



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

Advisory Circular

Subject: Aircraft Rescue Fire Fighting
Equipment, Tools and **Personal
Protective Equipment**

Date: Draft
Initiated By: AAS-300

AC No: 150/5210-14C
Change:

1 1 **Purpose.**

2 This advisory circular (AC) contains references to the minimum **standards** for the
3 selection and performance of aircraft rescue and firefighting personal protective
4 equipment (PPE), self-contained breathing apparatus (SCBA), and powered rescue
5 tools. **Use of this AC will assist airport management in the development of local procurement**
6 **specifications for ARFF equipment, tools and clothing.** Equipment meeting the standards in
7 this advisory circular will qualify as meeting the intent of Title 14 Code of Federal
8 Regulations (CFR) Part 139, *Certification of Airports*.

9 2 **Cancellation.**

10 This AC cancels AC 150/5210-14B, *Aircraft Rescue Fire Fighting Equipment, Tools*
11 *and Clothing*, dated 9/30/2008.

12 3 **Application.**

13 **The Federal Aviation Administration recommends the standards and guidelines in this**
14 **AC to establish uniform application for ARFF equipment, rescue tools and PPE. This**
15 **AC does not constitute a regulation, is not mandatory and is not legally binding in its**
16 **own right. It will not be relied upon as a separate basis by the FAA for affirmative**
17 **enforcement action or other administrative penalty. Conformity with this AC is**
18 **voluntary, and nonconformity will not affect rights and obligations under existing**
19 **statutes and regulations, except for the projects described in subparagraphs 2, 3 and 4**
20 **below:**

- 21 1. **The standards and guidelines contained in this AC are practices the FAA**
22 **recommends to establish an acceptable level of safety, performance and operation**
23 **ARFF operations.**
- 24 2. **This AC provides one, but not the only, acceptable means of meeting the**
25 **requirements of 14 CFR part 139, *Certification of Airports*.**

- 26 3. Use of these standards and guidelines is mandatory for projects funded under
27 Federal grant assistance programs, including the Airport Improvement Program
28 (AIP). See Grant Assurance #34.
- 29 4. This AC is mandatory, as required by regulation, for projects funded by the
30 Passenger Facility Charge (PFC) program. See PFC Assurance #9.

31 4 **Principal Changes.**

32 The AC incorporates the following principal changes:

- 33 1. Updated the NFPA documents that are referenced in this AC to the current version
34 of these documents.
- 35 2. Added Appendix A which provides a list of tools and equipment the FAA has
36 determined to be reasonable for supporting ARFF operations under 14 CFR Part
37 139.
- 38 3. Updated the format of the document in this version, and made minor editorial
39 changes throughout.

40 5 **Use of Metrics.**

41 Throughout this AC, U.S. customary units are used followed with “soft” (rounded)
42 conversion to metric units. The U.S. customary units govern.

43 6 **Where to Find this AC.**

44 You can view a list of all ACs at:

45 https://www.faa.gov/regulations_policies/advisory_circulars/.

46 You can view the Federal Aviation Regulations at:

47 https://www.faa.gov/regulations_policies/faa_regulations/.

48 7 **Feedback on this AC.**

49 If you have suggestions for improving this AC, you may use the Advisory Circular
50 Feedback form at the end of this AC.

John R. Dermody
Director of Airport Safety and Standards

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CHAPTER 1. INTRODUCTION

62 1.1 Overview.

63 This advisory circular (AC) provides the basic guidelines and standards for personal
64 protective equipment (PPE), self-contained breathing apparatus (SCBA), and powered
65 rescue tools.

66 To properly use this document, refer to the appropriate National Fire Protection
67 Association (NFPA) standard that corresponds to items you intend to procure. In
68 addition, Appendix A provides a listing of ancillary equipment for ARFF vehicles that
69 the FAA deems reasonable for supporting ARFF operations.

70 1.2 Adoption of NFPA Standards.

71 The Federal Aviation Administration (FAA) uses National Fire Protection Association
72 (NFPA) standards as the minimum performance criteria. Refer to the appropriate NFPA
73 standard for the applicable performance criteria:

- 74 • NFPA 1981, 2019 Edition, *Standard on Open-Circuit Self-Contained Breathing*
75 *Apparatus (SCBA) for Emergency Services*
- 76 • NFPA 1936, 2015 Edition, *Standard on Powered Rescue Tools*
- 77 • NFPA 1971, 2018 Edition, *Standard on Protective Ensembles for Structural Fire*
78 *Fighting and Proximity Fire Fighting*

79 1.3 Items Acquired with Federal Assistance Programs.

80 1.3.1 Procurement.

81 Items (equipment and supplies) acquired under Federal assistance programs must
82 comply with the procurement standards of 2 CFR §§200.317-200.326. It is not
83 necessary for an airport to comply with 2 CFR part 200 when the procurement action
84 does not include federal funding. Owner must conduct procurement transactions in a
85 manner providing full and open competition per 2 CFR § 200.319.

- 86 1. Entities interested in competing for an award may not assist the owner with
87 development of requirements or specifications.
- 88 2. Procurement actions must not include conditions that unduly restrict competition.
- 89 3. Do not place unreasonable requirements on firms in order to qualify as a bidder.
- 90 4. Avoid requiring unnecessary experience and excessive bonding.
- 91 5. Avoid any arbitrary action in bid evaluation and award.
- 92 6. Procurement requirements must incorporate a clear and accurate description of
93 product.
- 94 7. When it is impractical to describe a requirement, the use of “brand name or equal” is
95 permitted provided the salient features of the brand name product are clearly stated.

96 1.3.2 Equipment Use and Management.

97 Equipment acquired with federal assistance incurs conditions on use and property
98 management per 2 CFR § 200.313. 2 CFR § 200.33 defines equipment has tangible
99 property having a useful life of one year and an acquisition cost exceeding \$ 5,000.
100 Items that do not meet the equipment definition are supplies as defined by 2 CFR §
101 200.94.

- 102 1. Owner must use equipment for the intended program, which in this case is in
103 support of an ARFF vehicle.
- 104 2. Owner must maintain property records that include a description of the equipment,
105 identifying number, acquisition date, and use of equipment (e.g. what ARFF truck).
- 106 3. Owner must conduct a physical inventory of equipment every two years.

107 1.4 **How to Order NFPA Standards.**

108 NFPA Standards can be ordered from: 1 Batterymarch Park, P.O. Box 9101, Quincy,
109 Massachusetts 02269-9101 or **online** at www.NFPA.org.

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CHAPTER 2. PERFORMANCE STANDARDS111 2.1 **Personal Protective Equipment (PPE).**

112 *Comply with the standards of NFPA 1971, 2018 Edition, Standard on Protective*
113 *Ensembles for Structural Fire Fighting and Proximity Fire Fighting.*

114 2.2 **Self-Contained Breathing Apparatus (SCBA).**

115 *Comply with the standards of NFPA 1981, 2019 Edition, Standard on Open-Circuit*
116 *Self-Contained Breathing Apparatus (SCBA) for Emergency Services.*

117 2.3 **Powered Rescue Tools.**

118 *Comply with the standards of NFPA 1936, 2015 Edition, Standard on Powered Rescue*
119 *Tools.*

120 Listed below are additional reference documents applicable to equipment procured
121 under this AC. These documents will provide guidance on operation, care and
122 maintenance. This list of documents **is** for informational purposes only.

- 123 • **NFPA 402, 2019** Edition, *Guide for Aircraft Rescue and Fire-Fighting Operations*
- 124 • NFPA 414, **2017** Edition, *Standard for Aircraft Rescue and Fire-Fighting Vehicles*
- 125 • NFPA 1404, **2018** Edition, *Standard for Fire Service Respiratory Protection*
126 *Training*
- 127 • NFPA 1500, **2018** Edition, *Standard on Fire Department Occupational Safety,*
128 *Health and Wellness Program*
- 129 • NFPA 1581, **2015** Edition, *Standard on Fire Department Infection Control*
130 *Program*
- 131 • NFPA 1851, **2014** Edition, *Standard on Selection, Care, and Maintenance of*
132 *Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*
- 133 • NFPA 1852, **2019** Edition, *Standard on Selection, Care and Maintenance of Open-*
134 *Circuit Self Contained Breathing Apparatus (SCBA)*
- 135 • NFPA 1975, **2019** Edition, *Standard on Emergency Services Work Apparel*
- 136 • NFPA 1982, **2018** Edition, *Standard on Personal Alert Safety Systems (PASS)*
- 137 • NFPA 1983, **2017** Edition, *Standard on Life Safety Rope and Equipment for*
138 *Emergency Services*
- 139 • NFPA 1989, **2019** Edition, *Standard on Breathing Air Quality for Emergency*
140 *Services Respiratory Protection*
- 141 • NFPA 1999, **2018** Edition, *Standard on Protective Clothing for Emergency Medical*
142 *Operations*

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APPENDIX A. ANCILLARY ITEMS LIST FOR ARFF VEHICLES

144 The following list represents ancillary items (e.g., equipment/supplies) and quantities the FAA
 145 determines reasonable for support of ARFF vehicle operations. Owners may use this information
 146 along with FAA Order 5100.38D, *Airport Improvement Program Handbook*, Change 1,
 147 Appendix L, Safety and Security Equipment Projects, to assess eligibility and justification for
 148 AIP funding of ARFF safety items.

Item #	Equipment Description	Vehicle Class and Quantity Allowed	
		Class I, II & III	Class IV & V
1	Radio w/public address system w/ Ground to Ground, compatible with existing ARFF Radio System. Includes radio microphone, PA microphone, microphone mounting clips, speaker, antenna, wire harness and mounting	1	1
2	Axe, rescue, large, non-wedge type with serrated edge and 36 in fiberglass handle; to include scabbard and pick head cover and mounting equipment	1	1
3	Halligan Bar – 36 in	1	1
4	Axe, flat head, fiberglass handle - 36 in with mounting bracket, (for married set w/Halligan Tool)	1	1
5	36 in crowbar	1	1
6	Cutter, cable, 24 or 36 in	1	1
7	Hacksaw, heavy duty, 12 in with pistol grip and six (6) assorted blades	1	1
8	Hammer, 1-1/4 lb. (Maul)	1	1
9	Hammer, 16 oz., non-sparking	1	1
10	Hammer, Sledge, 8 lb. with fiberglass handle	1	1
11	Knife, rescue, V-blade (harness cutting tool)	2	2
12	Pliers, side cutting, 7 in	1	1
13	Adjustable wrench, 8 in		
14	Vice grip pliers, 10 in	1	1
15	Plug, fuel line (tapered hardwood)	3	3
16	Plug, fuel line (tapered neoprene)	3	3
17	Screw driver set—three (3) Phillips and three (3) straight blade	1	1
18	Shears, sheet metal, straight cut	1	1

19	Tool Bag (heavy duty) with organizer pouches/pockets and shoulder strap to carry items 6 - 18	1	1
20	Blanket, fire resistant with storage pouch	1	1
21	Wheel chocks – one set (2 chocks) with mounting brackets	1	1
22	Ladder, extension or “A-Frame”, up to 24 ft. overall length with mounting brackets.	1	1
23	Portable rechargeable, weatherproof, intrinsically safe hand-held lanterns having a minimum 25,000 beam candle power rating with straps. Chargers to be mounted in cab wired into vehicle electrical system for charging.	2	2
24	Pike pole, 8 ft. with fiberglass handle and mounting hardware	1	1
25	Pike Pole with 4 ft. “D” handle and mounting hardware	1	1
26	Rescue kit, pneumatic air hammer / chisel standard duty type), complete with spare air cylinder, carrying case and various tips.	1	1
27	Rescue saw, 14 in (Index A & B) or 16 in (Index C, D, E) complete with one (1) box of spare blades (composite masonry blades) or total 2 Diamond blades for metal. Including mounting hardware. ****	1	1
28	Rope, 100 ft. - 5/8 in Dia.	2	2
29	Fire extinguishers having a minimum 20 B/C UL rating of either dry chemical or clean streaming agent with mounting brackets.	2 or 1 Each	2 or 1 Each
30	Fire extinguisher Class D powder (30 lb.) with mounting bracket	1	1
31	Skin penetrator (piercing applicator) for water or foam application, manual type or Skin penetrator, water, foam or dry chemical application, pneumatic type including carry case, applicator and air cylinder (only if vehicle is not equipped with an HRET)	1	1
32	Powered firefighting hydraulic rescue tool with cutters, spreaders, (or combination tool), ram and power unit, hoses and mounting hardware (may be heavy duty battery operated) ****	1	1
33	Heavy duty canvas hydrant bag with straps	1	1
34	Gate valve 2 ½ in	2	2
35	Female gated reducing wye. 2 ½ in Female × (2) 1 ½ in Male	1	1
36	Adjustable hydrant wrench capable of accommodating up to a 1.75 in. (4.4-cm) pentagon nut and up to a 1.25 in. (3.2-cm) square nut	1	1
37	2-1/2 in. spanner wrenches w/bracket	2	2

38	1 in. spanner wrenches w/ bracket	2	2
39	LDH spanner wrenches w/ mounting bracket	0	2
40	Reducer, non-swivel – 2 ½ in to 1 ½ in ***	2	2
41	Double female couplings – 1 ½ in ***	1	1
42	Double female couplings – 2 ½ in ***	1	1
43	Double male couplings – 1 ½ in ***	1	1
44	Double male couplings – 2 ½ in ***	1	1
45	1 ¾ in × 50 ft. Rubber / Synthetic, with 1 ½ in NST couplings	6	6
47	Digital Refractometer (1) per station	1	1
48	Foam tank drum wrench tool (1) per station	1	1
49	5 gal pail wrench (1) per station	1	1
50	Full spine board, 6 ft. w/ 4 -9 straps	1	1
51	Positive pressure, variable speed, 18 in gasoline powered fan ****	1	1

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		Vehicle Class and Quantity Allowed	
Item #	Equipment Description	Class I, II & III	Class IV & V
	All Personal Protection Equipment (PPE) to be part of a matching ensemble that meets current NFPA 1971, standards		
52	Aluminized proximity reflective/radiant heat protection coats, with bellow and radio pockets with microphone tab - sizes to be provided to awarded vendor	3 pr	4 pr
53	Aluminized proximity reflective/radiant heat protection trousers with pockets and exchangeable knee re-enforcements - sizes to be provided to awarded vendor	3 pr	4 pr
54	ARFF aluminized proximity gloves which provides reflective/radiant heat protection w/ leather palms - sizes to be provided to awarded vendor.	3 pr	4 pr
55	ARFF boots, rubber, with pull on loops, toe and cushioned shin guard, sizes to be provided to awarded vendor.	3 pr	4 pr
56	Complete SCBA including 1 30-minute bottle, 1 face piece and PASS device. Must meet current NFPA 1981 Standard and match customer's standard fittings.	3	4

		Vehicle Class and Quantity Allowed	
57	Nomex hoods	3	4
58	Structural style helmets w/ aluminized shrouds and gold-coated face shield	3	4

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ARFF Vehicle Medical Kit – 1 Stocked Kit Per Vehicle – All Classes (Medical kit, first aid/first responder trauma kit, with shoulder strap – Only one per truck, table below is not for second medical kit, only showing contents of this kit.)			
	Item	Details	Qty. per Jump Kit
59	Bag Valve Mask Resuscitator Adult Kit	To include – 1 Small – 1 Medium -1 Large Mask	1 kit
60	Bag Valve Mask Resuscitator Child / Infant Kit	Child / Infant Mask Assortment	1 kit
61	1 Disposable Airway Kit		1 Kit
62	1 Burn sheet		1
63	Adhesive Bandages	1" × 3"	25
64	ABD Pads	5" × 9"	2
65	Multi Trauma Dressing	12" × 30"	1
66	Sterile Gauze Pads	4" × 4"	25
67	Sterile Eye Pads		4
68	Petroleum Gauze	3" × 9"	2
69	Sterile Roller Bandage	4"	5
70	Sterile Roller Bandage	6"	5
71	Waterproof Tape	1"	2
72	Waterproof Tape	2"	1
73	Triangular Bandages		2
74	Elastic Bandage	3"	2
75	Elastic Bandage	4"	2
76	BP Cuff		1
77	Stethoscope	With Bell for Chest Sounds	1
78	Cold Packs	Instant	2

79	Instrument Pack	1 each, shears, forceps, bandage scissors, penlight flashlight	1
80	Space Blanket	Wrapped	4
81	Nitrile Gloves		5
82	Sterile Water	For irrigation	1 bottle

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Note: *** Provide information on large diameter adapter thread pipe as part of the bid documents.

Note: **** One per station.

Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by (1) mailing this form to Manager, Airport Engineering Division, Federal Aviation Administration ATTN: AAS-100, 800 Independence Avenue SW, Washington DC 20591 or (2) faxing it to the attention of the Office of Airport Safety and Standards at (202) 267-5383.

Subject: AC 150/5210-14C

Date: _____

Please check all appropriate line items:

An error (procedural or typographical) has been noted in paragraph _____ on page _____.

Recommend paragraph _____ on page _____ be changed as follows:

In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

Other comments:

I would like to discuss the above. Please contact me at (phone number, email address).

Submitted by: _____

Date: _____