Aircraft Rescue Fire Fighting Working Group / AAAE ARFF CHIEF’S 2014

Presented to: Aircraft Rescue Fire Fighting Working Group / AAAE ARFF Chief’s Conference
By: Marc Tonnacliff
Date: January 2014
TOPICS TO BE COVERED

✈ FAA Advisory Circulars
   ✈ Currently Updating

✈ ARFF Training
   ✈ Regional training trends
   ✈ 12 Consecutive Calendar Months

✈ Airport Corporate Research Program
FederaL AVIatIOn ADminIstrATion

AIRCRAFT RESCUE FIRE FIGHTING WORKING GROUP / AAAE ARFF CHIEF’S CONFERENCE 2014

FAA ARFF WEB SITE

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

Hot Items


This Airport Cooperative Research Program (ACRP) report provides information on how to evaluate and implement web-based collaboration tools that are designed to provide a common operating picture for both day-to-day operations and full emergency response management.

• November 22, 2013: Draft AC 150/5210-17C, Programs for Training of Aircraft Rescue and Firefighting Personnel

The FAA will accept comments on this draft through January 31, 2014. Version C is a substantial rewrite. Major changes include replacing Appendix 1 with an Addendum of ARFF training facilities (to be updated quarterly) and removing the 1-minute time requirement for donning Personal Protective Equipment and the Self-Contained Breathing Apparatus.

• Receive email alerts when this page is updated!
AIRPORT SAFETY RESEARCH

Published Papers and Technical Notes

The following documents are in Adobe Acrobat (pdf) format and are available for download. You will need Adobe Reader software to view these documents. Adobe Reader is free and available for download by clicking on the following icon.

Magnets are a critical component of current avian radar technologies, providing avian radar systems with the energy that is transmitted and received to identify targets. The current avian radar performance assessment uses X-band marine radars that are based on magnetron technology. Manufacturers recommend regular replacement of magnetrons to maintain radar detection effectiveness. The University of Illinois Center of Excellence for Airport Technology (CEAT) examined the issue of operational effectiveness for magnetrons with short and long operational histories. CEAT found that magnetrons with long operational histories performed at a level consistent with new magnetrons. CEAT recommends that magnetron replacement be based on performance criteria rather than on a fixed schedule or replacement period. Replacement should be made when a magnetron fails to produce consistent detection results when evaluated as part of a regularly scheduled radar health assessment program.

Avian Radar Maintenance: Magnetron Replacement Requirements

DOT/FAA/TC-TN13/47
Author: Edwin E. Herricks, Peter Weber, David Mayer, and Ryan E. King
Format: Adobe Acrobat
File Size: 1 MB

The evolution of aircraft design and construction has brought about new challenges to Aircraft Rescue and Firefighting (ARFF) personnel. The New Large Aircraft (NLA) entering the market have introduced increased passenger capacities, fuel loads, hydraulic pressures, and the use of advanced composite materials. The most significant change is the introduction of the full-length, upper-passenger deck on the Airbus A380 with certification for up to 853 total passengers. The B-747-8 was just beginning flight service in the United States as this report was being developed. A supplement to this report will be issued following additional research specific to the B-747-8.

This report examines previous incidents with multilevel aircraft, as well as research conducted in relevant areas such as aircraft evacuations and advanced composite materials. In addition, accepted interior firefighting models were applied to the unique NLA configurations, thereby providing guidance for emergency planning of such events.

This report provides a discussion of the primary topics, such as agent quantity, aircraft systems, and components, which are pertinent to NLA firefighting strategies. Configurations and aspects of NLA layouts that require strategic consideration, and influence ARFF tactical decisions and response preplanning, are discussed in this report, as well as recommendations for best practices in NLA firefighting strategies.

Aircraft Rescue and Firefighting Strategies and Tactical Considerations for New Large Aircraft

DOT/FAA/TC-13/12
Author: Jack Kreckie
Format: Adobe Acrobat
File Size: 3.8 MB
<table>
<thead>
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<th>Number</th>
<th>Title</th>
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<tr>
<td>150/5210-17C</td>
<td>Draft AC 150/5210-17C, Programs for Training of Aircraft Rescue and Firefighting Personnel (posted 11/21/2013)</td>
<td>150/5210-17B</td>
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This AC provides information on courses and reference materials for training of Aircraft Rescue and Firefighting (ARFF) personnel. Version C is a substantial rewrite. Major changes include replacing Appendix 1 with an Addendum of ARFF training facilities (to be updated quarterly) and removing the 1-minute time requirement for donning Personal Protective Equipment and the Self-Contained Breathing Apparatus.

- **Addendum to Draft AC 150/5210-17C** (PDF, 175 KB)
- **Industry Letter for Draft AC 150/5210-17C** (PDF, 469 KB)
- **Excel Comments Matrix for Draft AC 150/5210-17C**

(PDF, 465 KB)
### INSTRUCTIONS FOR COMMENTS MATRIX

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<thead>
<tr>
<th>Reviewer and Org</th>
<th>Reviewer Phone#</th>
<th>Page#</th>
<th>Para#</th>
<th>Line#</th>
<th>C,E, or F</th>
<th>Comment/Rationale</th>
<th>Recommended Change/Proposed Rewrite</th>
<th>A or D (For OPR Use Only)</th>
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<td>The Reviewer is the person making the Comment and the Recommended Change.</td>
<td>Enter the Reviewers org code and phone number. If possible, also include an email address.</td>
<td>Enter the page, paragraph, and line number of the AC so we can easily identify the reference paragraph. NOTE: For comments on the whole AC, please indicate &quot;General.&quot;</td>
<td>Conceptual: You disagree with the intent of what's said or implied or, you believe an important concept has been omitted. Editorial: You agree with the intent but believe the wording is unclear, ambiguous, or of the wrong tone. Format: Comment on layout and organization and other format issues that are solely the responsibility of the authors. There is no need to identify deviations from the standard order format, typos or common spelling errors. They are being corrected as you review this AC.</td>
<td>Please explain your disagreement and give a rationale.</td>
<td>Please make clear your recommended change and proposed rewrite. When suggesting new wording, use quotation marks and make sure it's clear what text you intend to replace. An ellipse implies the beginning of the original material is ok.</td>
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### NOTE:

Insert Comments on the Comments Worksheet.
If matrix will made available to the public, delete instructions before posting.
Advisory Circulars

150/5210-17B - Programs for Training of Aircraft Rescue and Firefighting Personnel

1. A new Chapter 2, this AC replaces Appendix 1

2. Appendix 1 will be replaced with an Addendum of Aircraft Rescue and Firefighting (ARFF) Training Facilities, allow update on a quarterly basis.

3. It uses a new paragraph numbering system to make the text easier to follow and reference.

4. It removes the 1-minute each time requirement for donning of PPE and the SCBA.
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Appendix A. Related Reading Material .................................................. A-1
Often when ARFF folks get together, the talk turns to FAA rules, regulations, Advisory Circulars, Certalerts and the like. Many times we grumble and complain about those standards. Here is a chance for you to actually affect what one of their (final) rules will look like. Like any Federal regulatory body, the FAA must take in and consider comment from the public (and from industry professionals such as the readership of ARFF News.) You can expect to read your comments and the FAA response to them in the record when the final rule is promulgated.

The FAA has recently posted a draft advisory circular that many ARFF personnel are liable to hold an opinion on: Draft AC 150/5210-17C, Programs for Training of Aircraft Rescue and Firefighting Personnel (posted 11/21/2013) can be found at: http://www.faa.gov/documentLibrary/media/Advisory_Circular/draft_150_5210_17c.pdf

To quote the FAA: “This AC provides information on courses and reference materials for training of Aircraft Rescue and Firefighting (ARFF) personnel. Version C is a substantial rewrite. Major changes include replacing Appendix 1 with an Addendum of ARFF training facilities (to be updated quarterly) and removing the 1-minute time requirement for donning Personal Protective Equipment and the Self-Contained Breathing Apparatus.” (emphasis by ARFF News) Links to the addenda and the FAA’s letter to industry are: Addendum to Draft AC 150/5210-17C (PDF, 175 KB); Industry Letter for Draft AC 150/5210-17C (PDF, 469 KB). The current circular can be found at: http://www.faa.gov/airports/resources/advisory_circulars/

Removing the current SCBA 60-second standard as a training requirement further dilutes the professional requirements we should meet and that the flying public is entitled to expect from ARFF professionals. Airline profitability would also be impacted negatively. Although much less important than saving lives, allowing aircraft fires to go unchecked longer because we are not quickly equipped and ready to go to work will burn up more aircraft and the people inside the tube that we are sworn to protect. Costs will go up and a bunch of folks we will likely never meet will get a pink slip because of a cost-cutting measure. We must be as comfortable with our SCBA as we are with a knife and fork. Firefighters who are not absolutely competent with the SCBA will get themselves killed and will be responsible for the deaths and injuries of those who have to go in and bail them out. We cannot save passengers or crew without this most important piece of equipment. We cannot put victims “on hold” while we dust off an unfamiliar air pack and struggle with our facepiece. There are no “time outs” or “do overs” allowed in ARFF. We have the narrowest rescue window imaginable. Telling airport firefighters to instead train to take their time putting on their mask builds in a delay that simply costs lives. Training properly, on this particular skill set costs nothing, and can potentially save everything. Dropping this standard is an administrative statement that the people in the tube don’t matter as much as someone in a house, and that airport firefighters don’t need to be professional.

The mission statement of the ARFF Working Group is: “To
1.3.4 Rescue and Firefighting Personnel Safety.

The program should train 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. identify the purpose, components, operation, and limitations of self-contained breathing apparatus (SCBA);
7. demonstrate the inspection process for the SCBA;
8. demonstrate changing the air supply cylinder of a team member with an exhausted air supply cylinder;
9. 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, or
   f. high pressure hose is damaged;
10. 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, or
   f. high pressure hose is damaged;
APPENDIX RELATED READING MATERIAL

• A.1 REGULATIONS
• A.2 ADVISORY CIRCULARS
• A.3 PART 139 CERTALERTS
• A.4 OTHER RESOURCES
• A.5 DEFINITIONS AND ACRONYMS
• A.6 AIRCRAFT MANUFACTURER’S AIRCRAFT RESCUE AND FIREFIGHTING CHARTS.
A.6 AIRCRAFT MANUFACTURER’S AIRCRAFT RESCUE AND FIREFIGHTING CHARTS.
The links below will help the user locate aircraft informational charts for the associated aircraft manufacturers.
ADDENDUM. LIST OF ARFF TRAINING FACILITIES

Updating Procedures: The FAA updates this addendum on a Quarterly basis. To update your organization’s information, submit any changes to the FAA (see Paragraph 2.3 of AC 150/5210-17 for instructions) no later than September 25 for Quarter 1, December 25 for Quarter 2, March 25 for Quarter 3, and June 25 for Quarter 4.

NATIONAL
International Fire Service Training Association (IFSTA)
Fire Protection Publications
Oklahoma State University
930 North Willis
Stillwater, OK 74078-8045
www.ifsta.org

Colorado:
Denver International Airport
ARFF Training Academy
11345 Trussville Street
Denver, CO 80249
Contact: Chief Doug Mangels
Telephone: (303) 342-4345
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National Fire Protection Association (NFPA)
1 Batterymarch Park, PO Box 9101
Quincy, MA 02269-9101
Telephone: (800) 344-3555

State of Colorado/DOT
Division of Aeronautics
56 Inverness Drive E
Englewood, CO 80112-5129
Advisory Circulars (cont.)

- AC 150/5220-10E - Guide Specification for Aircraft Rescue and Fire Fighting (ARFF) Vehicles

- Since being issued:
  - Who has used this?
  - All of the allowed options are included - no changes to the printed spec from Chap 3 are allowed.
  - The Chapter 3 printout will be submitted to the ADO for approval
  - If the ADO disapproves a requested option, they can either note that on the spec for publication, or can return it to the sponsor if they want a clean spec approved/published.
Advisory Circulars (cont.)

Allowed but not in AC:
- 1 wk. maintenance course;
- 1 trip for mid construction review;

Vehicle bid on one classification

Tools, separate bid – we will be coming out with an approve list of acceptable tools

Location – AC 150/5210-14B - Aircraft Rescue Fire Fighting Equipment, Tools and Clothing
ARFF Training Trends

✈ §139.319 Aircraft rescue and firefighting: Operational requirements.
✈ Discrepancies trending through ALL nine regions

1. Not maintaining training records
2. Poor vehicle maintenance
3. Not maintaining PPE
4. Not completing training in 12 CCM
5. Failure of timed response for several reasons
6. Unfamiliar with equipment and its operation
ARFF Training Trends (Cont.)

7. Not getting required live fire burn.
8. Not ensuring pressurized propellant tanks are up to proper pressure.
9. Not following established procedures found in SOP's.
   ➢ Not checking the AFFF proportioning system
   ➢ You are not following what you write
§139.319

(i) Airport familiarization, including airport signs, marking, and lighting.
The following U.S. airports have approved Modifications of Standards (MoS) in place to accommodate A380 operations:

ANC - Anchorage International Airport
DEN - Denver International Airport
DFW - Dallas/Ft. Worth International Airport
IAD - Washington Dulles International Airport
IAH - Houston Intercontinental Airport, Texas
JFK - John F. Kennedy International Airport
LAX - Los Angeles International Airport
MCO - Orlando International Airport
MEM - Memphis International Airport
MIA - Miami International Airport
SDF – Louisville International Airport, Kentucky
SFO - San Francisco International Airport
The following U.S. airports have approved MoS in place to accommodate B-747-8 operations:

<table>
<thead>
<tr>
<th>Airport Code</th>
<th>Airport Name</th>
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<tbody>
<tr>
<td>ANC</td>
<td>Anchorage International Airport</td>
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<tr>
<td>ATL</td>
<td>Atlanta Hartsfield International Airport</td>
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<tr>
<td>BOS</td>
<td>Boston Logan International Airport</td>
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<tr>
<td>BQN</td>
<td>Rafael Hernandez Airport Puerto Rico</td>
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<tr>
<td>CVG</td>
<td>Cincinnati/Northern Kentucky International Airport</td>
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<tr>
<td>DEN</td>
<td>Denver International Airport</td>
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<tr>
<td>DFW</td>
<td>Dallas/Ft. Worth International Airport</td>
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<tr>
<td>DTW</td>
<td>Detroit Metro International Airport</td>
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<tr>
<td>EWR</td>
<td>Newark International Airport</td>
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<td>HNL</td>
<td>Honolulu International Airport</td>
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<tr>
<td>HSV</td>
<td>Huntsville International Airport [Alabama]</td>
</tr>
<tr>
<td>IAD</td>
<td>Washington Dulles International Airport</td>
</tr>
<tr>
<td>IAH</td>
<td>Houston Intercontinental Airport, Texas</td>
</tr>
<tr>
<td>IND</td>
<td>Indianapolis International Airport</td>
</tr>
<tr>
<td>JFK</td>
<td>John F. Kennedy International Airport</td>
</tr>
<tr>
<td>LAX</td>
<td>Los Angeles International Airport</td>
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<tr>
<td>LCK</td>
<td>Rickenbacker International Airport</td>
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<tr>
<td>MCO</td>
<td>Orlando International Airport</td>
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<tr>
<td>MIA</td>
<td>Miami International Airport</td>
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<tr>
<td>ORD</td>
<td>Chicago O’Hare International Airport</td>
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<tr>
<td>RFD</td>
<td>Rockford/Chicago International Airport</td>
</tr>
<tr>
<td>SEA</td>
<td>Seattle Tacoma International Airport</td>
</tr>
<tr>
<td>SFO</td>
<td>San Francisco International Airport</td>
</tr>
<tr>
<td>TOL</td>
<td>Toledo Express Airport</td>
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</table>
(ii) Aircraft familiarization
§139.319

(iii) Rescue and firefighting personnel safety.
(iv) Emergency communications systems on the airport, including fire alarms.
(v) Use of the fire hoses, nozzles, turrets, and other appliances required for compliance with this part.
(vi) Application of the types of extinguishing agents required for compliance with this part.
(vii) Emergency aircraft evacuation assistance.
§139.319

(viii) Firefighting operations
(ix) Adapting and using structural rescue and firefighting equipment for aircraft rescue and firefighting.
(x) Aircraft cargo hazards, including hazardous materials/dangerous goods incidents.
(xi) Familiarization with firefighters' duties under the airport emergency plan
§139.319

(3) All rescue and firefighting personnel must participate in at least one live-fire drill prior to initial performance of rescue and firefighting duties and every 12 consecutive calendar months thereafter.
What should go in a training plan?

- Specific goals should be set prior to attempting any type of training
- Determine desired outcome
- Where does guidance come from?
  - Airport Certification Manual (ACM)
  - Advisory Circulars
  - Local documents
  - Daily construction reports
HOW OFTEN SHOULD YOU TRAIN?

✈ All rescue and firefighting personnel are properly trained to perform their duties in a manner authorized by the Administrator.

✈ Such personnel must be trained prior to initial performance of rescue and firefighting duties and receive recurrent instruction every 12 consecutive calendar months.

✈ Training records must be kept for 24 CCM
TWELVE CONSECUTIVE CALENDAR MONTHS

- CERTALERT 10-01 Interpretation of the term “consecutive calendar months” as used in part 139, Certification of Airports

- If an airport operator is subject to an FAA periodic inspection (annual airport inspection) on January 15, 2010, “twelve consecutive calendar months” will end on January 31, 2011. If an airport operator is subject to an FAA periodic inspection on January 28, 2010, “twelve consecutive calendar months” will end on January 31, 2011.
Airport Corporative Research Program

http://pubsindex.trb.org/

The TRB Publications Index contains over 50,000 papers, articles, and reports published by the Transportation Research Board, Highway Research Board, Strategic Highway Research Program, or the Marine Board from 1923 to date.

For comments or questions, contact Lisa Loyo at lloyo@nas.edu.
ACRP Projects Completed
ACRP Projects In Progress

- ACRP 04-15 - A Tool for Developing Airport Terminal Incident Response Plans – should be completed soon

- ACRP10-13 - Integrating NIMS for Personnel and Resources at Airports

- ACRP 04-13 - Integrating Community Emergency Response Teams (CERT) at Airports
Getting More Out of Airport Mutual Aid

TRB will conduct a webinar on February 11, 2014, from 2:00pm to 3:30pm ET that will introduce airport operators and emergency planners to mutual aid agreements. Participants must register in advance of the webinar, and there is no fee associated with this webinar. This webinar will provide 1.5 Continuing Education Units for Accredited Airport Executives.

The Federal Aviation Administration’s Advisory Circular “Airport Emergency Plan” places increased attention on mutual aid agreements, including the process by which they are created and the roles of mutual aid partners in Airport Emergency Plans (AEPs). Webinar presenters will highlight management practices that may be used to establish and help sustain multi-airport mutual aid programs at state, regional, and national levels.

Webinar Presenters
- James Smith, Smith-Woolwine Associates Inc.
- Fred McCrosby, Savannah/Hilton Head International Airport
- Todd Haines, Dallas-Fort Worth International Airport

Moderated by: Mark A. Crosby, Portland International Airport

Webinar Outline
- PART 1: ACRP Synthesis 45 “Model Mutual Aid Agreements for Airports”
  - Types of, and patterns found in, mutual aid agreements
  - Basic generic models for sound agreements
  - Examples of specialized agreements
  - Checklist of essential and desirable features in airport mutual aid agreements
- PART 2: ACRP Report 73, “Airport-to-Airport Mutual Aid Programs”
  - Formal and informal mutual aid agreements among airports in the event of community wide disasters
  - Benefits associated with an airport-to-airport mutual aid program (MAP)
  - Different considerations when setting up an airport-to-airport MAP
- PART 3: Question and answer session

The first 60 minutes of the webinar will be for presentations and the final 30 minutes will be reserved for audience questions.
ACRP (cont.)

- Potential Research Topics for the Fiscal Year 2015 Airport Cooperative Research Program Due by March 19, 2014
- A research problem statement outline is required
- Guidance for writing problem statements available on the TRB website.
- Research problem statement submittals should follow the outline and may be submitted by anyone at any time prior to the deadline FY 2014 program is March 19, 2014.
- Problem statements may be submitted by e-mail to acrp@nas.edu the Microsoft Word format is preferred.
- The ACRP Oversight Committee (AOC) will select the research problem statements for the FY 2015 in July 2014. For problems selected requests for proposals will be issued, and contractors will be selected through a competitive process.
QUESTIONS!
CONTACT INFORMATION

Marc Tonnacliff
Federal Aviation Administration
800 Independence Ave. S.W.
Airport Safety and Standards,
AAS-300, Room 618
Washington, D.C. 20591
(202) 267-8732
marc.tonnacliff@faa.gov

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