



# Pennsylvania State Fire Academy

1150 Riverside Drive, Lewistown PA 17044

[www.osfc.pa.gov](http://www.osfc.pa.gov)



## Minimum Standard for Accreditation (MSA)

**Course Title:** Aircraft Rescue and Fire Fighting

**Publication Date:** 04/06/2024

**Course Code:** ARFF

**Minimum Age:** 18

**Course Length:** 40 Hours

**PA DOH Con-Ed**

**Lecture / Lab (Hours/Minutes):** 24/16

**Course #:** None

**Prerequisite(s)** Member of a Fire Department, airport employee or affiliated agency.

**Reference(s)** U.S Department of Transportation, Federal Aviation Administration Part 139, Latest edition of “Aircraft Rescue and firefighting” Instructors Guide and 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.

**Course Description** This course consists of modules of instruction which will contribute to the student’s 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. The curriculum meets current FAA Part 139.319 (i)(2)(i-xi) and FAA Part 139.319 (i)(3) annual live-fire training requirement for fire fighters at certificated airports.

**Instructional Methodology(s)** A Combination of classroom lecture with slides, field demonstration and practical skill evolutions.

**Student Equipment/Supplies** Pen/pencil & notebook, Personal Protective Equipment and Respiratory Protection as issued by the Authority Having Jurisdiction (AHJ). The PSFA Facial Hair Policy will be enforced for those using respiratory protection.

### **Facility Audiovisual / Equipment / Supplies**

1. Classroom set up with usual amenities; computer and computer projection equipment with screen/monitor; Audio Visuals for the course.
2. Instructor Guide and PowerPoint Presentation.
3. Flammable liquid hydrocarbon (FLH) or propane fueled fixed or mobile training simulator.
4. Aircraft Rescue Fire Fighting (ARFF) apparatus equipped with turret capable of flowing an appropriate amount of extinguishing agent.

**Competency Evaluation Mechanism(s)** Instructor evaluation of student’s performance during live fire exercises.



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**Special Note(s) / Condition(s)** Staffing will meet the requirements of NFPA # 1403 and the SFA Structural Burn Policy. Class sizes over 30 students will be approved before the fact by SFA Field Education Specialist. The lead instructor MUST be a Pennsylvania-accredited AAB instructor for State Certificates of Training to be issued.

**Pre-Course Assignment(s)** None

### Course Outline

Time (Minutes)	Topic
30 Minutes	Introduction
60 Minutes	Airport Familiarization
90 Minutes	Aircraft Familiarization (General Aviation/Commercial/Military)
60 Minutes	Communications/AEP
60 Minutes	Personal Safety
60 Minutes	Personal Protective Equipment
120 Minutes	Fire Behavior
60 Minutes	Extinguishing Agents
60 Minutes	Portable Fire Extinguishers
60 Minutes	Tools and Equipment
60 Minutes	Hose, Nozzles and Adaptors
90 Minutes	Vehicle/Apparatus Operations
60 Minutes	Forcible Entry
90 Minutes	Ventilation/Overhaul/Evidence Preservation
120 Minutes	Types of Aircraft Emergencies
60 Minutes	Hazard Materials/Aircraft Hazards/Firefighting Hazards
90 Minutes	Search and Rescue
180 Minutes	Strategy and Tactics
30 Minutes	Quiz
16 Hours	Practical Evolutions

**Learning Objectives** - Upon successful completion of this course, the student shall be able to complete the following objectives:

1. Shall identify the purpose of aircraft firefighting 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.



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4. Shall identify procedures for receiving and 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 tetrahedron, 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.
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 firefighting.
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 pre-fire plans and the I.C.S.
20. Shall identify the tactics involved in: Fire Attach 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.

**Practicals:** Students will participate in practical evolutions based on 1003 Airport Firefighter Professional board qualifications.

**Questions/Comments: Please contact the State Fire Academy  
717-248-1115 OR in PA: 1-800-459-4096**

**Proposal drafted by Allegheny County Airport Authority FAA Regional ARFF Training  
Facility Staff.**



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### Revision History

Date	Action	By
12/1992	Revised template	
11/2002	Revised	
02/27/2023	Template updated	J. Lauver
04/06/2024	Revised	
05/31/2024	Template updated	J. Lauver