



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

Subject: Programs for Training of Aircraft
Rescue and Firefighting Personnel

Date: 6/12/2015

AC No: 150/5210-17C

Initiated By: AAS-300

Change:

1 **Purpose.**

This Advisory Circular (AC) provides information on courses and reference materials for training of Aircraft Rescue and Firefighting (ARFF) personnel.

2 **Application.**

The Federal Aviation Administration (FAA) recommends the guidelines and standards in this AC for aircraft rescue and firefighting training programs. In general, use of this AC is not mandatory. However, for airports certificated under Title 14 Code of Federal Regulations, Part 139 (14 CFR part 139), this AC is required. It provides acceptable guidance in meeting the requirements for aircraft rescue and firefighting training outlined in 14 CFR §139.319. The standards contained in this AC to help an airport's ARFF training program. An airport operator may elect to follow an alternative method, provided it is also approved by the FAA as an acceptable, alternate means of complying with the requirements of part 139. In the event of a conflict, the requirements under 14 CFR Part 139 take precedence over the guidelines set for in this AC

3 **Cancellation.**

This AC cancels AC 150/5210-17B, *Programs for Training of Aircraft Rescue and Firefighting Personnel*, dated September 23, 2009.

4 **Principal Changes.**

This revision is a substantial rewrite and includes the following major changes:

1. As described in a new Chapter 2, this AC replaces Appendix 1 with an Addendum of Aircraft Rescue and Firefighting (ARFF) Training Facilities, which the FAA will update on a quarterly basis.
2. It uses a new paragraph numbering system to make the text easier to follow and reference.

3. It removes the one minute time requirement for donning of Personal Protective Equipment and the Self-Contained Breathing Apparatus.

5 **Addendum of Aircraft Rescue and Firefighting (ARFF) Training Facilities.**

The FAA regards training that provides at a minimum the standards set forth in 14 Code of Federal Regulations (CFR) Part 139.319 (i)(1)-(4) as critical to safety on airports. To help ARFF personnel meet these minimum standards, the FAA publishes a list of ARFF training facilities and reference materials. Because changes to this list may occur more frequently than the schedule for updating the AC, the FAA will review it on a quarterly basis and post an updated list online as an Addendum to this AC. See Chapter 2 for more information.

6 **Copies of this AC.**

This AC and the current Addendum of training facilities is available online at http://www.faa.gov/airports/resources/advisory_circulars/.



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CHAPTER 1. REQUIREMENTS FOR CERTIFICATED AIRPORTS

1.1 Introduction.

14 CFR Part 139.319 (i) requires that each holder of an airport operating certificate ensure that firefighting personnel are properly trained to perform their duties. This AC provides a method for meeting this provision, and lists the minimum requirements for training programs. Proficiency is the key to a successful ARFF training program, but this guidance is not intended to serve as a source of proficiency standards for airport firefighters. Instead, it is provided to assist the airport sponsor in establishing and ensuring an adequate training program. The number of hours of training required will vary from individual to individual. The FAA recommends a comprehensive, continuous, ongoing, and robust training program. It should encompass not only the subjects specified in 14 CFR Part 139.319 but also those additional areas of special interest defined in any local Standard Operating Procedure (SOP), Memorandum of Agreement (MOA), Memorandum of Understanding (MOU), and Standard Operating Guideline (SOG). At a minimum, annual recurrent training must occur for all ARFF personnel on a recurring basis at least **once every 12 consecutive calendar months (CCM)**. (See CertAlert 10-01 for an interpretation of the term “consecutive calendar months” as used in part 139, Certification of Airports, available at [http://www.faa.gov/airports/airport_safety/aircraft_rescue_fire_fighting/.](http://www.faa.gov/airports/airport_safety/aircraft_rescue_fire_fighting/))

1.2 Training Schedule.

1.2.1 Initial Training.

Before firefighters assume any ARFF duties, they must complete their initial ARFF training. It is not acceptable to simply take structural firefighters and assign them to ARFF duties without the necessary additional training. The training curriculum must include current instruction in at least the areas listed in 0 through 1.3.13 below (also see Part 139.319).

1.2.1.1 Initial training is that training provided to enable personnel to identify and interpret advanced theories, facts, concepts, principles, requirements, procedures, equipment, and components of ARFF. Trainees must also be able to apply these principles to the aircraft serving the airport and demonstrate all required tasks safely and accurately and in accordance with established procedures. The goal is to provide sufficient training and instruction such that firefighters can function well as part of a team.

1.2.1.2 Initial training is not complete until individuals have finished all basic training (Part 139.319 (i)(2)(i)–(xi) and participated in at least one live-fire drill commensurate with the index of their airport .

1.2.2 Recurrent Training.

1.2.2.1 Once ARFF firefighters have completed initial training, they must receive recurrent instruction **every 12 consecutive calendar months (CCM)**. Recurrent training is defined as that training provided as often as necessary

but at least once every 12 CCM to enable ARFF firefighters to maintain a satisfactory level of proficiency. Appropriate frequencies for recurrent training will vary from airport to airport and from one firefighter to another. Training in several areas (such as aircraft familiarization and adapting structural equipment to ARFF) will require coordination with air carrier, other organizations on the local airport, and mutual aid agencies.

1.2.2.2 ARFF personnel must also participate in at least one live-fire drill every 12 CCM. See 1.4 below.

Note: The ARFF training curriculum should be approved by the ARFF Chief and available for inspection by the FAA airport certification safety inspector during an inspection.

1.2.3 Frequency of Training.

Recurrent and live-fire drill training must be completed each year within a 12 CCM period. If the training is not conducted during the 12 CCM period, the firefighter and the airport will be out of compliance with Part 139 **if the firefighter works any assigned ARFF shift**. To remain in compliance, airports with firefighters who miss training for any reason, such as injury, deployment, or other circumstances, must not be assigned ARFF response duties until their training is current.

1.2.3.1 In addition, the CCM period can differ for the recurrent training and the drill training. For example, firefighters who completed the last cycle of recurrent training on December 31, 2013, have until December 31, 2014, to complete the next round of recurrent training. However, if they last attended live-fire drill training on January 5, 2013, they have until January 31, 2014, to complete their next live-fire drill training. If the requirement is completed early, the next 12 CCM period starts with the month the firefighter actually participated in the training (see CertAlert10-01).

(http://www.faa.gov/airports/airport_safety/aircraft_rescue_fire_fighting/.)

1.3 **Training Curriculum.**

Part 139 sets forth *minimum* requirements for compliance. While Part 139.319 (i)(3) sets forth minimum requirements for ARFF, the FAA encourages training in multiple categories for ARFF personnel who serve in several positions.

1.3.1 Airport Familiarization.

The program should train ARFF personnel during both the hours of daylight and darkness and include airport-specific training so that ARFF personnel can do the following:

1. Describe the runway and taxiway identification system;
2. Describe the airfield lighting system (i.e. center line, edge and threshold lights, etc.);
3. Describe airfield pavement marking and signing systems, to include standard colors used in markings and signs (local training requirement);

4. Identify the limits of the runway safety areas on the airport to include Engineered Materials Arresting Systems (EMAS) (local training requirement);
5. Identify and locate the various aircraft navigation aids located on the airport and identify critical areas associated with navigation systems;
6. Cite airport rules and regulations on vehicle movement and access on the airport movement and non-movement areas and on communicating with the air traffic control tower (ATCT) for everything entering and exiting the movement area;
7. Cite procedures for communicating with the ATCT ; state the use of Common Traffic Advisory Frequency (CTAF);
8. Cite rules and regulations governing airport security;
9. Given a grid map or other standard map used at the airport, identify key terrain features, installations, and potential hazards in both movement and non-movement areas;
10. Identify the probable direction of travel of fuel in a simulated leak in the fuel distribution system;
11. Demonstrate the operation of the emergency fuel shutoff to the fuel system and pumps to stop the flow of fuel within the system; and
12. Identify hazardous materials (and their locations) that are frequently stored or used on the airport property.

1.3.2 Aircraft Familiarization.

The program should ARFF train personnel so they can do the following:

1. Identify all types of passenger and cargo aircraft operating at the airport,
 - a. **Recommendation:** Consider becoming familiar with general aviation and large business class aircraft too;
2. Identify the different types of aircraft propulsion systems;
3. Locate normal entry doors, emergency exit openings, and evacuation slides for a given aircraft;
4. Demonstrate the opening of all doors and compartments for a given passenger or cargo aircraft;
5. Identify approximate aircrew and passenger capacities for a given aircraft;
6. Indicate the type of fuel used, location of fuel tanks, and capacity of fuel tanks for a given aircraft;
7. Identify and locate components of the fuel, oxygen, hydraulic, electrical, fire protection, anti-icing, auxiliary power unit (APU), brake, wheel, and egress systems for a given aircraft;
8. Identify and locate the flight data recorder and cockpit voice recorder in the event of an aircraft mishap;

9. Identify and locate the opening and operation of doors, compartments, and hatches for a given cargo aircraft;
10. Identify normal and emergency shutdown procedures for aircraft engines and auxiliary power units; and
11. Identify the general hazards associated with military aircraft, such as ejection seats, armament, and specialized fuels.

Note: Appendix A also provides links to some aircraft informational charts.

1.3.3 Rescue and Firefighting Personnel Safety.

The program should train ARFF personnel so they can do the following to reduce the risks associated with their duties:

1. Identify the hazards associated with aircraft rescue and firefighting;
2. Identify the hazards to personnel associated with aircraft and aircraft systems;
3. Identify the potential stress effects on emergency services personnel involved in a mass casualty situation;
4. Identify the purpose and limitations of approved personal protective clothing used locally;
5. Demonstrate the inspection process for Protective Ensembles—proximity suits and/or structural firefighting turnout gear;
6. Demonstrate the ability to properly put on and take off personal protective ensembles;
7. Identify the purpose, components, operation, and limitations of self-contained breathing apparatus (SCBA);
8. Demonstrate the inspection process for the SCBA;
9. Demonstrate changing the air supply cylinder of a team member with an exhausted air supply cylinder;
10. Demonstrate proper putting on and taking off of the SCBA;
11. While wearing a SCBA, demonstrate the actions to take when the following emergency situations occur:
 - a. low air alarm activates,
 - b. air supply is exhausted,
 - c. regulator malfunctions,
 - d. face piece is damaged,
 - e. low pressure hose is damaged, or
 - f. high pressure hose is damaged;

12. While wearing a SCBA, demonstrate the actions to take to assist a team member experiencing the following emergency situations:
 - a. low air alarm activates,
 - b. air supply is exhausted,
 - c. regulator malfunctions,
 - d. face piece is damaged,
 - e. low pressure hose is damaged, or
 - f. high pressure hose is damaged;
13. Identify techniques for protection from communicable disease hazards; and
14. Demonstrate the proper safety precautions to take while wearing personal protective equipment (PPE) while operating power and hand-operated tools.

1.3.4 Emergency Communications Systems on the Airport, including Fire Alarms.

The program should train ARFF personnel so they can do the following:

1. Demonstrate the use of communication equipment used by their organization;
2. Demonstrate knowledge of the phonetic alphabet;
3. Identify radio frequencies and channels used by their organization and mutual aid organizations;
4. Identify the procedures for receiving an emergency alarm;
5. Identify procedures for multiple alarms and mutual aid;
6. Demonstrate the proper procedure for obtaining clearance from the ATCT or other responsible authority for apparatus movement;
7. Identify emergency light gun signals used by the ATCT;
8. Demonstrate the use of standard hand signals used to communicate with aircrew personnel;
9. Give an initial status report for a simulated aircraft accident; and
10. Identify the local method used to communicate with aircrew personnel.

1.3.5 Use of Fire Hoses, Nozzles, Turrets, and Other Appliances.

The program should train ARFF personnel so they can do the following:

1. Identify the purpose of each tool and item of equipment used locally;
2. Identify the location of each tool and item of equipment used locally;
3. Identify the hazards associated with each tool and item of equipment used locally;
4. Identify the proper procedures for use and maintenance of each tool and item of equipment used locally;
5. Identify the purpose of each hose, nozzle, and adapter used locally;

6. Identify the location of each hose, nozzle, and adapter used locally;
7. Identify the size and amount of each hose carried on each local vehicle;
8. Identify the proper procedures for use and maintenance of each hose, nozzle, and adapter used locally;
9. Identify the proper procedure to use when advancing hose for fire attack;
10. Identify the primary purpose, agent capacity, water capacity, type of agent carried, agent discharge rate/range, personnel requirements, and response limitations for each vehicle used locally;
11. Demonstrate the proper methods of operation for all handlines and vehicle-mounted discharge devices;
12. Identify driver maintenance procedures for each vehicle used locally; and
13. Identify the procedures for resupply, using available methods—hydrant, structural vehicles, tank trucks, or other vehicles and drafting from a static source—for each vehicle used locally.

1.3.6 Applications of Extinguishing Agents.

The program should train ARFF personnel so they can do the following:

1. Identify the quantity, type, and extinguishing properties of each agent carried on each vehicle used, including advantages and disadvantages for the airport;
2. Identify which agents used by the local organization are compatible and which are not;
3. Identify the locations and quantities of each agent that is kept in inventory for vehicle resupply;
4. Identify the preferred agent to use in suppression and extinguishment for various fire scenarios;
5. demonstrate agent application techniques utilizing turrets, High Reach Extendable Turrets (if available), and hose lines in both interior and exterior fire attack scenarios;
6. Identify the location of each portable fire extinguisher provided on local vehicles;
7. Identify each type of portable fire extinguisher by classification and rating; and
8. Identify the limitations and operating characteristics of each type of portable fire extinguisher.

1.3.7 Emergency Aircraft Evacuation Assistance.

The program should train ARFF personnel so they can do the following:

1. Identify procedures followed during an emergency situation by crews of air carriers, cargo aircraft, and general aviation aircraft operating at the local airport;
2. Identify the procedures to use to protect evacuation points;

3. Identify which opening should be used to gain entry for a given aircraft and considerations that may affect the situation;
4. Select the necessary forcible entry tool(s) and/or equipment to gain entry to a given aircraft and situation;
5. While wearing full protective clothing, demonstrate, from inside and outside the aircraft, opening normal entry doors and emergency exit points for a given aircraft;
6. Identify potential locations for cut-in entry, using reference materials, aircraft markings, or general guidelines for a given aircraft;
7. Identify the hazards associated with cut-in entry; and
8. Demonstrate procedures used to assist passengers during emergency evacuation.

Note: ARFF personnel should not impede the exit of occupants and crew when trying to enter the fuselage for rescue and/or firefighting. ARFF personnel must locate and open any other available exits. Additionally, many occupants may not be able to extricate themselves, so ARFF personnel should be prepared to assist after all those who are able to exit have evacuated.

1.3.8 Firefighting Operations.

The program should train ARFF personnel so they can do the following:

1. Describe Standard Operating Procedures (SOPs) for various emergency scenarios;
2. Select strategy and tactics for incident control and termination;
3. Identify the procedures for securing and maintaining a rescue path;
4. Identify the proper procedure to use when protecting an aircraft fuselage from fire exposure;
5. Identify the procedures to use when providing protective streams for personnel;
6. Identify procedures for controlling runoff from fire control operations and fuel spills; and
7. Identify the procedures to use to stabilize aircraft wreckage;
8. Identify interior aircraft ventilation procedures;
9. Identify interior aircraft attack procedures;
10. Demonstrate proper ground ladder inspection procedures; and
11. Demonstrate how to deploy applicable ladders to access aircraft.

1.3.9 Adapting and Using Structural Rescue and Firefighting Equipment for Aircraft Rescue and Firefighting.

For any structural rescue and firefighting equipment available and intended for use in aircraft firefighting, the program should train ARFF personnel so they can identify the procedures used to adapt the equipment for aircraft rescue and firefighting. Examples may include:

1. Use of hydraulic extrication equipment on an aircraft and how it differs from that use on motor vehicles.
2. Use of power circular saws, reciprocating saws, and various other power tools designed for structural firefighting and the challenges their use on aircraft present.
3. Use of fire axes, Halligan tool, pike poles and other hand tools designed for structural firefighting and what each would be used for.
4. Incorporating structural apparatus into an aircraft response.
5. Supplying water to an ARFF truck with structural apparatus or a potable drafting tank.

1.3.10 Aircraft Cargo Hazards.

The program should train ARFF personnel so they can do the following:

1. Identify the hazards indicated by each Department of Transportation (DOT) and International Civil Aviation Organization (ICAO) label;
2. Identify the limitation of the DOT and ICAO classifications and labeling system;
3. Identify local procedures in the event of a HAZMAT situation requiring a HAZMAT response;
4. Identify the procedures for contacting and using the Chemical Transportation Emergency Center (CHEMTREC) and other resources to obtain information about a hazardous material; and
5. Using information obtained from the DOT Emergency Response Guidebook (ERG) and CHEMTREC, identify the appropriate response, including risk assessment and rescue or evacuation requirements, for a given situation involving hazardous materials.

1.3.11 Dangerous Goods.

The program should train ARFF personnel so they can identify the Notification to Captain (NOTOC), Pilot Notification Form (PNF), or Applicable Cargo Waybill Listing Dangerous Goods Carried by the Aircraft.

1.3.12 Familiarization with Firefighters' Duties under the Airport Emergency Plan.

The program should train ARFF personnel so they can do the following:

1. Identify airport pre-fire and emergency plans;
2. Identify various types of aircraft-related emergencies;
3. Identify and understand the incident command system (ICS) to be utilized in an emergency, according to the National Incident Management System (NIMS) or the airport emergency plan (AEP);
4. Identify the procedures to use to size-up a given aircraft accident/incident;
5. Identify and understand individual duties as described in the AEP; and
6. Identify the other duties of his/her organization under the AEP.

1.3.13 Additional Training.

- 1.3.13.1 If the airport emergency plan calls for ARFF personnel to respond to special situations, such as water rescues or confined space rescue, provide training specific to such situations.
- 1.3.13.2 If a Surface Movement Guidance and Control System (SMGCS) plan is in place at the airport, firefighters must receive training specific to operations in low-visibility.
- 1.3.13.3 ARFF personnel must also receive training in recognizing aircraft with explosive devices (i.e. airbag systems, ballistic parachute systems, and ejection seats) during emergency operations. (See CertAlert 13-04, *Additional Precautions for Approaching Aircraft with Ballistic Parachutes, Ejection Seats, and Airbags*, at http://www.faa.gov/airports/airport_safety/ for the latest on explosive devices.)
- 1.3.13.4 ARFF personnel must receive training on ARFF Vehicle(s) and High Reach Extendable Turret (HRET) operations where applicable. (See AC 150/5210-23, *ARFF Vehicle and High Reach Extendable Turret (HRET) Operation, Training and Qualifications*, for additional guidance.)
- 1.3.13.5 If ARFF vehicles are equipped with specialized equipment [i.e. Forward Looking InfraRed (FLIR), Driver's Enhanced Vision System (DEVS)], firefighters must receive training on them.

1.4 **Live-Fire Drills.**

Each Part 139 certificate holder must ensure all ARFF personnel participate in at least one live-fire drill every 12 CCM. This drill must include at least a pit fire with an aircraft mock-up, using enough fuel to provide a fire that simulates realistic firefighting conditions. The conditions should simulate the type of fire that could be encountered on an air carrier aircraft at the airport. The drill should provide an opportunity for the firefighting team familiarized with the use of all fire extinguishing equipment, enhance their confidence and abilities with the equipment they will use in an actual accident/incident, and develop tactics, strategies, and procedures. If possible, a simulated rescue of aircraft occupants will help create a realistic simulation.

1.4.1 Live-Fire Drill Requirements.

- 1.4.1.1 ARFF personnel should demonstrate controlling and extinguishing a simulated aircraft fire using handlines and/or turrets, given an ARFF vehicle. The decision to train on handline or turret should be based on whether the trainee is assigned a handline or whether the trainee is a driver/operator who would normally operate the turrets. Many training programs may have all the participants working the handlines, and it would be acceptable for the driver/operator to meet the annual requirement in this

fashion. However, it would not be acceptable for a handline firefighter to use training on the turrets to meet the annual requirement.

- 1.4.1.2 ARFF personnel should demonstrate protecting firefighters and aircraft occupants using fire streams, given an ARFF vehicle.
- 1.4.1.3 The FAA will accept live-fire training using either flammable liquid hydrocarbon (FLH) or propane as a fuel source from either a fixed or mobile training facility. Requirements for these facilities are found in AC150/5220-17, *Aircraft Rescue and Fire Fighting (ARFF) Training Facilities*.
- 1.4.1.4 Alternatively, the FAA will accept training fires on U.S. Air Force (USAF) training facilities, specifically with the CFRTF-3 design, which includes an aircraft mockup in the center of a 100-foot-diameter burn area.
- 1.4.1.5 The FAA accepts mobile simulators for two years for Index C, D, and E airports holding a Class I airport operating certificate (AOC). Every third year, these airport fire departments must attend a large fixed facility to gain experience fighting a larger pit fire than the mobile simulators can duplicate. Class I airports that are Index A and B and Class II, III, and IV airports may use a mobile trainer every year to meet their 14 CFR Part 139.319 requirement.
- 1.4.1.6 The FAA allows using of a smaller pool fire when a fixed training facility that meets all other requirements of a mobile trainer. This, however, does not eliminate the requirement that every third year Index C, D, and E airports holding a Class I AOC must attend a large fixed facility to gain the necessary experience of fighting a larger pool.
- 1.4.1.7 **Personnel Who Do Not Normally Fight Fire.**

Personnel who are not expected to fight fire in the normal course of events would not be expected to complete the annual live-fire training. ARFF personnel who are not expected to fight fire are not considered “required” personnel, i.e., that group of ARFF personnel who are designated to meet the requirements of Section 139.319 (j)(5). Examples of personnel not required to complete the live-fire training might include the following:

 1. Firefighter dispatcher whose sole responsibilities involve communications;
 2. Fire Chief or Assistant Fire Chief; and
 3. A fire marshal or inspector.
 4. Mutual-aid personnel

1.5 **First Aid.**

At least one person trained and current in basic emergency medical care must be on duty during air carrier operations. In this context, “on duty” does not mean that the emergency medical person must be one of the regular ARFF personnel, but that there must be some assured means of having the individual available within a reasonable response time. This training must include 40 hours covering at least the following areas:

1. primary patient survey;
2. triage;
3. cardiopulmonary resuscitation (CPR);
4. bleeding;
5. shock;
6. injuries to the skull, spine, chest, and extremities;
7. internal injuries;
8. moving patients; and
9. burns.

Note: For any airport whose firefighters are required to maintain national certification, and state licensure for Emergency Medical Technician (EMT) or higher shows compliance for Part 139.319 (i)(4) emergency medical training.

1.6 **Hands-On Training (HOT).**

The FAA highly recommends that firefighters receive hands-on training on the aircraft that regularly serve their airport if possible. Such training is very difficult unless there are aircraft that remain overnight or there is an aircraft maintenance facility on the airport. Where such hands-on training is not feasible, the FAA recommends that ARFF crews have access to aircraft diagrams.

1.7 **Firefighter Certification.**

1.7.1 National Fire Protection Association (NFPA) Certification.

NFPA certification is not required by 14 CFR Part 139, but it would be a worthwhile goal of a training program to enable personnel to meet proficiency criteria as detailed in NFPA 1003, *Standard for Professional Qualifications for Airport Fire Fighters*. The NFPA Technical Committee on Fire Fighter Professional Qualifications developed the standard. It specifies the minimum requirements of professional competence required for service as an airport firefighter. It does not restrict any jurisdiction from exceeding the minimum requirements set forth in the standard. A training program that leads to the fulfillment of the professional qualifications for an airport firefighter identified in NFPA 1003, latest edition, is another means acceptable to the Administrator of providing firefighting and rescue personnel with the training considered necessary to perform their duties at airports. The fire fighter will still be required to receive airport

specific training prior to being assigned to an ARFF vehicle for duty. Copies of NFPA 1003, latest edition, may be ordered from NFPA at the address in the Appendix.

1.7.2 State-Level Airport Firefighter Certification.

A training program encompassing at least the requirements in Chapter 1 that leads to the fulfillment of the criteria for the applicable state-level airport firefighter certification is also an acceptable means of meeting the initial training requirement. The fire fighter will still be required to receive airport specific training prior to being assigned to an ARFF vehicle for duty.

1.7.3 Pro Board Certification.

The purpose of the Pro Board is to establish an internationally recognized means of acknowledging professional achievement in the fire service and related fields. The Pro Board serves to provide accreditation of organizations that certify uniform members of public fire departments, both career and volunteer. Accreditation is generally provided at the State level to the empowered certifying authority of that jurisdiction. Entities that achieve Pro Board accreditation are recognized as having met the rigors of review by an independent organization. This third party independent review is the best way to assure candidates and governance bodies that the entity's program meets the national standards. Pro Board certification meeting the NFPA 1003 standard is an acceptable means to the Administrator of providing firefighting and rescue personnel with the training considered necessary to perform their duties at airports. The fire fighter will still be required to receive airport specific training prior to being assigned to an ARFF vehicle for duty. See <http://www.theproboard.org/>.

1.7.4 IFSAC Certification.

The IFSAC Certificate Assembly provides accreditation to entities that certify the competency of and issue certificates to individuals who pass examinations based on the NFPA fire service professional qualifications and other standards approved by the Assembly. IFSAC certification meeting the NFPA 1003 standard is an acceptable means to the Administrator of providing firefighting and rescue personnel with the training considered necessary to perform their duties at airports. The fire fighter will still be required to receive airport specific training prior to being assigned to an ARFF vehicle for duty. See <http://www.ifsac.org/>.

1.8 **Mutual Aid Agreements.**

Where mutual aid agreements exist with U.S. Air Force personnel and/or municipal fire services surrounding the airport, all parties should receive familiarization training. In connection with such mutual aid agreements, the U.S. Air Force encourages and extends the use of Air Force base training facilities to surrounding municipal fire organizations, as explained in Air Force Regulation 32-2001, *Fire Protection and Prevention Program*.

1.9 **Noncertificated Airports.**

There are no regulatory requirements for ARFF services at non-certificated airports. However, the FAA recommends at those airports that have ARFF coverage, or for fire

departments that have airport responsibility, the use of AC. The FAA also provides valuable information on First Responder Safety at a Small Aircraft or Helicopter Accident and the Ballistic Parachute System Familiarization. See http://www.faa.gov/aircraft/gen_av/first_responders/.

1.10 **FAA Programs Available.**

1.10.1 FAA's Aircraft Rescue and Firefighting Training DVDs.

The FAA has produced two DVDs that provide a foundation upon which firefighters can build during the required annual recurrent training. The first DVD is appropriate for inclusion in initial training, i.e., contributing knowledge of basic aircraft rescue and firefighting principles. The second DVD provides more information on the use of the High Reach Extendable Turret (HRET), extrication techniques, and cargo aircraft. These DVDs are not meant to qualify viewers to become Certified ARFF Specialists. They are currently available from your regional Airport Certification Safety Inspector (ACSI) or by requesting them from the FAA ARFF Specialist via email (http://www.faa.gov/airports/airport_safety/aircraft_rescue_fire_fighting/.)

CHAPTER 2. ADDENDUM OF AIRCRAFT RESCUE AND FIREFIGHTING (ARFF) TRAINING FACILITIES

The FAA regards training that provides at a minimum the standards as set forth in 14 CFR Part 139.319 (I)(1)-(4) as critical to safety on airports. To help ARFF personnel meet these minimum standards, the FAA publishes a list of ARFF programs and/or reference materials. Because changes may occur more frequently than the schedule for updating the AC, the FAA will post an updated version online as an Addendum to this AC.

2.1 Purpose of the Addendum.

The organizations listed in the Addendum also provide firefighter training programs and/or reference materials. The Addendum is not an all-inclusive list, nor does it indicate the only sources for such programs and/or reference materials available. The listing of an organization does not indicate an endorsement by the FAA. For programs that have a "HOT" fire drill facility, the appropriate Index level is included. None of the reference materials have been reviewed by the FAA for adequacy.

2.2 Copies of the Addendum.

The current Addendum is available online with this AC at:
http://www.faa.gov/airports/resources/advisory_circulars/.

2.3 Updating Training Facility Information.

Please send changes to this list to:

Airport Safety and Operations Division
Attn: ARFF Specialist
800 Independence Ave SW
AAS-300, Rm 618
Federal Aviation Administration
Washington DC 20591

2.3.1 Schedule for Updating Training Facility Information.

The FAA will update this addendum on a quarterly basis. To update your organization's information, submit any changes no later than September 25 for Quarter 1, December 25 for Quarter 2, March 25 for Quarter 3, and June 25 for Quarter 4.

APPENDIX A. RELATED READING MATERIAL**A.1 Regulations.**

1. 14 CFR Part 139 (Part 139), *Certification of Airports*.

A.2 Advisory Circulars.

The ACs listed below can be found at

http://www.faa.gov/airports/resources/advisory_circulars/. See current versions.

1. AC 150/5200-12, *First Responders' Responsibility for Protecting Evidence at the Scene of an Aircraft Accident/Incident*.
2. AC 150/5200-18, *Airport Safety Self-Inspection*. Contact FAA Regional Airports Office for associated DVD.
3. AC 150/5200-31, *Airport Emergency Plan*.
4. AC 150/5210-6, *Aircraft Fire and Rescue Facilities and Extinguishing Agents*.
5. AC 150/5210-7, *Aircraft Rescue and Firefighting Communications*.
6. AC 150/5210-13, *Airport Water Rescue Plans and Equipment*.
7. AC 150/5210-14, *Aircraft Rescue Fire Fighting Equipment, Tools and Clothing*.
8. AC 150/5210-19, *Driver's Enhanced Vision System (DEVIS)*.
9. AC 150/5210-23, *ARFF Vehicle and High Reach Extendable Turret (HRET) Operation, Training and Qualifications*.
10. AC 150/5220-17, *Aircraft Rescue and Fire Fighting (ARFF) Training Facilities*.
11. 150/5220-22, *Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns*.
12. AC 150/5230-4, *Aircraft Fuel Storage, Handling, Training, and Dispensing on Airports*.
13. AC 150/5340-1, *Standards for Airport Markings*.
14. AC 150/5340-18, *Airport Signing and Graphics*.
15. AC 150/5340-30, *Design and Installation Details for Airport Visual Aids*.
16. AC 120-57, *Surface Movement Guidance and Control System*.

A.3 Part 139 CertAlerts.

The FAA has published a number of ARFF-related CertAlerts. A complete list as well as other ARFF resources are available at

http://www.faa.gov/airports/airport_safety/aircraft_rescue_fire_fighting/.

A.4 **Other Resources.**

- A.4.1 National Fire Protection Association (NFPA) 1003, Standard for Airport Fire Fighter Professional Qualifications, and NFPA 405, Standard for the Recurring Proficiency of Airport Fire Fighters, current edition.

NFPA
1 Batterymarch Park
Quincy, MA 02169
Phone: (617) 984-7537
Fax: (617) 984-7085
<http://www.nfpa.org>

- A.4.2 U.S. Air Force Technical Order (TO) 00-105E-9, Aircraft Rescue Information (Fire Protection).

The technical order describes procedures for fire service personnel responding to various types of emergencies involving military or civil aircraft. It also provides general information on aircraft rescue and firefighting as well as detailed information about military aircraft and civilian air carrier aircraft used by the military. Nonmilitary organizations having airport firefighting and rescue responsibilities at airports that serve military aircraft under routine and/or emergency conditions may obtain a copy of this technical order by sending a request to:

HQ AFCESA/CEXF
ATTN: Fire and Egress Service Manager
139 Barnes Drive Suite 1
Tyndall Air Force Base, FL 32403-5319
Phone: (850) 283-6150
<http://www.dodffcert.com/00-105E-9/index.cfm>

- A.4.3 International Fire Service Training Association's (IFSTA's) Aircraft Rescue and Fire Fighting, Fifth Edition.

The manual was developed to provide information for both airport and structural fire department officers to effectively accomplish the various tasks involved in aircraft firefighting and rescue. It is designed for all types of fire protection organizations and includes the use of both conventional and specialized aircraft firefighting apparatus. Copies may be purchased from IFSTA at the following address:

IFSTA Headquarters
Fire Protection Publications
Headquarters for the International Fire Service Training Association
930 N. Willis
Stillwater, OK 74078
Phone: (405) 744-5723
Fax: (405) 744-8204
<http://www.ifsta.org>

A.4.4 U.S. Navy Aircraft Firefighting and Rescue Manual, NAVAIR 00-80R-14, NATOPS.

This publication contains firefighting doctrine, procedures, references, and information for use by those persons involved in aircraft rescue, fire prevention, and firefighting response operations. It contains organizational, training, and readiness requirements for ships, air stations, and aviation facilities ashore. This manual prescribes minimum firefighting and rescue operating procedures applicable to all shipboard, expeditionary airfields, and shore-based activities involved in aircraft fire prevention, control, and suppression. The current versions of NATOPS publications are listed in the NATOPS Status Report, which is available from:

U.S. Navy Global Customer Support Team Lead

Phone: (301) 757-0187

Email: airworthiness@navy.mil

A.4.5 U.S. Navy Aircraft Emergency Rescue Information Manual, NAVAIR 00-80R-14-1.

This manual contains essential information and procedures for use by ARFF personnel when rescuing occupants from crashed or disabled naval aircraft. It has been organized for ready reference by rescue teams and is intended to serve both as an operational guide and a training manual for rescue personnel. This publication has been prepared for use by crash crew members and their supervisors engaged in aircraft rescue operations. It provides detailed information about aircraft hazards, danger areas, procedures for aircraft entry, engine shutdown, ejection seat safing, aircrew and passenger release and extraction, and other actions important to aircraft rescue and firefighting personnel. It is available from:

U.S. Navy Global Customer Support Team Lead

Phone: (301) 757-0187

Email: airworthiness@navy.mil

A.5 **Definitions and Acronyms.**

A.5.1 Definitions.

1. **Notification to Captain (NOTOC)** documentation acts as a flight manifest. This document has also been called the Notice to Pilot in Command (NOPIC) or the Pilot Notification Form (PNF). Each NOTOC contains a standardized list of hazardous materials and dangerous goods (for both non-radioactive and radioactive materials) that are loaded onboard an aircraft. It also lists their location, quantity, and type of packaging as well as procedures to follow in the event of an emergency situation. Every air carrier has its own version of a written form to notify aircraft crew members about dangerous goods (HAZMAT) that is loaded onboard the aircraft.

A.5.2 Acronyms.

1. AAS Airport Safety and Standards
2. AC Advisory Circular
3. AEP Airport Emergency Plan

4. AOC	Airport Operating Certificate
5. ATCT	Air Traffic Control Tower
6. AIP	Airport Improvement Program
7. APU	Auxiliary Power Unit
8. ARFF	Aircraft Rescue and Firefighting
9. CCM	Consecutive Calendar Months
10. CertAlert	Certification Alert
11. CFR	Code of Federal Regulations
12. CFRTF	Crash Fire Rescue Training Facility
13. CHEMTREC	Chemical Transportation Emergency Center
14. CTAF	Common Traffic Advisory Frequency
15. CPR	Cardiopulmonary Resuscitation
16. DEVS	Driver's Enhanced Vision System
17. DOT	Department of Transportation
18. EMT	Emergency Medical Technician
19. ERG	DOT Emergency Response Guidebook
20. EMAS	Engineered Materials Arresting Systems
21. FAA	Federal Aviation Administration
22. FLIR	Forward Looking Infrared
23. HAZMAT	Hazardous Materials
24. HOT	Hands-on Training
25. HRET	High Reach Extendable Turret
26. IAP	Incident Action Plan
27. ICAO	International Civil Aviation Organization
28. ICS	Incident Command System
29. IFSTA	International Fire Service Training Association
30. MOA	Memorandum of Agreement
31. MOU	Memorandum of Understanding
32. NATOPS	Naval Aviation Training Operations Procedures and Standardization
33. NIMS	National Incident Management System
34. NFPA	National Fire Protection Association
35. NOPIC	Notice to Pilot in Command

36. NOTOC	Notification to Captain
37. PCA	Practical Critical Fire Area
38. PFC	Passenger Facility Charges
39. PPE	Personal Protective Equipment
40. PNF	Pilot Notification Form
41. SCBA	Self-Contained Breathing Apparatus
42. SMGCS	Surface Movement Guidance Control System
43. SOG	Standard Operating Guidelines
44. SOP	Standard Operating Procedures
45. TO	Technical Order

A.6 **Aircraft Manufacturer's Aircraft Rescue and Firefighting Charts.**

The links below will help ARFF personnel locate aircraft informational charts for the associated aircraft manufacturers.

1. Airbus - <http://www.airbus.com/support/maintenance-engineering/technical-data/aircraft-rescue-firefighting-charts/>
2. Antonov - <http://www.antonov.com/aircraft/passenger-aircraft/>
3. Boeing - http://www.boeing.com/boeing/commercial/airports/rescue_fire.page
4. Bombardier - https://customer.aero.bombardier.com/webd/BAG/CustSite/BRAD/RACSDocument.nsf/vwWebPage/QuickLinks_EmergencyDocs?OpenDocument
5. Embraer - <http://www.embraer.com/en-US/Pages/Home.aspx>
6. Ilyushin - <http://www.ilyushin.org/en/aircrafts/>