

Introduction to Apparatus Inspection, Maintenance, and Testing

Terms

Write the definition of the terms below on the blanks provided.

1. Maintenance (90)
2. Repair (90)
3. Gross Vehicle Weight Rating (GVWR) (101)
4. GVWR Placard (101)
5. Curb Weight (101)
6. Free Play (110)
7. Load Sequencer (113)
8. Load Monitor (113)
9. Load Shedding (113)

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True/False

Write True or False on the blanks provided; if false, write the correct statements on the lines provided.

- _____ 1. Repair means to keep the apparatus in a state of usefulness or readiness. (90)
- _____ 2. Older apparatus require a more gentle cleaning procedure than do newer apparatus. (92)
- _____ 3. Automatic snow chains should be activated during an inspection. (105)
- _____ 4. The speedometer should read between 0 and 5 miles per hour with the apparatus parked. (110)
- _____ 5. The driver/operator should adjust any clutch that does not have the appropriate amount of free play. (113)
- _____ 6. Apparatus brakes should be thoroughly tested at least once every three years. (115)
- _____ 7. The air pressure warning signal should sound before the pressure drops to less than 60 psi (414 kPa). (116)

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3. What two types of inspections are being performed during the driver/operator's daily inspection? (95)

4. What tasks should be performed during left- and right-side cab inspections? (98-99)

5. What information is imprinted on the sidewall of a truck tire? (100-101)

6. List the inspection guidelines for each of the components listed below. (102-104)

Windshield

Lighting system

Audible warning devices

Pump intakes

Pump discharges

Winches

Hydraulic rescue tool systems

Electric cord reels

Air hose reels

License plates

Stabilizers

7. List the exterior equipment that should be checked during an inspection. (107)

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12. What basic actions should be undertaken when performing an operational inspection of the aerial device?
(130-131)

Matching

Write the correct answers on the blanks provided.

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|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| _____ | 1. Performed on accessible welds and steel components (135) | A. Acoustic emission inspection |
| _____ | 2. Performed on aluminum ladders (135) | B. Conductivity reading |
| _____ | 3. Uses dye to saturate the surface of the test material; when the developer is applied, defects become apparent (136) | C. Hardness testing |
| _____ | 4. Involves the introduction of high frequency vibrations into the surface of the test component (136) | D. Liquid penetrant testing |
| _____ | 5. Utilizes x-ray technology to check the integrity of welds that are used to construct the aerial device (136) | E. Magnetic particle inspection |
| _____ | 6. Used to check the composition of metal components to determine if any significant changes have occurred (136) | F. Radiographic testing |
| _____ | 7. Uses special equipment that identifies flaws in the metal of an aerial device by emitting sound waves into the device and reading them at a distant point (136) | G. Ultrasonic inspection |

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Multiple Choice

Write the correct answers on the blanks provided.

- _____ 1. Most career fire departments require driver/operators to perform apparatus inspections and maintenance checks: (91)
- A. after each emergency call.
 - B. at the end of each work period.
 - C. at the beginning of each work period.
 - D. before the apparatus leaves the station.
- _____ 2. Which of the following is NOT a purpose of apparatus maintenance and inspection records? (91)
- A. Lawsuits
 - B. Warranty claims
 - C. Accident investigations
 - D. Promotional considerations
- _____ 3. Which of the following statements regarding apparatus cleanliness is LEAST accurate? (91-92)
- A. An apparatus can never be overcleaned.
 - B. Clean fire apparatus can help maintain good public relations.
 - C. Fire apparatus should be kept clean underneath as well as on top.
 - D. Keeping the apparatus body clean helps promote a longer vehicle life.
- _____ 4. To clean automotive glass, use: (93)
- A. vinegar.
 - B. ammonia.
 - C. warm, soapy water.
 - D. a bleach and water mixture.
- _____ 5. If wax or polish is required, it should not be applied to the apparatus until its paint is at least: (94)
- A. 3 months old.
 - B. 6 months old.
 - C. one year old.
 - D. two years old.

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- _____ 6. Which of the following is NOT a task that should be performed while checking tire and wheel condition? (99)
- A. Check each lug nut by hand.
 - B. Check valve stems for proper placement.
 - C. Look for unusual accumulations of brake dust.
 - D. Inspect the wheel/tire assembly for other leaks.
- _____ 7. Tire selections for fire apparatus are based on the gross vehicle weight: (100)
- A. including tools and equipment.
 - B. excluding tools and equipment.
 - C. including driver/operator and crew.
 - D. excluding driver/operator and crew.
- _____ 8. After completing the cab left- and right-side inspections, the driver/operator should next inspect everything from the: (104)
- A. front bumper to the rear bumper.
 - B. front of the cab to the rear of the cab.
 - C. rear of the cab to the tailboard on the passenger side, and from the tailboard to the rear of the cab on the driver's side.
 - D. front of the cab to the tailboard on the driver's side, and from the tailboard to the front of the cab on the passenger's side.
- _____ 9. Which of the following inspections should be performed on rear duals? (105)
- A. Replace tires with any damage.
 - B. Equip front wheels with splash guards.
 - C. Ensure that the duals are in contact with each other.
 - D. Check that the duals on each side of the apparatus are of different types.
- _____ 10. Automatic snow chains may not be effective in snow depths over ____ inches (mm). (106)
- A. 1 to 2 (25 to 51)
 - B. 3 to 6 (76 to 152)
 - C. 4 to 6 (102 to 152)
 - D. 6 to 10 (152 to 254)
- _____ 11. Which of the following is NOT included in a rear of vehicle inspection? (107-108)
- A. Hose beds
 - B. Booster tanks
 - C. Cabinet doors
 - D. Running and warning lights

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- _____ 12. The pump on a quint should be tested: (108)
- A. every day.
 - B. once a week.
 - C. once a month.
 - D. at least once a year.
- _____ 13. What is the FIRST step of an in-cab inspection? (109)
- A. Fasten seat belt.
 - B. Start the engine.
 - C. Ensure that all electrical switches are in the off position.
 - D. Set the seats and mirrors for proper adjustment for personal needs.
- _____ 14. Steering wheel free play should be no more than about ____ degrees in either direction. (110)
- A. 5
 - B. 10
 - C. 15
 - D. 20
- _____ 15. The __ turns various lights on at specified intervals so that the start-up electrical load for all of the devices does not occur at the same time. (113)
- A. load monitor
 - B. load shedder
 - C. load sequencer
 - D. load management system
- _____ 16. Apparatus with air brakes are to be equipped with an air pressure protection valve that prevents the air horns and other unnecessary peripherals from being operated when the pressure in the reservoir drops below ____ psi (kPa). (114)
- A. 50 (345)
 - B. 60 (414)
 - C. 70 (483)
 - D. 80 (552)
- _____ 17. The driver/operator should perform an air-brake test: (115)
- A. at least once a week.
 - B. at least once a month.
 - C. at the end of each work shift.
 - D. at the beginning of each work shift.

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- _____ 18. When testing air compressor governor cut out pressure, the compressor pump should continue pumping in compressed air until it cuts out at approximately _____ psi (kPa). (115)
- A. 75 (517)
 - B. 100 (690)
 - C. 125 (862)
 - D. 150 (1 034)
- _____ 19. When testing air leakage rate, the air-pressure loss should not be more than ___ psi (kPa) per minute after depressing the brake pedal. (116)
- A. 2 (14)
 - B. 4 (28)
 - C. 6 (41)
 - D. 8 (55)
- _____ 20. With the engine at operating rpm, the pressure should build from 85 to 100 psi (586 kPa to 690 kPa) within: (116)
- A. 15 seconds.
 - B. 30 seconds.
 - C. 45 seconds.
 - D. 60 seconds.
- _____ 21. Which of the following statements regarding chassis lubrication is MOST accurate? (123)
- A. Different types of engine oil may be mixed for lubrication.
 - B. Routine chassis lubrication can be performed only by a trained mechanic.
 - C. Proper lubrication helps prevent costly repairs and reduces out-of-service time.
 - D. The lubricant used for chassis lubrication must be the same lubrication used for the aerial device or equipment.
- _____ 22. Pre-service tests are performed by: (132)
- A. an insurance rating agency.
 - B. fire department personnel.
 - C. a third-party testing organization.
 - D. a certified fire apparatus mechanic.
- _____ 23. What type of testing is used to determine whether or not an aerial device is capable of safely handling the amount of weight it is rated to carry? (133)
- A. Load testing
 - B. Pre-service testing
 - C. Operational testing
 - D. Nondestructive testing

- _____ 24. Which of the following statements regarding manufacturer testing is LEAST accurate? (137)
- A. Manufacturer tests are performed by the manufacturer.
 - B. Manufacturer tests should include stability testing and flow testing.
 - C. Fire department personnel are usually not involved in performing manufacturer tests.
 - D. Manufacturer testing must be conducted before delivery of the vehicle to the purchaser.
- _____ 25. When is acceptance testing performed? (138)
- A. On a daily basis
 - B. On a weekly basis
 - C. Before delivery of the vehicle to the purchaser
 - D. After the apparatus has been delivered to the purchaser

Skill Sheet 4-1

Objective 4: Clean the interior and wash and wax the exterior of a fire department apparatus.

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will wash, wax, and dry a fire service apparatus, including the exterior, glass, tires, and interior of a fire service apparatus.

Equipment & Materials

- One or several firefighters
- Wheel chocks
- Apparatus operator's manual
- Garden hose, nozzle, and water supply source
- Automotive shampoo recommended by manufacturer
- Automotive wax
- Clean soft cloths and chamois
- Approved grease/tar-removing solvent
- Commercial glass cleaner
- Approved cleaning agents and protective coatings for interior cleaning
- Squeegee
- Bucket(s)
- Scrub brushes
- Fire service aerial apparatus

Task Steps

1. Park the apparatus outdoors; starting, driving, and braking according to SOPs.
2. Chock the apparatus wheels.
3. Gather equipment and set up work area.
4. Apply water to the apparatus from top to bottom using a garden hose without a nozzle.

Note: During the first six months after an apparatus is received, the vehicle should be washed frequently with cold water to harden the paint and keep it from spotting. Once a new vehicle's finish is properly cured, either a garden hose with a nozzle or a pressure washer may be used to speed cleaning of the apparatus.

5. Wash the apparatus from top to bottom.
6. Dry the apparatus exterior completely, using a clean chamois.

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7. Clean exterior glass using warm soapy water or commercial glass cleaner.
8. Open the cab windows.
9. Sweep or vacuum large, loose dirt particles.
10. Clean the seat upholstery, dashboard, engine compartment coverings, and floor finishes.
11. Close any open windows and open a door.
12. Wash the interior vehicle windows and mirrors using warm soapy water or commercial glass cleaners.
13. Wax the apparatus (if the operator's manual recommends waxing).

Skill Sheet 4-2

Objective 6: Perform a test of the air brake system.

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will perform a daily test of the air brake system.

Equipment & Materials

- One or several firefighters
- Fire service aerial apparatus

Task Steps

Air Brake Test 1

1. With engine off, transmission in neutral, full air tanks, and parking brake released, press brake pedal to floor.
2. Note position of needles. After one minute, air pressure should not drop more than 3 psi.
3. With engine off and master switch on, pump brake pedal continually to lower air tank pressure. Warning light and buzzer should activate before 60 psi.
4. After step 3 is complete, with parking brake released, continue to pump brake pedal until air brake control sets automatically.

Note: This should occur between 20 and 40 psi.

5. Start engine and let air pressure build up to normal. When the needle stops climbing, the air compressor has cut out.

Note: This should occur between 125 and 130 psi.

6. Apply the brake pedal, lowering the pressure in the tanks by 5 to 10 psi increments until the needle on the air gauge begins to move upward.

Air Brake Test 2

1. With engine running, apply parking brake.
2. Place transmission in drive and add acceleration. The parking brake should prevent movement of the vehicle.
3. Release the parking brake, move vehicle forward about 5 mph and apply brakes with the service brake pedal. Report and check any pull in steering, unusual feel, or delay in stopping action.
4. Check air pressure gauge needles.

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Skill Sheet 4-3

Objective 7: Perform a walk-around routine maintenance inspection. (NFPA® 1002, 4.2.1, 4.2.2)

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will inspect and perform routine maintenance on a fire service aerial apparatus.

Equipment & Materials

- Two firefighters; one to inspect and one to assist
- Wheel chocks
- Apparatus operator's manual
- Tire pressure gauge
- Apparatus maintenance log/forms
- Writing implement
- Fire service aerial apparatus

Task Steps

1. Park the apparatus outdoors, if weather permits.
2. Set up the inspection area.
CAUTION! Never run gasoline or diesel engines in an unventilated area for any period of time.
3. Chock the vehicle's wheels.
4. Approach the vehicle, looking for readily apparent damage. Look beneath the vehicle for spots that indicate leakage.
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.
8. Check that all steps, platforms, handrails, and ladders are securely mounted and not deformed.
9. Check the saddle fuel tanks beneath the door opening for leaks or other problems, if the vehicle is so equipped.
10. Check the condition of the tire/wheel assembly on the front left and right sides of the vehicle. Check tightness of lug nuts.
11. Visually inspect the suspension components found behind the front left and right wheels.
12. Check that front tires are properly inflated using pressure gauge and checking the reading against pressure recommended by apparatus manufacturer.
13. Check the front tire valve stems for cracks or looseness.
14. Check the front tires.
15. Check that the equipment in the rear portion of the cab is all onboard, in proper working order, and securely stowed.

16. Approach the front of the vehicle, noting any body damage not present in previous inspections.
17. Look beneath the vehicle noting any obvious damage to front axle, steering system, or pump piping (if present). Note any loose, bent, worn, damaged, or missing parts.
18. Check that the windshield is free of defects and clean.
19. Check that the wiper blades are held appropriately against the windshield, intact, and in good condition.
20. Check the hydraulic fluid level.
21. Start the apparatus engine, or hook the apparatus to the electrical charging system.
22. (Second firefighter) Operate all front running and emergency light switches in the cab one at a time, calling out switch type to inspecting firefighter.
23. Check all front running and emergency lights as they are activated, ensuring that they are functioning properly, all bulbs are working, and that lenses are in place and not cracked or broken.
24. Visually inspect any audible warning devices on the front of the vehicle (electric siren speakers, mechanical sirens, and air horns).

CAUTION! Do not test the operation of audible warning devices inside of the building or with someone standing in front of the vehicle.

25. Unreel the electrical cord reels and inspect them as they are wiped down with a damp cloth. Check all electrical connections for tightness and condition.
26. Unreel reel-mounted air hoses and inspect for cuts or other damage to the outer covering.
27. Inspect the left and right rear sides of the apparatus. This inspection should cover everything from the rear of the cab to the tailboard on each side of the apparatus. Note any obvious body damage that has occurred since the previous inspection.
28. Check the condition of the tire/wheel assembly on the back left and right sides of the apparatus. Check tightness of lug nuts.
29. Make a quick visual inspection of the suspension components found behind the back left and right wheels.
30. Check that the rear tires are properly inflated by using a pressure gauge and checking the reading against the pressure recommended by the apparatus manufacturer.
31. Check that the rear tire valve stems have no cracks or looseness.
32. Check the rear tires.
33. Inspect the automatic snow chains if the apparatus is so equipped. Make sure that all chains are present and in good condition.
34. Check all equipment compartments.
35. Examine any hose stored midship or on the side of the vehicle. Ensure that the hose is secure and properly stowed.
36. Check that top-mounted booster hose and reels are securely and properly stowed.
37. Check the water level in the booster tank through the top vent opening or sight glass. Note low water level and replenish, if necessary, after visual inspection.
38. Check that any equipment stored on the exterior of the vehicle is in good physical condition and is properly stowed.
39. Check that equipment stored above the pump panel is in good physical condition and is properly stored.

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40. Ensure that the reflective striping on the side of the apparatus is in good condition.
41. (Second firefighter) Operate the side warning light switch in the cab, calling out to inspecting firefighter when activated.
42. Check the side-mounted warning lights.
43. Check the rear bumper or tailboard for any new damage.
44. (Second firefighter) Operate all rear running and emergency light switches in the cab one at a time, calling out switch type to inspecting firefighter.
45. Check all running and emergency lights as they are activated.
46. Document all findings.

Skill Sheet 4-4

Objective 8: Perform an in-cab operational inspection. (NFPA® 1002, 4.2.1, 4.2.2)

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will perform an in-cab inspection of the apparatus.

Equipment & Materials

- One firefighter
- Ear protection
- Apparatus operator's manual
- Apparatus maintenance log/forms
- Writing implement
- Fire service aerial apparatus

Task Steps

1. Check the seatbelts/restraints.
2. Check that the mirrors are not missing or broken.
3. Make sure that the tilt/telescopic steering wheel is in a suitable position.
4. Adjust the seat and mirrors.
5. Turn off all electrical switches.
6. Start the vehicle.
7. Run the engine under a light load until it has warmed to its operating temperature.
8. Make sure that all gauges below are functioning in the normal operating range:
 - a. Speedometer/odometer
 - b. Engine speed (rpm)
 - c. Oil pressure
 - d. Fuel gauge
 - e. Ammeter/voltmeter
 - f. Air pressure
 - g. Coolant temperature
 - h. Vacuum gauge
 - i. Hydraulic pressure gauge
 - j. Transmission oil temperature gauge
 - k. Engine/operation hour gauge
9. Check that the speedometer is at or very near zero with the apparatus parked.

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10. Make sure that the fuel gauge reads at least three-quarters full.
11. Check that all other gauges register within limits specified in operator's manual.
12. Briefly operate all controls in the cab, checking each system below:
 - a. Electrical equipment switches
 - b. Turn signal switches
 - c. High beam headlight switches
 - d. Heating and air-conditioning controls
 - e. Radio controls
 - f. Public address systems (if so equipped)
 - g. Audible warning device controls (sirens, auto warning horns, air horns, back-up alarms, etc.)
CAUTION! Before testing audible warning devices, don appropriate hearing protection.
 - h. Controls for any computer equipment in the cab (mobile data terminal [MDT], mobile computer terminal [MCT], etc.)
 - i. Windshield wiper controls
 - j. Window defroster controls
 - k. Automatic snow chain control (if applicable)
 - l. Load management system
13. Check clutch pedal free play, noting in apparatus log or on inspection form insufficient or excessive free play.
14. Check steering wheel free play, noting in apparatus log or on inspection form insufficient or excessive free play.
15. Check air brake pressure level if apparatus is equipped with air brakes.
 - a. Start the vehicle and allow it to run for 60 seconds.
 - b. Schedule repair with a certified mechanic if you have to run the vehicle for more than 60 seconds to build sufficient air pressure.
 - c. Schedule repair with a 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).

Skill Sheet 4-5

Objective 9: Perform an engine compartment inspection. (NFPA® 1002, 4.2.1, 4.2.2)

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will perform an engine compartment inspection.

Equipment & Materials

- Driver/operator candidate
- Personal protective equipment (PPE)
- Eye protection
- Basic automotive tool kit
- Apparatus operator's manual
- Manufacturer's approved engine crankcase oil
- Manufacturer's approved antifreeze
- Manufacturer's approved power steering fluid
- Manufacturer's approved brake fluid
- Windshield washer fluid
- Replacement air filter as needed
- Replacement air dryer filter as needed
- Replacement belts as needed
- Mixture of baking soda and water
- Wire brush
- Clear water
- Bucket
- Clean cloths
- Apparatus maintenance logs/forms
- Writing implement
- Well-ventilated inspection area
- Fire service aerial apparatus

Task Steps

1. Shut down the apparatus.
 2. (Tilt-Cab Apparatus) Check that the level and/or control mechanism operates freely without binding and **that the hold-open device is latched.**
- CAUTION!** Before lifting the cab, make sure that all loose objects are secured or removed from the cab.
3. (Tilt-Cab Apparatus) Check that the cab lift motors and pumps operate properly.
 4. Determine the oil level by using the dipstick. Add oil through the fill port on the engine block if necessary.
 5. Inspect the air intake system for signs of damage or dirt buildup.
 6. Change the air filter if it is dirty or if the air filter restriction gauge indicates that it is time to change the filter.
 7. Test the emergency operating system, ensuring that the system operates properly and that the system resets to the proper position.

Note: Some diesel engines incorporate an emergency shutdown switch and a manual reset.

8. Inspect the exhaust system for damage.
9. Test the rain cap on the exhaust system, ensuring that it operates freely (if applicable).
10. **WARNING!** Use caution when removing the radiator fill cap on an engine that is 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 are cool.

Determine whether the antifreeze is at the proper level mark inside the reservoir. Add antifreeze until amount reaches proper level mark.

11. Check the radiator hoses, recording any leaks or undue wear in apparatus log or on maintenance form.
12. Remove any debris, such as leaves or trash, resting against the radiator intake.
13. **WARNING!** Some electrically operated engine cooling fans activate automatically without warning. Use caution when working near the fan.
Inspect the cooling fan, recording any cracks or missing blades in apparatus log or on maintenance form.
14. Check the windshield washer fluid level. Add windshield washer fluid if tank is less than half full.
15. If the apparatus has unsealed batteries, carefully remove the caps and check the electrolyte (water) level.

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

Note: Depending on the design of the vehicle, the batteries may be located in the engine compartment or in a separate compartment elsewhere on the vehicle. Most modern vehicle batteries are the sealed types that require no internal inspection by the driver/operator.

16. Add distilled water to cells if the electrolyte level is low.
17. Check all battery connections. Tighten any loose connections. Clean 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.
18. Check the battery tie-downs, ensuring that the battery is held firmly in place.
19. Check the built-in battery charger if the apparatus is so equipped, ensuring proper operation.
20. Check the automatic transmission fluid level on the dipstick or electronic readout. Add fluid to the automatic transmission if the reading on the dipstick or readout indicates that the fluid is low.

Note: Depending on the manufacturer's recommendations, it may be necessary to check the transmission fluid level after the vehicle has been driven and shifted through all forward gears, and while the vehicle is running.

21. Check the manufacturer's indicator marks to determine the power steering fluid level. Add fluid if the reading indicates that the fluid is low.
22. Check the level of the brake fluid in the master brake cylinder. Add fluid if the fluid is low.
23. Check for leaks in the air system.

24. Check all engine compartment belts for tightness and excessive wear.

WARNING! Never attempt to check the belts while the vehicle's engine is running.

25. Inspect the condition of all hoses and hydraulic lines for leaking fluids.

26. Check the electrical wiring in the engine compartment.

27. Check the general condition of the steering linkage and check it for looseness and free play.

28. If so equipped, check the manual transmission oil level to ensure that it is within the normal range. Add oil if necessary.

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Skill Sheet 4-6

Objective 11: Charge an apparatus battery. (NFPA® 1002, 4.2.1)

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will charge an apparatus battery.

Equipment & Materials

- One firefighter
- Wheel chocks
- Apparatus operator's manual
- Battery charger
- Eye protection
- Apparatus maintenance log/forms
- Writing implement
- Fire service aerial apparatus

Task Steps

1. Make sure that the battery and ignition switch(es) are in the OFF positions.
2. Identify the polarity of the battery to be charged (positive or negative ground).
3. Attach the red (positive or "+") charger cable to the red (positive or "+") battery post.
4. Attach the black (negative or "-") charger cable to the vehicle frame.
5. Connect the battery charger to a reliable power source (away from gasoline and other flammable vapors).
6. Set the desired battery charging voltage and charging rate if so equipped.

Note: Switches on battery charger should be in the OFF position when not in use.

7. Reverse the procedure to disconnect the battery charger.

Skill Sheet 4-7

Objective 13: Inspect a fire apparatus aerial device. (NFPA® 1002, 4.2.1, 4.2.2, 6.1.1)

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will perform an inspection of a fire apparatus aerial device.

Equipment & Materials

- Driver/operator candidate
- Certified driver/operator
- Fire service elevating platform aerial apparatus
- Apparatus operator's manual
- Appropriate documentation forms
- Writing implement
- Service records for apparatus being inspected/ tested

Task Steps

1. Park the apparatus in a suitable location for inspection.
2. Transfer power from the drive train to the aerial device hydraulic system.
3. Inspect the stabilizers.
4. Check the operation of the stabilizers and jack plates.
5. Inspect the aerial device turntable and torque box, if equipped.
6. Inspect the aerial elevating platform, if equipped.
7. **Articulating Aerial Device**
Inspect the lower and upper booms.
Note: Be certain that the apparatus is properly stabilized before operating the aerial device.
8. **Telescoping Elevating Platform**
Inspect the boom.
9. Raise and extend the aerial device.
10. Inspect cables, pulleys, and guides.
11. Rotate the aerial device.
12. Test the operation of auxiliary equipment on the aerial device.

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Skill Sheet 4-8

Objective 16: Test the operation of an elevating platform aerial apparatus. (NFPA® 1002, 4.2.2, 6.1.1)

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will test the operation of an aerial apparatus equipped with an elevating platform.

Equipment & Materials

- Driver/operator candidate
- Certified driver/operator
- Fire service elevating platform aerial apparatus
- Stopwatch for timed tests
- Apparatus operator's manual
- Appropriate documentation forms
- Writing implement
- Service records for apparatus being inspected/ tested

Task Steps

NOTE: The operational test of an aerial platform apparatus should cover the complete range of actions required to place the aerial platform in service.

Operational Tests From Lower Control Station

1. Park the apparatus in a suitable location for inspection.
2. Engage the PTO.
3. Set the stabilizers.
4. Set the engine speed.
5. Operate the aerial device through its entire range of motions.
6. Release the controls, noting and recording if they do not return automatically to neutral position.
7. Check the leveling indicators.
8. **Telescoping Elevating Platform**
Check rollers and sheaves.
9. Return the apparatus to its fully stowed position.
10. Conduct a time test.
11. Fully retract the aerial device and complete the rotation through 360 degrees.

12. Stow the aerial device.
13. Perform a visual inspection.

Operational Tests From Platform Control Station

1. Park the apparatus in a suitable location for inspection.
2. Engage the PTO.
3. Set the stabilizers.
4. Set the engine speed.
5. Operate the aerial device keeping the platform level through all phases of the test.
6. Release the controls, noting and recording if they do not return automatically to neutral position.
7. Test the platform control deactivation switch.
8. Stow the aerial device.
9. Perform a visual inspection.

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Skill Sheet 4-9

Objective 17: Test the operation of a water tower apparatus. (NFPA® 1002, 4.2.2, 6.1.1)

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will test the operation of a water tower apparatus.

Equipment & Materials

- Driver/operator candidate
- Certified driver/operator
- Fire service water tower apparatus
- Apparatus operator's manual
- Appropriate documentation forms
- Writing implement
- Service records for apparatus being inspected/ tested

Task Steps

1. Park the apparatus in a suitable location for inspection.
2. Engage the PTO.
3. Set the stabilizers.
4. Operate the water tower, raising it from its bed to full elevation.
5. Retract the water tower, rotating the turntable 360 degrees and bedding the water tower in the travel position.
6. Manipulate any control pedestal controls that have not been used in the test thus far.
7. Stow the aerial device.
8. Examine all parts.