

Reference Materials:

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

When an inconsistency arises between NFPA 414 and FAA 10D, NFPA 414 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**) 2024 edition (800) 344-3555 or www.nfpa.org

FAA Advisory Circular 150\5220-10E www.faa.gov

Any Major Fire Pump Manufacturer Repair Manual

Learning Objectives for the ARFF-3 Exam**1. Fire and Water Pump Systems**

- | | | |
|------------------------------|---------------------------------|--------------------|
| 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

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

3. Foam Systems

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

4. Nozzle and Turret Systems

- | | | |
|---------------------------------|-------------------------|-----------------------------------|
| 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

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

