage to that person. Test these devices when no one else is in a position to be harmed.
      • Controls for any computer equipment in the cab (mobile data terminal [MDT], mobile computer terminal [MCT], etc.)
      • Windshield wiper controls
      • Windshield defroster controls
      • Automatic snow chain control (if applicable)
      • Load management system
   b. Noting in apparatus log or on inspection form any problems or inoperable systems

MANUAL TRANSMISSION CLUTCH

13. Check clutch pedal free play.
   a. Noting in apparatus log or on inspection form insufficient or excessive freeplay
   b. Scheduling repair with certified mechanic if there is inappropriate freeplay

STEERING WHEEL

14. Check steering wheel free play.
   a. Noting in apparatus log or on inspection form insufficient or excessive freeplay
   b. Scheduling repair with certified mechanic if there is inappropriate freeplay (excess play that does not result in the actual movement of the vehicle’s front tires)
ROAD AND PARKING BRAKES

15. Check air brake pressure level if apparatus is equipped with air brakes.
   a. Starting vehicle and allowing it to run for 60 seconds
   b. Scheduling repair with certified mechanic if you have to run the vehicle for more than 60 seconds to build sufficient air pressure
   c. Scheduling repair with certified mechanic if on inspection you notice – or if it has been reported to you – that the air pressure protection valve allows the air horn to operate when the pressure in the air reservoir drops below 80 psi (552 kPa).

Total Score

Total points possible = 24
Total points needed to pass = 16

☐ Pass ☐ Fail
**NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications**

**Job Performance Requirement #3**
Perform Engine Compartment Inspection and Routine Preventative Maintenance

<table>
<thead>
<tr>
<th>Trainee: __________________________</th>
<th>Notes: ______________________________</th>
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<tr>
<td>Department: ________________________</td>
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<td>Evaluator: _________________________</td>
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<td>Date: ______________________________</td>
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<table>
<thead>
<tr>
<th><strong>References</strong></th>
<th>NFPA 1002, General Requirements 2-2.1, 2-2.2</th>
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</thead>
<tbody>
<tr>
<td><strong>Task</strong></td>
<td>Perform an engine compartment inspection and routine preventative maintenance.</td>
</tr>
<tr>
<td><strong>Given</strong></td>
<td>• One driver/operator</td>
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<td></td>
<td>• PPE</td>
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<td></td>
<td>• Eye protection</td>
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<td></td>
<td>• Basic automotive tool kit</td>
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<td></td>
<td>• Apparatus operator’s manual</td>
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<tr>
<td></td>
<td>• Manufacturer’s approved engine crankcase oil</td>
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<td></td>
<td>• Manufacturer’s approved antifreeze</td>
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<td></td>
<td>• Manufacturer’s approved power steering fluid</td>
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<td></td>
<td>• Manufacturer’s approved brake fluid</td>
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<tr>
<td></td>
<td>• Windshield washer fluid</td>
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<td></td>
<td>• Replacement air filter as needed</td>
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<td></td>
<td>• Replacement air dryer filter as needed</td>
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<td></td>
<td>• Replacement belts as needed</td>
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<tr>
<td></td>
<td>• Mixture of baking soda and water</td>
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<td></td>
<td>• Wire brush</td>
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<tr>
<td></td>
<td>• Clear water</td>
</tr>
<tr>
<td></td>
<td>• Clean cloths</td>
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<td></td>
<td>• Apparatus maintenance log/forms</td>
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<td></td>
<td>• Writing implement</td>
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<td></td>
<td>• Well ventilated inspection area</td>
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</tbody>
</table>

| **Performance outcomes**                  | The driver/operator shall perform an engine compartment inspection and routine preventative maintenance, given a fire department vehicle and its manufacturer’s specifications, so that the operational status of the vehicle is verified. |
1. Check the transmission fluid level on the dipstick or electronic readout.

2. Add fluid.
   a. If the reading on the dipstick or readout indicates fluid is low
   b. Proper amount per operator’s manual
   c. Appropriate fluid per operator’s manual

3. Check the manufacturer’s indicator marks to determine the power steering fluid level.

4. Add fluid. CAUTION! Be careful not to overfill the reservoir because damage can occur to the system.
   a. If the reading indicates fluid is low
   b. Adding appropriate fluid per operator’s manual
   c. Adding proper amount per operator’s manual

5. Shut down the apparatus.

6. (Tilt-Cab Apparatus) Check the level and/or control mechanism.
   a. Operates freely without binding

7. (Tilt-Cab Apparatus) Check the cab lift motors and pumps.
   a. Operates freely without binding

ENGINE (CRANKCASE) OIL

8. Determine the oil level.
   a. Pulling out the oil dipstick
   b. Wiping the dipstick clean
   c. Reading the oil level

9. Add oil through the fill port on the engine block if necessary.
   a. Consulting operator’s manual for proper type of oil and fill parameters
   b. Adding correct type of oil
   c. Filling to recommended level

ENGINE AIR FILTER

10. Inspect the air intake system.
    a. No signs of damage or dirt buildup

11. Change the air filter.
    a. If it is dirty or if the air filter restriction gauge indicates that it is time to change the filter
    b. Following instructions in operator’s manual
EMERGENCY SHUTDOWN SYSTEM

12. Test the emergency operating system.
   a. Following instructions in operator’s manual
   b. Ensuring that system operates properly
   c. Ensuring that system resets to proper position

EXHAUST SYSTEM

13. Inspect the exhaust system for damage.
   a. Recording on inspection form any damage found

14. Test the rain cap on the exhaust system.
   a. Ensuring that it operates freely

Radiator Coolant (Antifreeze)

WARNING! Use caution when removing the radiator fill cap on apparatus that is presently running or has been recently running. Boiling antifreeze and/or steam may erupt from the reservoir, causing severe injury to the person removing the cap. It is most desirable to check this item when the engine and radiator system is cool.

15. Determine whether the antifreeze is at the proper level mark inside the reservoir.
   a. Removing cap on antifreeze fill port, (commonly located on coolant system overflow reservoir) or looking through the sight glass, if one is provided
   b. Correctly reading the coolant level

16. Add antifreeze.
   a. Type approved by apparatus manufacturer
   b. Until amount reaches proper level mark per operator’s manual guidelines

17. Check the radiator hoses.
   a. Recording any leaks or undue wear in apparatus log or on maintenance form

18. Remove any debris, such as leaves or trash, resting against the radiator intake. COOLING FAN WARNING! Some engine cooling fans activate automatically without warning. Use caution when working near the fan.

19. Inspect the cooling fan.
   a. Recording any cracks or missing blades in apparatus log or on maintenance form
WINDSHIELD WASHER FLUID

20. Check the windshield washer fluid level.

   a. If tank is less than half full

BATTERY CONDITION

CAUTION! Wear appropriate personal protective equipment, including eye protection, when working with batteries. Contact with acid can damage the skin or eyes. Also, work in a well-vented area so that fumes will dissipate.

22. If the apparatus has unsealed batteries, carefully remove the caps and check the electrolyte (water) level.

23. Add water.
   a. If the internal level is low

24. Check all battery connections.
   a. Tightening loose connections
   b. Cleaning away any corrosion around terminals with a mixture of baking soda and water poured on the connections, scrubbed with a wire brush, and rinsed with clear water

25. Check the battery tie-downs.
   a. Ensuring that battery is held firmly in place

26. Check the built-in battery charger if the apparatus is so equipped.
   a. Ensuring proper operation

AUTOMATIC TRANSMISSION FLUID LEVEL

27. Check the automatic transmission fluid level on the dipstick or electronic readout.

28. Add fluid to the automatic transmission.
   a. If the reading on the dipstick or readout indicates fluid is low
   b. Adding proper amount per operator’s manual
   c. Adding appropriate fluid per operator’s manual
POWER STEERING FLUID LEVEL

29. Check the manufacturer’s indicator marks to determine the power steering fluid level.

30. Add fluid.
   a. If the reading indicates fluid is low
   b. Adding appropriate fluid per operator’s manual
   c. Adding proper amount per operator’s manual

BRAKE FLUID (HYDRAULIC BRAKE SYSTEMS)

31. Check the level of the brake fluid in the master brake cylinder.
   a. Following the procedure outlined in the operator’s manual

32. Add fluid.
   a. If the fluid is low
   b. Adding appropriate fluid per operator’s manual
   c. Adding proper amount per operator’s manual

AIR SYSTEM

33. Check for leaks in the air system.
   a. Walking around apparatus listening for leaks (with air system at normal operating pressure and engine shut off)

34. Inspect the air dryer filter, if apparatus is so equipped.
   a. Looking for dirt or damage

35. Replace the air dryer filter.
   a. If it is dirty or damaged
   b. According to instruction in operator’s manual

BELTS

36. Check all engine compartment belts (water pump, air compressor, fan, alternator, etc.) WARNING! Never attempt to check the belts which the vehicle’s engine is running. This could result in severe injuries or entrapment in the belt and pulley(s).
   a. For tightness and excessive wear
LEAKS

37. Inspect the condition of all hoses and hydraulic lines (antifreeze, water, windshield wiper fluid, oil, transmission fluid, hydraulic fluid, power steering fluid, and or battery fluid).
   a. No leaking fluids  

ELECTRICAL WIRING

38. Check the electrical wiring in the engine compartment.
   a. For frayed, cracked, loose, or otherwise worn wiring  
   b. Recording any wiring problems in apparatus log or on maintenance form  
   c. Referring any wiring problems to a mechanic for correction  

Total Score  

Total points possible = 61
Total points needed to pass = 42

☐ Pass  ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #4
Charge an Apparatus Battery

<table>
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<tr>
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<td>Evaluator: __________________________</td>
<td>____________________________________</td>
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<tr>
<td>Date: ______________________________</td>
<td>____________________________________</td>
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</tbody>
</table>

### References
NFPA 1002, General Requirements 2-2.1

### Task
Charge an apparatus battery.

### Given
- One driver/operator
- Wheel chocks
- Apparatus operator’s manual
- Battery charger
- Eye protection
- Apparatus maintenance log/forms
- Writing implement

### Performance outcomes
The driver/operator shall charge an apparatus battery, given a fire department vehicle, its manufacturer’s specifications, and battery charger so that the battery is charged correctly.
1. If the weather permits, park the vehicle outdoors.  

2. Set up the work area.  
   a. If vehicle must be charged indoors, proper ventilation equipment is in place and doors are open to vent vehicle exhaust  

3. Neutralize power sources.  
   a. Battery and ignition switch(es) in their OFF positions  

4. Identify the polarity of the battery to be charged.  
   a. Positive or negative ground  

5. Attach the positive charger cable to the positive battery post.  
   a. Red charger cable attached to red (+) battery post  

6. Attach the negative charger cable to the negative battery post.  
   a. Black charger cable to black (-) battery post  

7. Connect the battery charger to a reliable power source.  
   a. Away from gasoline and other flammable vapors  

8. Set the desired battery charging voltage and charging rate if charger is so equipped.  
   a. Consulting operator’s manual, if necessary  

9. Reverse the procedure to disconnect the battery charger.  

Total Score  

Total points possible = 9  
Total points needed to pass = 6  

☐ Pass  ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #5
Lubricate Chassis Components

| Trainee: ____________________________ | Notes: ______________________________ |
|____________________________________|__________________________________|
| Department: ________________________ | _________________________________ |
| Test Site: __________________________| _________________________________ |
| Evaluator: __________________________| _________________________________ |
| Date: ______________________________ | _________________________________ |

References
NFPA 1002, General Requirements 2-2.1

Task
Lubricate chassis components.

Given
- One driver/operator
- Lubrication gun
- Manufacturer’s approved chassis lubricant
- Apparatus operator’s manual
- Apparatus maintenance log/forms
- Writing implement

Performance outcomes
The driver/operator shall lubricate chassis components, given a fire department vehicle, its manufacturer’s specifications, lubrication gun, and approved lubricant so that the chassis is lubricated following the manufacturer’s instructions.
AUTOMATIC LUBRICATION SYSTEM

1. Follow the manufacturer’s directions for operating the system.

MANUAL LUBRICATION SYSTEM

2. If the weather permits, park the vehicle outdoors.

3. Consult the operator’s manual for the type of oil and the location of fill ports and grease fittings.

4. Locate the fill ports, one at a time.
   a. Consulting operator’s manual, as necessary

5. Press the end of the lubrication gun fill hose onto each fill port inlet.

6. Operate the pump handle on the gun until no more lubricant enters the inlet.
   a. Lubricant squeezes out between the hose outlet and the inlet

Total Score

Total points possible = 6
Total points needed to pass = 4

☐ Pass ☐ Fail
Job Performance Requirement #6
Perform Daily and Weekly Apparatus Inspections

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, General Requirements 2-2.2

Task
Perform daily and weekly apparatus inspections.

Given
• One driver/operator
• Fire department pumper
• Apparatus operator’s manual
• Department’s daily and weekly inspection forms
• Writing implement

Performance outcomes
The driver/operator shall perform daily and weekly apparatus inspection, given a fire department vehicle, its manufacturer’s specifications, so that the operational status of the vehicle is verified.
DAILY INSPECTION

1. **Operate the pump drive control.**
   a. Pump engages

2. **Check the auxiliary fuel tank if the apparatus is equipped with separate engine-driven pumps with fuel supplies independent of the main apparatus fuel tank.**
   a. Fuel tank full

3. **Check the pump panel gauges and valves.**
   a. All in working order

4. **Check any gauges duplicated on the pump panel and dashboard.**
   a. Gauges in agreement

5. **Open and close each valve several times.**
   a. Valves operate smoothly

6. **Check all pump drains.**
   a. All are closed

7. **Check the fire pump and booster lines.**
   a. Completely drained of water

8. **Inspect the water and foam tanks (if applicable).**
   a. Fluid at proper level

9. **Inspect the underside of the apparatus and inside compartments.**
   a. No evidence of water or foam leaks

10. **Inspect the auxiliary winterization system.**
    a. No damage, leaks, or obstructions

11. **Test the roof and bumper turrets (if applicable).**
    a. Operate properly and have full range of motion
    b. Discharge length and pattern conform to the specifications in the operator’s manual

12. **Inspect all components of the auxiliary fire suppression systems on board (halon, dry chemical, etc., if applicable).**
    a. Noting any damage, leaks, corrosion, loose connections, improper valve positions and low agent levels, as well as chemical systems
    b. Checking proper operation of hose reel on systems so equipped
13. Complete the department’s daily inspection form.
   a. Complete and legible

WEEKLY INSPECTION

14. Flush a hydrant.
   a. Pressure adequate
   b. Hydrant functioning properly

15. Connect the pumper to the hydrant.
   a. Following department’s SOPs

16. Remove all pump intake strainers, if possible, from the apparatus being inspected.

17. Flush the pump using one of the following methods:
   a. While the apparatus is out of gear, open all valves and drains and push water through the system until the water runs clear and contains no debris
   b. Pump water into the system through the intake and discharge connections (first one and then the other)

18. Check and clean the intake strainers.

19. Inspect the pump gear box.
   a. Checking for proper oil level and traces of water
   b. Consulting the operator’s manual for information on proper oil level and corrective measures

20. Operate the pump primer.
   a. All pump valves closed

21. If the apparatus has a multistage (two-or three-stage pump) operate the changeover valve while pumping from the booster tank.
   a. System operates properly

22. Check the pack glands.
   a. No excessive leaks

23. Recalibrate the flowmeter.
   a. Following flowmeter manufacturer’s instructions

24. Operate the pump pressure control device(s).
   a. System operates properly
25. System operating properly.
   a. Test the accuracy of the foam proportioning system

26. Refer to pump manufacturer’s recommendations for additional instructions, if any.

27. Complete the department’s weekly inspection form.
   a. Complete and legible

Total Score

Total points possible = 32
Total points needed to pass = 22

☐ Pass ☐ Fail
Job Performance Requirement #7
Start, Idle, and Shut Down a Fire Service Apparatus

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, Section 2-3.1, 3-1.3

Task
Start, idle, and shut down a fire service apparatus.

Given
• One driver/operator
• Fire service pumper
• Apparatus operator’s manual

Performance outcomes
The driver/operator shall start, idle, and shut down a fire service apparatus, given a fire department vehicle, its manufacturer’s specifications, so that the manufacturer’s operational instructions are followed.
MANUAL TRANSMISSION

1. Disconnect all ground shore lines (external electrical cords, air hoses, or exhaust system hoses) from the apparatus.
   a. Manually disconnected or automatically popped-off before the apparatus is driven from the station

2. Mount the apparatus cab.
   a. Using appropriate steps and handrails

3. Turn on the vehicle battery(ies).
   CAUTION! Never operate the battery switch while the engine is running.
   a. Hitting Battery 1, Battery 2 or Both on battery switch or moving simple switch to on position
   b. Following apparatus manufacturer’s directions and departmental SOPs

4. Make driver safety and comfort adjustments.
   a. Seat first and then mirrors and steering wheel position

5. Don safety restraints.
   a. Lap and shoulder belt(s)

6. Check the parking brake.
   a. Brake set

7. Place the transmission in neutral if it is not already in neutral.
   a. Pushing in clutch pedal completely (fully disengaging the clutch)
   b. Moving shift lever to neutral position
   c. Removing foot from clutch

8. Turn on the ignition switches located on the dashboard.

9. Operate the starter control.
   a. Using key, appropriate toggle switch(es), or push button depending on the apparatus
   b. Operating at intervals of no more than 30 seconds, with a rest of 60 seconds between each try if vehicle does not start sooner
   c. On gasoline-powered apparatus, operating manual choke control before operating the starter control, if necessary, and using it sparingly in warm weather or after apparatus is already warm
10. **Observe the apparatus gauges.**
   a. Stopping apparatus immediately and having system checked by a trained mechanic if oil pressure gauge does not indicate any reasonable amount of oil pressure within 5 to 10 seconds
   b. Checking ammeter to make sure the electrical system is operating/charging properly
   c. Checking air pressure gauge to ensure that adequate pressure is built up to release parking brake and operate service brakes

11. **Idle the engine.**
   a. For 3 to 5 minutes or until air pressure is built to appropriate level to operate service and parking brakes (consult operator’s manual)
   b. Increasing throttle to fast idle as necessary to speed buildup of air pressure

12. **Shut down the apparatus.**
   √ Note: Had the apparatus been driven, you would now place the transmission in neutral and allow the engine to idle and cool down for 3 to 5 minutes before shutting it off. Because this is an exercise, however, and because the apparatus has not been moved you will omit those steps.

13. **Shut off the engine.**
   a. Moving ignition key or switch(es) to OFF position

14. **Turn the battery switch to the OFF position.**

15. **Reconnect all ground shore lines (electric, air, exhaust).**

   MANUAL TRANSMISSION  Total Score  

AUTOMATIC TRANSMISSION

1. **Disconnect all ground shore lines (external electrical cords, air hoses, or exhaust system hoses) from the apparatus.**
   a. Manually disconnected or automatically popped-off before the apparatus is driven from the station

2. **Mount the apparatus cab.**
   a. Using appropriate steps and handrails
3. Turn on the vehicle battery(ies).
   CAUTION! Never operate the battery switch while the engine is running.
   a. Hitting Battery 1, Battery 2 or Both on battery switch or moving simple switch to on position
   b. Following apparatus manufacturer’s directions and departmental SOPs

4. Make driver safety and comfort adjustments.
   a. Seat first and then mirrors and steering wheel position

5. Don safety restraints.
   a. Lap and shoulder belt(s)

6. Check the apparatus parking brake.
   a. Brake set

7. Turn on the ignition switches located on the dashboard.

8. Operate the starter control.
   a. Using key, appropriate toggle switch(es), or push button depending on the apparatus
   b. Operating at intervals of no more than 30 seconds, with a rest of 60 seconds between each try if vehicle does not start sooner
   c. On gasoline-powered apparatus, operating manual choke control before operating the starter control, if necessary, and using it sparingly in warm weather or after apparatus is already warm

9. Observe the apparatus gauges.
   a. Stopping apparatus immediately and having system checked by a trained mechanic if oil pressure gauge does not indicate any reasonable amount of oil pressure within 5 to 10 seconds
   b. Checking ammeter to make sure the electrical system is operating/charging properly
   c. Checking air pressure gauge to ensure that adequate pressure is built up to release parking brake and operate service brakes

10. Idle the engine.
    a. For 3 to 5 minutes or until air pressure is built to appropriate level to operate service and parking brakes (consult operator’s manual)
    b. Increasing throttle to fast idle as necessary to speed buildup of air pressure
11. Shut down the apparatus.
   √ Note: Had the apparatus been driven, you would now place the
   transmission in neutral and allow the engine to idle and cool down for
   3 to 5 minutes before shutting it off. Because this is an exercise,
   however, and because the apparatus has not been moved you will omit
   those steps.

12. Shut off the engine.
   a. Moving ignition key or switch(es) to OFF position

13. Turn the battery switch to the OFF position.

14. Reconnect all ground shore lines (electric, air, exhaust).

   AUTOMATIC TRANSMISSION
   Total Score

   MANUAL TRANSMISSION
   Total points possible = 23
   Total points needed to pass = 16
   Total Score

   AUTOMASTIC TRANSMISSION
   Total points possible = 20
   Total points needed to pass = 14
   Total Score

☐ Pass ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #8
Drive a Fire Service Apparatus

| Trainee: ____________________________ | Notes: ______________________________ |
| Department: _________________________ | ______________________________     |
| Test Site: __________________________ | ______________________________     |
| Evaluator: __________________________ | ______________________________     |
| Date: ______________________________  |

References: NFPA 1002, Section 2-3.1, 3-1.3

Task: Drive a fire service apparatus.

Given:
- One driver/operator
- Fire service apparatus
- Apparatus operator’s manual

Performance outcomes:
The driver/operator shall drive a fire service apparatus, given a fire department vehicle and a predetermined route on a public way, so that the vehicle is safely operated in compliance with all applicable provincial and local laws, departmental rules and regulations.
FOUR-OR FIVE-SPEED MANUAL SHIFT TRANSMISSION WITH A SINGLE-SPEED REAR AXLE

MANUAL TRANSMISSION

1. Disconnect all ground shore lines (external electrical cords, air hoses, or exhaust system hoses) from the apparatus.
   a. Manually disconnected or automatically popped-off before the apparatus is driven from the station

2. Mount the apparatus cab.
   a. Using appropriate steps and handrails

3. Turn on the vehicle battery(ies).
   CAUTION! Never operate the battery switch while the engine is running.
   a. Hitting Battery 1, Battery 2 or Both on battery switch or moving simple switch to on position
   b. Following apparatus manufacturer’s directions and departmental SOPs

4. Make driver safety and comfort adjustments.
   a. Seat first and then mirrors and steering wheel position

5. Don safety restraints.
   a. Lap and shoulder belt(s)

6. Check the parking brake.
   a. Brake set

7. Place the transmission in neutral if it is not already in neutral.
   a. Pushing in clutch pedal completely (fully disengaging the clutch)
   b. Moving shift lever to neutral position
   c. Removing foot from clutch

8. Turn on the ignition switches located on the dashboard.

9. Operate the starter control.
   a. Using key, appropriate toggle switch(es), or push button depending on the apparatus
   b. Operating at intervals of no more than 30 seconds, with a rest of 60 seconds between each try if vehicle does not start sooner
   c. On gasoline-powered apparatus, operating manual choke control before operating the starter control, if necessary, and using it sparingly in warm weather or after apparatus is already warm
10. **Observe the apparatus gauges.**
   a. Stopping apparatus immediately and having system checked by a trained mechanic if oil pressure gauge does not indicate any reasonable amount of oil pressure within 5 to 10 seconds
   b. Checking ammeter to make sure the electrical system is operating/charging properly
   c. Checking air pressure gauge to ensure that adequate pressure is built up to release parking brake and operate service brakes

11. **Idle the engine.**
   a. For 3 to 5 minutes or until air pressure is built to appropriate level to operate service and parking brakes (consult operator’s manual)
   b. Increasing throttle to fast idle as necessary to speed buildup of air pressure

12. **Ensure that all riders are seated and wearing safety restraints.**

13. **Depress the clutch pedal.**
   a. With left foot

14. **Depress the service brake pedal.**
   a. With right foot

15. **Release the parking brake.**

16. **Place the gear shifter into a low gear.**
   a. Chosen gear allows vehicle to move without an inordinate amount of wear on engine
   CAUTION! Never attempt to start the apparatus moving while it is in a high drive gear. This action causes the clutch (on both manual and automatic transmissions) to slip, which may damage the clutch facing.

17. **Release the clutch.**
   a. Slowly
   b. Taking care to avoid vehicle rollback before engaging clutch

18. **Drive forward.**
   a. Depressing accelerator appropriately
19. **Shift to a higher gear.**
   a. After proper speed or revolutions per minute (rpm) are reached ______
   b. After apparatus clears station and you have an unobstructed view of street and traffic conditions ______
   c. Pushing in clutch pedal completely (fully disengaging the clutch) and shifting smoothly to next higher gears as appropriate for vehicle’s speed ______

20. **Shift to a lower gear.**
   a. Appropriate to the steepness of the grade when climbing or descending hill ______
   b. Before negotiating sharp curves or turning corners ______
   c. When driving over rugged terrain ______
   d. Maintaining peak engine power ______
   e. Limiting downhill speed to less than maximum governed rpm ______
   f. Remaining in gear at all times ______

21. **Extract apparatus if it becomes stuck in mud, sand, or snow.**
   a. Not racing engine or jumping clutch ______
   b. Maintaining front wheels in line with vehicle chassis ______

22. **Bring the apparatus to a standstill.**
   a. Braking smoothly, not abruptly ______
   b. Without skidding ______
   c. Activating engine brake and retarder per operator’s manual ______
   d. Not disengaging clutch until last few feet (meters) of travel ______

23. **Shut down the apparatus.**

<table>
<thead>
<tr>
<th>MANUAL TRANSMISSION</th>
<th>Total Score</th>
</tr>
</thead>
</table>

**AUTOMATIC TRANSMISSION**

1. **Disconnect all ground shore lines (external electrical cords, air hoses, or exhaust system hoses) from the apparatus.**
   a. Manually disconnected or automatically popped-off before the apparatus is driven from the station ______

2. **Mount the apparatus cab.**
   a. Using appropriate steps and handrails ______

Office of the Fire Commissioner JPR #8 May 05
3. **Turn on the vehicle battery(ies).**
   CAUTION! Never operate the battery switch while the engine is running.
   a. Hitting Battery 1, Battery 2 or Both on battery switch or moving simple switch to on position
   b. Following apparatus manufacturer’s directions and departmental SOPs

4. **Make driver safety and comfort adjustments.**
   a. Seat first and then mirrors and steering wheel position

5. **Don safety restraints.**
   a. Lap and shoulder belt(s)

6. **Turn on the ignition switches located on the dashboard.**

7. **Operate the starter control.**
   a. Using key, appropriate toggle switch(es), or push button depending on the apparatus
   b. Operating at intervals of no more than 30 seconds, with a rest of 60 seconds between each try if vehicle does not start sooner
   c. On gasoline-powered apparatus, operating manual choke control before operating the starter control, if necessary, and using it sparingly in warm weather or after apparatus is already warm

8. **Observe the apparatus gauges.**
   a. Stopping apparatus immediately and having system checked by a trained mechanic if oil pressure gauge does not indicate any reasonable amount of oil pressure within 5 to 10 seconds
   b. Checking ammeter to make sure the electrical system is operating/charging properly
   c. Checking air pressure gauge to ensure that adequate pressure is built up to release parking brake and operate service brakes

9. **Idle the engine.**
   a. For 3 to 5 minutes or until air pressure is built to appropriate level to operate service and parking brakes (consult operator’s manual)
   b. Increasing throttle to fast idle as necessary to speed buildup of air pressure

10. **Ensure that all riders are seated and wearing safety restraints.**

11. **Depress the service brake pedal.**

12. **Release the parking brake.**
13. Place the transmission into a gear for normal operation.
   a. Depressing interlock on shifter and moving it to D, or correct number
      or range of numbers, or depressing pushbutton selector

14. Drive forward.
   a. Depressing accelerator appropriately

15. Shift to a higher gear.
   a. After proper speed or revolutions per minute (rpm) are reached
   b. After apparatus clears station and you have an unobstructed view of
      street and traffic conditions
   c. Increasing pressure on accelerator

16. Shift to a lower gear.
   a. Depressing shifter interlock and manually moving shifter to a lower gear
   b. Not jumping more than one gear at a time
   c. When climbing or descending a steep hill
   d. Before negotiating sharp curves or turning corners
   e. When driving over rugged terrain
   f. Limiting downhill speed to less than maximum governed rpm

17. Extract apparatus if it becomes stuck in mud, sand, or snow.
   a. Not racing engine or jumping clutch
   b. Maintaining front wheels in line with vehicle chassis

18. Bring the apparatus to a standstill.
   a. Braking smoothly, not abruptly
   b. Without skidding
   c. Activating engine brake and retarder per operator’s manual
   d. Not disengaging clutch until last few feet (meters) of travel

19. Shut down the apparatus.

AUTOMATIC TRANSMISSION  Total Score

MANUAL TRANSMISSION
Total points possible = 43
Total points needed = 30

Total Score

AUTOMATIC TRANSMISSION  Total Score

Total points possible = 36
Total points needed to pass = 25

Total Score

☐  Pass  ☐  Fail
## NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

**Job Performance Requirement #9**  
**Back Apparatus Using Mirrors**

<table>
<thead>
<tr>
<th>Trainee: ____________________________</th>
<th>Notes: ______________________________</th>
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<tbody>
<tr>
<td>Department: _________________________</td>
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<td>Test Site: __________________________</td>
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<td>Evaluator: __________________________</td>
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<td>Date: ______________________________</td>
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</tbody>
</table>

### References
NFPA 1002, Section 2-3.2, 2-3.3, 2-3.4, 3-1.2

### Task
Back fire service apparatus using mirrors.

### Given
- Two driver/operators: one to operate the apparatus and one to serve as spotter
- Fire service pumper, mobile water supply apparatus, or wildland apparatus
- Apparatus operator’s manual
- Fire department SOPs on backing fire apparatus

### Performance outcomes
The driver/operator shall back fire service apparatus, given a fire department vehicle and predetermined direction from proctor, so that the vehicle is safely operated in compliance with all applicable provincial and local laws, and departmental SOPs.
1. **Mount the apparatus, secure your seatbelt, and start the apparatus.**  
2. **Adjust all mirrors.**  
   a. Sitting straight with both hands on the steering wheel  
   b. Moving your head from side to side until you can clearly see spotter  
3. **Place the apparatus in reverse.**  
   a. *(Manual)* Placing gear shifter in reverse position  
   OR  
   *(Automatic)* Depressing interlock on shifter and moving it to R, or correct number or range of numbers, or depressing push button selector  
4. **Back the apparatus.**  
   a. Slowly  
   b. Checking each mirror from time to time, but always looking for spotter  
   c. Following spotter’s directions  
   d. Stopping if you cannot see the spotter  
   e. Continuing to back up until spotter signals you to stop  
5. **Shut down the apparatus or place the apparatus in neutral and apply the parking brake.**  
   ✓ *Note: If other trainees will practice backing procedures, do not shut down the apparatus, but leave it in neutral and apply the parking brake.*  
   
   **Total Score**  

   Total points possible = 10  
   Total points needed to pass = 7  

☐ Pass    ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #10
Operate a Fire Department Pumping Apparatus
Through a Predetermined Obstacle Course

<table>
<thead>
<tr>
<th>Trainee: ____________________________</th>
<th>Notes: ______________________________</th>
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<tbody>
<tr>
<td>Department: _________________________</td>
<td>______________________________</td>
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<td>Test Site: __________________________</td>
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<td>Evaluator: __________________________</td>
<td>______________________________</td>
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<tr>
<td>Date: ______________________________</td>
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</tr>
</tbody>
</table>

References
NFPA 1002, Section 2-3.2, 2-3.4, 3-1.2

<table>
<thead>
<tr>
<th>Task</th>
<th>The student shall successfully maneuver a fire department pumping apparatus through four maneuvers of an obstacle course. The maneuvers shall be straight line, confined space turnaround, alley dock and serpentine as per the attached drawing.</th>
</tr>
</thead>
</table>
| Given| • Driver/operator  
• Pumping apparatus  
• A spotter  
• Obstacle course |
| Performance outcomes | The student shall maneuver a fire department pumping apparatus through the obstacle course not striking any marker cones, using reasonable speed for course conditions, judge vehicle clearance, use mirrors correctly, obey spotter when backing and maintain control of the vehicle at all times. |
1. Use installed restraint devices. ______
2. Activate vehicle emergency lighting. ______
3. Maintain a reasonable speed for course conditions. ______
4. Judge vehicle clearance and use mirrors. ______
5. Use and obey spotter when backing. ______
6. Not strike the course markers, straight line. ______
7. Not strike the course markers, confined space turnaround. ______
8. Not strike the course markers, alley dock. ______
9. Not strike the course markers, serpentine. ______
10. Maintain control of vehicle at all times. ______
11. Stop within 6” from the measured point. ______
12. Exit the vehicle with all parking equipment engage. ______
   √ Note: Student will lose 0.5 points for each marker struck. ______ - deductions

Total Score ______

Total points possible = 12
Total points needed to pass = 8

☐ Pass ☐ Fail
## NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

**Job Performance Requirement #11**  
Operate a Fire Department Pumping Apparatus  
Through a Predetermined Obstacle Course

<table>
<thead>
<tr>
<th>Trainee: ____________________________</th>
<th>Notes: ______________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department: _________________________</td>
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<td>Test Site: __________________________</td>
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<td>Evaluator: __________________________</td>
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<td>Date: ______________________________</td>
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</table>

### References

<table>
<thead>
<tr>
<th>References</th>
<th>NFPA 1002, Section 2-3.3, 2-3.5, 3-1.2</th>
</tr>
</thead>
</table>

### Task

The student shall successfully maneuver a fire department pumping apparatus through four maneuvers of an obstacle course. The maneuvers shall be off-set alley, parallel park, diminishing clearance and stopping, as per the attached drawing.

### Given

- Driver/operator
- Pumping apparatus
- A spotter
- Obstacle course

### Performance outcomes

The student shall maneuver a fire department pumping apparatus through the obstacle course not striking any marker cones, using reasonable speed for course conditions, judge vehicle clearance, use mirrors correctly, obey spotter when backing and maintain control of the vehicle at all times.
1. Use installed restraint devices.
2. Activate vehicle emergency lighting.
3. Maintain a reasonable speed for course conditions.
4. Judge vehicle clearance and use mirrors.
5. Use and obey spotter when backing.
6. Not strike the course markers, off-set alley.
7. Not strike the course markers, parallel park.
8. Not strike the course markers, diminishing clearance.
9. Not strike the course markers, stopping.
10. Maintain control of vehicle at all times.
11. Stop within 6” from the measured point.
12. Exit the vehicle with all parking equipment engage.
   √ Note: Student will lose 0.5 points for each marker struck.

Total points possible = 12
Total points needed to pass = 8

☐ Pass  ☐ Fail

Total Score ______

Note: Student will lose 0.5 points for each marker struck.
Job Performance Requirement #12
Operate a Fire Department Pumping Apparatus
On a Public Roadway

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

<table>
<thead>
<tr>
<th>References</th>
<th>NFPA 1002, Section 2-3.1, 3-1.3</th>
</tr>
</thead>
</table>
| Task       | The student shall operate a fire department pumping apparatus on a public roadway through a predetermined route that incorporates the maneuvers and features specified in the following: four left and four right turns, a straight section of urban business street or a two-lane rural road at least 1 mile (1.6 km) in length, one through-intersection and two intersections where a stop has to be made, one curve, either left or right, a section of limited-access highway that includes a conventional ramp entrance and exit and a section of road long enough to allow two lane changes, a downgrade steep enough and long enough to require down-shifting and braking, an upgrade steep enough and long enough to require gear changing to maintain speed and one underpass or a low clearance or bridge.√ 
| Note: The student will be licensed to drive any vehicle used in this testing. |

| Given      | • Driver/operator
            | • Pumping apparatus
            | • A predetermined route on a public roadway |

| Performance outcomes | The student shall operate a fire department pumping apparatus on a public roadway through a predetermined route so that the vehicle is safely operated in compliance with all applicable provincial and local laws, rules and regulations. |
1. Use installed restraint devices. ______

2. Maintain safe following distance. ______

3. Observe posted speed limits and adjust for weather/traffic/road conditions. ______

4. Utilize vehicle gauges, controls and mirrors. ______

5. Use and obey spotter when backing. ______

6. Demonstrate adequate braking distance allowing for vehicle weight, liquid surge, and road/weather conditions. ______

7. Maintain control of vehicle at all times. ______

8. Exit the vehicle with all parking equipment engaged. ______

9. * Student involved in an at fault accident, yes or no.  
   If yes, this is an automatic fail.  
   Pass/Fail

   Total Score ______

* Critical for successful completion.

Total points possible = 8  
Total points needed to pass = 6

☐ Pass ☐ Fail
Job Performance Requirement #13
Position Pumper for Drafting
from Static Water Supply

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References

NFPA 1002, Section 3-2.1, 3-2.2

Task

Position pumper for drafting from a static water supply.

Given

- Driver/operator
- At least two firefighters to assist with connecting the positioning hose in water
- Pumper
- Floating or conventional barrel-type floating strainer
- Two 10 foot (3 m) sections of hard-suction hose
- Spare hard-suction hose gaskets
- Rubber mallet
- Utility rope
- Laminated copy of Tables 5.1 and 5.2 from Driver/Operator pages 84 and 85

Performance outcomes

The driver/operator shall position pumper for drafting from a static water supply, given a pumper and necessary equipment, so that the pumper is ready to begin drafting operations from a static water supply.
1. **Stop the apparatus.**
   a. Shortly before reach water source
   b. On a firm surface, preferable paved

2. **Place the transmission in PARK or NEUTRAL.**
   a. Leaving apparatus idling

3. **Set the parking brake.**

4. **Dismount the apparatus.**
   a. Using handrails

5. **Size up the static water source to determine needs for minimum lift.**
   a. Referring to pre-incident plans and/or laminated lift tables

6. **Connect the sections of hard-suction hose.**
   a. Aligning sections
   b. Turning clockwise
   c. Hand tightening
   d. Using rubber mallet, if necessary, to make an airtight connection
   e. Not allowing couplings to rest on ground

7. **Connect strainer to one end of hard-suction hose.**
   a. Turning clockwise
   b. Hand tightening
   c. Using rubber mallet, if necessary, to make an airtight connection
   d. *(Barrel Strainer)* Fastening rope to strainer

8. **Prepare pump intake for coupling.**
   a. Removing pump intake cap
   b. Removing keystone valve from intake, if applicable

9. **Connect the hard-suction hose to the pumper.**
   a. To pump intake
   b. Aligning sections
   c. Turning clockwise
   d. Hand tightening
   e. Using rubber mallet, if necessary, to make airtight connection

10. **Pull the pumper into draft position.**
    a. After sizing up for entrapment, stability, and access
    b. At convenient angle to water source
    c. Within limits of length of hard-suction hose
    d. Minimizing lift distance
    e. *(Firefighters)* Using rope to maneuver strainer and to keep it off bottom
11. *(Firefighters)* Tie up strainer rope (if used) to assure that barrel strainer is not on the bottom to pumper or other stationary object

12. Put truck in pump gear to begin drafting process.

13. Place the transmission in PARK or NEUTRAL.
   a. When your instructor signals that the exercise has ended
   b. Leaving apparatus idling

14. Set the parking brake.

15. Dismount the apparatus.
   a. Using handrails

16. Dismantle drafting equipment and return to proper storage on pumper.
   a. Per department SOPs or instructor’s directions

Total Score

Total points possible = 34
Total points needed to pass = 24

☐ Pass ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #14
Position Pumper to Make Large Diameter Intake Hose Connections

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, Section 3-2.1, 3-2.2

Task
Position pumper to make large diameter intake hose connections.

Given
• Driver/operator
• Fire service pumper
• Large diameter soft intake hose
• Large diameter hard intake hose rated to withstand positive pressure
• Two 2½ inch (65 mm) gated hydrant valves
• Spanner or hydrant wrench
• Rubber mallet
• 2½ inch (65 mm) to 4½ inch (115 mm) expander coupling (if hydrant has only 2½ inch [65 mm] outlets)
• Chafing blocks

Performance outcomes
The driver/operator shall position a pumper to make large diameter intake hose connections, given a pumper and necessary equipment, so that the pumper is connected to the hydrant using large diameter intake hose and a flow of water is supplied to the pumper.
SOFT-SLEEVE CONNECTION

1. **Spot the pumper.**
   a. Front wheels at 45-degree angle to hydrant outlet ______
   b. Within limits of intake hose length ______
   c. (Side intake connection) Pump intake a few feet (meters) short of hydrant outlet
   **OR**
   (Front or rear intake connection) Pump intake a few feet (meters) short or a few feet (meters) beyond hydrant outlet ______

2. **Place the transmission in PARK or NEUTRAL.**
   a. Leaving apparatus idling ______

3. **Set the parking brake.** ______

4. **Dismount the apparatus.**
   a. Using handrails ______

5. **Close the booster tank valve if open.**
   a. If there is no clapper between pump and tank ______

6. **Remove the pump intake cap if intake hose is not reconnected.**
   a. Turning clockwise ______
   b. Using mallet or spanner if tight ______

7. **Remove necessary equipment from the pumper.**
   a. Hydrant or spanner wrench ______
   b. Expander (if necessary) ______
   c. Rubber mallet ______

8. **Remove the hydrant cap.**
   a. Turning counterclockwise ______
   b. Using hydrant wrench if cap is tight ______

9. **Inspect the hydrant.**
   a. Exterior for damage ______
   b. Inside outlet for debris or damage ______

10. **Place the hydrant wrench on the hydrant nut.**
    a. Handle pointing away from outlet ______

11. **Turn on hydrant to test, flush debris.**
    a. Briefly ______
12. Place the expander adapter on the hydrant, if necessary.
   a. Clockwise
   b. Hand tight

13. Place the 2½ inch (65 mm) gated hydrant valves on the small-diameter hydrant outlets.
   a. Clockwise
   b. Hand tight

14. Remove the intake hose from the pumper.

15. Connect the intake hose to the pump intake.
   a. Clockwise
   b. Hand tight

16. Stretch the intake hose to the hydrant.
   a. Placing two full twists in hose to prevent kinking

17. Make the hydrant connection.
   a. To steamer outlet or outlet with adapter
   b. Clockwise
   c. Hand tight

18. Open the hydrant.
   a. Slowly until hose is full

19. Tighten any leaking connections.
   a. Using rubber mallet

20. Place chafing blocks under hose.
   a. Where hose contacts ground

Total Score

Total points possible = 32
Total points needed to pass = 22

☐ Pass ☐ Fail
### Job Performance Requirement #15

Position Pumper to Connect to 2½ inch (65 mm) Hydrant Outlets

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#### References

NFPA 1002, Section 3-2.1, 3-2.2

#### Task

Position pumper to connect to 2½ inch (65 mm) hydrant outlets.

#### Given

- Driver/operator
- Fire service pumper
- One or two 2½ inch (65 mm) or 3 inch (77 mm) hoseline(s)
- Bell reducer or suction siamese fitting
- Two 2½ inch (65 mm) gated hydrant valves
- Spanner or hydrant wrench
- Rubber mallet

#### Performance outcomes

The driver/operator shall position a pumper to connect to 2½ inch (65 mm) hydrant outlets, given a pumper and necessary equipment, so that the pumper is connected to the hydrant using 2½ inch hoseline(s) and a flow of water is supplied to the pumper.
1. **Spot the pumper.**
   a. Front wheels at 45-degree angle to hydrant outlet
   b. Within limits of intake hose length
   c. (Side intake connection) Pump intake a few feet (meters) short of hydrant outlet
      **OR**
      (Front or rear intake connection) Pump intake a few feet (meters) short or a few feet (meters) beyond hydrant outlet

2. **Place the transmission in PARK or NEUTRAL.**
   a. Leaving apparatus idling

3. **Set the parking brake.**

4. **Dismount the apparatus.**
   a. Using handrails

5. **Close the booster tank valve if open.**
   a. If there is no clapper between pump and tank

6. **Remove necessary equipment from the pumper.**
   a. Hoselines
   b. Hydrant or spanner wrench
   c. Rubber mallet
   d. Bell reducer or siamese appliance
   e. 2½ inch (65 mm) gated hydrant valves

7. **Remove the pump intake cap.**
   a. Turning counterclockwise
   b. Using mallet or spanner if tight

8. **Connect the bell reducer or siamese fitting to the large pump intake connection.**
   a. Clockwise
   b. Hand tight

9. **Connect the two hoselines to the bell reducer or siamese fitting.**
   a. Clockwise
   b. Hand tight

10. **Remove the hydrant cap.**
    a. Turning counterclockwise
    b. Using hydrant wrench if cap is tight
11. **Inspect the hydrant.**
   a. Exterior for damage
   b. Inside outlet for debris or damage

12. **Place the hydrant wrench on the hydrant nut.**
   a. Handle pointing away from outlet

13. **Open the hydrant to test/flush debris.**
   a. Briefly

14. **Place the 2½ inch (65 mm) gated valves on the small diameter hydrant outlets.**
   a. Clockwise
   b. Hand tight

15. **Stretch the 2½ inch (65 mm) hoselines to the hydrant.**
   a. Removing from pumper according to departmental SOPs

16. **Connect the 2½ inch (65 mm) or 3 inch (77 mm) hose(s) to the hydrant.**
   a. To gated valves
   b. Clockwise
   c. Hand tight

---

**Total Score**

---

Total points possible = 30
Total points needed to pass = 21

☐ Pass    ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #16
Position Pumper to Make Multiple Intake Connections

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

<table>
<thead>
<tr>
<th>References</th>
<th>NFPA 1002, Section 3-2.1, 3-2.2</th>
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</thead>
<tbody>
<tr>
<td>Task</td>
<td>Position pumper to make multiple intake connections.</td>
</tr>
<tr>
<td>Given</td>
<td>• Driver/operator</td>
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<tr>
<td></td>
<td>• Fire service pumper</td>
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<tr>
<td></td>
<td>• Large diameter soft intake hose</td>
</tr>
<tr>
<td></td>
<td>• Two 2½ inch (65 mm) or 3 inch (77 mm) hoseline(s)</td>
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<tr>
<td></td>
<td>• Two 2½ inch (65 mm) gated hydrant valves</td>
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<tr>
<td></td>
<td>• Spanner or hydrant wrench</td>
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<td></td>
<td>• Rubber mallet</td>
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<td></td>
<td>• 2½ inch (65 mm) to 4½ inch (115 mm) expander coupling (if hydrant has only 2½ inch [65 mm] outlets)</td>
</tr>
<tr>
<td>Performance outcomes</td>
<td>The driver/operator shall position a pumper to make multiple intake connections, given a pumper and necessary equipment, so that the pumper is connected to the hydrant using large diameter intake hose and 2½ inch hoseline(s) so that a flow of water is supplied to the pumper from both connections.</td>
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</tbody>
</table>
1. **Spot the pumper.**
   a. Front wheels at 45-degree angle to hydrant outlet
   b. Within limits of intake hose length
   c. (Side intake connection) Pump intake a few feet (meters) short of hydrant outlet
      **OR**
      (Front or rear intake connection) Pump intake a few feet (meters) short or a few feet (meters) beyond hydrant outlet

2. **Place the transmission in PARK or NEUTRAL.**
   a. Leaving apparatus idling

3. **Set the parking brake.**

4. **Dismount the apparatus.**
   a. Using handrails

5. **Close the booster tank valve if open.**
   a. If there is no clapper between pump and tank

6. **Remove the pump intake cap.**
   a. Turning counterclockwise
   b. Using mallet or spanner if tight

7. **Remove necessary equipment from the pumper.**
   a. Hydrant or spanner wrench
   b. Expander, if necessary
   c. Rubber mallet
   d. 2½ inch (65 mm) gated hydrant valves

8. **Remove the hydrant cap.**
   a. Turning counterclockwise
   b. Using hydrant wrench if cap is tight

9. **Inspect the hydrant.**
   a. Exterior for damage
   b. Inside outlet for debris or damage

10. **Place the hydrant wrench on the hydrant nut.**
    a. Handle pointing away from outlet
11. Open the hydrant to test/flush debris.
   a. Briefly

12. Place the expander adapter on the hydrant, if necessary.
   a. Clockwise
   b. Hand tight

13. Place the 2½ inch (65 mm) gated valves on the small diameter hydrant outlets.
   a. Clockwise
   b. Hand tight

14. Remove the 2½ inch (65 mm) or 3 inch hoselines to the 2½ inch (65 mm) pumper.

15. Connect the 2½ inch (65 mm) or 3 inch hoselines to the 2½ inch (65 mm) pumper outlet.
   a. Clockwise
   b. Hand tight

16. Remove the intake hose from the pumper.

17. Connect the intake hose to the pump intake.
   a. Clockwise
   b. Hand tight
   \(\text{Note: Some departments carry the soft-sleeve hose reconnected to the pump intake through a gated intake valve. This arrangement requires only that the soft-sleeve intake hose be stretched to the hydrant.}\)

18. Stretch the intake hose to the hydrant.
   a. Placing two full twists in hose to prevent kinking
   \(\text{WARNING! Do not twist hose if it is equipped with Storz couplings. One of the hose couplings could come apart when the hose is charged.}\)

19. Maneuver the apparatus, if necessary, to make the connection.
   a. Shutting down apparatus when correctly positioned

20. Make the soft-sleeve hydrant connection.
   a. To steamer outlet or outlet with adapter
   b. Clockwise
   c. Hand tight
21. Stretch the 3 inch (77 mm) hoselines to the hydrant. 

22. Connect the 3 inch (77 mm) hoses to the hydrant. 
   a. To gated valves 
   b. Clockwise 
   c. Hand tight 

23. Open the hydrant. 
   a. Slowly until hose is full 

24. Tighten any leaking connections. 
   a. Using rubber mallet 

25. Place chafing blocks under large diameter intake hose. 
   a. Where hose contacts ground 

Total Score __________

Total points possible = 41
Total points needed to pass = 29

☐ Pass ☐ Fail
### References
- NFPA 1002, Section 3-2.1, 3-2.2

### Task
- Position pumper and make connections for a dual pumping operation.

### Given
- Two driver/operators
- Two pumpers
- Large diameter soft intake hose
- Spanner or hydrant wrench
- Rubber mallet
- Chafing blocks

### Performance outcomes
- The driver/operator shall position a pumper and make connections for a dual pumping operation, given a pumper and necessary equipment, so that pumper #1 is connected to a hydrant and pumper #2 is connected to pumper #1, so that a flow of water is supplied to both pumpers.
PUMPER #1

1. **Spot the pumper.**
   a. Front wheels at 45-degree angle to hydrant outlet  
   b. Within limits of intake hose length  
   c. (Side intake connection) Pump intake a few feet (meters) short of hydrant outlet  
   **OR**  
   (Front or rear intake connection) Pump intake a few feet (meters) short or a few feet (meters) beyond hydrant outlet

2. **Place the transmission in PARK or NEUTRAL.**
   a. Leaving apparatus idling

3. **Set the parking brake.**

4. **Dismount the apparatus.**
   a. Using handrails

5. **Close the booster tank valve if open.**
   a. If there is no clapper between pump and tank

6. **Remove the pump intake cap if intake hose is not preconnected.**
   a. Turning counterclockwise
   b. Using mallet or spanner if tight

7. **Remove necessary equipment from the pumper.**
   a. Hydrant or spanner wrench
   b. Expander, if necessary
   c. Rubber mallet

8. **Remove the hydrant cap.**
   a. Turning counterclockwise
   b. Using hydrant wrench if cap is tight

9. **Inspect the hydrant.**
   a. Exterior for damage
   b. Inside outlet for debris or damage

10. **Place the hydrant wrench on the hydrant nut.**
    a. Handle pointing away from outlet

11. **Open the hydrant to test/flush debris.**
    a. Briefly
12. Place the 2½ inch (65 mm) gated hydrant valves on the small diameter hydrant outlets.
   a. Clockwise
   b. Hand tight

13. Remove the intake hose from the pumper.

14. Connect the intake hose to the pump intake.
   a. Clockwise
   b. Hand tight

   \Note: Some departments carry the soft-sleeve hose reconnected to the pump intake through a gated intake valve. This arrangement requires only that the soft-sleeve intake hose be stretched to the hydrant.

15. Stretch the intake hose to the hydrant.
   a. Placing two full twists in hose to prevent kinking

   \WARNING! Do not twist hose if it is equipped with Storz couplings. One of the hose couplings could come apart when the hose is charged.

16. Make the hydrant connection.
   a. To steamer outlet or outlet with adapter
   b. Clockwise
   c. Hand tight

17. Open the hydrant.
   a. Slowly until hose is full

18. Tighten any leaking connections.
   a. Using rubber mallet

19. Place chafing blocks under large diameter intake hose.
   a. Where hose contacts ground

   PUMPER #1
   Total Score

PUMPER #2

1. Position the pumper.
   a. Intake to intake with pumper #1.
2. Connect intake hose to Pumper #2.
   a. Large intake relief valve
   b. Clockwise
   c. Hand tight

3. Connect other end of Pumper #2 intake hose to Pumper #1.
   a. Large intake relief valve
   b. Clockwise
   c. Hand tight

Note: If the pumper intakes are not equipped with relief valves, the cap from the unused intake valve cannot be removed until intake and discharge volumes are equalized. To do this, close the hydrant until the intake valve on Pumper #1 reads 0 (about 5 psi [35 kPal]).

4. Open relief valves on both pumpers.
   a. Counterclockwise

5. Open the hydrant.
   a. Slowly until hose if full
   b. Completely

6. Tighten any leaking connections.
   a. Using rubber mallet

7. Place chafing blocks under large diameter intake hose.
   a. Where hose contacts ground

   PUMPER #2 Total Score ______

PUMPER #1

Total points possible = 30
Total points needed to pass = 21

Total Score ______

PUMPER #2

Total points possible = 12
Total points needed to pass = 8

Total Score ______

☐ Pass ☐ Fail
## Job Performance Requirement #18

**Position Pumper and Make Connections for a Tandem Pumping Operation**

<table>
<thead>
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### References

NFPA 1002, Section 3-2.1, 3-2.2

### Task

Position pumper and make connections for a tandem pumping operation.

### Given

- Two driver/operators
- Two pumpers
- Large diameter soft intake hose
- Two 2½ inch (65 mm) or 3 inch (77 mm) hoseline(s)
- Bell reducer or siamese fitting
- Spanner or hydrant wrench
- Rubber mallet
- 2½ inch (65 mm) to 4½ inch (115 mm) expander coupling (if hydrant has only 2½ inch [65 mm] outlets)
- Chafing blocks

### Performance outcomes

The driver/operator shall position a pumper and make connections for a dual pumping operation, given two pumpers and necessary equipment so that the operator has water flowing to the attack pumper from the supply pumper.
ATTACK PUMPER

1. Position at the scene.
   a. According to the needs of the incident

2. Supply attack lines, elevated master streams, or FDC

3. Connect the supply hose.
   a. Once the supply pumper has reverse laid toward the hydrant
   b. To appropriate intake

4. Switch from onboard to external water supply.
   a. When supply hoses are charged

SUPPLY PUMPER

5. Reverse lay dual MDHs or one LDH.
   a. From attack pumper to hydrant

6. Connect to the hydrant.

7. Put pump in gear and prepare to low water.

8. Break the supply hose connections from the hosebed.

9. Connect supply hose to pump discharge.
   a. Appropriate discharge

10. Open the hydrant and being discharging water through the supply hose to the attack pumper.

   Total Score

Total points possible = 11
Total points needed to pass = 7

☐ Pass ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #19
Test Hose Carried on Your Apparatus
to Determine Friction Loss

Trainee: ____________________________ Notes: ______________________________

Department: _________________________ ______________________________

Test Site: ___________________________ ______________________________

Evaluator: __________________________ ______________________________

Date: ______________________________

References
NFPA 1002, Section 3-2.1, 3-2.2, 3-2.4

Task
Test hose carried on your apparatus to determine friction loss.

Given
- One driver/operator
- Pumper
- Friction Loss Coefficient Determination Chart (Figure 8.7, Driver/Operator p. 145) or equivalent department form
- Pitot tube or flowmeters
- Two in-line gauges, preferable calibrated in increments of 5 psi or less
- Hose to be tested
- Smoothbore nozzle if using pitot tube; any type nozzle if using flowmeter
- Writing implement

Performance outcomes
The driver/operator shall test hose carried on fire apparatus to determine friction loss, given a pumper and necessary equipment, so that the friction loss of fire hose is determined.
1. **Lay out the lengths of hose to be tested.**
   a. On a level surface
   b. 300 feet if hose is in lengths of 50 feet
   c. 400 feet if hose is in lengths of 100 feet

2. **Connect the hoselines to the pumper.**
   a. Discharge outlet

3. **Connect a nozzle to the hose.**
   a. Smoothbore nozzle if pitot used
   b. Any suitable nozzle if flowmeter used

4. **Insert Gauge 1 in the hoseline.**
   a. At connection between first and second sections of hose from discharge
   b. 50 feet from pumper if using 50 foot hose sections
   c. 100 feet from pumper if using 100 foot hose sections

5. **Insert Gauge 2 in the hoseline.**
   a. 200 feet from Gauge 1, regardless of length of hose
   b. 50 or 100 feet between Gauge 2 and nozzle, depending on length of hose

6. **Insert portable flowmeter, if used, in the hoseline.**
   a. Anywhere but between the two test gauges

7. **Supply water to the hoseline for Test Run 1.**
   a. Constant pump discharge pressure for duration of each test run
   b. Sufficient pressure to produce a satisfactory stream

8. **Document Test Run 1 on Friction Coefficient Chart.**
   a. Pump discharge pressure
   b. Reading from Gauge 1
   c. Reading from Gauge 2
   d. Reading from flowmeter or pitot tube

9. **Complete Friction Loss Coefficient Chart.**
   a. As instructed on the chart

10. **Repeat Steps 7 through 9 for each additional hose run.**
11. Disassemble equipment and return it to proper storage.
   a. Following department SOPs or local protocol

   Total Score

   Total points possible = 21
   Total points needed to pass = 15

   ☐ Pass    ☐ Fail

   Pass   Fail
Job Performance Requirement #20  
Test Hose Carried on Your Apparatus to Determine Friction Loss

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</table>

**References**  
NFPA 1002, Section 3-2.1, 3-2.2, 3-2.4

**Task**  
Test hose carried on your apparatus to determine friction loss.

**Given**  
- One driver/operator  
- Pumper  
- Friction Loss Coefficient Determination Chart (Figure 8.7, *Driver/Operator* p. 145) or equivalent department form  
- Pitot tube or flowmeters  
- Two in-line gauges, preferable calibrated in increments of 50 kPa or less  
- Hose to be tested  
- Smoothbore nozzle if using pitot tube; any type nozzle if using flowmeter  
- Writing implement

**Performance outcomes**  
The driver/operator shall test hose carried on fire apparatus to determine friction loss, given a pumper and necessary equipment, so that the friction loss of fire hose is determined.
1. Lay out the lengths of hose to be tested.
   a. On a level surface  
   b. 90 meters if hose is in lengths of 15 meters  
   c. 120 meters if hose is in lengths of 30 meters  

2. Connect the hoselines to the pumper.
   a. Discharge outlet  

3. Connect a nozzle to the hose.
   a. Smoothbore nozzle if pitot used  
   b. Any suitable nozzle if flowmeter used  

4. Insert Gauge 1 in the hoseline.
   a. At connection between first and second sections of hose from discharge  
   b. 15 meters from pumper if using 15 meter hose sections  
   c. 30 meters from pumper if using 30 meter hose sections  

5. Insert Gauge 2 in the hoseline.
   a. 60 meters from Gauge 1, regardless of length of hose  
   b. 15 or 30 meters between Gauge 2 and nozzle, depending on length of hose  

6. Insert portable flowmeter, if used, in the hoseline.
   a. Anywhere but between the two test gauges  

7. Supply water to the hoseline for Test Run 1.
   a. Constant pump discharge pressure for duration of each test run  
   b. Sufficient pressure to produce a satisfactory stream  

8. Document Test Run 1 on Friction Loss Coefficient Chart.
   a. Pump discharge pressure  
   b. Reading from Gauge 1  
   c. Reading from Gauge 2  
   d. Reading from flowmeter or pitot tube  

   a. As instructed on the chart  

10. Repeat Steps 7 through 9 for each additional hose run.
11. **Disassemble equipment and return it to proper storage.**
   a. Following department SOPs or local protocol

   Total points possible = 21
   Total points needed to pass = 15

   ☐ Pass ☐ Fail

   Total Score ______
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #21
Engage and Disengage Power
Take-Off (PTO) or Front-Mount Pump
for Pump-and-Roll Operation

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, Section 3-2.1

Task
Engage and disengage power take-off (pto) or front-mount pump for pump-and-roll operation.

Given
• One driver/operator
• Apparatus with PTO or front-mounted pump
• Apparatus operator’s manual

Performance outcomes
The driver/operator shall engage and disengage power take-off (pto) or front-mount pump for pump-and-roll operation, given a fire department pumper so that the apparatus is operated in a pump-and-roll mode.
MANUAL TRANSMISSION

Engaging the pump

1. Bring the apparatus to a full stop. ______
2. Set the parking brake. ______
3. Disengage the clutch.
   a. Depressing (pushing in) clutch pedal ______
4. Place the transmission into neutral.
   a. Shift lever in neutral position ______
5. Operate the PTO control.
   a. (In-cab control) Operating push/pull lever or other type dashboard switch
   OR
      (Pump-mounted control) Safely dismounting cab and operating pump-mounted lever or other type switch ______
6. Place the transmission into gear.
   a. Gear recommended in operator’s manual ______
7. Release the parking brake. ______
8. Engage the clutch.
   a. Release (let out) clutch pedal ______
   b. Slowly ______
9. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator ______

Disengaging the pump

10. Reduce engine rpm to idle speed.
    a. Using throttle control ______
11. Disengage the clutch.
    a. Depressing (pushing in) clutch pedal ______
12. Operate the PTO control.
    a. Direction opposite that used to engage pump ______
13. **Repeat disengaging procedures.**
   a. If pump indicator light on the dashboard is still lit

14. **Troubleshoot any problems that arise.**
   a. Referring to troubleshooting Table 11.1 on 273 *Driver/Operator*

   **MANUAL TRANSMISSION**

   **AUTOMATIC TRANSMISSION**

   *Engaging the pump*

1. **Bring the apparatus to a full stop.**

2. **Set the parking brake.**

3. **Place the transmission shift lever indicator at NEUTRAL (N), or leave at DRIVE (D).**
   a. Consulting operator’s manual
   b. Depending on manufacturer’s instructions

4. **Operate the PTO control.**
   a. (In-cab control) Operating push/pull lever or other type dashboard switch

      OR

      (Pump-mounted control) Safely dismounting cab and operating pump-mounted lever or other type switch

5. **Place the transmission into gear.**
   a. Gear recommended in operator’s manual

6. **Release the parking brake.**

7. **Troubleshoot any problems that arise.**
   a. Referring to troubleshooting Table 11.1 on 273 *Driver/Operator*

   *Disengaging the pump*

8. **Reduce engine rpm to idle speed.**
   a. Using throttle control
9. Place the apparatus in neutral.
   a. Moving shift lever indicator to NEUTRAL (N) position or pressing
      NEUTRAL (N) button

10. Operate the PTO control.
    a. Direction opposite that used to engage pump

11. Repeat disengaging procedures.
    a. If pump indicator light on the dashboard is still lit

12. Troubleshoot any problems that arise.
    a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator

AUTOMATIC TRANSMISSION Total Score

MANUAL TRANSMISSION

Total points possible = 15
Total points needed to pass = 10

AUTOMATIC TRANSMISSION

Total points possible = 13
Total points needed to pass = 9

Pass Fail

□ Pass □ Fail
Job Performance Requirement #22
Engage and Disengage Power Take-Off (PTO)
or Front-Mount Pump for Stationary Operation

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, Section 3-2.1

Task
Engage and disengage power take-off (pto) or front-mount pump for stationary operation.

Given
• One driver/operator
• Apparatus with PTO or front-mounted pump
• Apparatus operator’s manual
• Wheel chocks

Performance outcomes
The driver/operator shall engage and disengage power take-off (pto) or front-mount pump for stationary operation, given a fire department pumper so that the apparatus is operated in a stationary mode.
MANUAL TRANSMISSION

Engaging the pump

1. Bring the apparatus to a full stop. 

2. Set the parking brake. 

3. Disengage the clutch.  
   a. Depressing (pushing in) clutch pedal 

4. Place the transmission into neutral.  
   a. Shift lever in neutral position 

5. Operate the PTO control.  
   a. (In-cab control) Operating push/pull lever or other type dashboard switch 
   OR  
   (Pump-mounted control) Safely dismounting cab and operating pump-mounted lever or other type switch 

6. Engage the clutch.  
   a. Releasing (letting out) clutch pedal if still depressed 
   b. Slowly 

7. Repeat engaging procedures.  
   a. If pump indicator light on dashboard is unlit 
   b. If speedometer does not show a speed slightly above 0 mph (km/h) 

8. Troubleshoot any problems that arise.  
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator 

9. Place the wheel chocks.  
   a. Dismounting cab safely 
   b. Downhill side if parked on grade 
   c. Both sides if parked on flat surface 

Disengaging the pump

10. Reduce engine rpm to idle speed.  
    a. Using throttle control  

11. Disengage the clutch.  
    a. Depressing (pushing in) clutch pedal
12. Operate the PTO control.
   a. Direction opposite that used to engage pump  

13. Repeat disengaging procedures.
   a. If pump indicator light on the dashboard is still lit  

14. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator  

   MANUAL TRANSMISSION  Total Score  

AUTOMATIC TRANSMISSION

Engaging the pump

1. Bring the apparatus to a full stop.  

2. Set the parking brake.  

3. Place the transmission shift lever indicator at NEUTRAL (N), or leave at DRIVE (D).
   a. Consulting operator’s manual  
   b. Depending on manufacturer’s instructions  

4. Operate the PTO control.
   a. (In-cab control) Operating push/pull lever or other type dashboard switch
      OR
      (Pump-mounted control) Safely dismounting cab and operating pump-mounted lever or other type switch  

5. Repeat engaging procedures.
   a. If pump indicator light on dashboard is unlit  
   b. If speedometer does not show a speed slightly above 0 mph (km/h)  

6. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator  

7. Place the wheel chocks.
   a. Dismounting cab safely  
   b. Downhill side if parked on grade  
   c. Both sides if parked on flat surface  

Office of the Fire Commissioner JPR #22  

May 05
Disengaging the pump

8. Reduce engine rpm to idle speed.
   a. Using throttle control

9. Place the apparatus in neutral.
   a. Moving shift lever indicator to NEUTRAL (N) position or pressing NEUTRAL (N) button

10. Operate the PTO control.
    a. Direction opposite that used to engage pump

11. Repeat disengaging procedures.
    a. If pump indicator light on the dashboard is still lit

12. Troubleshoot any problems that arise.
    a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator

AUTOMATIC TRANSMISSION  Total Score

MANUAL TRANSMISSION

Total points possible = 18
Total points needed to pass = 12

Total Score

AUTOMATIC TRANSMISSION

Total points possible = 16
Total points needed to pass = 11

Total Score

☐ Pass ☐ Fail
Job Performance Requirement #23
Engage and Disengage a Midship
Transfer Driven Pump

<table>
<thead>
<tr>
<th>Trainee: ____________________________</th>
<th>Notes: ______________________________</th>
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<td>Department: _________________________</td>
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<td>Test Site: __________________________</td>
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<td>Evaluator: __________________________</td>
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<table>
<thead>
<tr>
<th>References</th>
<th>NFPA 1002, Section 3-2.1</th>
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<tbody>
<tr>
<td>Task</td>
<td>Engage and disengage a midship transfer driven pump.</td>
</tr>
<tr>
<td>Given</td>
<td>• One driver/operator</td>
</tr>
<tr>
<td></td>
<td>• Apparatus with midship transfer driven pump</td>
</tr>
<tr>
<td></td>
<td>• Apparatus operator’s manual</td>
</tr>
<tr>
<td></td>
<td>• Wheel chocks</td>
</tr>
<tr>
<td>Performance outcomes</td>
<td>The driver/operator shall engage and disengage a midship transfer driven pump, given a fire department apparatus with a midship transfer driven pump so that the pump is engaged following correct procedure.</td>
</tr>
</tbody>
</table>
MANUAL TRANSMISSION

Engaging the pump

1. Bring the apparatus to a full stop.

2. Set the parking brake.

3. Allow engine rpm to slow to idle speed.
   a. No gear slam when transmission is shifted

4. Shift the drive transmission into neutral.
   a. Moving gear shift to neutral position

5. Transfer power from drive to axle to pump.
   a. Moving pump shift control on dashboard from ROAD to PUMP position

6. Shift the apparatus transmission into pumping gear.
   a. Proper gear per operator’s manual

7. Ensure that apparatus cannot “drive away”.
   a. Locking shifter in place
   b. Slowly engaging clutch and depressing accelerator to test

8. Repeat transfer procedures.
   a. If pump indicator light on dashboard is unlit
   b. If speedometer does not show a speed slightly above 0 mph (km/h)

9. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator

10. Place the wheel chocks.
    a. Dismounting cab safely
    b. Downhill side if parked on grade
    c. Both sides if parked on flat surface

Disengaging the pump

11. Reduce engine rpm to idle speed.
    a. Using throttle control

12. Disengage the clutch.
    a. Depressing (pushing in) clutch pedal
    b. Waiting several seconds for drive shaft to stop spinning
13. Operate the pump shift control.
   a. Moving from PUMP to ROAD position  

14. Repeat disengaging procedures.
   a. If pump indicator light on the dashboard is still lit  

15. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator  

   MANUAL TRANSMISSION  Total Score  

AUTOMATIC TRANSMISSION

Engaging the pump

1. Bring the apparatus to a full stop.  

2. Allow engine rpm to slow to idle speed.
   a. No gear slam when transmission is shifted  

3. Shift the drive transmission into neutral.
   a. Moving shift lever indicator to NEUTRAL (N) position or pressing NEUTRAL (N) button  

4. Transfer power from drive axle to pump.
   a. Moving pump shift control on dashboard from ROAD to PUMP position  

5. Shift the apparatus transmission into pumping gear.
   a. Proper gear per operator’s manual  

6. Ensure that apparatus cannot “drive away”.
   a. Locking shifter in place  
   b. Depressing accelerator gently to test  

7. Repeat transfer procedures.
   a. If pump indicator light on dashboard is unlit  
   b. If speedometer does not show a speed slightly above 0 mph (km/h)  

8. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator  

9. Place the wheel chocks.
   a. Dismounting cab safely  
   b. Downhill side if parked on grade  
   c. Both sides if parked on flat surface  

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Disengaging the pump

10. Reduce engine rpm to idle speed.
   a. Using throttle control

11. Place the apparatus in neutral.
   a. Moving shift lever indicator to NEUTRAL (N) position or pressing NEUTRAL (N) button
   b. Waiting several seconds for drive shaft to stop spinning

12. Operate the pump shift control.
   a. Moving from PUMP to ROAD position

13. Repeat disengaging procedures.
   a. If pump indicator light on the dashboard is still lit

14. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator

   AUTOMATIC TRANSMISSION  Total Score

MANUAL TRANSMISSION

Total points possible = 20
Total points needed to pass = 14

Total Score

AUTOMATIC TRANSMISSION

Total points possible = 19
Total points needed to pass = 13

Total Score

☐ Pass ☐ Fail
**Reference:** NFPA 1002, Section 3-2.1

**Task:** Engage and disengage an auxiliary engine driven fire pump.

**Given:**
- One driver/operator
- Apparatus with auxiliary engine driven fire pump
- Apparatus operator’s manual
- Wheel chocks

**Performance outcomes:** The driver/operator shall engage and disengage an auxiliary engine driven fire pump, given a fire department apparatus with auxiliary engine driven fire pump so that the pump is engaged following correct procedure.
MANUAL AND AUTOMATIC TRANSMISSION

Engaging the pump

1. Bring the apparatus to a full stop. ____

2. Allow engine rpm to slow to idle speed. ____

3. Place the transmission into neutral.
   a. (Manual transmission) Clutch depressed and shift lever moved into neutral position
      OR
   b. (Automatic transmission) Shift indicator moved to NEUTRAL (N) or NEUTRAL (N) button pushed ____

4. Set the parking brake. ____

5. Start the auxiliary engine.
   √ Note: This procedure varies widely depending on the manufacturer of the engine and the design of the apparatus. Check with your instructor and the operator’s manual for the starting procedure for the apparatus to which you have been assigned. Remember, also, that when the engine is running and the pump is turning, the water supply to the pump must be opened so that the pump will not run dry for a prolonged period of time.
   a. Following procedure in operator’s manual ____

6. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator ____

7. Place the wheel chocks.
   a. Dismounting cab safely ____
   b. Downhill side if parked on grade ____
   c. Both sides if parked on flat surface ____

Disengaging the pump

8. Shut down auxiliary pump.
   a. Following procedure in operator’s manual ____

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9. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator

Total points possible = 11
Total points needed to pass = 7

Total Score

☐ Pass ☐ Fail
### NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

**Job Performance Requirement #25**  
Operate from the Apparatus Water Tank

<table>
<thead>
<tr>
<th>Trainee: ____________________________</th>
<th>Notes: ______________________________</th>
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<tr>
<td>Department: _______________________</td>
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<tr>
<td>Test Site: _________________________</td>
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<tr>
<td>Evaluator: _________________________</td>
<td>______________________________</td>
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<tr>
<td>Date: ______________________________</td>
<td></td>
</tr>
</tbody>
</table>

#### References
- NFPA 1002, Section 3-2.1

#### Task
- Operate from the apparatus water tank.

#### Given
- One driver/operator
- Apparatus with auxiliary engine-driven fire pump
- Apparatus operator’s manual
- Wheel chocks

#### Performance outcomes
- The driver/operator shall operate the pumper from the apparatus water tank, given a fire department pumper so that the pumper is flowing water using only water from apparatus tank.
**Putting the Pump in Operation**

1. Make the fire pump operational. __________

2. Dismount the apparatus cab.
   a. Safely __________

3. Place the wheel chocks.
   a. Downhill side if parked on grade __________
   b. Both sides if parked on flat surface __________

4. Proceed to the pump operator’s panel. __________

5. Fill the pump with water.
   a. Opening the tank-to-pump valve __________
   b. Fully opened __________

6. Ensure that valve cannot accidentally close.
   a. Locking in OPEN position if valve has a locking mechanism __________

7. (Multistage pump) Set the transfer valve to the proper position.
   a. SERIES (PRESSURE) position (generally) __________
   b. PARALLEL (VOLUME) position (if pump will need to furnish more than 50 percent of its rated capacity) __________

8. Increase engine rpm.
   a. Using hand throttle __________
   b. Observing master pressure gauge as the throttle is being advanced __________
      - If the pump is normally full of water, master pressure gauge should start to rise as soon as the rpm is increased
      - If it does not rise immediately, force air out of tank so that pressure can build

9. Speed removal of air from pump if master pressure gauge does not start to rise with increased rpm.
   a. Opening at least one discharge valve or tank fill line, or operating primer __________

   *(If master pressure gauge still fails to register a reading and you suspect that the pump is not in proper gear)*

10. Immediately decrease the engine speed.
    a. Using hand throttle __________
11. Verify that transmission is in the proper gear or that the pump shift transfer has been made.
   a. Adjusting position of shift transfer control as necessary until green pump indicator light is on
   b. Ensuring that speedometer reading is normal for pump operation

12. Build pressure in the pump.
   a. Using previous experience and departmental SOPs

13. If none of the attack lines is ready to be charged by the time the pump pressure has built up, allow water to circulate.
   a. Partially opening pump-to-tank line (tank fill valve)
   b. Removing air trapped in pump and piping
   c. Establishing a stable pressure

14. If the hoselines are ready for water when the pressure is set, initiate water flow.
   a. Opening discharge valve
   b. Slowly
   c. Locking open

15. Set the automatic pressure regulating device for the operating pressure.
   a. Referring to pump manufacturer’s operating manual

16. Prevent overheating by maintaining water movement through the pump.
   a. Setting booster cooling valve to tank position
   OR
   Using tank fill line to circulate water through booster tank

17. Monitor water level in tank.
   a. Warning officer in charge of amount of water remaining in tank
   b. Estimating amount of time water will last at present rate of consumption

18. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator

Total Score

Total points possible = 28
Total points needed to pass = 19

☐ Pass ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #26
Make the Transition from the Apparatus Water Tank
To an External Water Supply

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References

NFPA 1002, Section 3-2.1

Task

Make the transition from the apparatus water tank to an external water supply.

Given

• Driver/operator and pumper crew
• Pumping apparatus
• Apparatus operator’s manual
• External pressurized water supply (hydrant or supply hose from another fire pump)
• Wheel chocks

Performance outcomes

The driver/operator shall make the transition from the apparatus water tank to an external water supply, given a fire department pumper so that the supply of water is not interrupted to the pumper.
1. Engage the pump.  

2. Begin supplying attack lines from apparatus water tank.  

3. Connect the supply line.  
   a. Into a pump intake fitting equipped with a closed gate valve  

4. Purge this intake line of air.  
   a. Opening bleeder valve  

5. Close bleeder valve.  
   a. When a steady stream of water comes from bleeder valve  
   \ Note: The water supply is now at the pump, ready for the transition.  

6. Open the supply line intake valve.  
   a. Very slowly  
   b. Observing pressure on intake and discharge gauges and adjusting as necessary  
   c. Simultaneously closing tank-to-pump valve  
   d. Until intake line is completely open  

7. Obtain the desired pressure.  
   a. Increasing throttle  
   b. Priming as necessary  

8. Adjust the relief valve or pressure governor.  
   a. If necessary  

9. Open the circulatory valve or partially open the tank fill valve.  

10. Refill the tank.  
    a. As soon as an adequate supply of water is available  
    b. Diverting water through tank fill line  

11. Troubleshoot any problems that arise.  
    a. Referring to troubleshooting Table 11.1 on 273 Driver/Operator  

Total Score  

Total points possible = 16  
Total points needed to pass = 11  

☐ Pass  ☐ Fail
**NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications**

### Job Performance Requirement #27
Operate from a Pressurized Water Source

| Trainee: ____________________________ | Notes: ______________________________ |
| Department: _________________________ | _________________________________ |
| Test Site: __________________________ | _________________________________ |
| Evaluator: _________________________ | _________________________________ |
| Date: ______________________________ | |

| References | NFPA 1002, Section 3-2.1 |
| Task | Operate from a pressurized water source. |
| Given | • Driver/operator and pumper crew  
• Pumping apparatus  
• Pressurized water supply  
• Gate valve(s) (optional)  
• Hydrant wrench  
• Wheel chocks  
• Apparatus operator’s manual |
| Performance outcomes | The driver/operator shall operate from a pressurized water source, given a fire department pumper and necessary equipment so that the pumper is flowing water from a hydrant and a positive pressure is maintained on the supply line. |
1. **Select and test flow of a hydrant.**
   a. Most appropriate for firefighting and safety needs

2. **Make hydrant connections.**
   a. Following proper procedure
   b. Following appropriate departmental SOPs for forward or reverse lay

3. **Close tank-to-pump valve if the intake is not equipped with a shutoff valve.**

4. **Open the hydrant valve.**
   a. Fully open until valve stem will spin no further
   b. Not jamming valve stem past point where it easily stops turning

5. **Note the static pressure in the water system.**
   a. Reading the master intake
   b. After the pump is full of water
   c. After pressure in the system has stabilized

6. **Place the pump in service.**

7. **(Multistage pump) Set the transfer valve to the proper position.**
   a. SERIES (PRESSURE) position (generally)
   b. PARALLEL (VOLUME) position (if pump will need to furnish more than 50 percent of its rated capacity)

8. **Increase engine rpm.**
   a. Using hand throttle
   b. Observing master pressure gauge as throttle is being advanced
      • If pump is normally full of water, master pressure gauge should start to rise as soon as the rpm is increased
      • If pressure does not rise immediately, air in tank must be forced out before pressure can build

9. **Speed removal of air from pump (if master pressure gauge does not start to rise with increased rpm).**
   a. Using hand throttle

10. **Immediately decrease the engine speed (if master pressure gauge still fails to register a reading and you suspect that the pump is not in proper gear).**
    a. Using hand throttle
11. Verify that transmission is in the proper gear or that the pump shift transfer has been made.
   a. Adjusting position of shift transfer control as necessary until green pump indicator light is on
   b. Ensuring that speedometer reading is normal for pump operation

12. Build pressure in the pump.
   a. Using previous experience and departmental SOPs

13. Allow water to circulate (if none of the attack lines is ready to be charged by the time the pump pressure has built up).
   a. Partially opening pump-to-tank line (tank fill valve)
   b. Removing air trapped in pump and piping
   c. Establishing a stable pressure

14. Initiate water flow (if lines are ready for water when the pressure is set).
   a. Opening discharge valve
   b. Slowly
   c. Locking open

15. Set the automatic pressure regulating device for the operating pressure.
   a. Referring to pump manufacturer’s operating manual

16. Prevent the pump from overheating.
   a. Using one of the following methods as appropriate:
      • Pulling some of the booster line off the reel, securely tying off the nozzle to a solid object, and then opening the valve that supplies the booster reel, and discharging water in a direction that will not harm people or damage property
      • Open a discharge drain valve
      • Partially open the tank fill valve or pump-to-tank line

17. Troubleshoot any problems that arise.
   a. Referring to troubleshooting Table 11.1 on page 273 of Driver/Operator

SHUTTING DOWN THE HYDRANT OPERATION

18. Reduce the discharge pressure.
   a. Gradually slowing the engine rpm

19. Take the pressure control device out of service if in use.
   a. According to instruction in apparatus operator’s manual
20. Close the discharge valves.
   a. Slowly and smoothly

21. Disengage the pump control device.
   a. Following procedure as appropriate

22. Close the hydrant.
   a. Slowly and completely
   b. Checking to see that water is draining from bottom of hydrant

23. Replace the caps on the hydrant outlets.

24. Stow on the apparatus the intake hose and any appliances used.
   a. Draining hose first
   b. In correct storage location

Total Score

Total points possible = 37
Total points needed to pass = 25

☐ Pass       ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #28
Operate from a Static Water Source

Trainee: ____________________________ Notes: ______________________________
Department: _________________________  ______________________________
Test Site: ___________________________  ______________________________
Evaluator: __________________________  ______________________________
Date: ______________________________

<table>
<thead>
<tr>
<th>References</th>
<th>NFPA 1002, Section 3-2.1</th>
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</thead>
<tbody>
<tr>
<td>Task</td>
<td>Operate from a static water source.</td>
</tr>
</tbody>
</table>
| Given      | • Driver/operator and pumper crew  
|            | • Pumping apparatus/primer pump  
|            | • Static water supply  
|            | • Hard intake hose  
|            | • Strainer  
|            | • Length of rope for tying up strainer  
|            | • Wheel chocks  
|            | • Rubber mallet  
|            | • Roof ladder (optional) |
| Performance outcomes | The driver/operator shall operate from a static water source, given a fire department pumper so that the drafting operation is conducted following correct procedure. |
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Selecting the drafting site

1. Select the drafting site.
   a. Adequate water depth
   b. Accessible and stable location

Positioning the apparatus

√Note: This section outlines the procedure for placing the apparatus directly at the drafting location. Sometimes it is more expedient to park the apparatus short of the final drafting spot, to connect the hard intake hose to the pumper, and then to maneuver both into position at the same time.

2. Position the pumper.
   a. Follow proper procedure
   b. Placing apparatus directly at the drafting location

3. Immobilize the apparatus.
   a. Setting parking brake
   b. Properly blocking wheels
   c. Placing transmission in neutral
   d. Setting engine at idle
   e. Leaving warning lights running if near road

Making hose and apparatus connections

4. Check the intake hose gaskets.
   a. In place
   b. Clean

5. Connect the sections of intake hose.
   a. Without resting connections of ground
   b. Aligning each section of hose before turning it
   c. Hand tightening connections to make them airtight
   d. Using rubber mallet as necessary to make connections airtight

6. Connect the strainer to end of intake hose.
   a. Without resting it on ground

7. Tie guide rope to strainer.

8. Place intake hose and strainer in water.

10. Adjust apparatus position.
    a. As directed by firefighters with intake hose
    b. Until in a position that facilitates connecting intake hose to pumper

11. Connect intake hose.
    a. To pumper intake outlet
    b. First removing butterfly valve if necessary

12. Readjust pumper position.
    a. As necessary to place strainer and hose in correct water depth and area

13. Suspend the strainer off the bottom if necessary.
    a. Using one of the following methods:
       • Tying strainer guide rope to the apparatus or a tree
       • Resting the intake hose and strainer on a roof ladder extended from
         the edge of the water

Making the pump operational

14. Make the pump operational (engage the pump).
    a. Following appropriate procedure

Priming the pump

15. Make the pump as airtight as possible.
    a. Before priming
    b. Closing all drains and valves
    c. Capping unused discharge openings

16. Set engine rpm.
    a. (Two-stage pump) Placing transfer valve in VOLUME (PARALLEL) position and setting engine rpm according to instruction in operator’s manual
    b. (Electric motor-driven priming pump) Keeping engine rpm at about 1,000 to 1,200 rpm
    c. (Vacuum-type primer) Keeping rpm as low as possible without engine stall

17. Operate the primer control on the pump panel.
    a. Observing vacuum gauge reading
    b. Not stopping primer action until all air has been discharged
    c. Not stopping until a steady stream of water is being discharged under apparatus
18. **Troubleshoot priming operation and correct any problems.**
   a. If water has not been obtained in 30 seconds
   b. Referring as necessary to possible causes of inability to primer, page 267 of *Driver/Operator*
   c. Using troubleshooting Table 11.1, page 273 of *Driver/Operator*, as necessary

*Adjusting pump pressure*

19. **Increase throttle setting.**
   a. Before opening any discharges
   b. Until pressure is somewhere between 50 and 100 psi (350 kPa and 700 kPa)

20. **Open the discharge valve.**
   a. Slowly
   b. While observing discharge pressure
   c. Pausing if pressure drops below 50 psi (350 kPa)
   d. Momentarily operating primer if pressure continues to drop

21. **Set the discharge pressure to the desired value.**
   a. When water is flowing steadily

22. **Maintain vacuum and prevent the pump from overheating.**
   a. Opening another discharge or booster-line and discharging water back into source during entire time pump is operating
   b. Avoiding use of radiator fill gauge

*Operating the pump*

23. **Monitor gauges associated with the motor as well as those associated with the pump.**
   a. Keeping engine temperature gauge at normal operating temperature by using auxiliary cooler
   b. Avoiding use of radiator fill gauge

24. **Anticipate, troubleshoot, and correct problems that arise.**
   a. Referring as necessary to possible draft problems, page 268 of *Driver/Operator*
   b. Using troubleshooting Table 11.1, page 273 of *Driver/Operator*, as necessary
Shutting down the operation

25. Slowly decrease engine speed to idle.  

26. Take pump out of gear.  

27. Allow pump to drain.  

28. Stabilize engine temperature.  
   a. Placing transmission in neutral and allowing engine to idle and cool 
      down for 3 to 5 minutes  

29. Lubricate the priming pump.  
   a. After pump is drained and intake hose has been disconnected  
   b. Operating mechanical primer for a few seconds  
   c. Until primer oil or fluid comes out priming pump discharge  

30. Flush the pump with clean water.  
   a. As soon as practical and possible  

Total Score  

Total points possible = 59  
Total points needed to pass = 40  

☐ Pass  ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #29
Support a Sprinkler System

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, Section 3-2.4

Task
Support a sprinkler system.

Given
- Driver/operator and pumper crew
- Pumping apparatus
- Hose
- Pressurized water supply
- Sprinkler FDC
- Four-way valve (optional)
- Gate valve(s) (optional)
- Hydrant wrench
- Wheel chocks
- Apparatus operator’s manual

Performance outcomes
The driver/operator shall support a sprinkler system, given a fire department pumper and necessary equipment so that the pumper hoselines is connected to the sprinkler FDC following correct procedure.
1. **Locate the fire department connection (FDC) and the nearest suitable hydrant.**  
   a. Checking pre-incident planning information while enroute  
   b. Receiving information obtained by the dispatcher from the reporting party  
   c. By visual observation when arriving on location

2. **Ensure that sprinkler control valves are open and that any fixed fire pump on the property is running.**  
   a. Sending a firefighter or crew equipped with flashlight and portable radio to pump room to check and to open any closed valves and ensure pump operation

3. **Connect hoseline(s) to sprinkler FDC.**  
   a. Minimum of two 2½ inch (65 mm) hoselines or one 3 inch (77 mm) hoseline  
   b. Supplying FDC with one 1,000 gpm (4,000 L/min) rated pumper for every 50 sprinklers estimated to be flowing

4. **Hand lay supply line(s) to the hydrant and make all the appropriate connections.**  
   a. Following local SOPs for size of supply line to be used  
   b. Using a second engine company to reverse lay out if hydrant is a sizeable distance from FDC

5. **Prepare to charge the sprinkler system.**  
   a. Confirming presence of fire before charging

6. **Open the hydrant valve.**  
   a. Fully open until valve stem will spin no further  
   b. Not jamming valve stem past point where it easily stops turning

7. **Note the static pressure in the water system.**  
   a. Reading the master intake  
   b. After the pump is full of water  
   c. After pressure in the system has stabilized

8. **Place the pump in service.**
9. Develop the discharge pressure needed to supply the system.
   a. Placing a multistage pump in the VOLUME (PARALLEL) position
   b. Slowly building pressure to the discharge pressure printed on FDC plate or recommended pre-incident planning information, or, if this information is unavailable, bring to 150 psi (1,050 kPa)

10. Monitor pumping operations.
    a. Ensuring that appropriate intake and discharge pressures are maintained and apparatus is monitored for mechanical problems

11. Shut down sprinkler support pumping operations.
    a. Throttling down the engine on the pumper to reduce the discharge pressure
    b. Closing the discharge valves
    c. Taking the fire pump out of gear
    d. Shutting down the hydrant
    e. Disassembling all the hoselines and stowing the equipment

   Total Score

Total points possible = 23
Total points needed to pass = 16

☐ Pass ☐ Fail
Job Performance Requirement #30
Support a Standpipe System

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, Section 3-2.4

Task
Support a standpipe system.

Given
• Driver/operator and pumper crew
• Pumping apparatus
• Pressurized water supply
• High-rise hose pack with adapters and nozzle
• Four-way valve (optional)
• Gate valve(s)
• Hydrant wrench
• Wheel chocks
• Apparatus operator’s manual

Performance outcomes
The driver/operator shall support a standpipe system, given a fire department pumper and necessary equipment so that the pumper hoselines is connected to the standpipe system following correct procedure.
1. **Locate the fire department connection (FDC) and the nearest suitable hydrant.**
   a. Checking pre-incident planning information while enroute
   b. Receiving information obtained by the dispatcher from the reporting party
   c. By visual observation when arriving on location

2. **Establish that a working fire exists and that standpipe hoselines will be required.**
   a. Sending a crew equipped with a high-rise hose pack, flashlights, forcible entry tools, and portable radio to fire floor to begin the attack
   b. Confirming that crew is attaching a hose to standpipe in order to operate a fire stream and what floor they are on

3. **Connect a minimum of 2½ inch (65 mm) hoselines or one 3 inch (77 mm) hoseline to the standpipe FDC.**

4. **Hand lay supply line(s) to the hydrant and make all the appropriate connections.**
   a. Following local SOPs for size of supply line to be used
   b. Using a second engine company to reverse lay out if hydrant is a sizeable distance from FDC

5. **Prepare to charge the sprinkler system.**
   a. Confirming presence of attack line before charging

6. **Open the hydrant valve.**
   a. Fully open until valve stem will spin no further
   b. Not jamming valve stem past point where it easily stops turning

7. **Note the static pressure in the water system.**
   a. Reading the master intake
   b. After the pump is full of water
   c. After pressure in the system has stabilized

8. **Place the pump in service.**

9. **Develop the discharge pressure needed to supply the system.**
   a. Placing a multistage pump in the VOLUME (PARALLEL) position
   b. Slowly building pressure to the discharge pressure printed on FDC plate or recommended pre-incident planning information. If this information is unavailable, determine an appropriate discharge pressure considering friction loss in the standpipe (assume 25 psi [150 kPa], friction loss in the hose supplying the FDC), friction loss in the attack lines, elevation pressure, and required nozzle pressure
   c. Not exceeding 200 psi unless standpipe is designed for high pressure
10. **Monitor pumping operations.**
   a. Appropriate intake and discharge pressures are maintained _____
   b. Apparatus is monitored for mechanical problems _____

11. **Troubleshoot problems as they arise.**
   a. Using one of the following techniques as necessary: _____
      • FDC connection has a frozen swivel 1 - Use a double male with a double female
      • FDC unusable because of vandalism – Charge the first-floor standpipe riser by attaching a double female to a hose valve at the first-floor level
      • Individual hose valve on an upper floor is found inoperative – Use a valve on the next floor down
      • Single-riser building where the standpipe is totally unserviceable
         - Hoist a line up the outside of the building
         - Use standpipes in adjacent buildings to protect exposures
   b. Using troubleshooting Table 11-1, page 273 of *Driver/Operator*, as necessary _____

12. **Shut down standpipe support pumping operations.**
   a. Throttling down the engine on the pumper to reduce the discharge pressure _____
   b. Closing the discharge valves _____
   c. Taking the fire pump out of gear _____
   d. Shutting down the hydrant _____
   e. Disassembling and draining all hoselines _____
   f. Stowing equipment in correct location on apparatus _____

   **Total Score** _____

**Total points possible = 28**
**Total points needed to pass = 19**

☐ Pass ☐ Fail
### References
NFPA 1002, Section 3-2.1, 3-2.2

### Task
Dam a stream with a ladder and salvage cover.

### Given
- One firefighter
- Salvage cover
- Straight or roof ladder

### Performance outcomes
The driver/operator shall dam a stream with a ladder and salvage cover, given a ladder and salvage cover so that the flow of water is contained.
1. Spread a salvage cover on the ground. ______

2. Place the ladder on the salvage cover.
   a. Near edge of one long side ______

3. Roll up the ladder in the cover.
   a. Forming a flap by stopping about 4 feet (1.2 m) short of opposite side ______

4. Pick up the ladder and cover assembly.
   a. Firefighter at each end and one in middle ______

5. Place the ladder and cover assembly in the stream.
   a. Standing ladder on edge, flap side down and upstream ______
   b. Preferably at a point where the stream bottom is level ______

6. Anchor the flap.
   a. Stretching flap upstream ______
   b. Placing rocks on edge of flap or sticking straight bars through grommets ______
   c. Tucking in ends as necessary ______

7. Brace ladder to prevent force of water from bowing it.
   a. Placing some type of support (straight bar, etc.) behind the center of the ladder ______

Total Score ______

Total points possible = 10
Total points needed to pass = 7

☐ Pass      ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #32
Operate in a Constant Pressure Relay

| Trainee: ____________________________ | Notes: ______________________________ |
| Department: _________________________ | ______________________________     |
| Test Site: __________________________ | ______________________________     |
| Evaluator: __________________________ | ______________________________     |
| Date: ______________________________ |                                       |

**References**
NFPA 1002, Section 3-2.2

**Task**
Operate in a constant pressure relay.

**Given**
- Attack pumper and crew
- Water source pumper and crew
- At least two relay pumpers and crew
- Apparatus operator’s manual
- Static of pressurized water source
- Appropriate tools and equipment for connecting to water source

**Performance outcomes**
The driver/operator shall operate in a constant pressure relay, given two fire department pumpers and necessary equipment so that the attack pumper is supplied with water and a constant pressure is maintained throughout the relay.
1. Position the attack pumper at the fire.

2. Position the largest capacity pumper at the water source.

3. Lay out the hose leads from the relay pumpers.
   a. Following procedures used in your jurisdiction
   b. Referring to Figure 13.15, page 320 of Driver/Operator manual and increasing or decreasing hose lengths according to local policy
   c. Reserving at least two sections of hose in hosebed in the event of hose failure during operation

4. Position the other pumpers in the relay.
   a. Within 1,000 feet (300 m) of each other

(Source pumper crew)

5. Make necessary connections to the water supply.

6. Connect all supply lines to the pumpers in the relay.
   a. Hand tight
   b. Airtight

7. (All driver/operators except source pumper) Allow air to escape from hoselines.
   a. Opening an unused discharge gate if the pump does not have a relay relief valve

(Water source pumper driver/operator)

8. Set the pump discharge pressure.
   √ Note: The water supply officer or incident commander must realize the flow and pressure limitations of a given relay setup and should not attempt to exceed the capabilities of apparatus and hose.
   a. 175 psi (1,200 kPa)
   b. Modifying pressure as needed for:
      • Variations in relay pumper spacing (increasing for greater spacing, decreasing for lesser spacing)
      • Severe elevation differences between source and fire (decreasing when pumping downhill, increasing when pumping uphill)
      • Increases in needed fire flow
      • Large diameter hose (lowering to supply the same volume of water)
(First and each successive relay pumper driver/operator)

9. **Build to desired pressure.**
   a. Closing unused discharge gate on a steady stream of water flows from it ______
   b. Advancing the throttle until 175 psi (1,200 kPa), or desired pressure, is developed ______

10. **Set the pressure regulating device.**
    a. Once desired pressure is developed ______

(Attack pumper driver/operator)

11. **Adjust the discharge pressure(s) supplying the attack line(s).**
    a. As necessary ______

12. **Maintain the flow from the attack pumper during temporary shutdowns.**
    a. Using one or more discharge gates as waste or dump lines ______
    b. Not shutting down attack lines unless absolutely necessary ______
    c. In the event of hose rupture, opening relay pumper discharge before the rupture to dump water until the length is replaced ______

13. **Supply an adequate amount of water to the fireground.**
    a. Laying additional hoselines between relay apparatus as needed ______

14. **(All driver/operators) Keep correcting pump discharge pressure.**
    a. Maintaining 175 psi (1,200 kPa), or desired pressure, until:
       • Intake pressure form pressurized sources drops to 20 psi (150 kPa) ______
       • Operating the hand throttle does not result in an increase in rpm (engine has reached governed speed) ______

**Total Score** ______

Total points possible = 25
Total points needed to pass = 17

☐ Pass ☐ Fail
Job Performance Requirement #33
Install an In-Line Foam Eductor and Operate a High-Expansion Foam Generator

Trainee: ____________________________ Notes: ______________________________
Department: _________________________  ______________________________
Test Site: ___________________________  ______________________________
Evaluator: __________________________  ______________________________
Date: ______________________________

References
NFPA 1002, Section 3-2.3

Task
Install an in-line foam eductor and operate a high-expansion foam generator.

Given
• One driver/operator
• One pumper
• One firefighter in protective clothing
• Foam eductor
• Hose and nozzle compatible with eductor
• Two buckets of appropriate foam concentrate
• Water supply
• Troubleshooting guidelines on page 377 of Driver/Operator Handbook

Performance outcomes
The driver/operator shall install an in-line foam eductor and operate a high-expansion foam generator, given a fire department pumper and necessary foam and equipment so that properly proportioned foam is provided.
1. Select the proper foam concentrate.
   a. Appropriate for fuel type
   b. Using Table 15-1 in Driver/Operator if necessary

2. Check the eductor and nozzle.
   a. Hydraulically compatible (rated for the same flow)

3. Check the foam concentration listing on the side of the container.
   a. Matches eductor percentage rating

4. Set the eductor to the proper rating if adjustable.
   a. Same as foam concentration listing on side of container

5. Attach the eductor to a hose or discharge outlet.
   a. Avoiding kinks in hose
   b. Avoiding connections to discharge elbows
   c. Making sure that ball gates are completely open if eductor is connected directly to pump discharge outlet

6. Select and attach the attack hoseline.
   a. To desired nozzle
   b. To discharge end of eductor
   c. Length of the hose not exceeding eductor manufacturer’s recommendations

7. Open containers of foam concentrate.
   a. Enough estimated to handle task without interruption in flow of concentrate

8. Position the containers of concentrate.
   a. Near eductor
   b. Bottom of containers no more than 6 feet (2 m) below eductor

9. Place the eductor siphon tube into the concentrate.

10. Increase the water supply pressure.
    a. To that recommended by eductor manufacturer

11. Signal the driver/operator.
    a. To charge the attack line

12. Apply the foam.
    a. According to manufacturer’s directions and local SOPs
13. Troubleshoot any problems that arise.
   a. Referring to troubleshooting guidelines on page 377 of Driver/Operator as necessary

Total Score

Total points possible = 19
Total points needed to pass = 13

☐ Pass  ☐ Fail
Job Performance Requirement #34
Perform an Engine Speed Service Test

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

**References**
NFPA 1002, Section 2-2.2, 3-1.1

**Task**
Perform an engine speed service test.

**Given**
- One driver/operator
- One pumper
- Tachometer or revolution counter
- Appropriate departmental forms
- Writing implement

**Performance outcomes**
The driver/operator shall perform an engine speed service test, given a fire department pumper and necessary equipment so that the operational status of the vehicle is verified.
1. **Mount apparatus cab.**
   a. Using appropriate steps and handrails

2. **Turn on the vehicle battery(ies).**
   CAUTION! Never operate the battery switch while the engine is running.

   √ Note: Depending on the location of this switch, you may choose to operate this switch prior to entering the cab or immediately upon sitting in the driver’s seat.

   a. Hitting BATTERY 1, BATTERY 2 or BOTH on battery switch or moving simple switch to ON position
   b. Following apparatus manufacturer’s directions and departmental SOPs

3. **Check the parking brake.**
   a. Brake set

4. **Place the transmission in neutral if it is not already in neutral.**
   (Manual transmission)
   a. Pushing in clutch pedal completely (fully disengaging the clutch), moving shift lever to neutral position, removing foot from clutch
   OR
   (Automatic transmission)
   Moving shift indicator to NEUTRAL

5. **Turn on the ignition switches located on the dashboard.**

6. **Operate the starter control.**
   a. Using key, appropriate toggle switch(es), or push button depending on the apparatus
   b. Operating at intervals of no more than 30 seconds, with a rest of 60 seconds between each try if vehicle does not start sooner
   c. On gasoline-powered apparatus, operating manual choke control before operating the starter control, if necessary, and using it sparingly in warm weather or after apparatus is already warm

7. **Idle the engine.**

8. **Dismount the apparatus.**
   a. Using appropriate steps and handrails
9. **Attach the tachometer.**
   a. To engine or to service connection on the pump panel
   b. Follow directions provided by the tachometer and apparatus manufacturers

10. **Read and record tachometer reading.**
    a. Comparing reading with governed speed that it was rated for when apparatus was new

   √ **Note:** If it is not running at the correct speed, no further testing should be started until the situation is corrected by a trained mechanic.

11. **Mount the apparatus cab.**
    a. Using appropriate steps and handrails

12. **Shut off the engine.**
    a. Moving ignition key or switch(es) to OFF position

13. **Turn the battery switch to the OFF position.**

   Total Score

   Total points possible = 17
   Total points needed to pass = 12

   □ Pass       □ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #35
Perform a Vacuum Speed Service Test

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, Section 2-2.2, 3-1.1

Task
Perform a vacuum speed service test.

Given
- One driver/operator
- One pumper
- 20 feet (6 m) of intake hose same size as that in original test
- Original test records
- Vacuum gauge or mercury manometer
- Priming pump oil
- Replacement gaskets
- Appropriate departmental forms
- Writing implement

Performance outcomes
The driver/operator shall perform a vacuum speed service test, given a fire department pumper and necessary equipment so that the operational status of the vehicle is verified.
1. Make sure that the pump is completely drained of all water.  

2. Inspect all intake hose and cap gaskets.  
a. Replacing if cracked or broken  
b. Ensuring proper size  

3. Look for foreign matter in the intake hose.  
a. Cleaning the hose if necessary  

4. Connect the intake hose to the pump intake connection.  
a. 20 feet (6 m) of hose  
b. Correct hose (checking original test records for correct hose diameter)  

5. Cap the free end of the intake hose.  
a. Proper size cap  
b. Replacing gasket if damaged  

6. Prepare the intake and discharge connections.  
a. Opening all intake valves  
b. Tightly capping all intake connections  
c. Closing all discharge valves  
d. Removing all discharge caps  

7. Connect the vacuum gauge.  
a. Properly threaded to threaded test gauge connection  
b. Intake side of pump  

    CAUTION! If the gauge is connected to the pump outlet rather than the inlet, it will be irreparably damaged.  

8. Check the oil level in the priming pump reservoir.  
a. Replenish if necessary  

9. Make pump packing glands accessible for checking.  
a. Raising floorboards or opening compartment doors as necessary  

10. Run the priming device.  
a. Until the test gauge shows 22 inches (560 mm) of mercury  
b. Reducing the mercury reading 1 inch (25 mm) for each 1,000 feet (300 m) of altitude  

    Note: If the apparatus is unable to reach 22 inches (560 mm) of mercury, it should be removed from service and repaired as soon as possible.  

11. Compare readings of the apparatus intake gauge and test gauge.  
a. Record any difference on appropriate form
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

12. Shut off the apparatus engine. ______

13. Listen for air leaks. ______

14. Check the vacuum gauge readings over a five-minute interval.
   a. No more than 10 inches (250 mm or 33.9 kPa) of vacuum is lost in 5 minutes ______

15. Locate and correct excessive leaks.
    a. Before performing the rest of the service tests ______

Total Score ______

Total points possible = 23
Total points needed to pass = 16

☐ Pass ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #36
Perform a Hard Intake Hose Service Test

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, Section 2-2.2, 3-1.1

Task
Perform a hard intake hose service test.

Given
• One driver/operator
• One pumper
• Hard intake hose
• Flashlight w/batteries
• Vacuum gauge or mercury manometer
• Water supply
• Drum or sawhorse support
• Sheet of clear hard plastic or Lexan™ large enough to cover end of intake hose
• Appropriate departmental forms
• Writing implement

Performance outcomes
The driver/operator shall perform a hard intake hose service test, given a fire department pumper and necessary equipment so that the operational status of the hard suction and the vehicle is verified.
1. Completely drain all water from the pump.

2. Inspect all intake hose and cap gaskets.
   a. Replacing if cracked or broken
   b. Ensuring proper size

3. Remove gasket from intake cap.

4. Look for foreign matter in the intake hose.
   a. Cleaning the hose if necessary

5. Place a lighted flashlight into the hose.
   a. Just inside the female coupling

6. Connect 20 feet (6 m) of intake hose to the pump intake connection.
   a. Correct diameter per original test records
   b. Supporting the hose on drums or sawhorses so that it is relatively straight

7. Prepare the intake and discharge connections.
   a. Opening all intake valves
   b. Tightly capping all intake connections
   c. Closing all discharge valves
   d. Removing all discharge caps

8. Connect the vacuum gauge.
   a. Properly threaded to threaded test gauge connection
   b. Intake side of pump
   CAUTION! If the gauge is connected to the pump outlet rather than the inlet, it will be irreparably damaged.

9. Check the oil level in the priming pump reservoir.
   a. Replenish if necessary

10. Make pump packing glands accessible for checking.
    a. Raising floorboards or opening compartment doors as necessary

11. Seal the hose.
    a. Placing cap gasket removed earlier against the male end of hose
    b. Placing sheet of clear, hard plastic on top of gasket
    c. Covering entire opening
    d. Manually holding the gasket and plastic in place until priming device is operated
12. Run the priming device.
   a. Until the test gauge shows 22 inches (560 mm) of mercury
   b. Reducing the mercury reading 1 inch for each 1,000 feet (300 m) of altitude
   \(\sqrt{\text{Note: If the apparatus is unable to reach 22 inches (560 mm) of mercury, it should be removed from service and repaired as soon as possible.}}\)

13. Compare readings of the apparatus intake gauge and test gauge.
   a. Record any difference on appropriate form

14. Shut off the apparatus engine.

15. Listen for air leaks.

16. Check the vacuum gauge readings over a five-minute interval.
   a. No more than 10 inches (250 mm or 33.9 kPa) of vacuum is lost in 5 minutes

17. Look through the clear plastic.
   a. Looking for any signs of bubbling or liner separation
   b. Removing hose from service if signs of liner separation are detected

Total Score

Total points possible = 28
Total points needed to pass = 20

\(\square\) Pass  \(\square\) Fail
### References
NFPA 1002, Section 2-2.2, 3-1.1

### Task
Prepare the pumper and perform a pumper service test

### Given
- One driver/operator wearing a helmet
- One pumper
- Pitot gauge or flowmeter
- Test stand gauges
- Adequate number of capacity of hoselines and nozzles to conduct test
- Length of utility rope to secure hose nozzle
- Water supply
- Tables 16.4a and 16.4b, pages 390 and 391 in **Driver/Operator** manual
- Appropriate departmental forms
- Writing implement

### Performance outcomes
The driver/operator shall prepare the pumper and perform a pumper service test, given a fire department pumper and necessary equipment so that the operational status of the vehicle is verified.
PREPARING THE PUMPER FOR SERVICE TESTING

1. Open a discharge valve to allow the pressure in the pump to equalize.

2. Replace the cap at the end of the intake hose with the intake strainer.
   a. Hydraulically compatible (rated for same flow)

3. Tie off the intake hose and lower it into the water.
   a. Strainer at least 2 feet (0.6 m) below surface
   b. Sides and bottom of strainer surrounded by at least 2 feet (0.6 m) of water

4. Connect the discharge pressure test gauge.
   a. To pressure side of pump
   b. At test fitting on operator’s panel

5. Connect hoselines and test nozzle.
   a. Adequate number to carry the pump capacity to the test nozzle
   b. Test nozzle of correct size to handle pump capacity

6. Secure the nozzle.

7. Connect the pitot gauge and test stand gauges.
   a. Clamping pitot gauge into position at nozzle

CONDUCTING THE PUMPING TEST

8. Gradually speed up the pump.
   a. Until net pump discharge pressure reads 150 psi (1,035 kPa)
   b. (Two-stage pumps) Transfer valve in the VOLUME (PARALLEL) position

VOLUME FLOWING TEST

9. Check the nozzle flow.
   a. Using either a pitot gauge or a flowmeter
   b. Holding pitot gauge with blade open in the center of the stream with the tip about one-half the nozzle diameter from the end of the nozzle
10. **Make necessary adjustments to reflect net discharge pressure.**
   a. Closing valve further if flow is too great, and decreasing engine speed to correct discharge pressure
   b. Opening valve further if flow is too low, and increasing engine speed to correct discharge pressure
   c. Making all adjustments without the engine speed exceeding 80 percent of its peak
   d. Checking oil pressure to be sure that proper engine lubrication is maintained
   e. Recording any unusual vibration of pump or engine

20-MINUTE CAPACITY TEST

11. **Begin the twenty-minute capacity test.**
   a. Making and recording the following readings at the beginning of the test and at five-minute intervals until the 20-minute test is over
      • Pump discharge pressure
      • Nozzle pressure
      • Engine tachometer
      • Rpm
      • Engine coolant temperature (optional)
      • Oil pressure (optional)
      • Automatic transmission fluid temperature (optional)

200 PSI (1,380 kPa) TEST

12. **Increase the net pump discharge pressure.**
   a. Once the 20-minute capacity test has been completed
   b. To 200 psi (1,380 kPa)
   c. (Two-stage pumps) In VOLUME (PARALLEL) or PRESSURE (SERIES) position, depending on what position it was in on original certification test
   d. Pump delivering at least 70% of its rated volume capacity
   e. Running pump at this setting for 10 minutes

250 PSI (1,725 kPa) TEST

13. **Increase the net pump discharge pressure.**
   a. Once 200 psi (1,380 kPa) test has been completed
   b. To 250 psi (1,725 kPa)
   c. The pump should be delivering 50% of its rated volume capacity
   d. (Two-stage pump) Transfer valves in PRESSURE (SERIES) position
   e. Running pump at this setting for 10 minutes
14. Record any defects in engine or pump performance.
   a. On appropriate departmental form

15. Correct minor defects immediately if possible.

Total Score

Total points possible = 38
Total points needed to pass = 26

☐ Pass ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #38
Perform a Pressure Control Service Test

Trainee: ____________________________ Notes: ______________________________
Department: _________________________ ______________________________
Test Site: ___________________________ ______________________________
Evaluator: __________________________ ______________________________
Date: ______________________________

References
NFPA 1002, Section 2-2.2, 3-1.1

Task
Perform a pressure control service test.

Given
• One driver/operator
• One pumper
• Adequate number of hoselines and nozzles to conduct test
• Water supply
• Appropriate departmental forms
• Writing implement

Performance outcomes
The driver/operator shall perform a pressure control service test, given a fire department pumper and necessary equipment so that the operational status of the vehicle is verified.
PART I

1. Set the fire pump.
   a. So that it is discharging its rated capacity at a net pump discharge pressure of 150 psi (1,035 kPa) 

2. Set the pressure control device.
   a. To maintain discharge pressure at 150 psi (1,035 kPa) 

3. Closing the flowing valves.
   a. Once discharge pressure is set 
   b. One at a time 
   c. Taking no less than 3 seconds and no more than 10 seconds to close each valve 

4. Observe the pump discharge pressure gauge.
   a. Should rise no more than 30 psi (207 kPa) with all gauges closed 

PART II

5. Set the fire pump.
   a. So that it is discharging its rated capacity at a net pump discharge pressure of 150 psi (1,035 kPa) 

6. Reduce the engine throttle.
   a. Until pump pressure drops to 90 psi (620 kPa) with no change to discharge valve or nozzle settings 

7. Set the pressure control device.
   a. To maintain 90 psi (620 kPa) 

8. Close the flowing valves.
   a. Once discharge pressure is set 
   b. One at a time 
   c. Taking no less than 3 seconds and no more than 10 seconds to close each valve 

9. Observe the pump discharge pressure gauge.
   a. Should rise no more than 30 psi (207 kPa) with all gauges closed 

PART III

10. Set the fire pump.
    a. So that it is discharging 50 percent of its rated capacity at a net pump discharge pressure of 250 psi (1,725 kPa) 

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11. **Set the pressure control device.**
   a. To maintain the discharge pressure at 250 psi (1,725 kPa)

12. **Close the flowing valves.**
   a. Once discharge pressure is set
   b. One at a time
   c. Taking no less than 3 seconds and no more than 10 seconds to close each valve

13. **Observe the pump discharge pressure gauge.**
    a. Should rise no more than 30 psi (207 kPa) with all gauges closed

Total Score

Total points possible = 19
Total points needed to pass = 13

☐ Pass  ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #39
Perform Discharge Gauge and Flowmeter Operational Service Tests

| Trainee: ____________________________ | Notes: ______________________________ |
| Department: _________________________ | ______________________________      |
| Test Site: __________________________ | ______________________________      |
| Evaluator: __________________________ | ______________________________      |
| Date: ______________________________ |                                     |

**References**
NFPA 1002, Section 2-2.2, 3-1.1

**Task**
Perform discharge gauge and flowmeter operational service tests.

**Given**
- One driver/operator wearing a helmet
- One pumper
- Appropriate number of caps or closeable nozzles for all discharges
- A hoseline equipped with a solid stream nozzle
- Table 16.2 on page 384 and Table 16.5 on page 393 of *Driver/Operator Handbook*

**Performance outcomes**
The driver/operator shall perform discharge gauge and flowmeter operational service tests, given a fire department pumper and necessary equipment so that the operational status of the gauges are verified.
1. **Cap each discharge on the apparatus.**
   a. Disconnecting preconnected hoselines
   b. Screwing caps or closed nozzles onto the discharges

2. **Open each discharge valve slightly.**

3. **Increase throttle speed.**
   a. Until the test pressure discharge gauge reads 150 psi (1,035 kPa)
   b. Until master pressure gauge reads 150 psi (1,035 kPa)
   c. Until each line discharge pressure gauge reads 150 psi (1,035 kPa)

4. **Increase throttle speed.**
   a. Until the test pressure discharge gauge reads 200 psi (1,380 kPa)
   b. Until master pressure gauge reads 200 psi (1,380 kPa)
   c. Until each line discharge pressure gauge reads 200 psi (1,380 kPa)

5. **Increase throttle speed.**
   a. Until the test pressure discharge gauge reads 250 psi (1,725 kPa)
   b. Until master pressure gauge reads 250 psi (1,725 kPa)
   c. Until each line discharge pressure reads 250 psi (1,725 kPa)

6. **Recalibrate, repair, or replace any gauges with faulty readings.**
   a. Those that are off by more than 10 psi (70 kPa)

Total Score

**Total points possible = 13**
**Total points needed to pass = 9**

☐ Pass ☐ Fail
NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

Job Performance Requirement #40
Perform a Tank-to-Pump Flow Service Test

Trainee: ____________________________ Notes: ______________________________

Department: _________________________ ______________________________

Test Site: ___________________________ ______________________________

Evaluator: __________________________ ______________________________

Date: ______________________________

References
NFPA 1002, Section 2-2.2, 3-1.1

Task
Perform a tank-to-pump flow service test.

Given
• One driver/operator
• One pumper
• Pitot tube or flowmeter
• Hoselines and nozzles appropriate for discharge rate
• Water supply
• Appropriate departmental forms
• Writing implement

Performance outcomes
The driver/operator shall perform a tank-to-pump flow service test, given a fire department pumper and necessary equipment so that the flow rate from the tank to the pump is verified.
1. **Fill the water tank.**
   a. To overflowing

2. **Close the tank fill line, bypass cooling line, and all pump intakes.**

3. **Attach hoselines and nozzles.**
   a. Enough and sized to flow the desired discharge rate

4. **Place the pump in gear.**

5. **Flow water.**
   a. Opening the discharge(s) to which the hose(s) is (are) attached

6. **Increase the engine throttle.**
   a. Until maximum consistent pressure is obtained on discharge gauge

7. **Refill the tank.**
   a. Slowly closing discharge valve
   b. Without changing throttle setting
   c. Temporarily opening the bypass valve to prevent pump overheating

8. **Check the flow through the nozzle.**
   a. Reopening the discharge valve
   b. Using a pitot tube or flowmeter
   c. Adjusting throttle if pressure needs to be brought back to amount determined in Step 6
   d. Continuously discharging minimum flow rate until at least 80 percent of the tank has been emptied

9. **Interpret flow rates.**
   a. Comparing that measured to NFPA minimum or apparatus manufacturer’s designated rate
   b. Identifying problem in tank-to-pump line if flow rate is less than NFPA minimum or manufacturer’s designated rate
   c. Taking pump out of service if it tests to less than 90 percent of its certification testing capabilities or giving it a lower rating based on the test results of its actual performance
10. Record test results.
   a. On appropriate department test form

   Total Score

   Total points possible = 17
   Total points needed to pass = 11

   ☐ Pass ☐ Fail
## NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications

**Job Performance Requirement #41**  
Perform Foam Proportioning Equipment Service Tests

<table>
<thead>
<tr>
<th>Trainee: ____________________________</th>
<th>Notes: ____________________________________</th>
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<tr>
<td>Department: _________________________</td>
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<tr>
<td>Test Site: __________________________</td>
<td>_______________________________________________________________________________________</td>
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<tr>
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<td>_______________________________________________________________________________________</td>
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<tr>
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<td>_______________________________________________________________________________________</td>
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</tbody>
</table>

### References

- NFPA 1002, Section 2-2.2, 3-1.1

### Task

Perform foam proportioning equipment service tests.

### Given

- One driver/operator
- One pumper
- Calibrated tank
- Hoseline and foam nozzle
- Water supply
- Appropriate departmental forms
- Writing implement
- 3 graduated bottles, 100 ml or larger with caps
- 3% fluoroprotein – or protein-based foam concentrate
- Pipette or syringe
- Plastic stirring stick
- Refractometer
- Direct reading conductivity meter with foam concentrate percentage readout
- Graph paper

### Performance outcomes

The driver/operator shall perform foam proportioning service test, given a fire department pumper and necessary equipment so that the accuracy of the foam proportioning equipment is verified.
The driver/operator shall test the foam system accuracy using one of the following methods:

**USING THE DISPLACEMENT METHOD TO TEST THE ACCURACY OF THE FOAM PROPORTIONING EQUIPMENT**

1. **Operate the apparatus foam system.**
   a. At predetermined flow
   b. Using water as a substitute for foam concentrate
   c. Using a calibrated tank instead of the normal foam concentrate pails

2. **Record the volume of water drawn from the calibrated tank over a predetermined period of time.**
   a. On appropriate departmental form

3. **Determine the correction factor for drawing water rather than foam through the system.**
   a. Contacting the manufacturer of the proportioning system or foam concentrate normally used in the system

4. **Correlate the volume of water drawn with actual percentage of foam concentrate that the system would be proportioning at the test flow rate.**
   a. Recording on appropriate departmental form

**Total Score**

**USING PUMP DISCHARGE VOLUME METHOD TO TEST THE VOLUME OF THE FOAM CONCENTRATE PROPORTIONED INTO THE STREAM**

1. **Operate the apparatus foam system.**
   a. At predetermined flow
   b. Using water as a substitute for foam concentrate

2. **Collect the discharged water.**
   a. In a calibrated container
   b. For a predetermined period

3. **Record the volume of water discharged.**
   a. On appropriate departmental form

4. **Determine the correction factor for discharging water rather than foam through the system.**
   a. Contacting the manufacturer of the proportioning system or foam concentrate normally used in the system
5. Correlate the volume of water discharged with the actual percentage of foam concentrate that the system would be proportioning at the test flow rate.
   a. Recording on appropriate departmental form

   Total Score

USING THE REFRACTIVITY METHOD TO TEST THE QUALITY OF THE FOAM SOLUTION

1. Place protein or fluoroprotein-based foam concentrate in the bottles.
   a. Using pipette or syringe
   b. 2.7 ml into one
   c. 3 ml in second
   d. 3.3 ml into third

   √ Note: When testing proportioning equipment that can be operated at more than one setting, such as an in-line eductor that has 1%, 3%, ,and 6% settings, take three samples for each setting and prepare separate charts for each.

2. Add water to each bottle.
   a. To the 200 ml mark

3. Add a plastic stirring bar to each bottle.

4. Cap each bottle.
   a. Tightly

5. Shake each bottle.
   a. Vigorously
   b. Until water and concentrate are thoroughly mixed

6. Take a refractive index of each sample.
   a. Placing a few drops of sample on refractometer prism
   b. Closing cover plate
   c. Observing the reading

7. Plot each reading on a piece of graph paper.
   a. Drawing a line between the three points to establish a baseline curve

8. Take three samples of the actual foam solution produced by the system.
   a. Using pipette or syringe
9. Test each sample on the refractometer.
   a. Placing a few drops of sample on refractometer prism ______
   b. Closing cover plate ______
   c. Observing the reading ______

10. Plot each sample on the graph.
    a. Drawing a line between the three points ______

11. Interpret the results.
    a. Comparing to baseline curve ______
    b. Comparing to NFPA parameters ______

   Total Score ______

USING THE DIRECT READING CONDUCTIVITY METHOD TO TEST THE CONDUCTIVITY OF THE FOAM SOLUTION

1. Zero in the meter.
   a. Using plain water ______
   b. Collecting sample of water that will be used in the test ______
   c. Immersing the sensor head, using plain water ______

2. Collect a sample of foam solution.
   a. From proportioning system ______

3. Conduct test.
   a. Immersing sensor head in foam solution ______

4. Record meter reading.
   a. On appropriate departmental form. ______

   Note: If the meter does not have a foam concentrate percentage readout, plot the reading on the calibration curve to get the final results.

   Total Score ______

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<th>Displacement Method</th>
<th>Pump Discharge Volume Method</th>
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<tbody>
<tr>
<td>Total points possible = 6</td>
<td>Total points possible = 7</td>
</tr>
<tr>
<td>Total points needed to pass = 4</td>
<td>Total points needed to pass = 5</td>
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</table>

<table>
<thead>
<tr>
<th>Refractivity Method</th>
<th>Direct Reading Conductivity Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total points possible = 20</td>
<td>Total points possible = 6</td>
</tr>
<tr>
<td>Total points needed to pass = 14</td>
<td>Total points needed to pass = 4</td>
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☐ Pass ☐ Fail