

Reference Materials:

Note: This exam may contain “accepted practice” type questions not found in reference material.

When an inconsistency arises between NFPA 1900 and FAA 10F, NFPA 1900 will take precedence.

Pumping Apparatus DRIVER/OPERATOR Handbook, 3rd edition, International Fire Service Training Association (IFSTA), 800-654-4055 or www.ifta.org; Ch. 5,9 & 10

NFPA 460: Standard for Aircraft Rescue and Firefighting Services at Airports (**NFPA 412 Chapters**) 2024 edition

NFPA 1900: Standard for Aircraft Rescue and Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances (**NFPA 414 Chapters and Chapter 21**) 2024 edition (800) 344-3555 or www.nfpa.org

FAA Advisory Circular 150/5220-10F www.faa.gov

Any Major Fire Pump Manufacturer Repair Manual

LEARNING OBJECTIVES**1. Fire and Water Pump Systems**

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|------------------------------|---------------------------------|--------------------|
| a. Hydraulic Theory | d. Controls and Instrumentation | f. Pump Engagement |
| b. Mechanical | e. Over Heat Protection | g. Pump and Roll |
| c. Operations and Components | | h. Interlock |

2. Plumbing Systems

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|--|---------------------------|------------------|
| a. Hose Reel and Woven Jacket Hand Lines | d. Pressure Relief Valves | j. Piping |
| (1) required range | e. Priming System | k. Valve |
| (2) required hose length | f. Water tank | l. Winterization |
| b. Master Drains | g. Flow Switches | |
| c. Windshield Deluge | h. Interlocks | |
| | i. Structural Panel | |

3. Foam Systems

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|-----------------------------|---------------------------------|-----------------------------------|
| a. Transfer Pumps | i. Foam Agents | m. Premix |
| b. Flushing Systems | j. Eductors | n. CAFS |
| c. Instruments and Controls | k. Foam Pumps | o. Fluoroprotein |
| d. Interlocks | l. Testing | p. Disposal of Fire Fighting Foam |
| e. Check Valves | (1) Foam Concentration Range | |
| f. Foam Tanks | (2) Wind Speed | |
| (1) Mounting | (3) Order of Discharge Sampling | |
| g. Metering Valves | | |
| h. Proportioning Systems | | |

4. Nozzle and Turret Systems

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|---------------------------------|-------------------------|-----------------------------------|
| a. Piercing Nozzles | g. Micro-Processors | n. Dual Agent Turrets |
| b. Discharge Patterns/distances | h. Joysticks | o. Dual Rate Turrets |
| c. Non-Aspirated | i. Auto oscillation | p. Bumper Turrets |
| d. Aspirated | j. Hydraulic Controls | q. Roof Turrets |
| e. Electric Controls | k. Actuators | r. Interlock Systems |
| f. Manual Overrides | l. Ground Sweep Systems | s. Elevated Water-Way Systems |
| | m. Under Truck Nozzles | t. Parallel multiple agent nozzle |

5. Ancillary Agent Systems

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|------------------------------------|---|--|
| a. Instruments and Controls | f. Check Valves | m. Interlocks |
| b. Refilling Agents | g. Safety Valves | n. Flow and Range Performance parameters for clean agent systems |
| c. Caking and Fluffing | h. Pressure Regulators | |
| d. Plumbing | i. Pressure Vessels | |
| (1) Halogenated agent | (1) Gauge Requirement | |
| e. Discharge and Blow Down Systems | j. Hydro Chemical NozzlesDual Agent Nozzles | |
| | k. Propellant Gases | |
| | l. Agents | |