

**GCFFA 2007 Field Day
Class Break Down**

**SECTION 24 PUMP OPERATIONS/HYDRAULICS – 12 hrs
BASIC - 8 Hours**

24-01.01 The firefighter shall identify the operating principles of single stage and multi-stage centrifugal fire pumps as follows:

- A. The firefighter shall list the percentages of rated capacity rated pressures and capacity in gallons per minute at the rated pressures of a fire department pump.
- B. The firefighter, given a pump model/diagram, shall identify the main components indicating pump capacity, number of discharges and number of suction inlets.
- C. The firefighter shall "explain the difference between series/parallel operations of centrifugal fire pumps.
- D. The firefighter, given the proper information, shall list three (3) advantages of a centrifugal fire pump as compared to other types of fire pumps (i.e. positive displacement, rotary vane).

24-01.02 The firefighter shall demonstrate the use of mathematical calculations as required to solve fire department pumper hydraulic problems as follows:

- A. The firefighter shall list the mathematical orders of operation concerning addition, subtraction, multiplication, and division.
- B. The firefighter shall solve mathematical problems finding the square root, and decimal/fraction conversions.
- C. The firefighter shall list formulas used in finding GPM rates, friction loss of fire hose, engine pressure for hose layouts of nozzles, standpipe/sprinkler, master streams, and elevation operations.
- D. The firefighter, given the proper information, shall list conversion factors of fire hose that are smaller/larger than 2½ inches.
- E. The firefighter shall calculate the correct engine pressures for a specific situation.

24-01.03 The firefighter shall set up and perform pumping operations as follows:

- A. The firefighter shall list conditions that may result in pump damage.
- B. The firefighter, given a pump model or diagram, shall demonstrate the proper test/check inspection routines required to assure operational readiness.
- C. The firefighter, given a pump panel or diagram, shall identify all gauges and valves, and demonstrate their usage.
- D. The firefighter, given a pump panel or diagram, shall identify the proper usage of valves and gauges to obtain a flow of water from the following:
 - 1. a 1 inch (booster line) discharge outlet
 - 2. a 1½ or 1¾ inch discharge outlet
 - 3. a 2½ inch discharge outlet
 - 4. master stream discharge outlet (if applicable)
- E. The firefighter, given a pump panel or diagram, shall demonstrate the proper technique of hooking up or connecting intake hoses to the pumps.
- F. The firefighter, given an engine apparatus or diagram, shall demonstrate/list the engagement procedure of the PTO (power take-off) systems for the pumping apparatus.
- G. The firefighter, given a pump panel or diagram, shall demonstrate the proper procedure of valve manipulation to produce water from:
 - 1. a positive water source
 - 2. a static water source by drafting
 - 3. booster tank

ADVANCED - 4 Hours

24-03.01 The firefighter shall identify terms relating to the principles of fire service hydraulics as follows:

- A. The firefighter shall list the forms water takes and advantages water exhibits as an extinguishing agent.
- B. The firefighter shall list six (6) types of pressure, which affect the properties of water in fire service hydraulics.
- C. The firefighter, given a pump diagram and flow chart, shall explain the theory of drafting and principle component uses in a drafting operation.
- E. The firefighter shall demonstrate assembly and connection of the equipment necessary for drafting from a static water supply source and demonstrate drafting operations.

Auto Rescue

INTERMEDIATE - 6 Hours

9-02.01 The firefighter shall describe the techniques and safety procedures as they apply to the following rescue activities:

- A. motor vehicle accidents

9-02.02 The firefighter shall demonstrate the use of the following rescue tools:

- A. cribbing and shoring material D. pneumatic devices
- B. block and tackle E. trench jacks
- C. hydraulic devices

ADVANCED - 2 Hours

9-03.01 The firefighter, operating as a member of a team, shall demonstrate the proper techniques and safety procedures as they apply to the following rescue activities:

- A. motor vehicle accidents

SECTION 28 ROPES - BASIC - 4 Hours

28-01.01 The firefighter, when given name, picture, or actual knot, shall identify it and describe the purpose for which it would be used;

- A. Becket (sheet) bend F. bowline on a bight
- B. bowline G. half hitch
- C. clove hitch H. figure-eight
- D. half sheep shank with a safety I. figure-eight on a bight
- E. chimney hitch J. figure-eight follow through

28-01.02 The firefighter shall identify rope safety procedures.

28-01.03 The firefighter shall identify and/or demonstrate the terms used when tying a knot or hitch:

- A. standing part when tying a knot or hitch D. a loop when tying a knot or hitch
- B. running part when tying a knot or hitch E. a round turn when tying a knot or hitch
- C. a bight when tying a knot or hitch F. half hitch when tying a knot or hitch

28-01.04 The firefighter shall identify the construction characteristics and appropriate uses of both natural and synthetic fiber ropes:

- A. Characteristics of natural fiber (manila) ropes for utility use only:
 - 1. moisture retention

2. floatability
3. resistance to rot, mildew and attack by marine organisms
4. resistance to surface abrasion
5. resistance to acids, alkalis and solvents
6. safe working strength of new rope: 3/8 inch manila, 1/2 inch manila, 5/8 inch manila, 3/4 inch manila

B. Characteristics of synthetic ropes:

1. moisture retention
2. floatability
3. resistance to rot, mildew and attack by marine organisms
4. resistance to surface abrasion
5. resistance to acids, alkalis and solvents
6. safe working strength of new rope of: 1/2 inch nylon, dacron, polypropylene, braided nylon cover with nylon core; 5/8 inch nylon, dacron, polypropylene, braided nylon cover with nylon core; 3/4 inch nylon, dacron, polypropylene, braided nylon cover with nylon core

C. Uses of ropes:

1. hoisting tools and equipment
2. securing tools and equipment to immovable objects
3. rescue

28-01.05 Define a life safety rope and one and two person life safety rope including:

- A. maximum working load
- B. safety factor
- C. minimum breaking strength

28-01.06 The firefighter, when given the proper size and amount of rope, shall demonstrate tying the following knots:

- A. Becket (sheet) bend F. bowline on a bight
- B. bowline G. half hitch
- C. clove hitch H. figure-eight
- D. half sheep shank with a safety I. figure-eight on a bight
- E. chimney hitch J. figure-eight follow through

9-03.04 The firefighter, given a 20' length of 1/2 inch rope, shall demonstrate the following knots: as used in repelling:

- A. figure-eight D. clove hitch
- B. figure-eight follow through E. half-hitch
- C. bowline

RIT 12 hrs

**SECTION 23 FIREFIGHTER SAFETY 4 HOURS
BASIC - 4 Hours**

23-01.03 The firefighter shall describe the limitations of personnel working in a personal protective ensemble.

23-01.04 The firefighter shall demonstrate the operation of a Personal Alert Safety System (PASS) device.

23-01.07 The firefighter shall define techniques for action when trapped or disoriented in a fire situation or in a hostile environment.

23-01.12 The firefighter shall define safety procedures as they apply to emergency operations, specifically:

- B. team concept
- C. portable tools and equipment

23-01.13 The Firefighter shall identify the safety purpose of the 2 in 2 out rule per NFPA 1403.

INTERMEDIATE - 4 Hours

23-02.01 The firefighter shall demonstrate techniques for action when trapped or disoriented in a fire situation or hostile environment by:

- A. ability to read a preplan of a structure and diagram all possible escape routes prior to entry.
- B. exiting a smoke filled area by reversing the entry path while keeping in contact with a wall at all times, making all turns in the same direction (i.e. left or right) until out of the area.

SECTION 27 SELF-CONTAINED BREATHING APPARATUS - 4 HOURS

BASIC - 1 Hours

27-01.01 The firefighter shall identify at least four (4) hazardous respiratory environments encountered in fire fighting.

27-01.02 The firefighter shall demonstrate the use of self-contained breathing apparatus in conditions of obscured visibility.

27-01.07 The firefighter shall demonstrate the use of SCBA in conditions of restricted passage.

INTERMEDIATE - 1 Hours

27-02.03 The firefighter shall demonstrate the following emergency techniques using self-contained breathing apparatus to:

- A. assist other firefighters

ADVANCED - 2 Hours

27-03.01 The firefighter shall identify and define the operational components of all types of protective breathing apparatus.

27-03.02 The firefighter, without compromising the rescuers respiratory protection, shall demonstrate rescue procedures for the following:

- A. a firefighter with functioning respiratory protection
- B. a firefighter without functioning respiratory protection