Advanced Airport Firefighting and Rescue Operations Training Course



16 - 20 Nov 2026

Lisbon

4500 € (Per Person)

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Course Introduction / Overview:

The aviation industry operates within a uniquely high-risk environment where the potential for catastrophic incidents necessitates a specialized and highly proficient emergency response. This course provides a comprehensive, in-depth exploration of the principles and practices of Airport Rescue and Firefighting (ARFF). It is meticulously designed to equip professionals with the advanced skills required to manage complex aircraft incidents, from initial response to final resolution. Grounded in internationally recognized standards, such as those detailed in the "NFPA 403: Standard for Aircraft Rescue and Fire-Fighting Services at Airports", the curriculum moves beyond basic fire suppression to cover critical aspects of aviation fire safety, incident command, and passenger rescue. As emphasized by fire service expert Robert Burke, effective incident management hinges on preparation and a deep understanding of the unique challenges involved. Participants at BIG BEN Training Center will engage in a curriculum that integrates theoretical knowledge with practical application, focusing on aircraft construction, hazardous materials at airports, advanced foam application techniques, and strategic fuselage entry. This program is essential for developing the critical thinking and decisive action needed to protect lives and assets in the dynamic and demanding airport environment.

Target Audience / This training course is suitable for:

- Airport Firefighters.
- ARFF Crew Commanders and Officers.
- Airport Emergency Planners.
- Aviation Safety Managers.
- Airport Operations Supervisors.
- Incident Commanders.
- Civil Aviation Authority Officials.
- Emergency Medical Technicians assigned to airports.

Target Sectors and Industries:

- Aviation and Aerospace.
- Transportation and Logistics.
- Public Safety and Emergency Services.
- Defense and Military Aviation.
- Governmental and Regulatory Bodies.
- Airport Management and Operations.

Target Organizations Departments:

- Fire and Rescue Services.
- Emergency Management and Response.
- Airport Operations and Airside Management.
- Health, Safety, and Environment (HSE).
- Security and Compliance.
- Corporate Safety and Risk Management.

Course Offerings:

By the end of this course, the participants will have able to:

- Apply international ARFF standards from ICAO and NFPA to airport operations.
- Analyze aircraft types and construction to predict fire behavior and structural weaknesses.
- Execute advanced fire suppression tactics for large-scale aviation fuel fires.
- Master various foam application techniques for different incident scenarios.
- Conduct effective size-up and risk assessments for aircraft incidents.
- Implement safe and efficient fuselage entry and victim extrication procedures.
- Manage passenger evacuation and triage in a mass casualty incident.
- Establish and operate within an Incident Command System (ICS) for airport emergencies.
- Identify and mitigate hazards associated with dangerous goods on aircraft.
- Develop and critique airport emergency plans for enhanced preparedness.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to foster a deep, practical understanding of airport rescue and firefighting operations through an immersive and interactive learning environment. We believe that adult learning is most effective when it combines expert knowledge with hands-on application. Therefore, this course utilizes a blended approach, starting with instructor-led presentations that break down complex theories and international standards into understandable concepts. These sessions are enriched with detailed case studies of real-world aircraft incidents, allowing participants to analyze successes and failures in a controlled setting. A significant portion of the course is dedicated to interactive workshops and group discussions, where participants can share experiences and collaborate on solving complex emergency scenarios. Simulation exercises will challenge participants to apply their knowledge in realistic situations, honing their decision-making skills under pressure. Throughout the program, continuous feedback is provided by our experienced instructors to ensure that each participant masters the required competencies and can confidently apply these life-saving skills in their professional roles.

Course Agenda (Course Units):

Unit One: Foundations of Airport Rescue and Firefighting (ARFF)

- Introduction to ARFF and International Standards (ICAO & NFPA).
- Roles and Responsibilities of ARFF Personnel.
- Airport Familiarization and Grid Map Systems.
- Aircraft Types, Anatomy, and Construction Materials.
- Aviation Terminology and Communication Protocols.
- Principles of Fire Behavior in an Aviation Context.
- ARFF Apparatus and Personal Protective Equipment (PPE).

Unit Two: Aircraft Fire Suppression Agents and Techniques

- Properties and Application of Aqueous Film-Forming Foam (AFFF).
- Techniques for Controlling Pressurized Fuel and Engine Fires.
- Dry Chemical and Clean Agent Fire Suppression Systems.
- Advanced Foam Application and Management Strategies.
- Fire Ground Hydraulics for ARFF Operations.
- Managing Fires in Composite Material Aircraft.
- Interior Aircraft Firefighting Tactics.

Unit Three: Aircraft Rescue and Extrication Strategies

- Principles of Aircraft Rescue and Size-Up.
- Forcible Entry Techniques for Various Aircraft Fuselages.
- Patient Triage and Mass Casualty Incident Management.
- Tools and Equipment for Aircraft Extrication.
- Passenger Evacuation Management and Slide Utilization.
- Challenges of Rescue in Low-Visibility and Adverse Conditions.
- Emergency Medical Services Integration in ARFF Operations.

Unit Four: Incident Management and Special Hazards

- Implementing the Incident Command System (ICS) at Airport Incidents.
- Multi-Agency Coordination and Communication.
- Hazardous Materials and Dangerous Goods Recognition at Airports.
- Response to Non-Aircraft Fires (Terminal, Hangar, and Fuel Farm).
- ARFF Vehicle Positioning and Strategic Placement.
- Post-Incident Procedures and Scene Preservation.
- Human Factors and Decision-Making Under Stress.

Unit Five: Advanced Scenarios and Emergency Preparedness

- Live Fire Drill Simulations and Scenarios.
- Complex Multi-Casualty Aircraft Incident Drills.
- Developing and Evaluating Airport Emergency Plans (AEP).
- Water Rescue Operations near Airports.
- Response to Incidents Involving Unmanned Aerial Vehicles (UAVs).
- Leadership and Crew Resource Management in ARFF.
- Course Review, Assessment, and Future Trends in ARFF.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

Considering the rapid evolution of aircraft materials and alternative fuels, how must traditional ARFF tactics adapt to address future fire and rescue challenges?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by offering a holistic and forward-thinking curriculum that transcends conventional firefighting training. While many programs focus solely on the mechanics of fire suppression, this course integrates a deep strategic understanding of the entire airport emergency ecosystem. We emphasize the critical thinking and decision-making processes required to manage complex, high-stakes incidents, grounded in a thorough analysis of international standards from ICAO and NFPA. The curriculum is uniquely structured to address not only current challenges but also emerging threats, such as fires involving advanced composite materials and the complexities of managing incidents with new-generation aircraft. Rather than just teaching procedures, we cultivate leadership and adaptability through realistic scenario-based learning and in-depth case study analysis. Participants will leave not just with technical skills, but with an enhanced command presence and the ability to lead a multi-agency response effectively. The focus on human factors, crew resource management, and strategic incident command provides a level of professional development that is essential for modern ARFF leaders and responders.