



# Pennsylvania State Fire Academy

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## Minimum Standard for Accreditation (MSA)

December 1992

Revised November 2002

**Course Title:** Aircraft Rescue and Fire Fighting (ARFF)

**Length of Course:** 30 Hours

**Lecture/Lab Breakdown:** 24/6

**Prerequisites:** Member of Airport Fire Department

**Referenced Texts:** U.S. Department of Transportation, Federal Aviation Administration, "Aircraft Rescue and Fire Fighting" Instructor Guide; Latest edition of IFSTA "Aircraft Rescue and Fire Fighting"

**Course Goal:** Participants in this course will be provided with the minimum knowledge and skills necessary to successfully handle an aircraft emergency.

**Description of Course:** This course consists of ten modules of instruction which will contribute to the students knowledge of basic fire fighting and rescue principles and reinforce the skills necessary for the student to effectively operate the rescue and fire fighting equipment available at the local airport.

**Description of Methodology to be used:** A combination of classroom lecture with slides and overhead transparencies and field demonstration and practice.

**Student Equipment/Supply Needs:** Notebook and pencil, work clothes and gloves, T.O.G, S.C.B.A.

**Equipment/Audiovisual/Supply requirements:** Chalkboard, screen, overhead transparency projector, slide projector. A live fire training facility (pit) of at least 2500 square feet surface area is required for this course. Availability of actual aircraft for student examination and practice is highly recommended.

### **COURSE OUTLINE**

<b><u>Time</u></b>	<b><u>Content</u></b>
:50	MODULE I - Introduction
1:00	MODULE II - Airport Familiarization
1:50	Aircraft Familiarization
1:00	Communications
1:00	MODULE III - Personnel Safety
1:00	Personal Protective Equipment

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1:50	MODULE IV - Fire Behavior
1:00	Extinguishing Agents
1:00	Portable Fire Extinguishers
1:00	MODULE V - Tools and Equipment
1:00	Hose, Nozzles, and Adaptors
1:50	Vehicles
1:50	MODULE VI - Forcible Entry
1:00	Ventilation
1:50	MODULE VII - Types of Aircraft Emergencies
:50	Hazardous Materials
1:50	MODULE VIII - Search and Rescue
3:00	MODULE IX - Strategy and Tactics
6:00	MODULE X - Practical Evolutions
:50	QUIZ

**Competency Evaluation Mechanism (Brief description-attach copy):** Periodic direct questioning by instructors. Evaluation of manual skills, written examination.

**Course Objectives (specific):** Upon successful completion of this course, the student shall be able to complete the following objectives:

1. Shall identify the purpose of aircraft fire fighting and rescue operations.
2. Shall demonstrate familiarity with airport facility, including runway and taxiway identification systems, lighting color code marking systems, rules and regulations governing vehicle movements, the use of grid and topographical maps, the fuel storage and distribution system, and the use and storage of hazardous materials.
3. Identify various types of aircraft, propulsion systems, structural components, and access points. Indicate type of fuel used, hydraulic and oxygen systems. Identify the flight data recorder and cockpit voice recorder.
4. Shall identify procedures for receiving an emergency alarm. Shall identify systems used in communicating with various appropriate agencies.
5. Shall identify hazards associated with aircraft fire fighting/rescue.
6. Shall identify the purpose and limitations of personal protective clothing.
7. Shall identify the purpose and importance of S.C.B.A. Shall successfully don and use S.C.B.A.
8. Shall demonstrate familiarity with fire behavior by identifying components of the fire triangle, and their relationship to the fire extinguishment process; shall identify four classes of fire; shall define various terms relating to flammable/combustible liquids.
9. Shall identify the extinguishing properties of various agents.
10. Shall identify portable extinguishers by type and location and give the operating characteristics of each.
11. Shall identify the name, purpose, and use of various forcible entry tools, and give the safety precautions for using.

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12. Shall identify each hose, nozzle, and appliance used locally and give the proper use and application of each.
13. Shall correctly give the primary purpose, agent, capacity and application for each vehicle used locally.
14. Shall identify the openings used to gain entry to an aircraft, including a description of tools and methods needed.
15. Shall describe the principles of ventilation and the importance as it applies to rescue and fire fighting.
16. Shall identify various aircraft emergencies and the procedures used in handling them.
17. Shall demonstrate familiarity with hazardous materials by the proper use of the D.O.T. ERG Manual and other appropriate sources of information.
18. Given a simulated aircraft, shall demonstrate a proper search procedure from inside and outside the aircraft.
19. Shall identify S.O.P. and prefire plans and the I.C.S.
20. Shall identify the tactics involved in: Fire Attack and Control; Agent Application; Securing and maintaining a Rescue Path; Protecting Aircrew, Passengers and Personnel; Resupplying Vehicles; Containment of Runoff.
21. Given a live fire scenario and wearing proper personal protective equipment, the student will attack and extinguish a simulated aircraft fire involving flammable liquids of at least 900 square feet surface area.

ARFF00

**Questions/Comments: Contact the Curriculum Specialist**