



Pennsylvania State Fire Academy

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Minimum Standard for Accreditation (MSA)

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Course Title: Foam Fire Fighting Technician (National Foam) (NFFT)

Length of Course: 16 Hours

Lecture/Lab Breakdown: 12.5/3.5

Prerequisites: EBM

Referenced Texts: National Foam, Inc. Instructional Package

Course Goal/Description: A student in this course should be of the decision makers level who will be responsible for size-up and suppression. They will be introduced to basic information concerning the history of foam concentrates. They will receive the information to make the correct selection of foam concentrates based on the hazard, foam terminology, application rates and techniques, proportioning equipment and trouble shooting, and discharge devices associated with foam fire fighting.

Description of Methodology to be used: (Brief) Combination of lecture, guided discussion, and demonstration. The course is divided into 2 modules and delivered sequentially.

Student Equipment/Supply Needs: Pencil or pen, note pad, and Turn Out Gear

Equipment/Audiovisual/Supply requirements: Chalkboard, VCR with monitor, 35 mm carousel, slide projector and screen, large table for demonstration; AV kit for course (available from National Foam, Inc.)

Field Evolution Equipment Requirements: Pumper, foam concentrate, hose, line proportioner, a 5 gallon clear pail, fog nozzle, air-aspirating foam nozzle and a mid expansion foam nozzle or attachment.

COURSE OUTLINE **(General - Not Detailed)**

MODULE I - CLASSROOM LECTURE, 12.5 Hours

1. History of Foam, Chemical Foams, Mechanical Foams
2. Development of Foam Concentrates, from Proteins to present day Synthetics
3. Foam Terminology, Concentrate, Solution, Finished Foam
4. Understanding the Hazard, Flammable Liquids, Hydrocarbons, Polar Solvents, Blended Fuels

Continued

COURSE OUTLINE continued
(General - Not Detailed)

MODULE I - CLASSROOM LECTURE, 12.5 Hours (continued)

5. Application Rates, Size-up, Calculation for Hydrocarbon and Polar Solvent Incidents.
6. Proportioning Equipment, Fixed and Portable, Common Proportioning Problems
7. Aspirating and Non-Aspirating Nozzles, Foam blanket Quality and Drainage
8. Discharge Devices, Fixed and Portable Foam Devices.
9. Application Techniques, Types of Application (NFPA), Applying with Hand held Nozzles, Preserving the Foam Blanket, Marshaling Foam Resources.
10. Foam Concentrate Storage, The Guidelines for Proper Storage
11. Foam Compatibility, Mixing Concentrates of Different Types as Concentrate and as Finished Foam
12. Foam and Environmental Concerns, Dealing with the Impact of Foam Concentrates and the Environment

MODULE II - FIELD PRACTICAL EVALUATIONS, 3.5 Hours

Eductor Objectives

Basic set up
Eductor Failures
Gate Back Nozzle Bale
Mis-Matched Nozzle to Eductor
Incorrect Line Pressure
Length of Hose Lay
Elevation
Kinked Hose Lines

Nozzle Objectives

Non Air-Aspirating Low Expansion Structural Fog Nozzles
Air-Aspirating Low Expansion Water Fog Nozzles with
Foam Attachments and Foam Nozzles
Mid Expansion Air-Aspirating Foam Nozzles

Stream Reach

Low Expansion Non Air-Aspirating Water Fog Nozzles
Low Expansion Water Fog Nozzles with Air-Aspirating Foam Attachment
Mid Expansion Air-Aspirating Foam Nozzles

Application Techniques

Bank-In
Bounce Off
Rain Down

Expansion and Drainage - A Comparison of Air-Aspirated and Non Air-Aspirated
Finished Foam Blanket Structure

continued

Student Knowledge Objectives: The student shall have an understanding of:

1. how foam is used to control and extinguish flammable liquid fires.
2. the differences in foam concentrate physical characteristics and their intended uses.
3. the foam concentrate percentages.
4. proper application techniques.
5. selecting the proper foam concentrate for a given hazard.
6. flammable and combustible liquids.
7. the difference between an aspirating and non air-aspirating nozzle used to apply a foam blanket.
8. the importance of a finished foam blanket. Based on the use of aspirated or non air-aspirated nozzles, and the quality of the foam blanket as it relates to the nozzle choice.
9. foam concentrates and how they can effect the environment.
10. mixing of foam concentrates types as a concentrate and as a finished foam blanket.

Student Skill Objectives: The student shall demonstrate the ability to:

1. properly set-up and use foam by means of a line proportioner.
2. roll a finished foam blanket onto a fire.
3. show foam as a rain down method.
4. apply finished foam by the banking method.
5. troubleshoot a line proportioner operation that fails to operate properly.
6. properly clean and maintain the foam appliances after use.
7. visually determine properly expanded finished foam and the difference between low and medium expanded finished foam.
8. properly size-up and select the correct foam concentrate, percentage selection and resources to control an incident.