UGANDA

ADVISORY CIRCULAR

CAA-AC- AGA602
October 2022

AERODROME RESCUE AND FIREFIGHTING SERVICES (ARFFS) PERSONNEL REQUIREMENTS, QUALIFICATIONS AND TRAINING

1. PURPOSE

This Advisory Circular (AC) provides guidance and information for compliance with requirements for Aircraft Rescue and Firefighting Services (ARFFS).

2. APPLICATION

The material contained in this AC is applicable for use on all categories of civil aerodromes except where otherwise specified. The guidance contained in this AC is recommended to be used for Aircraft Rescue and Firefighting Services.

3. REFERENCES

3.1 Civil Aviation (Aerodromes) Regulations
3.2 ICAO Airport Services Manual Doc 9137:
- Part 7: Airport Emergency Planning
- Part 1: Rescue and Fire Fighting
- Part 5: Removal of Disabled Aircraft

3.3 Human Factors Training Manual. ICAO Doc 9683
3.4 ICAO Doc 9284 Technical Instruction for safe Carriage of Dangerous Goods by Air
3.5 ICAO Doc 7192 Training Manual Part E-2 Aerodrome Fire Services Personnel
3.6 ICAO Annex 19 Safety Management System
3.7 ICAO Doc 9774 Manual on Certification of Aerodromes

4. REQUIREMENTS FOR CERTIFICATED AERODROMES

4.1 The Civil Aviation (Aerodromes) Regulations, require that:

"*all rescue and firefighting personnel shall be properly trained, including training in human performance and team coordination and shall participate in live fire drills commensurate with the type of aircraft and firefighting equipment in use at the aerodrome, including pressure-fed fuel fires"*

The recommendations in this AC comprise a method for meeting this provision. The minimum requirements for a training program are listed below. These recommendations are not intended as proficiency standards for airport fire fighters, but are provided to assist the airport operators in establishing an adequate training program. However, proficiency is the key to a successful ARFF training program. The number of hours of training will vary from individual to individual. We recommend that, as a minimum, no less than 40 hours of annual recurrent training be accomplished for each ARFF personnel.

4.1.1 Entry training standards

A recruitment and retention policy should ensure that all rescue and fire personnel go through a detailed and comprehensive assessment process to ensure that the right candidate is selected for the position.

If rescue and fire personnel are recruited with no previous ARFF experience, they should undertake an initial fire fighters' course and be deemed competent on acquisition of skills. Competency assessments in both practical and technical aspects should be conducted within this course.

4.1.2 Continued ARFFS personnel development

An environment conducive to learning and development should be provided, enabling personnel to have the opportunity to fulfil their potential.

All personnel in the ARFFS, regardless of ARFF experience on or off aerodromes should participate in an ongoing structured learning program (SLP). Competency assessments in both practical and technical aspects should be conducted within this program.

All ARFFS watches, shifts or crews should participate in comprehensive recurrent training appropriate to their roles and tasks to maintain skills necessary to ensure all ARFFS operations are carried out safely and effectively. This training should include:

a. realistic fire drills commensurate with the types of aircraft in use at the aerodrome

b. live fires associated with fuel discharge under very high pressure (pressure fed-fuel)

c. drills to maintain operational performance with fire service equipment

d. training to include human performance and team coordination

e. breathing apparatus training in heat and or smoke.

4.1.3 Training Curriculum

The training curriculum must include initial and recurrent instruction in at least the areas listed in (1) through (11) below.

Initial training is defined as that training provided to a new employee to enable him/her to identify and interpret advanced theories, facts, concepts, principles, requirements, procedures, equipment, and components of ARFFS as applied to the aircraft serving the airport and to demonstrate all required tasks safely and accurately and in accordance with established procedures while functioning independently.

Recurrent training is defined as that training provided to an employee as often as necessary but not less than 12 consecutive calendar months to enable him/her to maintain a satisfactory level of proficiency. Appropriate frequencies for recurrent training will vary widely from airport to airport and from one employee to another. Training in several areas will require coordination with airlines and other organizations on the local airport.

4.1.3.1 Airport familiarization

The program shall train personnel such that they are able to do the following:

(a) Describe the runway and taxiway identification system;

(b) Describe the airfield lighting color code/marking system;

(c) Describe the airfield pavement marking and signing system;

(d) Identify the various on-field aircraft navigation aids;

(e) Cite airport rules and regulations concerning vehicle movement and access;

(f) Cite rules and regulations governing airport security;

(g) Locate a given point on a grid map or other standard map used at the airport;

(h) Identify terrain features using map symbols;

(i) Identify installations and features in the critical response areas that present a hazard to vehicle response;

(j) Identify installations and terrain features in the critical response areas that limit vehicle response capability;
(k) Identify the probable direction of travel of fuel in a simulated leak in the fuel distribution system;
(l) Demonstrate the operation of fuel system valves and pumps to control the flow of fuel within the system; and
(m) Identify hazardous materials that are frequently stored or used on the airport property.
(n) Identify alternative routes to any point on the movement area when normal routes are blocked;
(o) Operate foam tenders over all types of terrain during all kinds of weather

4.1.3.2 Aircraft familiarization

For scheduled flight operations, the program should train personnel such that they are able to do the following:

(a) Identify the types of aircraft operating at the airport;
(b) Identify the categories of aircraft propulsion systems;
(c) Locate normal entry doors, emergency exit openings, and evacuation slides for a given aircraft;
(d) Demonstrate the opening of all doors and compartments for a given aircraft;
(e) Identify aircrew and passenger capacities and locations for a given aircraft;
(f) Indicate the type of fuel used, location of fuel tanks, and capacity of fuel tanks for a given aircraft;
(g) Identify and locate components of the fuel, oxygen, hydraulic, electrical, fire protection, anti-icing, APU, brake, wheel, and egress systems for a given aircraft; and
(h) Identify and locate the flight data recorder and cockpit voice recorder.
(i) Location of batteries and isolation switches
(j) Position of break-in points of an aircraft

4.1.3.3 Rescue and firefighting personnel safety

The program shall train personnel such that they are able to do the following:

(a) Identify the hazards associated with aircraft firefighting/rescue;
(b) Identify the hazards to personnel associated with aircraft and aircraft systems;
(c) Identify the potential stress effects on emergency services personnel involved in a mass casualty situation;
(d) Identify the purpose and limitations of approved protective clothing used locally;
(e) Demonstrate donning protective approved clothing within 1 minute;
(f) Identify the purpose of self-contained breathing apparatus. Identify the components and operation of self-contained breathing apparatus.;
(g) Identify the limitations of self-contained breathing apparatus.;
(h) Demonstrate the donning within 1 minute and use of an approved self-contained breathing apparatus.;
(i) Demonstrate changing the air supply cylinder of a team member with an exhausted air supply cylinder;
(j) While wearing a self-contained breathing apparatus, demonstrate the actions to be taken when the following emergency situations occur: low air alarm activates, air supply is exhausted, regulator malfunctions, face piece is damaged, low pressure hose is damaged, and high-pressure hose is damaged;
(k) Identify techniques for protection from communicable disease hazards.

4.1.3.4 Emergency communications systems on the airport, including fire alarms

The program shall train personnel such that they are able to do the following:

(a) Identify the procedures for receiving an emergency alarm;
(b) Identify radio frequencies and channels used by his/her organization and mutual aid organizations;
(c) Identify procedures concerning multiple alarms and mutual aid;
(d) Demonstrate knowledge of the phonetic alphabet;
(e) Demonstrate the use of all communication equipment used by his/her organization;
(f) Cite the procedure for obtaining clearance from control tower or other responsible authority for apparatus movement;
(g) Give an initial status report for a simulated aircraft accident;
(h) Demonstrate the use of standard aircraft fire rescue hand signals; and

(i) Identify standard hand signals to be used to communicate with aircrew personnel.

4.1.3.5 Use of fire hoses, nozzles, turrets, and other appliances

The program shall train personnel such that they are able to do the following:

(a) Identify the purpose of each tool and item of equipment used locally;

(b) Identify the location of each tool and item of equipment used locally;

(c) Identify the hazards associated with each tool and item of equipment used locally;

(d) Identify the proper procedures for use and maintenance of each tool and item of equipment used locally;

(e) Identify the purpose of each hose, nozzle, and adapter used locally;

(g) Identify the size and amount of each hose carried on each local vehicle;

(h) Identify the proper procedures for use and maintenance of each hose, nozzle, and adapter used locally;

(i) Identify the proper procedure to be used when advancing hose for fire attack;

(j) Identify the proper procedure to be used when laying hose to establish a replenishment of water;

(k) 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;

(l) Demonstrate the proper methods of operation of all hand lines and vehicle-mounted discharge devices;

(m) Identify the procedures for maintenance of each mentioned equipment and

(n) Identify the procedures for replenishment, using a hydrant, structural vehicles, tank trucks and other vehicles, for each vehicle used locally.

4.1.3.6 Applications of Fire extinguishing agents

The program shall train personnel such that they are able to:

(a) identify the extinguishing properties of each agent, including advantages and disadvantages;

(b) identify which agents used by the local organization are compatible and which are not;

(c) identify the locations and quantities of each agent that is kept in inventory for vehicle replenishment;
(d) identify the quantity of each type of agent that is carried on each vehicle used at the local airport;
(e) identify the preferred agent to be used in suppression and extinguishment for various fire scenarios;
(f) demonstrate agent application techniques;
(g) identify each type of portable fire extinguisher by classification and rating;
(h) identify the limitations and operating characteristics of each type of portable fire extinguisher;
(i) Identify the location of each portable fire extinguisher provided on local vehicles; and
(j) Identify the general location of portable fire extinguishers provided on aircraft.

4.1.3.7 Emergency aircraft evacuation assistance

For scheduled flight operations, the program shall train personnel such that they are able to do the following:

(a) identify the priorities of openings to be used to gain entry to aircraft;
(b) identify which opening should be used to gain entry for a given aircraft and situation;
(c) select the necessary tools and equipment to gain entry for a given aircraft and situation;
(d) while wearing full protective clothing, demonstrate, from inside and outside the aircraft, opening normal entry doors and emergency exit points for a given aircraft;
(e) identify potential locations for cut-in entry, using reference materials, aircraft markings, or general guidelines for a given aircraft;
(f) identify the hazards associated with cut-in entry;
(g) identify procedures followed during an emergency situation by crews of scheduled aircraft operating at the local airport; and
(b) identify the procedures to be used to protect evacuation points.

4.1.3.8 Firefighting operations

The program shall train personnel such that they are able to do the following:

(a) Describe the standard operating procedure plans for various emergency scenarios;

(b) Select a strategy and tactics for incident control and termination;

(c) Identify the procedures for securing and maintaining a rescue path;

(d) Identify the proper procedure to use when protecting an aircraft fuselage from fire exposure;

(e) Identify the procedures to be used when providing protective streams for personnel;

(f) Identify procedures for controlling runoff from fire control operations and fuel spills; and

(g) Identify the procedures to be used to stabilize aircraft wreckage.

4.1.3.9 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 shall train personnel such that they are able to identify the procedures used to adapt the equipment for aircraft rescue and firefighting based on manufacturer specifications.

4.1.3.10 Aircraft cargo hazards

The program shall train personnel such that they are able to do the following:

a. identify the hazards indicated by each International Civil Aviation Organization (ICAO) label;
b. identify the limitation of the ICAO classifications and labeling system;
c. use Emergency Response Guidebook to obtain information on hazardous materials for a given situation;
d. using the information obtained from the Emergency Response Guidebook to identify the appropriate response, including risk assessment and rescue or evacuation requirements, to a given situation involving hazardous materials.

4.1.3.11 Familiarization with firefighters' duties under the airport emergency plan

The program shall train personnel such that they are able to do the following:

a. Identify airport pre-fire plans;
b. Identify the various types of aircraft-related emergencies;
c. Identify and understand the incident command system to be utilized in an emergency;

d. Identify the procedures to be used to size-up a given aircraft accident; and
e. Identify the other duties of his/her organization under the airport emergency plan.

4.2 Additional training

a. If the airport emergency plan calls for fire fighters to respond to special situations, such as water or treetop rescue, aircraft internal fires training specific to such situations should be provided.
b. If a Surface Movement Guidance and Control System (SMGCS) plan is in place at the airport, training specific to operations in low visibility should be provided.
c. Fire fighters should also receive training in recognition of aircraft ballistic parachute systems during emergency operations.
d. Management of incident command system involving mass casualties

4.2.1. Live-Fire Drills

All rescue and firefighting personnel must participate in at least one live-fire drill every 12 months. This drill must include a pit fire with an aircraft mock-up or similar device smoke simulator for this case, using enough fuel to provide a fire intensity that simulates realistic firefighting conditions. The conditions would simulate the type of fire that could be encountered on a scheduled aircraft at the airport. It is intended that the drill provide an opportunity for the firefighting team to become familiar with the use of all fire extinguishment equipment they will use in the event of an accident. If possible, a simulated rescue of aircraft occupants will help in creating a realistic simulation. During the drill, each fire fighter must demonstrate the following:

(a) the control and extinguishment of a simulated aircraft fire using hand lines and turrets, given an airport-type foam firefighting vehicle. The decision to train on hand lines or turret should be based on whether the trainee is assigned a hand lines or whether the trainee is a driver/operator who would normally operate the turrets. Many training programs may have all the participants working the hand lines, 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 hand lines firefighter to use training on the turrets to meet the annual requirement;

(b) the control and extinguishment of a simulated aircraft fire using hand lines and turrets, given each type, other than foam-type, firefighting vehicle [see (a) above for guidance on acceptability of hand lines and turret operation]; and

(c) using fire streams to protect fire fighters and aircraft occupants, given an airport firefighting vehicle.

4.2.2 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 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) Bleeding;
(2) Cardiopulmonary resuscitation;
(3) Shock;
(4) Primary patient survey;
(5) Injuries to the skull, spine, chest, and extremities;
(6) Internal injuries;
(7) Moving patients;
(8) Burns; and
(9) Triage.

4.2.3. Hands-On Training

It is highly recommended that fire fighters receive hands-on training on the aircraft that regularly serve their airport. Such a feat 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, it is recommended that ARFF crews be given access to aircraft schematics and to computer-based training that are available in the commercial market.

5. FIRE FIGHTER CERTIFICATION

In future Aircraft Rescue and Fire Fighting Certification Program will be developed to recognize ARFF personnel who have demonstrated more than normal devotion to their profession by exceeding regular job requirements and to standardize ARFF training. The levels for the ARFF Certification Program will be as follows:

1. The Basic Level—designed to recognize personnel who have recently entered the ARFF profession.
2. The Senior Level—designed to recognize more experienced ARFF personnel.
3. The Master Level—designed to recognize personnel involved in management and training of ARFFS personnel

6. HUMAN PERFORMANCE AND TEAM COORDINATION

1. Leadership
    - Definition of leadership
    - Differences between leadership and authority
    - A skilled leader
2. Personality and attitudes
    - Personality traits and attitudes
    - Characteristics of attitudes
    - Desirable and undesirable personality characteristics
    - Differences between personality and attitudes
3. Communication
    - Effective communication
    - Hazards which reduce quality of communication
4. Co-ordination
    - Advantages of teamwork
    - Variables that determine co-ordination
    - Risks associated with breakdown in communication
5. Human Performance Limitations
    - Information processing

- Perception
- Stress and workload
- Situation awareness
- Work environmental factors

7 PERSONNEL MEDICAL FITNESS

Personnel selected for rescue and firefighting duties should be free from any physical or mental condition or disability which might limit their performance or which might be aggravated by a sudden level of exertion.

The medical fitness of prospective rescue and firefighting personnel should be determined by a medical examination and assessment conducted by a registered medical practitioner to the following standards:

(a) **Vision -** applicants should have:
   (i) a distance visual acuity (without correction) of 6/12 in each eye separately. No standard is set for near visual acuity
   (ii) normal fields of vision.

(b) **Colour perception -** applicants should have normal colour perception as tested by pseudo-isochromatic plates. If this is failed by more than 2 errors with a 24 plate set, they should demonstrate an ability readily to identify coloured lights of signal red, signal green and white as tested by the normally accepted lantern tests.

(c) **Hearing -** applicants should understand an average conversational voice in a quiet room, using both ears, at a distance of 2.5 m (8 feet) from the examiner, and with the back turned to the examiner. In cases of doubt, and on-the-job hearing assessment should be used to determine whether there is adequate ability to understand radioed instructions and verbal instructions under the conditions of background noise to be encountered in and around operating firefighting appliances.

(d) **Medical fitness -** applicants should be free from any congenital or acquired disability

and the effects of medication or of drugs causing such degree of functional incapacity as is likely to interfere with the efficient performance of their duties during the period before the next medical review.

(e) Applicants should be free from any risk factor, disease, or disability which renders them likely to become suddenly unable to perform their assigned duties safely during the period before the next medical review.

(f) There should be no history or current diagnosis of the following:

(i) psychosis, depression or other psychiatric illness
(ii) alcohol or drug dependency
(iii) epilepsy
(iv) any disturbance of consciousness without an explanation
(v) coronary artery disease (whether successfully treated or not)
(vi) other cardiac conditions treated by surgical means (for example, valve replacement or insertion of a pacemaker)
(vii) any active disease (or functional disability) of the lungs
(viii) diabetes mellitus controlled by insulin.

In determining the complete fitness of a person, consideration should be given to the arduous nature of rescue and firefighting duties. Particular care should be taken if personnel are selected to wear respiratory equipment, where psychological factors are significant, in addition to physical suitability. The nature of testing, and procedures for assessing, the suitability of prospective rescue and firefighting personnel should be established and included in the aerodrome certification exposition.

10.1 Continued medical fitness for personnel

Medical fitness assessments specific to ARFFS should be developed. The medical fitness assessments should be conducted for pre-employment entry as rescue and firefighting personnel as well as ongoing medical fitness assessments for existing staff. The frequency of medical fitness assessments should be determined by local arrangement. The medical fitness framework

assessments should be used to identify any underlying medical conditions, which may pose risk to the individual rescue and firefighting personnel, during physically demanding activities.

The assessment should include a medical certificate:

(i) From a registered medical practitioner

(ii) With the periodicity of the checks set by the medical practitioner based on the rescue and firefighting personnel history, and results of examinations

(iii) With a maximum check periodicity of two (2) years for personnel below 40 years and yearly for those above 40 years old.

10.2 Continued physical fitness for personnel

The physical fitness assessments should be conducted for pre-employment entry as rescue and firefighting personnel as well as ongoing physical fitness assessments for existing staff to ensure that rescue and firefighting personnel are maintaining their level of physical fitness.

ARFFS should develop various types of tests to ensure that the aerobic endurance fitness, an aerobic fitness and flexibility is tested to determine if the rescue and firefighting personnel has the required physical fitness level for the job. The physical fitness assessment should also be conducted at least once a year.

Aerobic endurance fitness is the ability to continue to exercise for prolonged periods of time at low to moderate or high intensity. This is typically what limits the ability to continue to run, cycle or swim for more than a few minutes and is dependent upon the body ‘s heart, lungs and blood to get the oxygen to the muscles (VO2) providing the sustained energy needed to maintain prolonged exercise. Typical aerobic activities include walking, jogging, cycling, rope skipping, stair climbing, swimming, and or any other various endurance activities.

Anaerobic fitness works differently to aerobic fitness. It is an activity that requires high levels of energy and is done for only a few seconds or minutes at a high level of intensity. The term anaerobic means - without oxygen. Participation in anaerobic activities leads to anaerobic

fitness, which may be defined as higher levels of muscular strength, speed and power. Examples of anaerobic activities include heavy weight lifting, running up several flights of stairs, sprinting, power swimming, or any other rapid burst of hard exercises. Muscular strength is the ability to lift, pull, push and carry heavy objects over.

Flexibility refers to the ability to move the limbs and joints into specific positions at the end of their normal range of movement. Flexibility is important as it will allow the body to work in cramped positions without unduly stressing the muscles, tendons and ligaments and may reduce the risk of injury. Flexibility is best developed using slow controlled stretching exercises.

Director Safety, Security and Economic Regulation

Appendix I

TEMPLATE FOR RESCURE AND FIRE FIGHTING TRAINING PROGRAM

1. **FIRE FIGHTER TRAINING**

2. **COMPETENCE OF ARFFS TRAINERS**

3. **REVIEW RFFS TRAINING PROGRAM**

   Every year the aerodrome operators RFFS trainers review the training material that is submitted to Authority for approval and renewal of the certificate. The instructors meet at the end of the year and work on the material which is then sent for approval.

4. **ARFFS TRAINING SCHEDULE**
   The ARFFS training schedule is always posted on the company web site for interested parties that need this training.

5. **ISSUING OF CERTIFICATE**
   Successful students (Fire trainees) and their names are recorded in the aerodromes certified ARFFS register. This is through the training report submitted to the human resources department at the end of each training.

6. **EXPIRED ARFFS CERTIFICATE**
   Refresher training is organized for staff whose certificate has either expired or has lasted for a period of 24 calendar months. This is done every two years.

7. **SCHEDULE OF ARFFS COURSES OFFERED**
   The syllabi are prepared by ARFF specialists and reviewed by a group of senior instructors from the Training Academy. The comments and recommendations of these instructors are reflected in the syllabus of the first edition of each Technical Guidance.

8. **COURSE ELIGIBILITY:**
   A trainee must meet the following prerequisites before being considered as a suitable for a career as a firefighter;
   a. Trainees must have a good command of his national language (reading, writing, and speaking).

b. Trainee should be capable of reading, writing and speaking the language used by the instructional staff or the Fire Service Training School (where applicable).
c. Trainee's educational background should be of a suitable standard that this intellectual capability will enable him to comprehend the instructional lessons during the course.
d. The trainee shall be medically and physically examined prior to the course by recognized medical physician to ensure he will be suitable for the arduous physical tasks proposed for the course.
e. The trainee shall be able to speak, see, hear and execute the physical duties of a firefighter with clarity but without assistance or aids.
f. Trainees shall have successfully completed the established selection process by interview; completely aware of his personal entitlements and compiled all necessary application forms.
g. Trainees shall have been issued with all necessary personal items of clothing or uniform

9. **COURSE LENGTH:**

The course is predominantly a practical experience of the trainee. Apart from the hours where the trainee will be engaged in physical education and the maintenance of equipment and fire vehicles, the course includes:

Practical
Theory/ Class Activity

Number of students:
Minimum 12
Maximum 15

Curriculum:

The lessons developed for this course are intended as guides only and are designed for an average classroom period of 50 minutes to one hour. Each instructor is expected to develop his own individual lesson plans based upon the subject material contained in each lesson guide. An example of a lesson guide developed into a lesson plan is included. There is also guidance on how to set up a practical aircraft firefighting exercise Local procedures must be included where applicable.

10. GRADING:

The number appearing in the column entitled "grading" is an indicator of the required level of knowledge. As a general indication, it may be taken that the required level of grading indicates an increasing level of proficiency from 1 to 5.

1. Denotes an understanding of a principle
2. Denotes a basic knowledge of a subject
3. Denotes knowledge of the subject and the ability, where applicable, to apply it practically.
4. Denotes a thorough knowledge of the subject and the ability to apply it with speed and accuracy.
5. Denotes extensive knowledge of the subject and the ability to apply procedures derived from it with judgment in the light of the circumstances.

11. COURSES

11.1 BASIC AIRPORT FIREFIGHTER

Course objectives

To provide the trainee with knowledge and fundamentals of rescue and firefighting for both aviation and structural fires.

Module 1: Airport Topography and Building Fire-fighting Principles

- Role of Airport Rescue & Fire-fighter
- Airport Rescue & Fire-fighter Safety
- Legislation
- Basic Fire Science
- Basic Map Skills
- Airport Familiarization
- Basic Water supply
- Building Fire Behavior
- Building Fire-fighting Strategy
- Building fire-fighting and rescue
- Fuel Farm Fires
- Liquefied petroleum gas fires
- Means of Escape
- Handling and operation of fire extinguishers
- Fire Prevention and Protection

- Extinguishing Agents and their uses.
- Practical Firemanship
- Personal Protective Equipment (PPEs)
- Firefighting hose
- Knots and lines

Module 2:

- Aircraft Familiarization
- Fire in aircraft hangars
- Application of Foam at Aircraft Fires.
- Aircraft fire-fighting strategy and techniques
- Aircraft fire extinguishing systems
- Aircraft Cabin Evacuation Systems
- Aircraft fuel systems
- Engine fire fighting
- Aircraft Undercarriage fire
- Aircraft Internal Fires
- Introduction to HAZMAT
- Aircraft Construction.
- Military Aircraft
- Helicopter Fire-fighting & Rescue
- Breathing Apparatus training
- Cockpit Voice Recorder and Flight Dater Recorder
- Fire ground Hydraulics
- Pumps and primers
- Rescue Tools and Fire-fighting equipment
- Types of ladders and safe handling

Module 3:

- Visits to facilities of technical interest
- Fire Service Standard Drills
- Individual Physical Proficiency Test (IPPT)
- Physical exercises

- Fire Fighting Exercises

11.2 ADVANCED AIRPORT FIRE FIGHTER

11.3 WATCH ROOM PROCEDURE

Module 1: Watch room & Airport Emergency Communication Management

- Watch room Attendant Roles and Standard Operation Procedures (SOP)
- Radiotelephony procedures
- Standard Operational Messages
- Watch room Procedure and Facilities
- Air Traffic Control Procedures
- Meaning and Essentials of Communication
- Basic Map Skills
- Human Factors in Watch Room Operations
- The role of a Fire-fighter
- Airport Layouts, Markings and Runway Incursion
- Emergency for Which Services May Be Required
- How to plan and Write an Effective Report
- Glossary of Terms used in Aircraft Incidents Reports

Module 2: Practical training

- Practicing OB Incident data entry
- Practice using bomb threat checklist
- Practicing Sending and Receiving Messages
- Communication using four & six figure grid reference
- Communication films, videos
- Visit to Facilities of technical interest

11.4 FIRST RESPONDER

Modules

- Introduction to EMS Systems
- Well-Being of the First Responder
- Legal and Ethical Issues
- The Human Body

- Lifting and Moving Patients
- Airways
- Medical Emergencies
- Bleeding and Soft Tissue Injuries
- Injuries to Muscles and Bones
- Child birth
- Infant and children
- Medical Emergencies
- Bleeding and Soft Tissue Injuries
- Injuries to Muscles and Bones

11.5 AIRPORT FIRE OFFICER

Module 1:

- Leadership in the fire service
- Human factors
- Principles of Supervision
- Basics of budgeting
- Estimates of expenditure
- Airport emergency planning
- Exercise Planning
- Design and location of airport fire stations
- Station Training
- Interest in Fire Investigation
- Post – Crash Incident Report.
- Airport Categorization/ Level of Protection
- Heliports - Level of Protection
- Principles of instruction and Instructional techniques
- Class Control

Module 2: Fire Safety and Fire Service operations

- Managing Safety at Work Place

- Fire Case Studies
- Aircraft Refueling and Ramp Safety
- BA Tally Control Board and BAECO
- Aircraft Rescue & Fire-fighter Tactical Operations
- Management & Planning of Operational Training
- Evidence preservation
- Aircraft Accident Investigation
- Cargo Aircraft Fire Fighting

Module 3: Procedure and practice

- On-scene command and control at aircraft crash site
- Tactical table exercises
- Post-exercise debriefs
- Analysis and evaluation of recent aircraft accidents
- Methods of Instructional Techniques (Practical)
- Physical Education Exercise
- Report Writing - Practical Exercise

11.6 FIRE GROUND LEADERSHIP

Modules

- Command and Responsibilities at the Fire ground
- On-site Command, Coordination and Communications Exercise

11.7 BREATHING APPARATUS WEARER

Outline

Physiology of SCBA

- Respiratory and circulatory cycles
- Atmospheric hazards

Components of SCBA

- Back pack assembly
- High pressure metal cylinder assembly
- Pressure reducing valve assembly
- Face piece assembly

Types of SCBA

- Open circuit positive pressure breathing apparatus
- Closed circuit breathing apparatus

Basic Troubleshooting and Maintenance

- Charging of cylinders
- Basic fault findings
- Maintenance of face mask

SCBA Entry Control Board

- SCBA tally and entry control board
- Entry control points
- Entry control procedures: Stages one and two

Safety Procedures during SCBA Operations

- SCBA Donning and Operating Procedures
- Distress Signal Unit (DSU)
- Methods of Searching
- Use of SCBA in various scenarios
- Building fire behavior
- BA Endurance Training