

Operating Telescoping Aerial Equipment

Terms

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

1. Static Load (266)

2. Shock Load (268)

True/False

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

- _____ 1. The driver/operator must have the skills necessary to troubleshoot problems on the fireground and to operate all controls while maintaining visual contact with the aerial device. (254)
- _____ 2. Raising the aerial device means elevating the entire assembly from its stored position to the desired angle and useful position. (255)
- _____ 3. Seating the extension locks is an important step in making the aerial ladder a rigid structure. (261)
- _____ 4. Do not attempt any part of lowering process with personnel on the ladder. (262)

- _____ 5. Personnel on a moving aerial device dramatically decreases the stress created on the device and the hydraulic system. (262)

- _____ 6. Most aerial ladder failures or apparatus overturning accidents involve a combination of overloading and overextension of the ladder at high angles of elevation. (265)

- _____ 7. All ladders are stronger when load is applied perpendicular to the rungs than when applied laterally. (270)

- _____ 8. A shock load, such as a person jumping on the ladder, imposes stress several times less than stress imposed when the load is gradually applied. (270)

- _____ 9. The driver/operator should be aware that strong winds will affect the load capacity and the stability of the aerial device. (270)

- _____ 10. The aerial platform can be used to lift items heavier than its rated platform capacity. (271)

Short Answer

Write the correct answers on the blanks provided.

1. What are the series of motions when raising the aerial device? (255)

2. List three tasks the driver/operator should complete before deploying the aerial device. (256)

3. List the step-by-step procedures used to raise an aerial device to its working position. (257-261)

4. List the keys to operating an aerial device on a grade. (266)

5. What are the signs of mechanical trouble or impending failure the driver/operator must continually look for? (269)

Multiple Choice

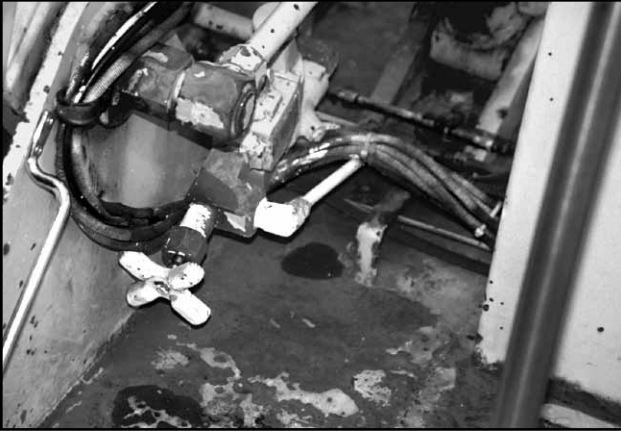
Write the correct answers on the blanks provided.

- _____ 1. Since 1991, NFPA® ____ has established minimum load requirements for aerial ladders. (265)
- A. 1001
 - B. 1041
 - C. 1901
 - D. 1911
- _____ 2. Most manufacturers allow operations of an aerial device at winds up to: (266)
- A. 25 to 30 mph (40 km/h to 48 km/h).
 - B. 35 to 40 mph (56 km/h to 64 km/h).
 - C. 45 to 50 mph (72 km/h to 80 km/h).
 - D. 55 to 60 mph (88 km/h to 97 km/h).
- _____ 3. Which of the following are loads that are steady, motionless, constant, or applied gradually? (266)
- A. Static loads
 - B. Shock loads
 - C. Lateral loads
 - D. Perpendicular loads
- _____ 4. The manufacturers of several of the older, light-duty ladders recommend the use of guy ropes in winds exceeding: (266)
- A. 25 mph (40 km/h).
 - B. 35 mph (56 km/h).
 - C. 45 mph (72 km/h).
 - D. 55 mph (88 km/h).
- _____ 5. Shock load is also called ____ load. (268)
- A. static
 - B. inverse
 - C. dynamic
 - D. horizontal

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- _____ 6. Which of the following is NOT a common method of removing ice from an aerial device? (268)
- A. Shrugging
 - B. Compressed air
 - C. High-pressure steam
 - D. Liquid thawing agent
- _____ 7. Which of the following is a NOT an obvious sign of heat damage to an aerial device? (269)
- A. Discoloration
 - B. Disfiguration
 - C. Deformed weld
 - D. Leaking hydraulic fluid
- _____ 8. Auxiliary hydraulic pumps should be operated only at ____ -minute intervals. (270)
- A. one
 - B. two
 - C. three
 - D. four

Identification

Identify the different locking devices on the lines provided.



1.



2.



3.

Skill Sheet 8-1

Objective 4: Raise and lower a telescoping aerial device. (NFPA® 1002, 6.2.3, 6.2.4)

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will raise and lower a telescoping aerial device.

Equipment & Materials

- Driver/operator candidate(s)
- Certified driver/operator(s)
- Fire service telescoping aerial apparatus
- Apparatus operator's manual

Task Steps

Raising The Aerial Device

1. Unlock the aerial device from its cradle.
2. Move the tiller operator's station if apparatus design so requires.
3. Attach a ladder pipe if there is no permanently attached waterway system and if an elevated master stream is going to be deployed.
4. Make hose connections, connecting intake fire hose(s) to appropriate fire pump or waterway.
Note: If raising an aerial platform, steps 5 through 27 should be performed first by Candidate 1 at the lower pedestal and then by Candidate 2 in the platform. These roles should then be reversed so that each candidate raises and lowers the aerial device from each position.
5. Allow personnel to board the aerial platform if apparatus is so equipped. Each occupant must connect with an approved safety harness.
6. Check the intended path of the aerial device for obstructions.
7. Elevate the aerial device.
8. Rotate the aerial device until its tip is in line with the intended target.
9. Extend the aerial device.
10. Lower the aerial device to the objective, positioning device about 4 to 6 inches (100 mm to 150 mm) above the surface of the objective.
11. Activate all aerial device locks.

Lowering The Aerial Device

12. Remove all personnel from the aerial ladder before attempting any part of the lowering process.
Note: Personnel in the elevating platform may remain in the platform during the lowering process.
13. Drain the waterway system.
14. Disengage all aerial device locks.
15. Raise the aerial device away from its objective.
16. Retract the aerial device.
17. Rotate the aerial device until it is positioned directly above its travel cradle.
18. Lower the aerial device.
19. Ensure that the device is firmly seated and that the hold-down locks have engaged.
20. Allow personnel to exit the platform, if applicable.
21. Remove the ladder pipe, hose, and associated equipment.
22. Remove and stow all elevated master stream equipment.
23. Replace the tiller operator's station.
24. Activate the hold-down locks if they did not automatically activate when the device was bedded.
25. Raise the stabilizers.
26. Disengage the PTO.
27. Disengage the fire pump.