

TANZANIA CIVIL AVIATION AUTHORITY



AERODROME EMERGENCY PLAN MANUAL

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FOREWORD

Part X (a) of the Civil Aviation (Aerodromes Designs and Operations) Regulation, 2024 requires an aerodrome operator to establish an aerodrome emergency plan at the aerodrome commensurate with the most demanding aircraft operations and other activities conducted at the aerodrome. The aerodrome emergency plan shall provide for the coordination of the actions to be taken in the event of an emergency occurring at the aerodrome or in its vicinity.

This Manual provides guidelines for the establishment aerodrome emergency plan at aerodromes in the United Republic of Tanzania.

Amendment to this Manual is the responsibility of the Director General Civil Aviation and readers should forward advice on errors, inconsistencies or suggestions for improvement to the Director General Civil Aviation at the following address:

Director General
Tanzania Civil Aviation Authority
P.O. Box 2819
DAR ES SALAAM
Tel: (255) 22 2198100
Fax: (255) 22 2844304
Email: tcaa@tcaa.go.tz



Tanzania Civil Aviation Authority

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DEFINITIONS AND TERMS

When the following terms are used in this manual, they have the following meanings:

Aircraft accident - An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

a) a person is fatally or seriously injured as a result of:

(i) being in the aircraft, or

(ii) direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or

(iii) direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

b) the aircraft sustains damage or structural failure which:

(i) adversely affects the structural strength, performance or flight characteristics of the aircraft, and

(ii) will normally require major repair or replacement of the affected component,

except for engine failure or damage, when the damage is limited to a single engine (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or

c) the aircraft is missing or is completely inaccessible.

(For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident is classified as a fatal injury. An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located)

Aircraft incident - An occurrence, other than an accident, associated with the operation of an aircraft, which affects or could affect continued safe operation if not corrected. An incident does not result in serious injury to persons or substantial damage to aircraft;

Aircraft operator - A person, organization or enterprise engaged in or offering to engage in aircraft operations;

Airline coordinator - A representative authority delegated by an airline to represent its responsibilities during an emergency involving its aircraft or property;

Aerodromes emergency plan - Procedures for coordinating the response of Aerodromes services with other agencies in the surrounding community which could assist in responding to an emergency occurring on, or in the vicinity of, the Aerodromes;

Aerodromes emergency exercise - A test of the emergency plan and review of the results in order to improve the effectiveness of the plan;

Aerodromes flight information service - Air traffic services units which provide Aerodromes flight information service, search and rescue, alerting service to aircraft at non-controlled Aerodromes, and assistance to aircraft in emergency situations;

Aerodromes manager - The individual having managerial responsibility for the operation and safety of an Aerodromes. The manager may have administrative control over Aerodromes rescue and fire-fighting services, but normally does not exercise authority over operational rescue and fire matters;

Air side - The movement area of an aerodrome, adjacent terrain and buildings or portions thereof, access to which is controlled;

Air traffic service - A generic term meaning, variously, flight information service, alerting service, air traffic advisory service, air traffic control, area control, approach control, or aerodrome control services;

Aerodromes control tower - A facility established to provide air traffic control service for Aerodromes traffic. Alarm and dispatch centre. A facility in use in many metropolitan

areas for the rapid dispatch of emergency services. The facility is usually contacted by the general public using a simple three-digit telephone number;

Biological agent - A microorganism which causes disease in man, plants, or animals or causes the deterioration of material;

Blood volume expanders - Sterile solutions administered by intravenous injection to counteract the physiological complications of blood loss;

Care area - Location where first medical care is given to injured;

Collection area - Location where seriously injured are collected initially;

Command post (CP) - The location at the scene of an emergency where the on-scene commander is located and where command, co-ordination, control, and communications are centralized;

Crash alarm - A system by which relevant emergency services are notified simultaneously of a pending or actual emergency;

Dangerous goods - articles or substances which are capable of posing a risk to health, safety, property or the environment;

Designated passenger holding area - Location to which the apparently uninjured aircraft occupants are transported;

Emergency Operations Centre - A designated area on the Aerodromes used in supporting and coordinating operations at Aerodromes emergencies;

Exercise - Testing of the Aerodromes emergency plan and review of the results in order to improve the effectiveness of the plan;

Forensic doctor - (Medical examiner/coroner) A public officer whose principal duty is to investigate and inquire by an inquest into the cause of any death where there is reason to suppose is not due to natural causes. The data acquired deals with the relation and application of medical facts to legal questions;

Full-scale emergency exercise - Assembling and utilization of all the resources that would be available and used in a real emergency;

Grid map - A map of an area overlaid with a grid system of rectangular co-ordinates that are used to identify ground locations where no other landmarks exist;

Hazardous materials - (See Dangerous goods)

Incident - an occurrence other than an accident associated with the operation of an aircraft, which affect or may affect the safety of operation of aircraft;

In-flight emergency - An emergency which affects the occupants or operational integrity of an aircraft while in flight;

Inner perimeter - That area which is secured to allow effective command, communication and co-ordination control, and to allow for safe operations while dealing with an emergency, including the immediate ingress and egress needs of emergency response personnel and vehicles;

Investigation - A process conducted for the purpose of accident prevention, which includes gathering and analysis of information, the drawing of the conclusions, including the determination of cause(s) and, when appropriate, the making of safety recommendations;

Medical transportation area - That portion of the triage area where injured persons are staged for transportation to medical facilities under the direct supervision of a medical transportation officer;

Mobile emergency hospital - A specialized, self-contained vehicle that can provide a clinical environment in which a physician may provide definitive treatment for serious injuries at the accident scene;

Mobile quarters - Shelters which are designed to be rapidly conveyed to the accident site and quickly activated to protect casualties from exposure to the elements. Their accessories would include provisions for light and heat. Means of transportation must be considered as an integral element of these shelters;

Moulage - A reproduction of a skin lesion, tumor, wound, or other pathological state which is applied to volunteer victims to simulate realistic injuries in emergency exercises;

Movement area - That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s);

Mutual aid emergency agreements - Agreements established with appropriate agencies in the surrounding community, defining initial notification and response assignments;

On-scene commander - Person designated to take charge of the over-all emergency operation;

Outer perimeter - That area outside of the inner perimeter which is secured for immediate support operational requirements, free from unauthorized or uncontrolled interference;

Partial exercise - An exercise of one or more participants of the Aerodromes emergency plan as required to improve efficiency;

Rendezvous point - A pre-arranged reference point, i.e. road junction, cross-road or other specified place, to which personnel/vehicles responding to an emergency situation initially proceed to receive directions to staging areas and/or the accident/incident site;

Restricted articles - (See Dangerous goods)

Stabilization - Use of medical measures used to restore basic physiologic equilibrium to a patient to ensure survival and facilitate future definitive care;

Staging area - A prearranged, strategically placed area where support response personnel, vehicles and other equipment can be held in readiness for use during an emergency;

Tabletop exercise - The simplest and least expensive type of drill stage. Used to test the integration and capability of emergency response resources, it is a simple tool for planning, critiquing, and updating various responses before trying them in the field;

Tagging - Method used to identify casualties as requiring immediate care (Priority I), delayed care (Priority II) minor care (Priority III), or as deceased;

Triage - The sorting of casualties at an emergency according to the nature and severity of their injuries;

Triage area - Location where triage operations are performed;

Triage tag - A tag used in the classification of casualties according to the nature and severity of their injuries; and

REFERENCES

1. Aerodromes Services Manual ICAO Doc 9137 Part 7
2. Tanzania Civil Aviation (Aerodromes Design and Operations) Regulations as amended
3. Tanzania Civil Aviation (Handling and Transportation of Dangerous Goods) Regulations as amended
4. Tanzania Civil Aviation (Safety Management Systems) Regulations as amended.

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CHAPTER ONE: INTRODUCTION

1.1 Purpose

This Manual is issued to guide Aerodrome Operators to develop and maintain an Aerodrome Emergency Plan (AEP), in accordance with the requirements in the Civil Aviation (Aerodromes Design and Operations) Regulations.

1.2 Information and Guidance

1.2.1 An aerodrome emergency plan shall be established at an aerodrome, commensurate with the aircraft operations and other activities conducted at the aerodrome. The aerodrome emergency plan shall provide for the coordination of the actions to be taken in an emergency occurring at an aerodrome or in its vicinity. Examples of emergencies are aircraft accidents on land or water, sabotage including bomb threats, unlawful seized aircraft, dangerous goods occurrences, building fires, natural disaster and public health emergencies.

1.2.2 It is imperative that the Aerodrome operator examines each of the requirements of aerodrome emergency planning in relation to the category, location, size and complexity of operations of aerodrome. The Aerodromes emergency plan shall include a set of instructions and procedures to ensure prompt response of rescue and firefighting, medical services, removal of disabled aircraft services, law enforcement agencies, police/security, other agencies on and off the Aerodromes and other competent, trained, expert personnel and the surrounding community adequate to meet unusual conditions.

1.3 The Need for an Aerodrome Emergency Plan

1.3.1 Aerodromes emergency planning is the process of preparing the Aerodromes to cope with an emergency occurring at the Aerodromes or in its vicinity. The objective

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of the emergency planning is to minimize the effect of an emergency particularly in respect of saving lives and maintaining aerodrome operations.

1.3.2 The (insert name of aerodrome) emergency plan sets forth the instructions and procedures for co-coordinating the response of different Aerodromes agencies (or services) and those agencies within the proximity of the Aerodromes that could be of assistance in responding to the emergency.

1.3.3 The Aerodromes emergency plan will be implemented similarly whether it is an on-Aerodromes or an off-Aerodromes aircraft accident/incident. It is only in jurisdiction that changes will be noted. In an on-Aerodromes aircraft accident/incident, the Aerodromes authority will normally be in command. In an off-Aerodromes aircraft accident/incident, the agency in command will be the agency agreed upon in the mutual aid emergency agreement pre-arranged with the surrounding community. When an aircraft accident/incident occurs just outside the Aerodromes perimeter, the jurisdictional responsibility will be as agreed upon in the mutual aid emergency agreement pre-arranged with the surrounding community. This, however, shall not affect the immediate response by Aerodromes personnel or by agencies having roles in the Aerodromes emergency plan.

1.4 Responsibility

Each Aerodrome Operator shall be responsible for establishing emergency plans and procedures to deal with all unusual conditions at the Aerodromes and for coordinating the plan with surrounding community. The Aerodromes operator also shall have the responsibility for assignment of emergency personnel and equipment provided by all concerned departments and agencies, and for providing maximum aircraft/Aerodromes emergency services and mutual aid. The plan shall spell out the coordinated response or participation of all existing agencies which, in the opinion of

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the authority, could be of assistance in responding to an emergency. Examples of such agencies are:

1.4.1 On the Aerodromes.

- a) rescue and firefighting services;
- b) medical services;
- c) police and/or security services;
- d) aerodrome administration;
- e) Air Traffic Services; and
- f) aircraft operators.

1.4.2 Off the Aerodromes

- a) mutual aid police;
- b) mutual aid local fire departments;
- c) medical services;
- d) hospitals;
- e) government authorities;
- f) military;
- g) harbor patrol or coast guard; and
- h) all other participating agencies.

1.4.3 The Aerodromes operators shall ensure that all participating agencies having duties and responsibilities under the emergency plan are familiar with their assignments.

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Aerodrome operators shall also be familiar with other agencies' duties in the emergency plan.

1.4.4 It is imperative that emergency mutual aid agreements which define responsibilities and/or liabilities of each contributing party with surrounding communities are established.

1.5 Establishment of an Aerodrome Emergency Plan

The purpose of an Aerodromes emergency plan is to ensure that there is:

- a) orderly and efficient transition from normal to emergency operations;
- b) delegation of Aerodromes emergency authority;
- c) assignment of emergency responsibilities;
- d) authorization by key personnel for actions contained in the plan;
- e) co-ordination of efforts to cope with the emergency; and
- f) safe continuation of aircraft operations or return to normal operations as soon as possible.

CHAPTER TWO: AERODROME EMERGENCY PLAN DOCUMENT

2.1 Purpose and Scope

2.1.1 Purpose of the Emergency Plan

The purpose of the emergency plan is to set out in a manual form the responsibilities, and required action and roles of the various personnel/agencies involved in dealing with emergencies affecting the Aerodrome.

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2.1.2 Scope of the emergency plan

The scope of the emergency plan document shall include command, communication and co-ordination functions for executing the plan. Every emergency is like a new project. However certain similarities observed in all emergency situations make it possible to plan in advance. These similarities include COMMAND, COMMUNICATION, and COORDINATION, which form the key functions for executing the plan.

2.2 Outline of an Aerodrome Emergency Plan

This guideline is intended to ensure uniformity in the development of Aerodromes emergency plans. The Aerodromes authority is responsible for developing a plan and procedures for emergencies applicable to the Aerodromes particular characteristics and operations with the following contents:

- a) Types of emergency situation for which it is intended to deal with;
- b) The In charge of the Emergency Operations Centre and Emergency Command Post for each type of emergency and their contacts;
- c) Details, Responsibilities and role of each Agency involved in the plan and their contacts;
- d) Names and phone numbers of services or people to alert in the case of an emergency;
- e) Grid map of the aerodrome and its immediate surroundings;
- f) Triage of victims and medical services of survivors;
- g) Evacuation;
- a) Telecommunications;
- b) Exercises for the testing of the aerodrome emergency plan; and

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- c) Update of the aerodrome emergency plan.

The aerodrome operator shall perform the following:

- a) Define the responsibilities of the Aerodrome and other participating agencies;
- b) Create effective lines of communication and adequate communication facilities to identify a “cascade” call system to include persons/agencies responsible for “cascade” information. Where possible, a 24-hour coverage shall be maintained;
- c) Arrange for the availability of a fixed Emergency Operations Center and a Mobile Command Post at the Aerodromes for use during an emergency;
- d) Describe the function of air navigation services (Air traffic services or Aeronautical Information Service, Search and Rescue) relating to emergency actions;
- e) Integrate assistance from local support services such as fire departments, security, medical, civil defense and other government agencies; and
- f) Issue instructions and procedures for response to accident/incidents.

In developing the emergency plan and procedures, it is vital that arrangements be simple and easily understood by all involved in the Aerodromes emergency plan.

2.3 Type of Emergencies

The Aerodromes emergency plan shall provide for the command, communication, and coordination of the action to be taken in an emergency occurring at an aerodrome/Aerodromes or its vicinity.

The different types of emergencies that can be anticipated are: -

2.3.1 Emergencies involving aircraft:

- a) Accident - Aircraft on-Aerodromes

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- b) Accident - Aircraft off-Aerodromes
 - i) land
 - ii) water
- c) incident - aircraft in flight
 - i) severe air turbulence
 - ii) decompression
 - iii) structural failure
- d) incident - aircraft on ground
- e) incident - Sabotage including Bomb Threat
- f) incident - unlawful Seizure of aircraft (Hijack)

2.3.2 Emergencies not involving aircraft which include:

- a) Fire – Structural
- b) Sabotage including bomb threat (Terminal Building, Cargo complex, etc.)
- c) Natural disaster.
- d) Dangerous goods (hazardous materials)
- e) Medical emergencies

2.3.3 Compound emergencies.

- a) aircraft/structures
- b) aircraft/fueling facilities
- c) aircraft/aircraft

2.3.4 Public Health /Medical emergency:

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- a) Increased risks of travelers or Cargo spreading a serious communicable disease internationally through air transport of a severe outbreak of a communicable disease potentially affecting a large proportion of aerodrome staff;
- b) Epidemiological control as a result of sudden outbreak of communicable diseases
- c) Clinic Control such as collective food poisoning, and sudden serious illness or injury beyond the capability of the Aerodromes first aid or Medical Clinic. These are important factors determining the nature and scale of the emergency plan and the activation.

2.3.5 Aircraft Emergencies for which services may be required are classified as:

- a) **“Aircraft Accident”:** An Aircraft Accident, which has occurred on or in the vicinity of the Aerodromes.
- b) **Full Emergency:** An aircraft approaching the Aerodromes is or is suspected to be, in such trouble that there is danger of an accident
- c) **Local Standby:** An aircraft approaching the Aerodromes is known or is suspected to have developed some defect but the trouble is not such as would normally involve any serious difficulty in effecting a safe landing.
- d) **Aircraft Ground Incident:** When an aircraft on the ground is known to have an emergency situation other than an accident, requiring the attendance of emergency services.
- e) **Weather Standby:** This may be instituted when the weather conditions have deteriorated to such an extent as to render a landing difficult or difficult to observe e.g. a strong cross - wind.

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f) **Domestic Fire:**

The classification of domestic fire is given as any fire:

- i) On the aerodrome not included in the categories above;
- ii) Outside the aerodrome boundary (other than aircraft accidents) which is liable to constitute a danger to flying or aerodrome's property;
- iii) Which the aerodrome fire services shall attend:
 - According to an agreement with the fire local brigade:
 - In response to a call from the public or police on humanitarian grounds.

- g) **Premeditated Crash Landing:** It is recommended that if wheels up landing by medium or large aircraft become necessary at an aerodrome the landing shall be made on the paved surface of the runway.

For light aircraft, use shall be made of paved surface of the runway or unpaved strip.

2.3.6 Aircraft Emergencies Requiring Aerodromes Responses Only:

- a) Describe the emergencies the aerodrome can handle without external agencies such as "aircraft accident" or "full emergency" involving a light aircraft.
- b) Where the Aerodrome entirely relies upon external resources, the aerodrome operator shall make a statement to indicate the municipality/city or service provider and include a mutual agreement letter among the Exhibit.
- c) In a medical emergency the degree or type of illness or injury and the number of persons involved will determine the extent to which the Aerodromes emergency plan is utilized. Every day, minor first-aid requirements shall be dealt with by Aerodromes first-aid or medical clinics. Where Aerodromes first-

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aid or medical clinics are not available, outside medical attention shall be obtained. Important factors that determine the need to implement the emergency plan, and if so, the extent of its utilization, include communicable diseases, collective food poisoning, and sudden, serious illness or injury beyond the capability of the Aerodromes first-aid or medical clinic.

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CHAPTER THREE: AGENCIES INVOLVED

3.1 General

The plan shall coordinate the response of all participating agencies, which, could be of assistance in responding to an emergency.

Examples of emergencies and corresponding participating agencies:

3.1.1 On the aerodrome:

Air Traffic Services, Aeronautical Information services, rescue and firefighting services, aerodrome administration, medical and ambulance services, aircraft operators, security services, and police;

3.1.2 Off the aerodrome:

Fire departments, police, health authorities (including medical, ambulance, hospital and public health services), military, and harbor patrol or coast guard.

3.1.3 Public health services

Include planning to minimize adverse effects to the community from health-related events and deal with public health issues rather than provision of health services to individuals

The first step in a **viable emergency plan is to have the co-operation and participation of all the concerned Agencies/surrounding community.**

Agencies to be considered are:

- a) air traffic services;
- b) rescue and firefighting services (fire departments);
- c) police and/or security services;
- d) Aerodromes operators;

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- e) medical services;
- f) hospitals;
- g) aircraft operators;
- h) government authorities;
- i) communication services;
- j) Aerodromes tenants;
- k) transportation authorities (land, sea and air);
- l) Rescue Co-ordination Centre;
- m) civil defense;
- n) mutual aid agencies;
- o) military;
- p) harbor patrol or coast guard;
- q) clergy;
- r) public information office;
- s) customs;
- t) mental health agencies;
- u) public utilities;
- v) postal authorities;
- w) veterinary services;
- x) coroner;
- y) volunteer organizations; and

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z) International relief agencies (Red Cross, etc.).

3.2 Air Traffic Services

When the emergency involves an aircraft, the Aerodromes control tower (or Aerodromes flight information service) is required to contact the rescue and fire fighting service and to provide information on the type of emergency and other essential details, such as the type of aircraft, fuel on board and location of the accident, if known. Additionally, the Aerodromes emergency plan may specify that air traffic services shall initiate the calling of the local fire departments and appropriate organizations in accordance with the procedures laid down in the plan. **The initial call shall provide the grid map reference, rendezvous point and, where necessary, the Aerodromes entrances to be used.** Alternatively, this function may be assigned by the plan either in whole or in part to another organization or unit.

Care must be taken, when preplanning initial notification of the accident, to specify clearly the responsibility assignments and to avoid duplication in the calling requirements. Subsequent calls may expand the information given to include the number of aircraft occupants, any dangerous goods on board, and the name of the aircraft operator, if appropriate. If the Aerodromes must be closed because of the emergency situation at hand, air traffic services are expected to take action as necessary with respect to aircraft desiring to land or depart.

3.3 Rescue and Fire Fighting Services

The prime responsibility of Aerodromes rescue and firefighting personnel is to **save lives**. Property endangered by aircraft incidents and accidents occurring on or near the Aerodromes shall be preserved as far as practicable. To achieve this objective,

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fire shall be suppressed and any re-ignition prevented. There are aircraft accidents, however, where fire may not occur, or where the fire may be rapidly extinguished. In every case, the procedures shall provide for the most rapid evacuation possible of survivors of the accident.

Unless seriously injured casualties are stabilized rapidly, they may become fatalities. Aerodromes rescue and fire fighting personnel shall receive training to satisfy locally acceptable, emergency medical standards. They may be the only rescue personnel on the scene during the critical period immediately following an accident and possibly for an extended period of time. On-Aerodromes availability of other responding personnel with qualified medical expertise may reduce this need.

Only fire-fighting and rescue personnel wearing approved personal protective firefighting clothing and equipment shall be allowed in close proximity to an aircraft accident site. Such clothing shall be worn within a distance of approximately 100 m from any point on the aircraft or any fuel spillage. As a means to easily identify and distinguish the fire officer in command, a suitable red hard hat and highly visible red apparel such as a vest or coat shall be worn, with “CHIEF FIRE OFFICER” in reflective lettering displayed front and back.

3.4 Police and/or Security Services

In an Aerodromes emergency, it is expected that the police or security officer first to arrive at the scene will secure the site and request reinforcement, if needed. The officer's responsibilities shall continue until relieved by the designated law enforcement agency that has jurisdictional authority over the area. The plan shall include arrangements for the rapid and effective reinforcement of the security

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cordon by local police, military or other units under governmental control, wherever required. Congestion-free ingress and egress roads need to be established immediately for emergency vehicles. The security services, police force, or other appropriate local authorities are expected to ensure that only persons with specific tasks be allowed at the scene of the accident. They shall route the normal traffic away from or around the accident site.

A method to easily identify responding emergency personnel shall be implemented at security check points to ensure that they have immediate access to the accident site. "Emergency Access" identification can be pre-issued by the Aerodromes operator to emergency personnel for use during an emergency.

3.5 Aerodrome Operator

The Aerodrome operator shall be responsible for **establishing, promulgating and implementing the plan and designating the person in command of the over-all operation at the command post.** The Aerodromes operator shall **ensure that the information, such as names and telephone numbers of offices or people involved in an Aerodromes emergency, is kept up to date and distributed to all concerned.**

Co-ordination of all agencies responding to an emergency is expected to be carried out by the Aerodromes operator. The Aerodromes operator will also arrange necessary meetings of the Aerodromes emergency plan coordinating committee, composed of key personnel from participating agencies, to critique the plan after it has been tested or implemented. The Aerodromes operator shall be responsible for closing the Aerodromes, or part of it, if circumstances so require. Aircraft operations shall be resumed only when circumstances permit aircraft to operate safely without interfering with rescue activities and the Aerodromes movement area has been secured.

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3.6 Medical Services

The purpose of medical services is to provide triage, first aid and medical care in order to:

- a) save as many lives as possible by locating and stabilizing the most seriously injured, whose lives may be in danger without immediate treatment;
- b) provide comfort to the less seriously injured and to administer first aid; and
- c) transport casualties to the proper medical facility.

It is essential that provision of medical services such as triage, stabilization, first aid, medical care, and transporting of the injured to hospital(s) be carried out in the most expeditious manner possible. To this end, well organized medical resources (personnel, equipment and medical supplies) shall be available at the accident site in the shortest time possible. The medical aspects of the emergency plan shall be integrated with local community emergency plans as agreed upon in the mutual aid emergency agreement.

A medical coordinator shall be assigned to assume control of the emergency medical operations at the accident site. If Aerodromes medical services exist, the medical coordinator may be designated from the Aerodromes medical staff. In some cases, it may be necessary to appoint an interim medical coordinator, to be relieved when the designated medical coordinator arrives on site. The interim medical coordinator can be designated from the Aerodromes rescue and firefighting personnel.

Medical and ambulance services may be an integral part of the Aerodromes services, particularly whenever an ambulance service is a part of the Aerodromes rescue and fire-fighting service. Whenever medical and ambulance services are not

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available at the Aerodromes, prearrangements with local, private, public or military medical and ambulance services shall be made. The plan has to ensure the dispatch of a satisfactory assignment of personnel, equipment and medical supplies. To ensure a rapid response, the plan can include arrangements for land, sea and airborne transportation of medical services to the scene, and subsequent transportation of persons requiring immediate medical care.

Prearrangements are necessary for the availability of doctors and other medical personnel for all Aerodromes emergencies. The plan shall list a sufficient number of doctors to offset any absences at the time an emergency occurs.

3.7 Hospitals

Participating hospitals shall have contingency emergency plans to provide for mobilization if necessary of **medical teams to the accident site in the shortest possible time**. Availability of qualified personnel and adequate facilities at the hospitals to deal with Aerodromes emergency situations is vital. In this respect, it is mandatory to **establish in advance an accurate list of surrounding hospitals**. They shall be classified according to their effective receiving capacity and specialized features, such as neurosurgical ability or burn treatment. In most circumstances it is unwise to deplete the most proximate hospital to the accident site of essential medical and nursing personnel.

The distance from the Aerodromes and the ability to receive helicopters shall be considered. Reliable two-way communication shall be provided between the hospitals, ambulances and helicopters. The alert of an aircraft accident shall be made to a single medical facility which then alert all other facilities according to a local medical communications network.

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3.8 Aircraft Operators

It is important that **arrangements be made in the plan to disseminate full details of aircraft related information, such as number of persons aboard, fuel quantity and existence of any dangerous goods, if available.** Aircraft operators are expected to be responsible for providing this information. **This information is vital to the on-scene commander and will influence the tactics and strategies used to deal with the emergency.** Operators also are responsible for making arrangements for any uninjured persons who may require continuing their journey, or need accommodations or other assistance. Additionally, aircraft operators may be responsible for contacting deceased passengers' next of kin. The police and/or international relief agencies (Red Cross, etc.) will normally assist in the accomplishment of this task.

The Aerodromes emergency plan shall designate an aircraft operator to respond to an emergency involving a chartered, private, military or other non-tenant aircraft operator. The proper disposition of all cargo, mail and baggage aboard an aircraft involved in an accident is the responsibility of the aircraft operator. Permission to remove these items from the aircraft may be granted by the on scene commander only after the emergency has been abated and the requirements of the accident investigators have been met.

3.9 Government Authorities

In order to avoid conflict and confusion between participants, the Aerodromes emergency plan shall clearly define the obligations, controls and limitations placed on the Aerodromes authority by government agencies. Post-accident investigation, unlawful seizure of aircraft, bomb threats and bombings, customs and postal matters, may all fall into jurisdictions other than that of the Aerodromes authority.

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3.10 Aerodromes Tenants

Aerodromes tenants and their employees shall be considered a prime source of readily available equipment and human resources. With their intimate knowledge of the Aerodromes, Aerodromes tenants and their employees can have a vital role in the emergency plan especially if their background includes medical training, transportation or food preparation. It is important that these persons be deployed under supervision and assigned specific functions to void duplication of efforts and disruption of other emergency operations. For their own personal safety, the use of these people shall be restricted until the emergency is under control. Employees with first aid knowledge shall be known and identified by means of a suitable vest during an emergency.

3.11 Transportation Authorities

In an emergency, vehicles are needed to carry out rescue operations, to transport personnel and to haul supplies and debris. Responsibility for the control of vehicles to be used during an emergency shall be assigned to a designated transportation officer. All of the transportation equipment available at the Aerodromes, such as buses, trucks, maintenance vehicles and automobiles, shall be inventoried and assignments shall be included in the emergency plan. Arrangements in advance also might be made to obtain additional vehicles from bus companies, leasing companies or garages. Also, by prior agreement, the use of vehicles owned by Aerodromes employees might be included in the emergency plan.

In Aerodromes emergencies, provision shall be made for an easily identifiable guide vehicle, equipped with two-way radio communication, to lead groups of vehicles from the rendezvous point(s) or staging area to the accident site. This shall be accomplished without interference with aircraft operations. As a means to easily identify and distinguish the transportation officer in charge, a lime-green hard

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hat and lime-green vest or other apparel shall be worn, with “TRANSPORTATION OFFICER” in reflective lettering displayed back and front.

3.12 Rescue Coordination Centre (RCC)

Rescue co-ordination centers may play a significant role when aircraft accidents occur in the vicinity of an Aerodromes but the accident site is not known, or rescue facilities additional to those available at or near the Aerodromes are required to be brought into action. Rescue co-ordination centres shall have means of immediate communication with all rescue units within their areas of responsibility, including units providing aircraft, helicopters and special rescue teams. Where appropriate, coastal radio stations capable of alerting and communicating with surface vessels must be used. Assistance from some of these units can be essential in responding to an accident in the vicinity of the Aerodromes.

3.13 Civil Defense

The Aerodromes emergency plan shall be integrated with the local community civil defense emergency plan and with local search and rescue teams. Consideration shall be given to the role the Aerodromes may have as a result of co-ordination with civil defense officials and in support of any civil defense emergency plan requirements.

3.14 Mutual Aids Agreement

Aerodromes emergencies may be of such magnitude that local rescue and firefighting, security, law enforcement and medical services are inadequate to handle the situation. It is therefore strongly recommended that written mutual aid program be initiated to ensure the prompt response of adequate rescue and firefighting, security, law enforcement and medical services elsewhere. Such mutual

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aid agreements are normally coordinated by the Aerodromes authority as well as the agencies involved, and implemented by the Aerodromes authority.

All mutual aid agreements shall be reviewed or revised annually. Telephone and personnel contacts shall be reviewed and updated monthly.

3.15 Military

Where a military installation is located on or in the vicinity of an Aerodromes, a mutual aid agreement shall be initiated to integrate these personnel within the command, communication and co-ordination functions of the emergency plan.

3.16 Harbour Patrol and Coast Guard

Harbour patrol and coast guard are services which are vital to Aerodromess in proximity to large water environments. Co-ordination of such services shall be included in the Aerodromes emergency plan where applicable. These services usually interface with rescue co-ordination centres and mutual aid police units. To obtain the immediate response of such services, maintenance of an adequate communication network is an essential ingredient of the plan.

3.17 Religious Leaders

Arrangements shall be made to contact the religious leaders in order to provide comfort to casualties and relatives and to perform religious services where and when appropriate.

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3.18 Public Information Officer

A public information officer shall be designated. This officer shall co-ordinate and release factual information to the news media and also shall co-ordinate public information statements between all parties involved.

It is recommended that the television and radio news media be requested to withhold the release of accident information for at least fifteen minutes (or longer, if possible). This delay will allow sufficient time to establish adequate security around the accident site and to establish road blocks on routes providing ingress and egress to the accident site by participating emergency medical agencies and other services.

3.19 Mental Health Agencies

The emergency plan shall include local mental health agencies. Therapeutic treatment, as well as follow-up procedures for dealing with the possible long-term effects of the emergency, shall be available for survivors, relatives, eyewitnesses, and emergency scene personnel.

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Chapter Four: Responsibility and Role of Each Agency for Each Type of Emergency

4.1 Aircraft accident on the Aerodromes

The Aerodromes emergency plan shall be implemented immediately upon an aircraft accident occurring on the Aerodromes. For this type of emergency, responding agencies are expected to take action as below.

4.1.1 Action by Air Traffic Services

4.1.1.1 Initiate emergency response by using the **crash alarm communication system**

4.1.1.2 **Notify the Rescue and firefighting service** and provide information on the **location of the accident, grid map reference** and all other essential details, including time of the accident and **type of aircraft**. Subsequent notification may expand this information by providing details on the **number of occupants, fuel on board**, aircraft operator, and any **dangerous goods on board**, including quantity and location, if known.

4.1.1.3 **Close the affected runway** and minimize vehicle traffic on that runway to prevent disturbance of accident investigation evidence.

4.1.1.4 If required, initiate **communications to the police and security services**, Aerodromes authority, **and medical services** in accordance with the procedure in the Aerodromes emergency plan. **Provide the contacts with grid map reference, rendezvous point and/or staging area and Aerodromes entrance** to be used.

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4.1.1.5 Issue the following **Notice to Airmen (NOTAM)** immediately: “Aerodromes rescue and firefighting service protection unavailable until (time) or until further notice. All equipment committed to aircraft accident.”

4.1.1.6 Verify by written checklist that the actions above were completed, indicating notification time(s) and name of person completing action.

4.1.2 Action by Rescue and Fire Fighting Services (Fire Departments)

4.1.2.1 A request to respond to an aircraft accident on the Aerodromes will normally be issued by the air traffic services. When, however, a call is received from any other person, an accident is observed, or there is reason to consider that an accident is imminent, the Aerodromes rescue and firefighting service will take action in the same manner as if the air traffic services had originated the request. The air traffic services will then be informed of the nature of the request/call and of the response initiated.

4.1.2.2 Aerodromes rescue and firefighting services shall:

- a) proceed via **fastest access routes to the site** indicated by air traffic services;
- b) advise mutual aid fire department(s) while en route of the following:
 - 1) rendezvous point;
 - 2) staging area;
 - 3) human resources and equipment required for support, if known; and
 - 4) any other pertinent information; and
- c) immediately **establish a well identified command post**. This is a temporary post until the Aerodromes authority mobile command post is available and operative.

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4.1.2.3 The **senior Aerodromes fire officer is the responsible officer in charge** until the emergency has been stabilized.

4.1.2.4 An aircraft/structural fire is unique because of the fire control problems with the presence of highly flammable fuel and the high structures normally found on an Aerodromes. Control of the combined aircraft/structural fire will be predicated on mutual aid emergency agreements.

4.1.2.5 Prior agreement shall be reached between the on-Aerodromes rescue and firefighting service and the off-Aerodromes mutual aid fire departments as to which is best equipped to fight fires in aircraft hangars or other Aerodromes structures. Additionally, there shall be prior agreement as to which agency will be in command when an accident involves an aircraft and an Aerodromes structure.

4.1.3 Action by Police and or, Security Services

4.1.3.1 The first security/police officer to arrive, in co-ordination with the on-scene commander, will assume security responsibility, immediately establish free traffic lanes on ingress and egress roads for emergency vehicles, and request reinforcements as needed. This officer shall remain in command of security until relieved by the law enforcement authority who has jurisdiction over the area.

4.1.3.2 Security personnel shall establish an ambulance route to the triage area to enable those vehicles to proceed to the area, load and depart in an orderly line. The route shall provide for the continuous, unobstructed flow of emergency vehicles without blockage or reversal into the casualty pick up area.

4.1.3.3 Security personnel and police will be needed to handle traffic in the vicinity of the accident site, to admit authorized emergency personnel, to keep unauthorized

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persons from the accident site, and to assume custody of personal effects removed from the aircraft.

4.1.3.4 Normal traffic shall be routed away from or around the accident site.

4.1.3.5 The emergency site shall be cordoned off as soon as possible to exclude intruders, press, sightseers, onlookers and souvenir hunters. Appropriate markings shall be prominently displayed to advise all persons of possible hazards which may cause them serious injury shall they encroach on the area.

4.1.3.6 Communications between all security check points and the command post and/or emergency operations center shall be implemented as soon as possible.

4.1.3.7 Notification of other agencies shall be carried out as soon as possible.

4.1.3.8 Identifying arm bands, site passes, or I.D. tags shall be issued by the controlling authority and monitored by the security police officer and the security police team.

4.1.3.9 Special security provisions are necessary to **protect the flight data and cockpit voice recorders**. Additional security shall be effected to **protect any mail involved, secure any dangerous goods which may be present, or to protect personnel from exposure to radioactive materials**.

4.1.4 Action by Aerodromes Operator

4.1.4.1 The Aerodromes operator will go to the accident site and, when required, **set up an easily identifiable mobile command post**. The mobile command post shall be adequately staffed by **senior representatives capable of making decisions involving:**

- a) Aerodromes operations;
- b) security operations;

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- c) medical operations;
- d) aircraft operations; and
- e) aircraft recovery operations.

The Aerodromes operator will review the action checklist to verify that:

- a. the Aerodromes emergency operations center has been activated;
- b. mutual aid police procedures have been initiated and secondary notification calls have been made;
- c. mutual aid fire departments have been notified and escort has been provided for their access to the accident site and staging areas designated;
- d. medical and ambulance services have been alerted and their arrivals at the designated rendezvous point or staging area have been verified;
- e. the affected aircraft operator has been notified and information obtained concerning any dangerous goods on board the aircraft (e.g. explosives, compressed or liquefied gases, flammable liquids or solids, oxidizers, poisonous substances, infectious substances, radioactive materials or corrosives), and this information has been passed on to appropriate participants;
- f. liaison has been established with air traffic services concerning the closure of Aerodromes areas, designation of emergency response corridors, issuing of voice advisories and NOTAM advising of reduced Aerodromes rescue and firefighting protection;
- g. government aircraft accident investigation authorities have been notified;
- h. the meteorological department has been notified to make a special weather observation;

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- i. arrangements have been made for the immediate survey and photography of the affected runway to identify the location of crash debris;
- j. arrangements have been made to secure the crash debris pending release by the investigating agencies;
- k. airspace reservation co-ordination offices (air traffic flow control office), if any, have been advised of reduced Aerodromes capabilities; and
- l. if fatalities are involved, the Medical Examiner has been notified and temporary morgue facilities designated.

4.1.4.2 In conjunction with mutual aid police, the Aerodromes operator shall:

- a. designate rendezvous points and staging areas for the inner and outer perimeters;
- b. assign security personnel at the staging area and/or rendezvous point to escort vehicles so as to ensure the orderly flow of emergency vehicles, particularly ambulances, to and from the accident site; and
- c. assign staging areas for escort vehicles and ambulances to ensure rapid dispatch.

4.1.4.3 After consulting with the chief fire officer in charge, the Aerodromes authority shall co-ordinate the activities of mutual aid rescue personnel and direct their activities to maximize their efforts.

4.1.4.4 The Aerodromes Operator shall also arrange the availability of the following services as required:

- a. portable emergency shelter for use by other than medical services;
- b. lavatories;

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- c. drinking water;
- d. ropes, barriers, etc.;
- e. food service;
- f. mobile or portable lighting;
- g. cones, stakes, and signs;
- h. machinery, heavy equipment, extraction tools;
- i. hydraulic extraction tools and shoring materials; and
- j. communications equipment, such as public address, portable telephones, etc.

4.1.4.5 The Aerodromes operator will provide the initial briefing for the Aerodromes public information officer and will then co-ordinate with the public information officer of the aircraft operator involved, when appropriate, any press releases and statements to the press.

4.1.4.6 Upon concurrence of the chief fire officer, police/security chief and the medical coordinator, the Aerodromes operator on-scene commander will notify all participating mutual aid organizations upon termination of the Aerodromes emergency.

4.1.5 Action by Medical Services

It shall be the responsibility of the **medical coordinator to supervise the medical services** and to:

- a. **verify the notification of mutual aid medical and ambulance services and their subsequent arrival at the rendezvous point or staging area;**

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- b. organize the necessary actions for triage, treatment of the casualties, and their eventual evacuation by appropriate means of transportation;
- c. control the flow of casualties and ensure, together with the transportation officer, the dispatch of the casualties to the appropriate hospitals by all available means of transportation;
- d. maintain an accurate list of the casualties including their names and their final disposition;
- e. co-ordinate the transportation of the uninjured to the designated holding area with the aircraft operator concerned;
- f. provide medical evaluation of ambulatory and uninjured survivors;
- g. arrange for the replenishment of medical supplies, if necessary; and
- h. organize, with the police, reception facilities for the dead.

4.1.6 Action by Hospitals

Appoint a hospital coordinator responsible for the following:

- a) immediately provide and transport doctors and **medical teams skilled in trauma care** to the accident site upon notification of the emergency;
- b) provide medical care to the casualties when they arrive at the treatment area; and
- c) ensure that adequate **doctors and nurses, operating rooms, intensive care units, surgical teams, blood and blood volume expanders are available for emergency situations**, including aircraft accidents.

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4.1.7 Action by aircraft operators

- 4.1.7.1** The **senior aircraft operator** representative will **report to the mobile command post** to co-ordinate the aircraft operator activities with the person in charge. **In the event the aircraft operator is not an Aerodromes tenant, the Aerodromes operator shall designate the most capable operator on the Aerodromes to handle emergencies** involving transient aircraft until such time as the aircraft operator involved can arrive at the scene.
- 4.1.7.2** The senior representative of the aircraft operator will provide information regarding passenger load, flight crew complement and the existence of any dangerous goods together with their loading position. Dangerous goods include explosives, compressed or liquefied gases (which may be flammable or toxic), flammable liquids or solids, oxidizers, poisonous substances, infectious substances, radioactive materials and corrosives. Information concerning dangerous goods shall be relayed, as soon as possible, to the chief fire officer and the medical coordinator.
- 4.1.7.3** The senior aircraft operator representative shall make arrangements for transportation of uninjured persons from the accident site to the designated uninjured holding area. Transportation of the “walking injured” from the scene shall be permitted only after consultation with the medical coordinator.
- 4.1.7.4** The aircraft operator staff shall proceed to the designated uninjured holding area. The senior aircraft operator representative at the uninjured holding area will appoint qualified receptionists, registrars, and welfare coordinators from the staff.

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- 4.1.7.5** The aircraft operator representative who is in command of the uninjured holding area will oversee those operations by making arrangements for additional medical services (if required), commissary items, clothing, telephone facilities.
- 4.1.7.6** The receptionists shall meet the transporting vehicles as they arrive from the scene of the accident and direct the passengers to the registrars' tables where they will be processed.
- 4.1.7.7** The registrars will record the passenger's name on the manifest and determine desired reservation requirements, i.e. hotel accommodations, air transportation or other modes of transportation, etc. Registrars shall list any persons to be notified of the passenger's physical and/or mental condition and potential plans. The registrar will then place an identification tag or sticker (available from the emergency kit, see Appendix 7, paragraph 10) on the passenger. The registrars will direct the passengers to the welfare coordinators when registration has been completed.
- 4.1.7.8** Welfare coordinators and mental health specialists trained in stress management shall:
- a) Give support and comfort to relatives and friends of passengers and crew members on board the aircraft;
 - b) register relatives and friends waiting at the Aerodromes for information about persons on board; and
 - c) provide care, comfort, and assistance to the “walking injured”, uninjured survivors and responding personnel (if required).
- 4.1.7.9** The aircraft operator or its representative will provide notification of the aircraft accident to:
- a) health and welfare agencies;

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- b) customs, where applicable;
- c) immigration, where applicable;
- d) post office; and
- e) environmental agencies, where applicable.

4.1.7.10 A senior aircraft operator official will be responsible for the initial notification of relatives and friends.

4.1.7.11 News releases by aircraft operators shall be prepared in co-ordination with the Aerodromes public information officer and liaison officers from other agencies involved in the accident.

4.1.7.12 The aircraft operator is responsible for the removal of the wrecked or disabled aircraft, but only after receiving authorization from the aircraft accident investigation authority.

4.1.8 Action by Government Authorities

The following government authorities may be required to take appropriate action as indicated in their emergency plan:

- a) government accident investigation personnel;
- b) health and welfare;
- c) post office;
- d) customs;
- e) immigration;
- f) agriculture;
- g) public works; and

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h) environmental agencies.

4.1.9 Action by the Public Information Officer

4.1.9.1 All press personnel will be directed to a designated press staging area for press personnel authorized to cover an Aerodromes emergency. At this area the following will be provided:

- a) briefing;
- b) communications; and
- c) transportation service to and from the accident site, when permissible.

4.1.9.2 Only members of the press, free-lance reporters and photographers wearing a valid press card will be admitted to the briefing area, to the designated press staging area, or transported to the scene of the accident.

4.1.9.3 In general, responsibility for news releases concerning an aircraft emergency shall be that of:

- a) a public information officer designated by the Aerodromes authority; and
- b) the representative of the aircraft operator involved.

4.1.9.4 Under no circumstances will the press or any other personnel not involved in life saving or firefighting operations be permitted inside security lines until all rescue operations have been completed. Establishment of security lines shall consider the interests of media coverage as much as rescue operations permit.

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4.2 Aircraft accident off the Aerodromes

4.2.1 General

The Aerodromes emergency plan, as well as the mutual aid emergency agreement, shall be implemented immediately upon an aircraft accident occurring off the Aerodromes. For this type of emergency, responding agencies are expected to take action as described in 4.10.2 to 4.18 below.

4.2.2 Initial Notification

Initial notification of an off-Aerodromes accident normally will be made by a witness to the **local police, fire department, or Alarm and Dispatch Centre, if available**. The Alarm and Dispatch Centre is the centralized notification system for any emergency situation that alerts appropriate responding agencies, depending on the nature of the emergency.

4.2.3 Action by Air Traffic Services

4.2.3.1 Initiate emergency response by using the alarm communications system.

4.2.3.2 Notify the emergency services having jurisdiction over the area, providing information on the location of the accident, giving grid map reference and all other essential details. These details shall include the time of accident and the type of aircraft involved. Subsequent notification may expand this information by giving details on the number of occupants, fuel on board, aircraft operator, if appropriate, and any dangerous goods on board, including quantity and location, if known.

4.2.3.3 Initiate notification of the Aerodromes rescue and fire fighting service, police and security services, Aerodromes authority, and medical services in

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accordance with the procedure in the Aerodromes emergency plan, giving grid map reference.

4.2.3.4 If required, issue the following NOTAM as soon as possible: “Aerodromes rescue and fire fighting service reduced to category (indicate category number) until further notice.”

4.2.3.5 Confirm that the actions above were completed, by written checklist, indicating notification time(s) and name of person completing action.

4.2.4 Action by Aerodromes Rescue and Fire Fighting Services

4.2.4.1 Notification of an aircraft accident off the Aerodromes will normally be received from the air traffic services, local police or local fire departments. Designated vehicles will be sent in accordance with the existing mutual aid fire department agreement.

4.2.4.2 Aerodromes rescue and **firefighting** services shall:

- a) proceed via the most suitable access routes to the off-Aerodromes accident site in co-ordination with the local police
- b) responsible for ingress and egress roads;
- c) co-ordinate with mutual aid fire department(s); and
- d) while enroute, exchange information with the fire department having jurisdiction over the area concerning:
 - 1. rendezvous point and/or staging area;
 - 2. human resources and equipment responding; and
 - 3. any other pertinent information.

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4.2.4.3 The senior Aerodromes fire officer will report to the senior fire officer of the fire department having jurisdiction over the area and will request instructions.

4.2.4.4 Prior agreement shall be reached between the Aerodromes rescue and firefighting service, the local fire department in command, and mutual aid fire departments as to which is best equipped to fight fires involving aircraft and/or structures. Additionally, there shall be agreement as to which agency will act in command when an accident involves both an aircraft and an Aerodromes structure.

4.2.5 Action by police and security services

4.2.5.1 The first security/police officer to arrive will immediately assume security responsibility, establish free traffic lanes on ingress and egress roads for emergency vehicles, and request reinforcements as needed. He shall remain in command of security until relieved by the appropriate law enforcement authority who has jurisdiction over the area.

4.2.5.2 Traffic flow and site security are the primary responsibility of police and security personnel. They shall notify the appropriate communications centre of the location of the accident and available means of access and egress. After consultation with the on-scene commander, they shall initiate traffic control measures in order to aid responding emergency vehicles.

4.2.5.3 Security personnel and police will be needed to handle traffic in the vicinity of the accident site and to prevent disturbance of material scattered over the accident site.

4.2.5.4 The emergency site shall be cordoned off as soon as possible to exclude intruders, press, sightseers, onlookers and souvenir hunters. Appropriate markings shall be displayed prominently, advising all persons of possible

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hazards that may cause serious injury shall they encroach on the area. In order to prevent ignition of fuel vapours, flares shall not be used within a distance of approximately 100 m of the accident site.

- 4.2.5.5** Communications between all security check points and the command post and/or emergency operations centre shall be implemented as soon as possible.
- 4.2.5.6** Notification of other agencies shall be carried out as soon as possible.
- 4.2.5.7** Identifying arm bands, site passes, or I.D. tags shall be issued by the controlling authority and monitored by security and police officers.
- 4.2.5.8** Special security provisions are necessary to protect the flight data and cockpit voice recorders, to protect mail, to secure any dangerous goods which may be present, and to protect personnel from exposure to radioactive materials, if necessary.

4.2.6 Action by Aerodromes Operator

Agreements for emergency mutual aid with the surrounding community enable the Aerodromes authority to take the following actions:

- a) respond to the accident site;
- b) activate the Aerodromes emergency operations centre and the mobile command post (if required);
- c) extend as much emergency aid as requested by the jurisdiction agency in command of the off-Aerodromes accident/incident;
- d) notify the aircraft operator involved;
- e) notify the Regulatory Authority (CAA);
- f) notify other agencies; and

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g) provide medical equipment and personnel.

4.2.7 Action by medical services

4.2.7.1 Civil defence and local authorities normally will be responsible for organizing the medical response. However, the medical response from the on-Aerodromes medical service shall also be applicable to mass casualty accidents occurring off the Aerodromes.

4.2.7.2 According to the mutual aid emergency agreement with the surrounding community, the Aerodromes authority may provide, if requested and if available, a part of its medical equipment, supplies (i.e. first aid equipment, stretchers, body bags, mobile shelters, etc.) and assistance of first-aid personnel at the accident site.

4.2.8 Action by hospitals

4.2.8.1 Ensure that adequate doctors, nurses, and operating room, intensive care, and surgical teams are available for emergency situations, including aircraft accidents.

4.2.8.2 Provide medical care to the injured when they arrive.

4.2.9 Action by aircraft operators

4.2.9.1 The senior representative of the aircraft operator or a designee will report to the command post to co-ordinate the aircraft operator activities with the person in charge.

4.2.9.2 The senior representative of the aircraft operator will provide information regarding passenger load, flight crew complement and the existence of any dangerous goods together with their loading position. Dangerous goods include

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explosives, compressed or liquefied gases (which may be flammable or toxic), flammable liquids or solids, oxidizers, poisonous substances, infectious substances, radioactive material or corrosives. Information concerning dangerous goods shall be relayed, as soon as possible, to the chief fire officer and the medical coordinator.

- 4.2.9.3** The senior aircraft operator representative shall make arrangements for transportation of uninjured persons from the accident site to the designated uninjured holding area. Transportation of the “walking injured” from the scene shall be permitted only after consulting with the medical coordinator.
- 4.2.9.4** The aircraft operator staff shall proceed to the designated uninjured holding area. The senior aircraft operator representative at the uninjured holding area will appoint qualified receptionists, registrars and welfare coordinators from staff.
- 4.2.9.5** The aircraft operator representative who is in command of the uninjured holding area will oversee those operations by making arrangements for additional medical services (if required), commissary items, clothing, telephone facilities, etc.
- 4.2.9.6** The receptionists shall meet the transportation vehicles as they arrive from the scene of the accident and direct the passengers to the registrars' tables where they will be processed. The receptionists shall know where support facilities are located, i.e. toilet facilities, telephones, clothing, drinking water, etc.
- 4.2.9.7** The registrars will record the passenger's name on the manifest and determine desired reservation requirements, i.e. hotel accommodations, air transportation or other modes of transportation, etc., and any persons to be notified of the passenger's physical and/or mental condition and potential plans. The registrar

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will use an identification tag or sticker (available from the emergency kit), to place on the passenger. The registrars will direct the passengers to the welfare coordinators when registration has been completed.

4.2.9.8 The aircraft operator will provide notification of the aircraft accident to:

- a) state licensing and accident investigation authorities, as required;
- b) health and welfare agencies;
- c) customs, where applicable;
- d) immigration, where applicable;
- e) post office; and
- f) environmental agencies.

4.2.9.9 A senior aircraft operator representative will be responsible for the initial notification of relatives and friends.

4.2.9.10 News releases by aircraft operators will be prepared in co-ordination with the Aerodromes public information officer and liaison officers from other agencies involved in the accident.

4.2.9.11 The aircraft operator is responsible for the removal of the wrecked or disabled aircraft, but only after receiving authorization from the aircraft accident investigation authority. For further information, see the Aerodromes Services Manual (Doc 9137), Part 5 — Removal of Disabled Aircraft.

4.2.10 Action by Government Authorities

The following government authorities, after being notified, may be required to take appropriate action as indicated in their emergency plan:

- a) government accident investigation personnel;

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- b) health and welfare;
- c) post office;
- d) customs, immigration and agriculture; and
- e) environmental agencies.

4.2.11 Action by the public information officer

4.2.11.1 The responsibility for news releases concerning an off-Aerodromes emergency shall be that of:

- a) the representative of the aircraft operator;
- b) a public information officer designated by the particular government authority in command; and
- c) a public information representative designated by the Aerodromes authority.

4.2.11.2 Only members of the press, free-lance reporters, and photographers wearing a valid press card will be admitted to the briefing area, permitted to the designated press staging area, or transported to the scene of the emergency.

4.2.11.3 In general, responsibility for news releases concerning an aircraft emergency shall be that of:

- a) a public information officer designated by the Aerodromes authority; and
- b) the representative of the aircraft operator involved.

4.2.11.4 Under no circumstances shall the media or any other personnel not involved in the firefighting, rescue or emergency medical care be permitted inside security lines until all rescue operations have been completed and the area is declared safe for entry by the on-scene commander/chief fire officer.

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4.3 Full Emergency

4.3.1 General

The agencies involved in the Aerodromes emergency plan **shall be alerted to “full emergency” status when it is known that an aircraft approaching the Aerodromes is, or is suspected to be, in such trouble that there is a possibility of an accident.**

4.3.2 Action by air traffic services

4.3.2.1 Notify the Aerodromes **rescue and firefighting service to stand by at the predetermined ready positions** applicable to the planned runway and provide as many of the following details as possible:

- a) type of aircraft;
- b) fuel on board;
- c) number of occupants, including special occupants — handicapped, immobilized, blind, deaf;
- d) nature of trouble;
- e) planned runway;
- f) estimated time of landing;
- g) aircraft operator, if appropriate; and
- h) any dangerous goods on board, including quantity and location, if known.

4.3.2.2 Initiate notification of the mutual aid fire department(s) and other appropriate organizations in accordance with the procedure prescribed in the Aerodromes emergency plan, providing, if necessary, the rendezvous point and Aerodromes entrance to be used.

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4.3.3 Action by other agencies

The specific responsibilities and roles of the various agencies itemized in 4.1.2 to 4.1.10 corresponding to an aircraft accident on the Aerodromes can be paralleled for “full emergency” as required by local operating requirements.

4.4 Local Standby

4.4.1 General

The agencies involved in the Aerodromes emergency plan shall be alerted to “local standby” status when an aircraft approaching the Aerodromes is known or is suspected to have developed some defect but the trouble is not such as would normally involve any serious difficulty in effecting a safe landing.

4.4.2 Action by air traffic services

Notify the Aerodromes rescue and firefighting service to stand by as requested by the pilot, or stand by as local Aerodromes agreements require at the predetermined ready positions applicable to the runway to be used. Provide as many of the following details as possible:

- a) type of aircraft;
- b) fuel on board;
- c) number of occupants, including special occupants — handicapped, immobilized, blind, deaf;
- d) nature of trouble;
- e) planned runway;
- f) estimated time of landing;

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g) aircraft operator, if appropriate; and

h) any dangerous goods on board, including quantity and location, if known.

4.4.3 Action by other agencies

The specific responsibilities and roles of the various agencies itemized in 4.1.2 to 4.1.10 corresponding to an aircraft accident on the Aerodromes can be paralleled for “local standby” as required by local operating requirements.

4.5 Non-aircraft accident-related Aerodromes emergencies

4.5.1 Procedures and techniques developed for responding to non-aircraft accident-related Aerodromes emergencies shall be similar to the techniques in handling aircraft accident emergencies. It shall be recognized that medical and fire emergencies can arise at any location where large numbers of persons work or congregate. This problem can be severe at Aerodromes because of the exposure associated with commonplace activities, such as arriving and departing passengers and sightseers, and the use of public service facilities (i.e. automobile movement and parking areas, restaurants, bars, baggage handling and storage areas, etc.).

4.5.2 The diverse character of persons travelling by air suggests the need for the Aerodromes authority to arrange to have available emergency medical services to treat conditions such as cardiac arrest, abdominal pains, burns, cuts, abrasions, and other medical problems.

4.6 Unlawful acts against civil aviation

4.6.1 An aircraft which is subjected to a threat of sabotage or unlawful seizure shall be parked at an **isolated aircraft parking position** until the act of unlawful

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interference is terminated. Such an area shall be located at least 100 m away from other aircraft parking positions, buildings or public areas as specified in Tanzania Civil Aviation (Aerodrome Design and Operations) Regulation. In such cases it may be necessary to evacuate passengers without the aid of loading ramps provided at the passenger terminal. Motorized loading ramps may be available which could be driven to the site; otherwise, built-in aircraft stairs or the aircraft slides may be used.

4.7 Occurrences involving dangerous goods

4.7.1 General:

Detailed information on procedures for dealing with Occurrences Involving Dangerous Goods is given in the ICAO Emergency Response Guidance for Aircraft Incidents involving Dangerous Goods (Doc 9481).

- 4.7.1.1** Many types of dangerous goods can be shipped by air. These include explosives, compressed or liquefied gases (which may be flammable or toxic), flammable liquids or solids, oxidizers, poisonous substances, infectious substances, radioactive material or corrosives. Packages containing dangerous goods may be found in Aerodromes cargo buildings, on aircraft loading ramps, in aircraft cargo compartments, etc. **Rescue and firefighting personnel need to be aware of the potential hazards of any dangerous goods and be prepared to deal with related emergencies.** Accidents involving aircraft carrying dangerous goods present special rescue and fire control problems, although the existence of such cargoes may not be immediately known. **Aircraft operators shall report without delay the presence, or possible presence, of dangerous goods on board aircraft involved in an accident.** Packages containing dangerous goods can be identified by the distinctive

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diamond-shaped dangerous goods labels. **Rescue and firefighting personnel shall familiarize themselves with the various labels.**

4.7.1.2 If a package containing radioactive materials ruptures and spillage occurs, the vehicles or persons that come near or cross through the area may become contaminated. If radioactive material is disturbed, winds or a thermal column from an aircraft fire could carry and spread the radioactive material over a great distance, endangering a wide area. Provision for decontamination of responding personnel and equipment shall be included in emergency planning procedures. If packages containing radioactive material are damaged, the assistance of radiological experts will be required without delay. The most appropriate organization able to provide such assistance shall be determined. This may well be one of the agencies listed in 3.1.1.

4.7.1.3 Where broken containers are found which could cause injury to or affect the health of exposed aircraft occupants or rescue personnel (particularly from radioactive, etiological, or toxic materials), special precautions shall be taken. Personnel trained to deal with the special problems involved shall be utilized. If damaged packages of dangerous goods are found, especially if they are radioactive, infectious or poisonous materials, precaution shall be taken to safeguard the health of exposed aircraft occupants and rescue personnel. Fire fighters and other rescue workers shall be trained to deal with the special problems that could arise.

4.7.1.4 In the event radioactive materials are suspected, the following general procedures shall be followed;

- a) the nearest nuclear energy facility, hospital with a radiological unit, military base or civil defense organization shall be required to dispatch immediately a radiological team to the accident site;

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- b) persons coming in contact with radioactive material shall be segregated until examined by radiological team physicians;
- c) suspected material shall be identified but not handled until it has been monitored and released by authorized personnel. Clothing and tools used at the accident scene shall be segregated until released by a radiological emergency team;
- d) food or drinking water suspected of contamination shall not be used;
- e) only properly attired rescue and firefighting personnel shall remain on the scene; all other persons shall be kept as far from the scene as possible; and
- f) all hospitals shall be notified immediately that radioactive materials are involved so they can establish radioactive decontamination areas in the hospital.

4.7.1.5 The basic regulations for the carriage of radioactive materials by all forms of transport are published by the International Atomic Energy Agency (IAEA). These regulations form the basis for many national regulations.

4.7.1.6 Food or drinking water suspected of contamination by aetiological or toxic materials shall not be used. The public health and veterinary authorities shall be informed immediately.

4.7.1.7 Any casualty or person exposed to dangerous materials shall be removed from the scene of the occurrence and transported to the appropriate medical facilities for suitable treatment as soon as possible.

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4.8 Natural disasters

4.8.1 General

The natural disasters to which Aerodromes may be subjected include storms, floods, earthquakes, and seismic sea waves. The vulnerability of an Aerodromes to any of these will, in good measure, be affected by geography, since the more dangerous occurrences are often defined by certain areas or belts. While nothing can be done to avert them, there are actions that can be taken to minimize damage and expedite restoration of aircraft operations.

4.8.1.1 Development of weather patterns, prediction and tracking of movement of storms, and notification to the public of potential danger will normally be carried out by a meteorological service in the area.

4.8.1.2 The Aerodromes emergency plan shall provide for initial protective measures, emergency supplies pertinent to local disaster exposure, personnel shelter, and post-storm clean up and restoration. Aircraft operations will usually be impossible for several hours before and after the storm.

4.8.1.3 As soon as severe storm warnings are received, all owners of aircraft based or located at the Aerodromes shall be notified. Warnings shall be issued to all aircraft pilots en-route to the Aerodromes. Aircraft owners and pilots shall be responsible for their aircraft. If possible, all aircraft on the ground shall be evacuated to Aerodromes outside the storm area. Aircraft in flight shall be advised to divert to an alternate destination. Aircraft on the ground that cannot be dispersed shall be put under cover or tied down so as to face into the approaching winds.

4.8.1.4 Power interruptions are common during a natural disaster, either by damage to generating plants or by destruction of transmission lines. Aerodromes located in

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severe storm areas shall take measures to ensure minimum interruption to power supply, either by providing standby engine generators or dual sources of commercial power.

- 4.8.1.5** Specific personnel assignments for building protection to collect or secure all loose objects that may be blown about by the winds shall be made in the Aerodromes emergency plan. It may be necessary to fill and place sandbags if there is any possibility of flooding.

4.9 Emergencies at Aerodromes bordering water bodies

- 4.9.1** Aerodromes which are located adjacent to large bodies of water required additional emergency services. Aircraft may sink rapidly making the danger of drowning or hypothermia a major problem for the occupants. Some aircraft are not equipped with life vests, rafts or inflatable slides. Flotation devices sufficient to carry the number of occupants of the largest aircraft regularly using the Aerodromes shall be carried on amphibious rescue vehicles capable of rapid deployment.

4.10 Acts of sabotage or terrorism at aerodromes

4.10.1 General

The acts of sabotage or terrorism to which Aerodromes may be subjected include but not limited to arson, bomb threats, electrical power disruption, hostage situations, and attacks on fuel farms. The vulnerability of an Aerodromes to any of these will, in good measure, be affected by geography of the Aerodromes, layout plan of the aerodrome facilities, and infrastructure around the aerodrome. There are actions that can be taken to minimize the damage and expedite restoration of aircraft operations.

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4.10.1.1 The measures to be employed in handling the acts of sabotage and terrorism may include but not limited to:

- a) availability of rescue and firefighting service dedicated for terminal buildings, fuel farms, control towers, power stations and other aerodrome infrastructure;
- b) employment of early detection measures such as sniffer dogs among others.

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Chapter Five: Emergency Operations Centre and Mobile Command Post

5.1 General

A fixed Emergency Operations Centre shall be available to deal with emergency situations at each Aerodromes. Certain emergency situations will require a Mobile Command Post at the scene, normally under the direction of the Aerodromes operator on-scene commander.

5.2 Emergency Operations Centre

5.2.1 The main features of this unit are:

- a) its fixed location;
- b) it acts in support of the on-scene commander in the mobile command post for aircraft accidents/incidents;
- c) it is the command, co-ordination and communication center for emergencies including unlawful seizure of aircraft and bomb threats; and
- d) it is operationally available 24 hours a day.

5.2.2 The location of the Emergency Operations Center shall provide a clear view of the movement area and isolated aircraft parking position, wherever possible.

5.2.3 The emergency operations center is a designated area on the Aerodromes which is usually used in supporting and coordinating operations in accidents/incidents, unlawful seizure of aircraft, and bomb threat incidents. The unit shall have the necessary equipment and personnel to communicate with the appropriate agencies involved in the emergency, including the mobile command post, when this is deployed. **The communication and electronic devices shall be checked daily.**

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5.3 Mobile Command Post

5.3.1 The mobile command post is a point where co-operating agency heads assemble to receive and disseminate information and make decisions pertinent to the rescue operations. The Mobile Command Post will usually be adequate to co-ordinate all command and communication functions. The main features of this unit are:

- a) it is a mobile facility capable of being rapidly deployed;
- b) it serves as command, co-ordination and communication centre for aircraft accidents/incidents;
- c) it is operational during aircraft accidents/incidents; and
- d) it is correctly located with respect to wind and terrain conditions.

5.3.2 In the event of any accident/incident, a designated, recognizable and readily visible mobile command post is a high priority item. It shall be established **as quickly as possible**, preferably at the same time as the initiation of fire control and rescue activities. A continuity of command must be maintained so that each agency reporting to the mobile command post can be adequately briefed on the situation before assuming control of its individual responsibilities.

5.3.3 The unit shall contain the necessary equipment and personnel to communicate with all agencies involved in the emergency, including the emergency operations center. **The communication and electronic devices shall be checked each month.**

5.3.4 In order to eliminate confusion and missed transmissions, since several different agencies are working together in the command post utilizing several radio frequencies and telephones, it is essential that the volume of noise be reduced by utilizing headsets or sound absorbent partitions for each participant.

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- 5.3.5** Maps, charts, and other relevant equipment and information shall be immediately available at the mobile command post.
- 5.3.6** The mobile command post shall be easily recognizable by provision of an elevated distinguishing marker, such as a chequered flag, colored traffic cone, balloon or rotating light.
- 5.3.7** It may be necessary to establish a sub-command post. When this is required, one location shall be designated as a “master” command post with adequate communications to the sub-command post.

CHAPTER SIX: COMMANDER AND COORDINATORS FOR THE AEP

6.1 General

- 6.1.1** Once an accident has occurred, the initial direction and control of rescue and firefighting operations are the responsibility of the Aerodromes rescue and firefighting service officer in charge. Rescue and firefighting personnel will be the first to arrive at the accident site; therefore, for a certain period of time this officer will be in command. However, the rescue and firefighting service officer is so involved in the rescue and firefighting operation that as soon as the on-scene commander arrives, the on-scene commander will assume command as outlined in the Aerodromes emergency plan. **The transition of authority and command responsibility needs to be established in the emergency plan and exercised accordingly.**
- 6.1.2** Off-Aerodromes accidents are under the direction and control of the agency agreed upon in the mutual aid emergency agreement prearranged with the surrounding community.

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6.1.3 The plan shall call for the designation of other coordinators to accomplish particular functions.

CHAPTER SEVEN: GRID MAP

7.1 General

- 7.1.1 **A detailed grid map(s) of the Aerodrome and its vicinity (with date of revision) shall be provided in the emergency operations center.** Similar maps shall be available in the control tower, fire station, rescue and fire fighting vehicles and all other supporting vehicles responding to an emergency. Copies shall also be distributed to the agencies involved in the plan.
- 7.1.2 It is preferable that two (2) grid maps be provided; **one map shall depict the confines of Aerodromes access roads, location of water supplies, rendezvous points, staging areas, etc** (See attached sample grid map Fig. 7.1 — Aerodromes). The other map shall include surrounding communities and depict appropriate medical facilities, access roads, rendezvous points, etc. within a **distance of approximately 8 km** from the centre of the Aerodromes (See attached sample grid map Fig. 7.2 — Aerodromes and surrounding community).
- 7.1.3 It is absolutely essential that where more than one grid map is used, the grids do not conflict; they must be immediately identifiable to all participating agencies. Use of different color grids as in Figures 7-1 and 7-2 preclude misinterpretation of grid maps.
- 7.1.4 The grid map which shows the available medical facilities shall contain information on potential bed availability and medical specialties at the different hospitals. Each hospital shall be individually numbered and treatment specialty indicated with distinct data such as beds, personnel, etc.

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7.1.5 It is essential that **whenever the grid map is revised, an updated copy shall be provided to all participating agencies and the old map destroyed.**

CHAPTER EIGHT: INFORMATION ON OFFICES TO BE CONTACTED

8.1 General

8.1.1 Flow control charts, (aircraft accident on Aerodromes, and aircraft accident off Aerodromes), assist in rapid communication in the event of an emergency. Accordingly, they shall contain all vital telephone numbers. **Separate flow control charts shall be developed for each type of emergency included in the plan.** It is important that the method of notification be clearly outlined in the Aerodromes emergency plan.

8.1.2 **Contact numbers shall be verified monthly** and a revised list issued if any changes have occurred. In order to require only one page to be re-issued when a change occurs, each flow control chart shall be printed on one sheet and dated.

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CHAPTER NINE: TRIAGE AND MEDICAL CARE

9.1 Immediate need for care of the injured in aircraft accidents

In the aftermath of an aircraft accident, many lives may be lost and many injuries aggravated if immediate medical attention is not provided by trained rescue personnel. **Survivors shall be triaged, given available emergency medical aid as required, and then promptly evacuated to appropriate medical facilities.**

9.2 Triage principles

9.2.1 “Triage” is the sorting and classification of casualties to determine the order of priority for treatment and transportation

9.2.2 Casualties shall be classified into four categories:

- a) Priority I: Immediate care
- b) Priority II: Delayed care
- c) Priority III: Minor care
- d) Priority IV: Deceased

9.2.3 The first qualified, medically trained person to arrive at the site must immediately begin initial triage. This person(s) will continue performing triage until relieved by a more qualified person or the designated Aerodromes triage officer. Victims shall be moved from the triage area to the appropriate care holding areas before definitive treatment is rendered. Casualties shall be stabilized at the care holding areas and then transported to an appropriate facility.

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9.2.4 Every effort shall be made to ensure that Priority I casualties are treated first and receive ambulance transportation priority when stabilized. This is the responsibility of the triage officer.

9.2.5 Triage is most efficiently accomplished in place. However, the conditions at an accident scene may demand the immediate movement of casualties before triage can be safely accomplished. In that case, the casualties shall be moved the shortest distance possible, well away from firefighting operations, and upwind and uphill from the scene.

9.2.6 Triage of casualties shall include the use of **casualty identification tags to aid in the sorting of the injured and their transportation to a designated hospital.** This technique is especially suited to multilingual situations.

9.3 Standardized casualty identification tags and their use

9.3.1 Need for standardized tags. Casualty identification tags shall be standardized through colour coding and symbols to make the tag as simple as possible. Tags help to expedite the treatment of mass casualties in a triage situation and thus permit more rapid evacuation of the injured to medical facilities.

9.3.2 Tag design. Standardized tags shall be designed to require only minimal information to be entered thereon, be usable under adverse weather conditions, and be water resistant. In this tag, numerals and symbols indicate the medical priority classification of casualties as follows:

Priority I or immediate care: RED tag;

Roman numeral I; rabbit symbol

Priority II or delayed care: YELLOW tag;

Roman numeral II; turtle symbol

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Priority III or minor care: GREEN tag;

Roman numeral III; ambulance with X symbol

Priority IV or deceased: BLACK tag

9.3.3 Where tags are unavailable, casualties may be classified by using Roman numerals on adhesive tape or by placing marks directly on the forehead or on other exposed skin areas to indicate priority and/or treatment needs.

9.4 Care principle

9.4.1 Stabilization of the seriously injured shall be accomplished at the accident site. The immediate transportation of the seriously injured before stabilization shall be avoided.

9.4.2 In accidents occurring on or adjacent to the Aerodromes, rescue and firefighting personnel are generally the first emergency personnel on the scene. These personnel must be aware that it is imperative that seriously injured casualties be located and stabilized as quickly as possible. In cases where fire control or prevention does not require the efforts of all rescue and firefighting personnel, available persons shall immediately commence casualty stabilization under the direction of the most qualified trauma-trained individual on the scene. **First response rescue vehicles shall carry initial supplies of casualty-care equipment, including artificial airways, compresses, bandages, oxygen and other related equipment used for the stabilization of smoke inhalation casualties and severe trauma.** Sufficient oxygen shall be available for use on rescue and firefighting personnel. **However, oxygen shall not be used in areas where fuel spills or fuel-soaked clothing is present due to the explosion hazard.**

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- 9.4.3** Actions taken during the first few minutes of medical treatment shall stabilize the casualties until more qualified medical care is available. When specialized trauma teams arrive, more sophisticated medical care (i.e. cardiopulmonary resuscitation, etc.) will be provided.
- 9.4.4** The triage procedure and subsequent medical care shall be placed under the command of one authority, the designated medical coordinator, upon this officer's arrival. Prior to this, the command of triage shall be assumed by the individual designated by the commanding rescue and firefighting chief and shall continue until relieved by the pre-designated medical coordinator.
- 9.4.5** The medical coordinator has responsibility for all medical aspects of the incident and shall report directly to the on-scene commander. The medical coordinator's primary function will be administrative, not as a participant of the medical team treating the injured.
- 9.4.6** As a means to easily identify and distinguish the medical coordinator, a white hard hat and highly visible white coat or vest shall be worn, with "MEDICAL CO-ORDINATOR" displayed front and back in reflective red lettering.
- 9.4.7** Care of Priority I (Immediate care) casualties. This type of casualty includes:
- a) major hemorrhages;
 - b) severe smoke inhalation;
 - c) asphyxiating thoracic and cervico-maxillo-facial injuries;
 - d) cranial traumata with coma and rapidly progressive shock;
 - e) compound fractures;
 - f) extensive burns (more than 30 per cent);
 - g) crush injuries;

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h) any type of shock; and

i) spinal cord injuries.

9.4.8 The following actions are recommended:

- a. first aid (clearing of the wind pipe, stopping of hemorrhages by means of homeostatic pads, and positioning the casualty in the recovery position;
- b. resuscitation;
- c. oxygen administration, except in areas of fuel or fuel soaked clothing; and
- d. placing the injured under shelter pending transportation.

9.4.9 Care of Priority II (Delayed care) casualties. This type of casualty includes:

- a. non-asphyxiating thoracic trauma;
- b. closed fractures of the extremities;
- c. limited burns (less than 30 per cent);
- d. cranial trauma without coma or shock; and
- e. injuries to soft parts.

9.4.10 Care of casualties sustaining injuries which do not need immediate emergency medical treatment to sustain life can be delayed until Priority I casualties have been stabilized. Transportation of Priority II casualties will be performed following minimum on-site care.

9.4.11 Care of Priority III (Minor care) casualties: This type of casualty includes minor injuries only. Certain accidents/incidents will occur where passengers have either minor or no injuries, or appear not to be injured. Because these casualties can interfere with other priorities and operations, it is important that they be transported

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from the accident/incident site to the designated holding area where they shall be re-examined.

9.4.12 It is important that provisions be made for the care, comfort, and identification of Priority III casualties. This shall be provided through Aerodromes operations, the aircraft operator (where involved), or international relief organization (Red Cross, etc.). Specific treatment areas shall be pre-designated for this purpose, such as an empty hangar, a designated area in a passenger terminal, a fire station, or other available sites of adequate size (hotel, school, etc.). Any such area selected shall be equipped with heating or cooling systems, electric light and power, water, telephones and toilet facilities. A number of such preselected sites shall be available so that, when an accident occurs, the most advantageous site can be selected based on both travel distance and space needs (number of casualties involved). All aircraft operator personnel and Aerodromes tenants shall know the location of such designated facilities.

9.5 Control of the flow of the injured

9.5.1 The injured shall pass through four areas which shall be carefully located and easily identified.

- a. **Collection area** — location where initial collection of the seriously injured from the debris is accomplished. The need for the establishment of this area will be dependent upon the type of accident and the circumstances surrounding the accident site. Custody of casualties is normally transferred from the rescue and firefighting personnel to medical services at this point. In most cases, however, this transfer will occur at the triage area.

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- b. **Triage area** — The triage area **shall be located at least 90 m upwind of the accident site** to avoid possible exposure to fire and smoke. If necessary, more than one triage area may be established.
- c. **Care area** — Initially, there will be a single **care area**. Subsequently, this area shall be subdivided into three subareas according to the three categories of injured, i.e. Immediate care (Priority I), Delayed care (Priority II) and Minor care (Priority III). Care areas can be colour coded for identification purposes (Red — Immediate, Yellow — Delayed, and Green — Minor). The use of coloured traffic cones, flags, etc., may be used.
- d. **Transportation area** — A transportation area for the recording, dispatching and evacuation of survivors shall be **located between the care area and the egress road**. Only one transportation area is normally required. However, if there is more than one transportation area, it is essential to have communications between them.

9.5.2 Mobile facilities for the stabilization and treatment of Priorities I and II casualties are recommended. Ideally these facilities shall be operational in less than thirty (30) minutes. Their design must therefore permit rapid conveyance to the site and rapid activation to receive casualties. These facilities shall consist of:

- a) conventional or resuscitation ambulances. A resuscitation ambulance is an ideal shelter for a Priority I casualty. The casualty may be treated there and subsequently conveyed directly to a hospital;
- b) Tents preferably red to accommodate serious or extremely urgent cases. These facilities, with provisions for integrated heating and lighting, can be transported to the scene together with all the necessary medical equipment; and

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- c) Tents preferably yellow to accommodate Priority II casualties. Transportable mobile hospitals or ambulances can be used for stabilization treatment for all casualties.

CHAPTER TEN: CARE OF AMBULATORY SURVIVORS

10.1 General

10.1.1 The Aerodrome Operator, aircraft operator (where involved), or other pre-designated agency selected for the purpose is responsible to:

- a) select the most suitable holding area for the particular emergency from those pre-designated in the Aerodromes emergency plan;
- b) provide for the transportation of the uninjured from the accident site to the designated holding area;
- c) arrange for doctor(s), nurse(s) or teams qualified in first aid to examine and treat the supposedly uninjured, especially for nervous traumatism (shock) and/or smoke inhalation, where pertinent;
- d) furnish a full passenger and crew manifest for accountability purposes;
- e) interview the uninjured and record their names, addresses, phone numbers, and where they can be reached for the next 72 hours;
- f) notify relatives or next of kin where deemed necessary;
- g) co-ordinate efforts with the designated international relief agency (Red Cross, etc.); and
- h) prevent interference by unauthorized persons or those not officially connected with the operation in progress.

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10.1.2 Prearrangement shall be made for the immediate transportation by bus or by other suitable transport of the “walking injured”/ambulatory from the accident site to the designated holding area. This plan shall be implemented automatically following notification of the emergency. A nurse or a person trained in first aid shall accompany these people to the holding area. **Each and every passenger and crew member shall be examined for nervous traumatism (shock) and smoke inhalation.** Cold or inclement weather may require additional provisions for their protection and comfort.

10.1.3 Occupants departing an aircraft using evacuation slides may be barefoot or without proper wearing apparel. Where the aircraft accident occurred in water or a marshy area, these people may be wet and uncomfortable. These problems shall be anticipated by having supplies of clothing, footwear, and blankets readily available. It may be necessary to establish a special holding area which can supply warmth and clothing to prevent hypothermia, and be used for examination purposes, before these persons are transported to the designated ambulatory holding area.

10.1.4 International relief agencies and military establishments provide many of the aforementioned requisites.

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CHAPTER ELEVEN: CARE OF FATALITIES

11.1 Care of Fatalities (Black Tag)

11.1.1 Evidence must be preserved when caring for the fatalities at an aircraft accident site. It is important to realize that an undisturbed site will produce the most reliable evidence for determining cause and/or future corrective action that may help prevent a similar accident. The plan shall include contingencies that address management of the fatalities at the scene of the emergency. The plan needs to designate the person(s) responsible for contacting and coordinating with the forensic doctor. Aerodromes fire fighters and other rescue personnel shall understand the basic need for and the techniques and procedures used in aircraft accident investigation. **Whenever possible, the wreckage shall remain undisturbed until the arrival of the appropriate accident investigation authority.**

11.1.2 Areas immediately surrounding the location of the fatality shall be completely secured. Areas in which a large number of fatalities or dismembered bodies are located shall be left undisturbed until the arrival of the forensic doctor and the aircraft accident investigator or a designee.

11.1.3 An adequate supply of disposable plastic gloves and leather gloves shall be available for stretcher bearers removing the remains of the fatalities. Although disposable plastic gloves are acceptable, they are easily cut or torn by aircraft wreckage and debris. Leather gloves do not rip or tear but do absorb body fluids and decrease the sense of touch. it is suggested that one plastic and one leather glove be worn by the individual stretcher bearer or two bearers can work as a team. **All gloves shall be burned following use in gathering body parts.**

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11.1.4 If it becomes necessary to move bodies or parts of the wreckage, photographs shall be taken showing the relative position of bodies and parts within the wreckage and a sketch of their respective positions shall be made prior to removal. In addition, tags shall be affixed to each body or body part displaced and corresponding stakes or tags shall be placed where the body parts were found in the wreckage. A journal shall be kept of all tags issued. Special precautions shall be taken to avoid disturbing anything in the cockpit area. Shall any flight controls be required to be displaced, photographs, drawings, or notes shall be taken before displacement.

11.1.5 The fatalities shall be extricated and personal effects removed from the wreckage prior to the arrival of the forensic doctor or appropriate authority only to prevent their destruction by fire or for other similar compelling reasons. When bodies must be moved, previously mentioned precautions shall be taken. Provisions shall be made to obtain sufficient body bags to contain all bodies as well as personal effects.

11.1.6 Body bags are normally available from major local suppliers of caskets, funeral directors and their equipment and supply firms, and from nearby military facilities. Stocks of body bags at each Aerodromes are desirable.

11.1.7 **Body identification and determination of cause of death is conducted with the concurrence of the authority designated for this duty.** This operation is generally conducted with the co-operation of forensic teams and other specialists.

11.1.8 Accidents which result in a large number of fatalities will overload normal morgue facilities. In areas where delay or temperature may contribute to the deterioration of tissue, refrigerated storage shall be available. This may be provided either by a permanently located cooler or refrigerated semitrailers. The area for post-mortem examination shall be located near the refrigerated storage and be arranged to

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provide a high level of security. This shall be a suitable working area with electricity and running water, large enough for initial body sorting.

11.1.9 The morgue shall be isolated and in an area remote from places where relatives or the general public have access.

11.1.10 After identification has been made of the fatality, efforts to contact next of kin shall commence. Agencies such as aircraft operators, public service organizations (i.e. international relief agencies and police), or clergy shall be utilized.

11.1.11 The accident investigation team generally has the authority and the need to require autopsies and toxicological analyses of flight crew members, and in special cases, passengers. The need for these tests shall be determined prior to the release of bodies.

11.1.12 As soon as practical after the emergency, all participants in the firefighting and rescue effort shall be debriefed. Their observations shall be recorded by the proper authorities. Sketches, diagrams, photographs, movie films, and tape and video recordings made on the accident site as well as appropriate details on the tagging of bodies and body parts removed from their positions are invaluable tools for investigators.

11.1.13 The forensic officer in charge shall wear a dark brown hard hat and vest or other apparel, with “FORENSIC CHIEF” displayed front and back in distinctive lettering.

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CHAPTER TWELVE: COMMUNICATIONS

12.1 Communication services

12.1.1 Arrangements for two-way communications must be made for all Aerodromes agencies involved in an emergency. The plan also shall include the maintenance of an adequate communication network with off-Aerodromes agencies responding to an emergency. The plan calls for the command post and emergency operations center to have the capability of continuous communication with all participating agencies. **Backup modes of communication shall be identified during the planning process.**

12.2 Communication network

12.2.1 A coordinated communication network is of vital importance to any major operation involving agencies from more than one jurisdiction.

12.2.2 A coordinated communication network shall consist of a sufficient number of radio transceivers, telephones and other communication devices to establish and maintain a primary and a secondary means of communication. These networks shall link the emergency operations center and the command post with each other as well as with all participating agencies.

12.2.3 The operational communication network shall provide a **primary and, where necessary, an alternate means for effective direct communications** between the following, as applicable:

- a) The alerting authority (control tower or flight service station, Aerodromes manager, fixed-base operator, or airline office) and the rescue and firefighting (RFF) units serving the Aerodromes.

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- b) Air traffic control tower and/or flight service station, the appropriate fire department alarm room/dispatch centre(s) and the fire fighting and rescue crews en-route to an aircraft emergency and at the accident/incident site.
- c) Appropriate mutual aid agencies located on or off the Aerodromes, including an alert procedure for all auxiliary personnel expected to respond.
- d) The RFF vehicles, including a communication capability between crew members on each RFF vehicle.

12.3 Communication equipment

12.3.1 It is important to provide serviceable communication equipment in sufficient quantity to ensure rapid response of personnel and equipment to an emergency. The following communication equipment shall be available for immediate use in the event of an emergency.

12.3.2 Portable radios. A sufficient number of portable, two-way radios shall be available to provide each participating agency with the ability to communicate with the command post.

12.3.3 Strict communication discipline must be employed to prevent jamming of emergency frequencies. Each agency shall operate on its own frequency, and there shall be a designated command frequency.

12.3.4 Radios shall be available at the command post to provide direct communication with the aircraft or ground controllers shall it become necessary. These radios shall be equipped with headsets to reduce the confusion and noise from multiple frequencies in use at the time.

12.3.5 Direct communications may also be established with the pilot or the aircraft cockpit by use of cockpit-to-ground lines. This requires a proper connector, wire, microphone, and headset. Co-operation and co-ordination between the

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Aerodromes rescue and firefighting service and the individual aircraft operator(s) are needed to establish this type of communication capability. Normally, this communication capability results from the use of a ground service headset that is plugged into a wheel well interphone jack.

12.3.6 **A sufficient number of fixed lines (both listed and unlisted) or mobile phones shall be available at the command post to provide direct communication with agencies outside the Aerodromes,** as well as within the Aerodromes. Direct lines save time and reduce the probability of overloading radio communication channels.

12.3.7 Medical facilities and ambulances need communications capability in order to take advantage of advance life support systems within the medical community.

12.3.8 A dedicated vehicle equipped with necessary communication equipment and **self-contained electrical power** may be a definite asset to a good communication system. A well-equipped communication vehicle is an indispensable part of an efficient, well-managed command post. Planning shall always include a qualified vehicle driver/operator.

12.3.9 It is desirable to install recording devices with time insertion units at the operations centre and/or mobile command post to ensure that all communications are recorded for later analysis. **It is also desirable to record all emergency communications, including printed communication.**

12.3.10 In the event of a temporary lapse of communications, runners shall be assigned to the command post to augment other modes of communication. Portable megaphones shall also be available.

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12.4 Apron and terminal area emergencies

12.4.1 A communications system shall be established by the Aerodromes operator, or the aircraft operators, in order to provide rapid response of the emergency equipment to accidents and incidents occurring in the terminal areas. Apron accidents include aircraft cabin fires, refueling spills and fires, aircraft and vehicle collisions and medical emergencies.

12.4.2 As many apron personnel as possible, but at least all supervisory personnel, shall be equipped with two-way radios in order to establish direct communication with a central notification facility.

12.4.3 All aircraft boarding gates or boarding bridges shall be equipped with telephones at both boarding and apron levels. Emergency telephone numbers shall be prominently displayed by the telephone.

12.5 Testing and verification

12.5.1 The communication system shall be **tested each day** to verify the operability of all radio and telephone networks.

12.5.2 A complete and current list of interagency telephone numbers shall be available to all agencies and to personnel responsible for the Aerodromes/community emergency plan. These phone numbers shall be **verified monthly** to ensure they are correct. Updated lists shall be distributed to all emergency plan participants on a continual basis.

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CHAPTER THIRTEEN: AERODROME EMERGENCY EXERCISES

13.1 Purpose

13.1.1 The plan shall contain procedures for periodic testing of the adequacy of the plan and for reviewing the results in order to improve its effectiveness. It shall be tested by conducting:

- a. a full-scale aerodrome emergency exercise at intervals not exceeding two years and partial emergency exercises in the intervening year to ensure that any deficiencies found during the full-scale aerodrome emergency exercise have been corrected; or
- b. a series of modular tests commencing in the first year and concluding in a full-scale aerodrome emergency exercise at intervals not exceeding three years; c) and reviewed thereafter, or after an actual emergency, so as to correct any deficiency found during such exercises or actual emergency.

13.1.2 The purpose of an Aerodromes emergency exercise is to ensure the adequacy of the following:

- a. response of all personnel involved;
- b. emergency plans and procedures; and
- c. emergency equipment and communications.

13.1.3 It is therefore important that the plan contain procedures requiring that the Aerodromes emergency plan be tested. **This test shall correct as many deficiencies as possible and familiarize all personnel and agencies concerned with the Aerodromes environment, the other agencies and their role in the emergency plan.**

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13.1.4 The Aerodromes emergency plan provides the framework which enables Aerodromes and community fire protection, security, medical, and other resources to join in an effective, coordinated response to Aerodromes emergencies. By using any of several types of Aerodromes emergency exercises, Aerodromes operators and community emergency resource managers can, first, produce an integrated emergency plan with a response based upon need and emergency location and, second, practice the procedures and co-ordination needed to accomplish an effective emergency response in minimum time. In addition, Testing is crucial for identifying gaps in the plan. For example, some individuals involved in the plan may have misconceptions or misunderstandings about it; some of the procedures that seem workable on paper may not work in practice; the written estimates of time, distance or available resources may be sufficiently inaccurate to cause problems. It may provide emergency response personnel from outside the Aerodromes to familiarize themselves with Aerodromes facilities, resources, traffic pattern, and identifiable hazard areas. The exercises shall be conducted in daylight, twilight and darkness and in various conditions of weather and visibility.

13.2 Types of Aerodrome Emergency Exercises

13.2.1 The following are the methods and schedule of testing the Aerodromes emergency plan:

- a) **Full-scale exercises** shall be conducted at least **once every two years**
- b) **Partial exercises** shall be conducted at least **once each year that a full-scale exercise is not held** or as required to maintain proficiency;

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- c) **Tabletop exercises** shall be conducted at least **once each six months**, except during that six-month period when a full-scale exercise is held.

13.3 Tabletop exercises

13.3.1 The tabletop exercise is a test of the integration and capability of emergency response resources without the expense and disruption of services incurred by a full-scale exercise. The exercise may be held as a co-ordination exercise prior to the full-scale exercise, or it may be held at intervening times in order to reconfirm procedures, policy, telephone numbers, radio frequencies, and changes in key personnel.

13.3.2 **The tabletop exercise is the simplest type of drill to stage, requiring only a meeting room, a large-scale map of the Aerodromes, and a senior representative of each participating unit in attendance.** A probable accident location is selected on the map and each participant describes what actions their unit would take to respond. This exercise will quickly reveal operational problems, such as conflicting communications frequencies, lack of equipment, confusing terminology and areas of jurisdiction. These exercises shall be held semiannually, but not coincidental with other exercises.

13.4 Partial emergency exercises

13.4.1 Partial emergency exercises may be required for some of the participating units in order to train new personnel, evaluate new equipment or techniques, or to comply with mandatory recurrent training requirements. These drills are economical because of their limited scope and can be repeated as often as required in order to maintain a high standard of proficiency. They may involve only one unit, such as

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rescue and firefighting services or medical, or a combination of several units, as desired. These exercises shall be held at least once each year that a full-scale exercise is not held to ensure that any deficiencies found during the full-scale Aerodromes emergency exercise have been corrected.

13.5 Full scale exercises

13.5.1 The Aerodromes emergency plan shall be given full-scale emergency exercises to test all facilities and associated agencies at intervals not exceeding two years. The exercise shall be followed by a full debriefing, critique and analysis. Representatives of all organizations which participate in the exercise shall also actively participate in the critique.

13.5.2 The first step in planning full-scale emergency exercises is to have the support of all Aerodromes and community authorities concerned. Departments and agency personnel to be considered are those listed in 3.1.

13.5.3 **Objectives.** In conducting an Aerodromes full-scale emergency exercise, the first and most basic step Aerodromes and community emergency response planners and workers must decide is exactly what shall be achieved. As funds and personnel are often difficult to obtain, it is prudent for management to make plans to accomplish specific goals.

- a) **Selecting an objective.** There are numerous objectives that can be set for an emergency exercise. For example, it may be desirable to hold an exercise at night to test the reactions of response personnel under nighttime conditions. Similarly, it may be desirable to test the ability of local emergency response teams to react to the discovery of hazardous materials in the cargo of an aircraft.

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b) **Setting limits on goals.** It is likely that more than one objective could be accomplished during an exercise. The pitfall in combining several objectives is that more may be set than can be achieved. As part of the objective setting effort, planners shall limit the scope of the problems that will be explored or they run the risk of confusing and frustrating response personnel. Actual emergencies may create confusion and frustration, but confusion and frustration in training exercises will only produce a negative learning experience. This represents a misspent opportunity for emergency planners and may decrease the ability of the community to respond in real emergencies.

c) **Assessing results.** After the exercise, it shall be possible to look back and see specific skills that were learned, new environmental conditions that were explored, communications systems that were tried out, additional mutual aid units that were integrated into the emergency plan, new equipment that was used, as well as other benefits or problems.

13.5.4 All agency heads must be thoroughly familiar with the Aerodromes emergency plan and must develop a plan for their individual departments in co-ordination with the general plan. The agency heads shall meet regularly to develop an understanding of their agencies' responsibilities and requirements in co-operation with other agencies.

13.5.5 A large passenger aircraft shall be sought for the full-scale emergency exercise to add realism to the on-Aerodromes exercise and to familiarize participants with the problems of removing casualties from aircraft. If an aircraft is not available, a bus or similar large vehicle may be used.

13.5.6 The emergency exercises shall be held in locations which will provide maximum realism while ensuring minimum disruption of the Aerodromes operations. Various

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scenarios can be used. The exercise may be held either during the day or at night on the Aerodromes, in the runway end safety area, or in the surrounding community. Scenarios include accidents involving:

- a) aircraft/structures;
- b) aircraft/aircraft; or
- c) aircraft/ground vehicles.

Since about 80 per cent of all aircraft accidents occur on the runway, the runway end safety areas, or the approach or take-off areas, the majority of exercises shall be held in the aforementioned locations. Where aircraft are not available, inclusion of small fires in the area can add realism for the fire services. Volunteer casualties shall be moulded in order to provide realism for the medical responders.

13.5.7 At least 120 days prior to the scheduled full-scale emergency exercise, the Aerodromes operator shall hold a meeting of all key supervisory personnel of principal participating agencies. At this time, the aims of the exercise shall be outlined, a scenario formulated, work tasks assigned, and duties of all agencies and personnel defined. A suggested time schedule and checklist is as follows:

D – 120 days

Supervisory personnel of participating agencies hold organizational meetings to outline aims, formulate the scenario, assign work tasks, and select emergency plan coordinators. (See Chapter 6);

D – 90 days

First progress report on arrangements;

D – 70 days

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First meeting of all participating agencies (individual committee representatives);

D – 60 days

Complete arrangements for full-scale emergency exercise site or staging area.

Written scenario completed;

D – 50 days

Training for moulage team begins. Second meeting of the individual committee representatives. A moulage chairman can be selected from hospitals, rescue and firefighting personnel, civil defence, military personnel, etc.;

D – 40 days

Arrangements for transportation, feeding, stretcher bearers and volunteer workers completed;

D – 30 days

Third meeting of the individual committee representatives. A preliminary “warm-up” communication exercise is held;

D – 21 days

Fourth meeting of the individual committee representatives. Make-up for members who missed previous team training and arrangements for volunteer casualties completed;

D – 14 days

Final meeting and briefing for all participants, including critique team;

D – 7 days

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Final meeting of supervisory personnel to review assignments;

D – 0 days

The exercise;

D + 1 to 7 days

A critique following the exercise so that all participants may hear the observers' reports; and

D + 30 days

Supervisory personnel meet to review written critiques submitted by observers and participants; revise procedures to correct mistakes and shortcomings indicated in the exercise.

13.5.8 In preparing the scenario, the use of real names of aircraft operators and types of aircraft shall be avoided. This will prevent any possible embarrassment to civil aviation companies or agencies.

13.5.9 In order to obtain the maximum benefit from a full-scale emergency exercise, it is important to review the entire proceedings. An observer critique team shall be organized, comprised of members who are familiar with mass casualty accident proceedings. A team chairman shall be appointed and shall be present at all meetings. The team shall be present at the final organizational meeting (seven days prior to the drill) and, in co-ordination with the authority in charge, ensure that significant problems are introduced into the exercise. **Each member of the critique team shall observe the entire exercise and complete the appropriate emergency drill critique forms (see Appendix). As soon as convenient after**

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the exercise (not later than seven days), a critique meeting shall be held so members of the team can present their observations and recommendations for improvement of the Aerodromes emergency plan procedures and associated Aerodromes emergency plan document.

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CHAPTER FOURTEEN: REVIEW OF THE AERODROME EMERGENCY PLAN

14.1 General

14.1.1 **Evaluating** the plan. Exercises provide Aerodromes operators and exercise planners an excellent opportunity for evaluating the effectiveness and efficiency of the plan. To maximize the usefulness of evaluation, planners shall carefully design the system of evaluation.

14.1.2 **Planning.** In accordance with the objectives of the exercise, planners shall develop an evaluation system that includes feedback, identifies benefits, and obtains the services of evaluators well before the exercise takes place.

- a) **“Feedback loop”.** Figure 14-1 illustrates the classic project management system for project planning and implementation. A project is planned, implemented, and then evaluated (given feedback). The feedback leads to the development of modifications, where needed, after which the cycle begins anew.
- b) **Benefits.** Planning an effective evaluation system for any size Aerodromes emergency response exercise is important not only for detecting problems in the exercise itself, but more importantly, for finding areas of the Aerodromes or community emergency response plans that may need refinement.
- c) **Evaluators.** The exercise shall be totally open to a select group of knowledgeable evaluators, identifiable by distinctive clothing. The evaluators shall not be involved in the planning or conduct of the exercise. Normally, government agencies, other Aerodromes, and private aviation organizations can provide experienced evaluators which can benefit both the Aerodromes holding the exercise and themselves. Evaluators need to be identified well before the exercise and familiarized with the Aerodromes plans, including evaluation and reporting guidelines.

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- d) **Preparation.** Evaluators experienced in Aerodromes operations, emergency response, and emergency exercises require no training by drill planners. However, a preliminary meeting detailing the scope and objectives of the exercise enables the evaluators to do their jobs effectively and thus yield the greatest benefit to the Aerodromes.
- e) **Preparing evaluators.** Evaluators shall receive information packets and critique sheets well before the exercise takes place. Assigning evaluators to assess command, control, and communications and the emergency response functional areas ensures that the key elements of emergency response are observed in detail. Other evaluators shall be assigned to critique the entire exercise. They will move about the site and observe all of the functional areas and response efforts. Outside evaluators often have preferences or certain areas of expertise, such as security or medical, which planners shall determine before making evaluation assignments.
- f) **Critique sheet.** A critique sheet is a considerable aid in the evaluation of an emergency exercise. It is most effective if it is divided into separate sections addressing each of the distinct functional areas with sufficient space for taking notes. Questions asked shall be general since being too specific may consume evaluators' time with details and prevent them from seeing the drill from a larger perspective. Sample critique sheets are provided in Appendix 7.
- g) **Briefings.** Planners shall brief evaluators on their functions and last-minute changes the day before the exercise. At that time, planners may give them final copies of exercise information and critique sheets and distribute distinctive vests, apparel, hats, badges, or other means of identification. Evaluators shall also exercise participants, and familiarize themselves with the marking or clothing that identifies each emergency response function.

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14.1.3 **Feedback.** Three systems of feedback common in exercises are on-site or immediate feedback, critique conferences, and written reports. One or more of these systems shall be used.

- a) **On-site or immediate feedback.** On-site feedback involves assembling representatives from all participating groups immediately after the exercise to get their comments while the exercise is fresh in their minds. Naturally enough, many details may escape as an evaluator tries to summarize several hours of intense activity in a five-minute oral report. Evaluators will overlook other details until later, when they compare notes with other response personnel. The great advantage of on-site feedback is that everyone's interest is at its peak; the most critical problems will likely be discovered immediately. To conduct an on-site feedback session, Aerodromes operators and exercise planners shall set up rules of order to ensure uninterrupted speaking opportunities. A stenographer or tape recorder shall record the session for later review.
- b) **Feedback conference.** The feedback conference will usually involve planners and managers of the various emergency response units involved in the exercise and the plan. Planners shall schedule it no sooner than one week after the exercise. Managers will probably need at least a week to hold feedback sessions with their own personnel and gather valuable information to share at the conference. Local emergency coordinators shall attend the feedback conference, both to benefit the Aerodromes in its use of community resources and to ensure that the community benefits from the Aerodromes experience.
- c) **Written reports.** Evaluators experienced in exercises and critiques shall write reports of their observations. Planners may also ask other personnel for written reports. Written reports are often more candid than comments made in the on-site

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feedback sessions, where participants might be sensitive to **outsiders'** comments. The Aerodromes operators shall make every effort to contact other Aerodromes authorities who have been involved in actual aircraft accidents and those who have conducted full-scale emergency exercises to acquire data and procedures to correct and upgrade their Aerodromes emergency plan.

14.2 Review following an accident

14.2.1 As soon as practical following an accident, responding agencies shall obtain oral or written reports from all of their participating personnel and complete a document covering the entire response operation. A tabletop meeting shall then be held to consider these documents and, if required, make changes to the emergency plan considered necessary to improve the response capability for future emergencies.

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APPENDICES

APPENDIX 1: TEMPLATE FOR AN AERODROME EMERGENCY PLAN DOCUMENT

Section 1 — Emergency telephone numbers

This section shall be limited to essential telephone numbers according to site needs, including:

- a) air traffic services;
- b) rescue and firefighting services (fire departments);
- c) police and security;
- d) medical services:
 - 1) hospitals;
 - 2) ambulances; and
 - 3) doctors — business/residence;
- e) aircraft operators;
- f) government authorities;
- g) civil defence; and
- h) others.

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Section 2 — Aircraft accident on the Aerodromes

- a) action by air traffic services (Aerodromes control tower or Aerodromes flight information service);
- b) action by rescue and firefighting services;
- c) action by police and security services;
- d) action by Aerodromes authority:
 - 1) vehicle escort; and
 - 2) maintenance;
- e) action by medical services:
 - 1) hospitals;
 - 2) ambulances;
 - 3) doctors; and
 - 4) medical personnel;
- f) action by aircraft operator involved;
- g) action by emergency operations centre and mobile command post;
- h) action by government authorities;
- i) communication network (emergency operations centre and mobile command post);
- j) action by agencies involved in mutual aid emergency agreements;
- k) action by transportation authorities (land, sea, air);
- l) action by public information officer(s);
- m) action by local fire departments when structures involved; and

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n) action by all other agencies.

Section 3 — Aircraft accident off the Aerodromes

- a) action by air traffic services (Aerodromes control tower or Aerodromes flight information service);
- b) action by rescue and fire fighting services;
- c) action by local fire departments;
- d) action by police and security services;
- e) action by Aerodromes authority;
- f) action by medical services;
 - 1) hospitals;
 - 2) ambulances;
 - 3) doctors; and
 - 4) medical personnel.
- g) action by agencies involved in mutual aid emergency agreements;
- h) action by aircraft operator involved;
- i) action by emergency operations center and mobile command post;
- j) action by government authorities;
- k) action by communication networks (emergency operations centre and mobile command post);
- l) action by transportation authorities (land, sea, air);

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- m) action by public information officer; and
- n) action by all other agencies.

Section 4 — Malfunction of aircraft in flight (Full emergency or local standby)

- a) action by air traffic services (Aerodromes control tower or flight information service);
- b) action by Aerodromes rescue and firefighting services;
- c) action by police and security services;
- d) action by Aerodromes authority;
- e) action by medical services:
 - 1) hospitals;
 - 2) ambulances;
 - 3) doctors; and
 - 4) medical personnel;
- f) action by aircraft operator involved;
- g) action by emergency operations centre and mobile command post; and
- h) action by all other agencies.

Section 5 — Structural fires

- a) action by air traffic services (Aerodromes control tower or Aerodromes flight information service);
- b) action by rescue and firefighting services (local fire department);

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- c) action by police and security services;
- d) action by Aerodromes authority;
- e) evacuation of structure;
- f) action by medical services:
 - 1) hospitals;
 - 2) ambulances;
 - 3) doctors; and
 - 4) medical personnel;
- g) action by emergency operations center and mobile command post;
- h) action by public information officer; and
- i) action by all other agencies.

Section 6 — Sabotage including bomb threat (aircraft or structure)

- a) action by air traffic services (Aerodromes control tower or Aerodromes flight information service);
- b) action by emergency operations centre and mobile command post;
- c) action by police and security services;
- d) action by Aerodromes authority;
- e) action by rescue and firefighting services;
- f) action by medical services:
 - 1) hospitals;

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- 2) ambulances;
- 3) doctors; and
- 4) medical personnel;
- g) action by aircraft operator involved;
- h) action by government authorities;
- i) isolated aircraft parking position;
- j) evacuation;
- k) searches by dogs and trained personnel;
- l) handling and identification of luggage and cargo on board aircraft;
- m) handling and disposal of suspected bomb;
- n) action by public information officer; and
- o) action by all other agencies.

Section 7 — Unlawful seizure of aircraft

- a) action by air traffic services (Aerodromes control tower or Aerodromes flight information service);
- b) action by rescue and firefighting services;
- c) action by police and security services;
- d) action by Aerodromes authority;
- e) action by medical services;
 - 1) hospitals;

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- 2) ambulances;
- 3) doctors; and
- 4) medical personnel;
- f) action by aircraft operator involved;
- g) action by government authorities;
- h) action by emergency operations centre and mobile command post;
- i) isolated aircraft parking position;
- j) action by public information officer; and
- k) action by all other agencies.

Section 8 — Incident on the Aerodromes

An incident on the Aerodromes may require any or all of the actions detailed in Section 2, “Aircraft accident on the Aerodromes”. Examples of incidents the Aerodromes authority shall consider include fuel spills at the ramp, passenger loading bridge, and fuel storage area; dangerous goods occurrences at freight handling areas; collapse of structures; vehicle/aircraft collisions; etc.

Section 9 — Persons of authority — site roles

To include but not limited to the following according to local requirements:

- a) on-Aerodromes:
 - 1) Aerodromes chief fire officer;
 - 2) Aerodromes authority;

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3) Police and security — Officer-in-charge; and

4) Medical coordinator; and

b) off-Aerodromes:

1) Local chief fire officer;

2) Government authority; and

3) Police and security — Officer-in-charge;

Experience indicates that confusion in identifying command personnel in accident situations is a serious problem. To alleviate this problem, it is suggested that distinctive coloured hard hats and vests or apparel with reflective lettering be worn by command personnel for their easy identification. The following colours are recommended:

Red — Chief Fire Officer

Blue — Police chief

White (Red lettering) — Medical Co-coordinator

International orange — Aerodromes administration

Lime green — Transportation Officer Dark brown — Forensic Chief

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APPENDIX 2: AERODROMES MEDICAL SERVICES

Adequate medical services and supplies shall be available at an Aerodromes. Provision of medical services will generally not present great difficulties at a large Aerodromes or Aerodromes near a large city. Provision of medical services may present some difficulties at small Aerodromes not located near populated areas. These Aerodromes, however, shall have available emergency medical services to provide adequate medical care in the event of an aircraft accident, taking into account the largest aircraft using the Aerodromes.

A medical inventory of the Aerodromes community area shall be part of the Aerodromes emergency plan. Consideration shall be given to:

- a) human resources on and off the Aerodromes, i.e. doctors, teams qualified in first aid, stretcher bearers and nurses; and
- b) medical equipment and services on and off the Aerodromes, i.e. hospitals and ambulances.

At Aerodromes where the above resources are only available from areas beyond the immediate Aerodromes community, the Aerodromes emergency plan shall be integrated with wider emergency plans to obtain the necessary response, possibly using helicopters to transport medical services and equipment to the crash site.

All personnel assigned to rescue duties and “public-contact” Aerodromes employees shall be given first aid and CPR (cardiopulmonary resuscitation) training.

Rescue and firefighting personnel shall have the ability to stabilize seriously injured casualties. At least two full-time members per shift of the Aerodromes rescue and firefighting service or other on-Aerodromes personnel shall be trained to an emergency medical treatment level as determined by the local medical authority. In addition, it is recommended that as many rescue and firefighting personnel as is practicable receive

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training to meet minimum standards of medical proficiency and preferably to the level of personnel highly qualified in first aid or the equivalent. Accordingly, they shall have sufficient medical equipment at their immediate disposal to initiate stabilization until full medical services are available at the site or until transportation of casualties to adequate medical facilities is provided.

Periodic exercises and drills in CPR techniques are mandatory to maintain proficiency. It shall be noted, however, that proficiency in emergency medical techniques can be maintained only through constant practical application. Unless operations include providing advanced life-support systems on a day-to-day basis, proficiency will decline or disappear.

Aerodromes may enlist volunteers from Aerodromes employees other than rescue and firefighting personnel to provide an immediate response to assist casualties resulting from emergencies. Volunteers shall be trained by accredited agencies in first aid and rescue response duties. In case of an emergency, they shall initially be under the supervision of the first commander at the scene, i.e. the chief fire officer, until the arrival of the medical coordinator. Each appropriate authority must address the issues of compensation and liability.

Emergency medical supplies and equipment. The Aerodromes authority shall arrange to have sufficient medical supplies, available on or in the vicinity of the Aerodromes, to treat the passenger and crew capacity of the largest aircraft normally using the Aerodromes. Experience has shown, however, that more than one aircraft can be involved in an aircraft accident. Consequently, medical supplies to handle this possibility shall be considered. The type and quantity of such supplies shall be determined by the principal medical authority for the Aerodromes using the statistical information given in the Table below.

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Table 2.1- Estimated maximum number of casualties at an aircraft accident at an Aerodromes

Aircraft occupants	Number of casualties	20 per cent casualties Immediate care Priority I	30 per cent casualties Delayed care Priority II	50 per cent casualties Minor care Priority III
500	375	75	113	187
450	338	68	101	169
400	300	60	90	150
350	263	53	79	131
300	225	45	68	112
250	188	38	56	94
200	150	30	45	75
150	113	23	34	56
100	75	15	23	37
50	38	8	11	19

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These figures are based on the assumption that the maximum number of surviving casualties at an aircraft accident occurring on or in the vicinity of an Aerodromes is estimated to be about 75 per cent of the aircraft occupants.

It can be expected that requirements for care of these will be distributed as follows:

20 per cent — Immediate care (Red — Priority I)

30 per cent — Delayed care (Yellow — Priority II)

50 per cent — Minor care (Green — Priority III)

The Aerodromes shall have available stretchers, blankets, backboards and/or immobilizing mattresses, preferably stored on a suitable vehicle (e.g. trailer) which can be transported to the accident site. Blankets are needed to alleviate casualties' exposure to shock and possible adverse weather conditions. Since trauma victims in an aircraft accident sometimes sustain severe spinal injuries, backboards and cervical collars shall be used when removing such casualties from the aircraft in order to minimize the possibility of further spinal injury. The backboards shall be of a type designed to fit through access ways and aisles of commercial and business aircraft. They shall have restraining straps available so that the patient can be secured to the board. A cleat shall be attached to the underside of the backboard to facilitate lifting by carrying personnel. Sufficient emergency oxygen and respiratory equipment shall be available to treat smoke inhalation victims.

A resuscitation type ambulance can be used as an ideal shelter for an immediate care (Priority I — Red) casualty.

Inflatable tents shall have adequate heating and lighting when possible. A large tent can normally accommodate about ten (10) serious cases and can be carried on a large all-purpose vehicle along with other necessary medical equipment.

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To cope with an emergency involving a large aircraft, it is recommended that the general emergency medical supplies and equipment described in List 2.1 be available at the Aerodromes or be available from outside sources. List 2.1 has been prepared to cope with the largest type of aircraft at present being used for commercial air transport operations, i.e. B747, DC-10, Airbus. If only operations by smaller aircraft are planned for the foreseeable future, the specified medical supplies and equipment shall be adjusted to comply with reasonable requirements for the largest aircraft expected to operate at the Aerodromes.

List 2.1 General emergency supplies and equipment

Quantity /Description

- 500 triage labels
- 100 stretchers, adaptable to the most commonly used ambulances
- 10 immobilizing mattresses for backbone fractures
- 50 splints, either conventional or inflatable, for the various types of fractures
- 50 first-aid kits, each containing a set of 10 tags, haemostatic pads, tourniquets, respiratory tubes, scissors, dressings, sterile burn packs
- 20 resuscitation chests containing material for on-site intubation, infusion and oxygenation for about 20 casualties (See Figure A3-2)
- 2 or 3 electrocardiographic or electrocardioscopic apparatuses
- 2 or 3 manual or mechanical respirators
- 10 intravenous infusion packs (normal saline or haemacell) with giving sets
- 2 or 3 suction devices

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2 Entonox analgesic cylinders

300-500 plastic bags or coffins for the deceased

Definitions

Immobilizing mattresses (also called vacuum mattresses): This apparatus consists of a plastic bag designed like a mattress and filled with very small balls. An aspirator (mechanical or other) is used to take out the air so that the mattress is crushed by atmospheric pressure and becomes as rigid as plaster. A human body, partly enveloped before compressing the mattress, is completely wrapped. Head, limbs and backbone thus become immobilized, allowing any type of transportation through the use of lateral rope loops. The apparatus is permeable to x-rays. Although the dimensions are variable, its length varies generally between 1.80 and 1.90 m and its width between 0.80 and 0.90 m.

Backboard - These are classified as long and short backboards. The approximate dimension for a long backboard ranges between 1.90 m - 1.83 m in length in order to be able to maneuver through the smallest aircraft emergency exits of 51 cm wide and 91.5 cm high. A 7.5 cm wide velcro retaining strap is normally required for legs, hips, upper torso and head.

Aerodromes Medical Care Facilities

(Medical Clinic and/or First-Aid Room)

General factors influencing need. There are many general factors which influence the need for an Aerodromes first-aid room or an Aerodromes medical clinic. Factors to be taken into consideration include:

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- a) the number of passengers served annually and the number of employees based on the Aerodromes;
- b) the industrial activity on the Aerodromes property and in the surrounding community;
- c) the distance from adequate medical facilities; and
- d) mutual aid medical services agreements.

Generally, it may be recommended that an Aerodromes medical clinic be available when the Aerodromes employees number 1 000 or more and that a first-aid room be available at every Aerodromes. The Aerodromes medical care or first-aid room personnel and facilities shall be integrated with the Aerodromes emergency plan. The Aerodromes medical clinic, in addition to providing emergency medical care to the Aerodromes population, may extend emergency care to communities surrounding the Aerodromes, if these communities have no emergency facilities of their own.

Location of Aerodromes medical care facilities

The facilities shall be readily accessible to the Aerodromes terminal building, to the general public and to emergency transportation equipment (i.e. ambulances, helicopters, etc.). Site selection shall avoid the problem of having to move injured persons through congested areas of the Aerodromes terminal building, while providing access to the facility by emergency vehicles by a route that as far as is feasible can bypass normal public access roadways to and from the Aerodromes. This suggests that the medical care facility be located so that access can be gained from the air side of the Aerodromes terminal building as this provides control over unauthorized vehicles interfering with emergency equipment.

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Aerodromes medical care facility personnel

The number of trained personnel and degree of expertise needed by each individual will depend on the particular Aerodromes's requirements. The staff of the Aerodromes medical clinic shall form the nucleus for the medical services planning for the Aerodromes emergency plan (and be responsible for implementation of the medical portion of the plan). It is recommended that the Aerodromes first-aid room be staffed with at least highly qualified first-aid personnel.

In general, it is recommended that during the principal hours of Aerodromes activity at least one person trained to deal with the following be on duty:

- a) cardiopulmonary resuscitation (CPR);
- b) bleeding from a traumatic source;
- c) Heimlich maneuver (choking);
- d) fractures and splinting;
- e) burns;
- f) shock;
- g) emergency childbirth and immediate care of newborn, including pre-matures;
- h) common medical conditions which may influence the outcome of injury (allergies, high blood pressure, diabetes, pace-maker, etc.);
- i) basic measures for treatment and protection subsequent to spills or leaks of radioactive materials, toxic, or poisonous substances;
- j) treatment of emotionally disturbed persons;
- k) recognition and first aid for poisons, bites, and anaphylactic shock; and
- l) transportation techniques for injured persons.

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This person shall have authority to order hospitalization if necessary and to arrange any needed transportation to a hospital. The Aerodromes medical clinic equipment and the medical supplies have to be determined by the physician or the group of physicians in charge of the clinic. It shall be remembered that responding to an aircraft emergency may be the main problem.

The Aerodromes medical care facility shall be adequately equipped to handle cardiac arrest and other types of injuries and illnesses associated with industrial medicine. If drugs are maintained, provision shall be made to ensure full security.

Since the majority of non-accident related medical emergencies at Aerodromes involve coronary problems, advance life support systems including oxygen, oxygen regulators, and other elements for cardiopulmonary care shall be readily available. In addition, first-aid kits (containing drugs, a wide selection of bandages and splints, blood transfusion equipment, and burn and maternity kits), chains, ropes, crow-bars, and metal cutters shall be available.

Aerodromes without a Medical Care Facility

At Aerodromes without a medical care facility (medical clinic or first-aid room), the Aerodrome operator shall make arrangements to have available sufficient personnel trained in advanced first aid to cover all active hours of Aerodromes operation. Equipment for first aid work at these Aerodromes shall consist, at minimum, of an emergency medical care bag. This bag shall be readily available to be carried on a designated Aerodromes emergency vehicle and shall contain at least:

- one plastic sheet (1.80 m × 1.80 m) with four spikes;
- seven haemostats (one package of three, one package of four);

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- two field dressings (one 45 cm × 56 cm, one 56 cm × 91 cm);
- ten abdominal pads (five packages of two);
- forty 10 cm × 10 cm gauze pads (four packages of ten);
- two tourniquets;
- one artificial airway;
- three disposable airways (one each No. 2, No. 4, No. 5);
- one bulb syringe with two catheters (No. 12, No. 14 FR);
- two large bandage scissors;
- twenty disposable syringes with No. 25 GA 1.6 cm needle;
- twelve ace bandages (two 15 cm, four 7.5 cm, six 5 cm);
- twelve alcohol sponge packages;
- four rolls of gauze bandage (two 7.5 cm, two 5 cm);
- two rolls of adhesive tape;
- four Vaseline gauze dressings (15 cm × 91 cm);
- box of 100 band-aids;
- one blood pressure cuff and gauge;
- two clipboards (22 cm × 28 cm);
- six pencils;
- sufficient supply of casualty identification tags (see Appendix 8);
- one set of inflatable splints;
- one resuscitube;

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- one short spine board;
- one flashlight;
- two cervical collars;
- one bite-stick wedge;
- one disposable obstetric kit; and
- one immobilizing mattress.

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APPENDIX 3: PRESERVATION OF EVIDENCE FOR ACCIDENT INVESTIGATION

Aerodromes fire fighters and other rescue personnel shall understand the basic need for and the techniques and procedures used in aircraft accident investigation. Whenever possible the wreckage shall remain undisturbed until the arrival of the first aircraft accident investigator. However, when absolutely necessary for the rescue or fire suppression activities, the wreckage may be disturbed. Disturbance shall be kept to a minimum.

The bodies of the deceased shall remain in the position they were found. If it becomes necessary to move bodies or parts of the wreckage, a sketch plan of their respective positions prior to removal shall be made as soon as possible. Photographs from four separate angles, if possible, shall be taken showing the relative position of bodies and parts within the wreckage. In addition, tags shall be affixed to each body or part displaced and corresponding stakes or tags shall be placed where they were found in the wreckage. Special precautions shall be taken to prevent disturbance of anything in the cockpit area. Shall any control be displaced voluntarily or accidentally, the occurrence must be recorded and brought to the attention of the accident investigation authority.

Isolation of and security measures within the wreckage area shall be established as soon as possible. All authorized personnel shall possess and display proper "Emergency Access" identification as required by the Aerodromes emergency plan.

All security personnel shall be briefed on proper identification procedures. Two-way radio communication with appropriate authorities on the site can help identify any person seeking entry whose credentials are questionable.

Accident sites can be exceptionally dangerous areas, owing to the possible presence of flammable fuels, dangerous goods and scattered pieces of wreckage. All necessary safety precautions in the emergency area shall be carried out rigidly. These include

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exercising good judgement during fire control and throughout all rescue efforts. Safety equipment and protective clothing must be worn by all personnel involved.

As soon as practical after the emergency, all participants in the fire fighting and rescue efforts shall be debriefed and their observations recorded by the proper authorities. Sketches, diagrams, photographs, movie films, and tape and video recordings made on the accident site as well as appropriate details on the tagging of bodies and parts removed from their locations are invaluable tools for investigators and shall be handed to the investigator-in-charge upon this officer's arrival.

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APPENDIX 4: MUTUAL AID EMERGENCY AGREEMENTS

1. The close proximity of an Aerodromes to surrounding communities and the possibility of an off-Aerodromes aircraft accident give rise to the need for mutual aid emergency agreements.
2. A mutual aid emergency agreement shall specify initial notification and response assignments. It shall not specify the responsibilities of the agency concerned as this will be contained in the emergency plan.
3. Mutual aid emergency agreements must be prearranged and duly authorized. A sample of a letter of agreement is included in Figure 5-1 of this Appendix. The Aerodromes authority may have to act as coordinating agency if more complicated jurisdictional or multi-agency agreements are necessary. Paragraphs 4 and 5 of this Appendix contain guidelines compiled to assist the preparation of mutual aid emergency agreements with local fire departments for accidents occurring on and off the Aerodromes.
4. Procedure for local fire department(s) — aircraft accident on-Aerodromes:
 - a. When a response is initiated, mutual aid fire department(s) shall proceed directly to the rendezvous point or staging area at the Aerodromes. An escort will be provided by Aerodromes police/security from the rendezvous point or staging area to the accident site.
 - b. It is imperative that mutual aid fire department(s) members recognize that unless the Aerodromes is closed to flight operations, unescorted movement on Aerodromes property is extremely dangerous and may result in conflict with aircraft movements.
 - c. Upon arrival at the accident site:

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the senior officer of the Aerodromes rescue and firefighting service receiving mutual aid shall have full authority at the scene; fire department mutual aid communications shall be carried out on the pre-designated communication channel; and communication transmissions will be prefaced by Aerodromes rescue and firefighting/local fire department call number.

5. Procedure for local fire department(s) — aircraft accident off-Aerodromes:

- a) A call to an off-Aerodromes aircraft accident will normally be received from air traffic services or police. Shall that not be the case, the local fire department shall notify air traffic services or police via radio or telephone that an accident has occurred and give the approximate location on the grid map.
- b) Upon arrival at the accident site, the local fire department shall:
 - 1) ensure that the mutual aid emergency agreement is initiated;
 - 2) establish a command post (This may be a temporary post until the Aerodromes authority mobile command post is available and operative.); and
 - 3) ensure that all communications are on the designated aircraft accident channel.
- c) The local fire department shall advise air traffic services or police of the following:
 - 1) exact location of the accident site;
 - 2) location of the command post;
 - 3) specific location/rendezvous points on the grid map to which fire units shall respond; and
 - 4) any request for specialized equipment if necessary.

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Sample of emergency agreement

[Name] INTERNATIONAL AERODROMES

EMERGENCY PLAN

LETTER OF EMERGENCY AGREEMENT

Date issued

Agency: (Name and address)

.....
.....
.....

Endorses the [insert aerodrome name] International Aerodromes Emergency Plan, associated Aerodromes emergency plan document dated (insert date), and attached procedures (included as paragraphs 4 and 5 of the Appendix), and agrees to comply with all the procedures and instructions, and fulfill all applicable responsibilities contained therein.

.....

Signature of Authorized Representative

Date:

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APPENDIX 5: AIRCRAFT ACCIDENTS IN WATER

1. Where Aerodromes are situated adjacent to large bodies of water (such as rivers, oceans or lakes) or where they are located on coastlines, special provisions shall be made for rescue and firefighting operations in the event of an aircraft accident/incident in the water. Specialized equipment for rescue and firefighting may include fire/rescue boats, aircushion vehicles, helicopters, coastal patrol boats, or amphibious vehicles.
2. Consideration of unusual terrain and water conditions such as tidal flats and swamps dictates the choice of the unique types of vehicles most suitable to these conditions. Helicopters, air-cushion, and amphibious vehicles as well as conventional watercraft may be found to provide this specialized service.
3. In developing the water rescue service, consideration shall be given to public services (such as military search and rescue units, harbor police, or fire departments) and private rescue services (such as rescue squads, power and communication companies, offshore oil field operators, or shipping and waterway operators) that may be available and are capable of rendering assistance. A signal system for alerting private or public services in time of emergency shall be prearranged.
4. Many aircraft do not carry personnel flotation devices on board, especially those not engaged on extended flights over water. Such flotation devices shall be available in numbers sufficient to meet the needs of the maximum passenger capacity of the largest aircraft normally using the Aerodromes. Where the largest aircraft are equipped for scheduled over-water operation, the Aerodromes may reduce the amount of personnel flotation devices.

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5. Probability of fire. Where accidents occur in the water, the possibility of fire is normally reduced because of the suppression of ignition sources by the water contact and the cooling of heated surfaces. In a situation where fire is present, control and extinguishment will require the availability of specialized equipment.

6. Spillage of fuel on water surfaces. It shall be anticipated that the impact of the aircraft hitting the water might rupture fuel tanks and lines. It is thus reasonable to assume that quantities of fuel will be found floating on the surface of the water. Boats having exhausts at the waterline may present an ignition hazard if operated where this condition is present. Where fire is present, approach shall be made after considering wind direction and velocity and water current. Fire may be moved away from the area by using a sweeping technique with hose streams. Foam and other extinguishing agents shall be used where necessary. Wind and water currents shall be considered to deal effectively with floating fuel and to prevent it from moving into areas where it would be hazardous to rescue operations. As soon as possible, pockets of fuel shall be broken up or moved with high volume nozzles, neutralized by covering them with foam or a special inert material, or boomed to contain the fuel in a safe area prior to absorption, dilution, or removal. With preplanning, the water pollution control authorities may provide emergency assistance during this operation.

7. Rescue boats. Rescue boats shall be capable of shallow water operations. Boats powered by **jet-type propulsion** eliminate the dangers of propellers puncturing inflatable equipment or injuring survivors during rescue operations. Boats powered by conventional propellers may prevent the hazards of puncture and injury by being equipped with fan-type guards or cowls. Inflatable boats may be punctured by wreckage or barnacles. **8. If the water environment is subject to freezing,**

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vehicles suitable for operation on ice (i.e. hovercraft, swamp boats, etc.) shall be available.

8. Boats and other rescue vehicles shall be so located that they can be brought into action in minimum time. Special boathouses or launching ramps shall be provided in order to reduce response time.
9. **Boats shall be of such size as to efficiently carry the flotation equipment required with adequate space for the crew.** Sufficient working space shall be provided to permit rapid dispersal of the flotation devices. Inflatable life rafts shall be the prime flotation equipment carried; there shall be a sufficient quantity on hand to accommodate the maximum passenger load of the largest aircraft normally using the Aerodromes. Once this flotation equipment has been distributed, there shall be sufficient space to accommodate a limited number of litter cases brought aboard in the rescue process.
10. **Adequate two-way radio equipment** shall be provided in all rescue boats in order to permit communications with other rescue units, such as helicopters, air cushion or amphibious equipment, and water-land based units.
11. **A minimum of two floodlights** shall be provided for night operations.
12. **Radar reflectors** shall be used to facilitate navigation and rendezvous efforts.
13. Even though occupied sections of the aircraft may be submerged; the possibility remains that enough air may be trapped inside to maintain life. Entry by divers shall be made at the deepest point possible.
14. Organizing diving units/use of divers. Diving units shall be dispatched to the scene. When available, helicopters can be used to expedite the transportation of divers to the actual area of the crash. All divers who may be called for this type of service shall be highly trained in both scuba diving and underwater search and

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recovery techniques. In areas where there are no operating governmental or municipal underwater search and recovery teams, agreements may be made with private diving clubs. In all operations where divers are in the water, standard diving flags shall be flown and boats operating in the area shall be warned to exercise extreme caution.

15. It shall be anticipated that victims are more apt to be found downwind or downstream from the accident site. This shall be taken into consideration in planning the operation. Where only the approximate location of the crash is established upon arrival, divers shall use standard underwater search patterns and mark the locations of the major parts of the aircraft with marker buoys. If sufficient divers are not available, dragging operations shall be conducted from surface craft. In no instance shall dragging and diving operations be conducted simultaneously.
16. A command post shall be established at the most feasible location on an adjacent shore. This shall be located in a position to facilitate implementing the Aerodromes/community emergency plan in accordance with guidelines established by the authority having jurisdiction.

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APPENDIX 6: AIRCRAFT OPERATOR EMERGENCY KITS

1. The following material describes the action which is expected to be taken and the services which are expected to be provided by the aircraft operator involved following an aircraft accident.
2. Aircraft operator personnel often make up the only force available for responding to the needs of aircraft occupants in an emergency.
3. The aircraft operator emergency plan shall be coordinated with the Aerodromes emergency plan so that aircraft operator personnel know which responsibilities the Aerodromes will assume and what response is required by the aircraft operator. A checklist form shall be developed by the aircraft operator for the company coordinator's use. This form shall document time of notification of the accident, company communications, personnel assignments, response and other actions taken. From this log of events, a critique of aircraft operator and Aerodromes emergency plans can be analyzed for future improvement.
4. Training shall be initiated by the aircraft operator to prepare all company personnel for emergencies. In all emergencies, the passengers involved are subjected to stresses of a severity not generally encountered. It is vital for all emergency workers to be familiar with common responses by passengers to unusual stress and apprehension and to be able to cope effectively with disturbed persons. The best possible preparation for behaving effectively under emergency conditions is education and practice. Education shall include instruction in the nature and actions of disturbed individuals and the general types of reactions to be expected. Aircraft operator personnel shall participate in simulated emergency drills to help establish effective patterns of behavior under emergency conditions and practice the basic principles of "psychological first aid".

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5. The aircraft operator involved shall make arrangements to adequately handle incoming emergency telephone inquiries. Provision of information to public media shall be considered to avoid numerous telephone calls.
6. A holding area for uninjured persons shall be designated in order to assemble and process passengers not injured or apparently not injured in the emergency. The area selected shall provide for both passenger stabilization and security from the news media.
7. Upon notification of an accident, designated aircraft operator personnel shall immediately report to the designated holding area to receive the passengers evacuated from the accident scene. The aircraft operator personnel shall be at this station before the passengers arrive. Emergency kits (see 10 to 12 in this Appendix for kit contents) shall be prepared and be readily available so that passenger service representatives may effectively carry out their duties. While waiting for the evacuees, an organizational meeting shall be held by the aircraft operator's person in command, delegating:
 - a) a receptionist(s);
 - b) registrars; and
 - c) a welfare coordinator for the survivors.
8. The following organization and description of required duties are suggested.
 - a) The person in command. Normally this will be the senior representative for the operator whose aircraft was involved in the accident. In the event of a charter or a diverted flight, the representative of the aircraft operator designated to provide ground services for that flight shall take command. In the case of an overflight or of an aircraft operator without personnel based at the Aerodromes, the command

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authority shall be the Aerodromes authority. The person in command shall have radio communications with the aircraft operator's operations and emergency operations centres. Telephones shall be available in the passenger holding areas. The aircraft operator's person in command shall oversee the over-all operations and make arrangements for additional medical services if required, commissary items, etc.

- b) Receptionist(s). The receptionist(s) shall meet the buses as they arrive from the scene of the accident and direct the passengers to the registrars' tables where they will be processed. The receptionist(s) shall know where the toilet facilities are located.
- c) Registrars. The registrars shall have emergency kits available. Two people will constitute one registrar team. Several teams will be required to swiftly and efficiently process the passengers. One member will enter the passenger's name on the registrar's form (see Figure 7-1) and determine what arrangements are desired; i.e. hotel accommodation or reservations for another flight, transportation, clothing, etc., and any persons to be notified of the passenger's condition and future plans. The other member of the registrar team will make out an identification tag or sticker (available from the emergency kit) and place it on the passenger. This will assist in identifying the passenger when accommodations have been arranged. More importantly, this will indicate that the passenger has been processed. The registrars will then direct the uninjured survivors to the welfare coordinators.
- d) Welfare coordinator. Welfare coordinators are the nucleus of "psychological first aid." They shall attempt to stimulate passenger conversation. Special attention shall be given to those who do not join in the group. In giving psychological first aid, it will be noted that some persons become more disturbed than others. Giving sympathetic understanding can be the first step towards helping a person.

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Overwhelming persons with pity will only make them feel more helpless and might confirm their worst fears concerning their condition. A person who exhibits bodily trembling, rapid breathing, shortness of breath, etc., shall be engaged in conversation and professional medical attention requested as soon as available.

9. A staff force of the size indicated can be provided by most aircraft operators; however, there may be a problem at Aerodromes with a small operation. As a result, a mutual aid assistance programme of all aircraft operator personnel and (if necessary, other Aerodromes tenants based at the Aerodromes) shall be established. Training can be acquired from local international relief agencies (Red Cross, etc.). This training is not extensive but would provide education for passenger service in an emergency.

Emergency Kits

10. Each aircraft operator shall prepare an emergency kit which can be readily available to all aircraft operator personnel during all hours of operations. All company personnel shall have knowledge of the location of the emergency kit. The kit must contain writing pads or forms on which to list the following information:
 - a. name, address, and home telephone number of passenger;
 - b. name and telephone number of person to be notified of passenger's condition;
 - c. arrangement requests of passenger (i.e. future flight, hotel, transportation within the local area, etc.); and
 - d. where person can be contacted during the next 72 hours.

The kit shall also contain adhesive type name tags to identify passengers who have been processed and those for whom arrangements have been made.

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11. Contacts numbers for the following shall be available in the emergency kit:

- a) **doctors to attend to minor injuries. Each aircraft operator shall have a letter of agreement with a physician(s) who will respond to a designated holding area;**
- b) hotels where passengers can be billeted. It is beneficial to place passengers in the same hotel or at least in groups at hotels;
- c) linguists, who shall be available on a 24-hour basis (preferably people who work on the Aerodromes for quick response). Local schools and private language departments can also be contacted;
- d) caterer (if commissary items are required);
- e) all local aircraft operator reservations offices;
- f) ambulance companies in case a passenger unexpectedly requires transportation;
- g) taxicab companies; and
- h) **emergency telephone numbers** to be disseminated on radio and television so that families of the casualties may telephone and receive information.

12. A current copy of a recognized airline guide shall be available in the emergency kit. (Local airline schedules would be most helpful for registrars who will be making arrangements on future flights).

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Copy of the Registrar's Form

REGISTRAR'S FORM

Passenger details

Name:

Address:

Address:

Address:

Phone number:

Accommodation/Hotel (name):

.....

Future flight (no.):

Local transportation:

Where can be contacted during next 72 hours:

.....

.....

Person to be notified

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Name:

Relationship:

Phone number(s):

Phone number(s):

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APPENDIX 7: EMERGENCY EXERCISE CRITIQUE FORM

Name of person performing critique.....

GENERAL

1. Date and time of emergency.....

(Day/Month/Year)

.....

(Local time — 24-hour clock)

2. Location of emergency

.....

3. Type of emergency

.....

.....

RESCUE FIRE FIGHTING OPERATIONS

4. Time of emergency notification

.....

(Local time — 24-hour clock)

5. a) First agency or individual to arrive at emergency

.....

b) Time of arrival

.....

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(Local time — 24-hour clock)

6. a) Arrival time of Aerodromes rescue fire-fighting service at emergency

.....

(Local time — 24-hour clock)

b) Approximate number of fire personnel at site

.....

c) Time and type of first protection action (foam, dry chemical, etc.)

.....

(Local time — 24-hour clock)

7. a) Time first casualty evacuated from aircraft

.....

(Local time — 24-hour clock)

b) How evacuated

.....

.....

.....

.....

c) Number of casualties evacuated from inside aircraft

.....

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d) Time last casualty evacuated from aircraft

.....

(Local time — 24-hour clock)

Comments:

.....
.....
.....
.....
.....

8. a) Number of injured

.....

b) Number of non-injured

.....

c) Number of dead

.....

9. a) Time first casualty transported to triage area

.....

(Local time — 24-hour clock)

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b) Time last casualty transported to triage area

.....

(Local time — 24-hour clock)

10. a) Name of other services participating in first aid

.....

.....

.....

b) Who was in charge of these services?

.....

.....

.....

c) How many persons involved?

.....

11. a) Name of other organizations participating in rescue operations

.....

.....

.....

.....

b) Number of persons involved

.....

12. Was the moulage realistic? YES/NO

SECURITY

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13. a) Time of emergency notification to police/security

.....

(Local time — 24-hour clock)

b) Who was first police/security officer to arrive at emergency site?

.....
.....

c) Time of arrival

.....

(Local time — 24-hour clock)

14. a) Number of persons involved

.....

b) Did command of security at emergency site change at any time? YES/NO

If so, give sequence of command change and agency represented

.....
.....
.....
.....

15. Was the traffic satisfactorily controlled? YES NO

16. Was there any provision for the security of personal effects? YES NO

17. Any special problems at accident site with security (spectators, etc.)?

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c) How notified?

.....

d) By whom?

.....

e) Arrival time at emergency site

.....

(Local time — 24-hour clock)

20. a) Number of physicians responding

.....

b) Number of nursing personnel responding

.....

21. a) Was a triage area designated at emergency site? YES/NO

b) Was the triage area located to expedite the flow of casualties?

.....

c) Were the casualties properly classified and tagged?

.....

22. How were medical and first aid personnel identified?

.....

.....

.....

23. a) What time were international relief agencies (Red Cross, etc.) notified?

.....

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(Local time — 24-hour clock)

b) How notified?

.....

c) By whom?

.....

d) Arrival time

.....

.....

(Local time — 24-hour clock)

e) Which agencies were participating?

.....

.....

.....

.....

f) Number of personnel participating

.....

AMBULANCES

24. a) Time of notification to ambulances

.....

(Local time — 24-hour clock)

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b) How notified?

.....

c) By whom?

.....

d) Name of ambulance company

.....

.....

e) Time of arrival at accident site of first ambulance

.....

(Local time — 24-hour clock)

25. a) How many casualties did ambulance handle?

.....

b) Time of departure

.....

(Local time — 24-hour clock)

c) Hospital

.....

d) Arrival time at hospital

.....

(Local time — 24-hour clock)

26. a) Was ingress or egress to accident site a problem? YES/NO

If yes, explain:.....

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.....

.....

b) Were there any special problems driving from accident site to hospital? YES/NO

If yes, explain:.....

.....

HOSPITALS

27. Number of physicians responding

.....

28. Number of nursing personnel responding

.....

29. Number of other hospital personnel responding

.....

30. Number of casualties received

.....

31. Kind of casualties received

.....

.....

.....

.....

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b) From what organization?

.....
.....

39. What special problems were indicated?

.....
.....
.....

COMMUNICATIONS AND CONTROL

40. Did the Command Post perform effectively? YES/NO

41. Did the emergency operations centre perform effectively? YES/NO

42. Was the personnel call system effective? YES/NO

43. Was the physician call system effective? YES/NO

44. Was the emergency message accurately received? YES/NO

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45. Were communications with the hospitals effective? YES/NO

46. Were there any problems with internal communications? YES/NO

If yes, explain:

.....

.....

47. What kinds of communications systems were used?

a) two-way radio

b) telephone

c) walkie-talkie

d) messenger

e) other (Specify)

NARRATIVE

Make any comments that may be helpful in evaluating this exercise.

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