**Driver Operator Aerial 2023**

**Study Guide**

1. Identify the angle of the aerial ladder. When it is in the cradle.
2. Explain the differences between operating the aerial in the following positions:
   1. Off the rear.
   2. Off the right side.
   3. Off the left side.
   4. Off the front.
3. Describe the testing procedures and frequency aerial ladders should be tested per NFPA 1911.
4. Define the following:
   1. Short jacking.
   2. Full jacking.
   3. Pilot operated check valve.
   4. Water hammer.
   5. Horizontal height.
      1. Aerial device.
5. Identify the minimum flow rate for aerial devices.
6. Explain the difference between a dead mans switch and a master power switch.
7. Identify the three general lifting points hydraulic cylinders are used on aerial devices.
8. Explain the differences between turntable controls and tip controls.
9. Explain the differences between VOX and PTT communication controls.
   1. Locations on the aerial device.
10. Explain how the maximum vertical reach is determined for an arial ladder.
11. Identify and describe the three control handles of an aerial device.
12. Explain why there is a separate electric powered pump and a hand crank system on an aerial device.
13. Identify the three colored zones on the level gauge and explain how the angle affects capacity.
14. Identify and explain the six steps for positioning and stabilizing an apparatus on a level surface.
15. Identify safety concerns with aerial placement at a commercial or industrial fire.
16. Identify the year 1901 adopted improved design and load requirements for aerial apparatus.
17. Explain the procedures for lowering the aerial device after using to flow water.
18. Identify conditions that can affect the stability of an aerial device.
19. Describe the relationship between hydraulic and electric aerial device controls.
20. Identify the sections of a ladder.
21. Identify the materials used to make aerial ladders.
22. Explain how to calculate nozzle reaction for elevated master streams.
23. Describe how the air minder or air gauge alarm for breathing systems of an aerial device work.
24. Identify the seven common components of an aerial device.
    1. Identify the main component.
    2. Inspection and testing procedures.
25. Explain how to calculate the collapse zone.
26. Describe the procedure for using the aerial to affect a rescue.
27. Describe safety procedures when using an aerial near power lines.
28. Identify the agency that mandates how often air storage cylinders attached to the aerial apparatus are to be tested and inspected.
29. Describe the in-cab procedures when setting up the aerial device.
30. Identify how horizontal reach is calculated for an aerial device.