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NFPA 424M Airport/ Community Emergency Planning 1986

National Fire Protection Association Batterymarch Park, Quincy, MA 02269

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Policy Adopted by NFPA Board of Directors on December 3, 1982

The Board of Directors reaffirms that the National Fire Protection Association recognizes that the toxicity of the products of combustion is an important factor in the loss of life from fire. NFPA has dealt with that subject in its technical committee documents for many years.

There is a concern that the growing use of synthetic materials may produce more or additional toxic products of combustion in a fire environment. The Board has, therefore, asked all NFPA technical committees to review the documents for which they are responsible to be sure that the documents respond to this current concern. To assist the committees in meeting this request, the Board has appointed an advisory committee to provide specific guidance to the technical committees on questions relating to assessing the hazards of the products of combustion.

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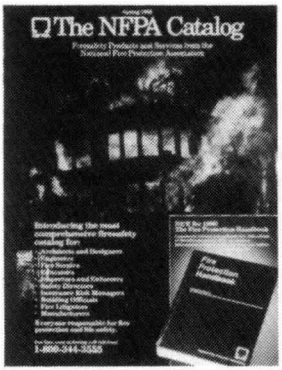

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NFPA 424M

Manual for

Airport/Community Emergency Planning

1986 Edition

This edition of NFPA 424M, *Manual for Airport/Community Emergency Planning*, was prepared by the Technical Committee on Aircraft Rescue and Fire Fighting, released by the Correlating Committee on Aviation, and acted on by the National Fire Protection Association, Inc. at its Annual Meeting held May 19-22, 1986, in Atlanta, Georgia. It was issued by the Standards Council on June 11, 1986, with an effective date of July 1, 1986, and supersedes all previous editions.

The 1986 edition of this document has been approved by the American National Standards Institute.

Origin and Development of NFPA 424M

The Subcommittee on NFPA 424 started work on this document in 1976. It was submitted to the Association at the 1978 Fall Meeting, and released as the first edition on January 25, 1979.

This second edition is a complete rework of the text to expand the material included, and covers additional subject areas. Because of the informational format of this document, an "M" was added to NFPA 424 to designate this as a Manual.

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Contents

NFPA 424M

Manual for

Airport/Community Emergency Planning

1986 Edition

NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates explanatory material on that paragraph in Appendix A.

Chapter 1 Administration

1-1 Scope. This manual describes the elements of an aircraft/community emergency plan that require consideration before, during, and after an emergency has occurred. The scope of the aircraft/community emergency plan should include command, communication, and coordination functions for executing the plan.

1-2 Purpose. This manual was written to inform airport and adjacent community authorities of current emergency planning techniques and procedures that result in the efficient utilization of personnel from all involved organizations to provide maximum delivery of emergency services to the airport and the surrounding community.

1-3 Definitions.

Terms that are defined in this manual are used in accordance with the meanings and usages given therein. A wide variety of terms are in use throughout the world to describe facilities, procedures, services, etc., related to airports. As far as possible the terms used in this manual are those that have the widest international use. 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 that takes place between the time any person boards the aircraft with the intention of flight, until such person has disembarked, in which any person suffers death or serious injury as a result of coming in contact with anything attached therto, or in which the aircraft receives substantial damage.

Aircraft Incident. Any occurrence associated with the operation of an aircraft that is not considered an "Aircraft Accident."

Aircraft Operator. A person, organization, or enterprise engaged in or offering to engage in aircraft operation.

Airline Coordinator. A representative authority delegated by an airline to represent its interests during an emergency covered by this manual.

Airport Air Traffic Control. A service established to provide air and ground traffic control for airports.

Airport/Community Emergency Plan. Establishment of procedures for coordinating the response of airport services with other agencies in the surrounding community that could be of assistance in responding to an emergency occurring on, or in the vicinity of, the airport.

Airport Control Tower. A unit established to provide air traffic control service for airport traffic.

Airport Flight Information Service. Air traffic services units that provide airport flight information service, search and rescue, alerting service to aircraft at noncontrolled airports, and assistance to aircraft in emergency situations.

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

Airside. The movement area of an airport, adjacent terrain and buildings or portions thereof, access to which is controlled.

Authority Having Jurisdiction.* The "authority having jurisdiction" is the organization, office or individual responsible for "approving" equipment, an installation or a procedure.

Biological Agents. Living organisms that are utilized in medical research or "germ" warfare.

Care Area. Location where first medical care is given to injured.

Collection Area. Location where seriously injured are collected initially.

Command Post. Point where responding agencies are briefed on the situation as they arrive to report and assume control of the individual aspects of the operation.

Drill. Testing of the emergency plan and review of the results in order to improve the effectiveness of the plan.

Emergency Medical Technician (EMT). A person trained to administer emergency medical treatment more advanced than basic first aid.

Emergency Operations Center. A fixed designated area on the airport to be used in supporting and coordinating operations at airport emergencies.

Full-Scale Emergency Exercise. Assembly and utilization of all the resources that would be available and used in a real emergency.

Grid Map. A plan view of an area with a system of squares (numbered and lettered) superimposed to provide a fixed reference to any point in the area.

Holding Area. Location to which the apparently uninjured aircraft occupants are transported.

In-Flight Emergency. Those emergencies that affect the operational integrity of an aircraft while in flight.

The seriousness of these emergencies can be defined by using alert status guidelines stated in FAA terms.

Inner Perimeter. That area which is secured to allow effective command, communication and coordination control, and to allow for safe operations to deal 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 that includes the gathering and analysis of information, the drawing of 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 that enables a physician to provide definitive treatment for serious injuries at the accident scene.

Moulage. A reproduction of a skin lesion, tumor, wound, or other pathological state. Applied for realism to simulate injuries in emergency exercises.

Mutual Aid. Mutual aid is synonymous with "mutual assistance," "outside aid," "memorandums of understanding," "letters of agreement" or other similar agreements, written or not, that constitute an agreed reciprocal assistance plan between emergency services.

On-Scene Commander. Person designated to take charge of the overall emergency operation.

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

Paramedic. A medical technician who has received extensive training in advanced life support and emergency medicine. These personnel are usually permitted to administer intravenous fluids and other drugs that can arrest a life-threatening physiological condition.

Rendezvous Point. A prearranged reference point, i.e., road junction, crossroad, 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.

Specialty Emergency Exercise. One or more specialty agencies fully involved in an exercise to test or give the agency practice in its specialty.

Stabilization. All the medical measures used to restore basic physiologic equilibrium in a patient in shock, due to trauma, so that he/she may survive for future definitive care.

Staging Area. A prearranged, strategically placed area, where support response personnel, vehicles, and other equipment can be held in an organized state of readiness for use during an emergency.

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

Triage. Sorting and classification of casualties to determine the order of priority for medical treatment and transportation.

Triage Area. Location where triage operations are carried out.

Chapter 2 Emergency Planning

2-1* The Plan.

2-1.1 The airport/community emergency plan should describe the coordination of the actions to be taken in an emergency occurring at an airport or in its vicinity.

2-1.2 "Before the emergency" considerations include detailed planning addressing all factors that may reasonably be forecast to bear upon effective emergency operations. Preplanning should define the organizational authority and the responsibilities for developing, testing, and implementing the emergency action plan both on and off the airport facility.

2-1.3 "During the emergency" considerations depend on the exact nature and location of the emergency. These factors will change as the rescue work progresses. For example, while the fire chief would normally be the first "on-scene" overall commander of the emergency forces, he/she may thereafter become one of several staff officers as other responding officers from other agencies assume their designated roles at the command post under the jurisdiction of the designated "on-scene" commander.

2-1.4 "After the emergency" considerations may not possess as high an element of urgency as the preceding events, but particularly due to legal considerations, transitions of authority and responsibility at the scene need to be thoroughly discussed and planned in advance. Some personnel who in early stages had a direct operational assignment subsequently may be required to remain on the scene and may assume a supportive role (i.e., police/security personnel; fire-rescue personnel). It is thus necessary to preplan for these supportive services as regards their work schedules and overtime pay, and to consider problems related to restoring or maintaining protective services to permit continuation of normal airport/aircraft operations that may have been disrupted by the emergency.

2-1.5 The recommendations set forth are based on the requirement that rescue of aircraft occupants and other related accident victims takes precedence over most other operations. The stabilization and emergency medical treatment of victims is of paramount importance. The speed and skill of such treatment is crucial in situations

where life hazards exist. An effective rescue effort requires adequate preplanning for the emergency and subsequent execution of periodic practice drills.

2-1.6 Recommendations contained herein are not intended to conflict with any local or state regulations or jurisdictions. One of the principal purposes of this document is to alert all participating departments or agencies that conflicts may exist because such international, national, state, or local regulations may overlap or have voids. These recommended practices will help resolve many of the problem areas that actual emergencies have demonstrated as potential conflicts.

2-1.7 Ammendment of Airport/Community Emergency Plan.

2-1.7.1 The airport authority should maintain the master records of the Airport/Community Emergency Plan and transmit to each participating agency amendments, additions, and revisions as appropriate.

2-1.7.2 It is suggested that the structure of the Airport/Community Emergency Plan be arranged so that each annex is severable, so that each agency may insert changes concerning its function to the airport authority on an ongoing, as-needed basis. However, at suitable intervals — every two years is suggested — the entire Airport Community Emergency Plan should be reviewed by the participants in the plan. The purpose of such review should be to have a comprehensive analysis of lessons learned from the drill, geographical/physical changes, legal, and technical changes, etc., that may influence adequacy of the Airport/Community Emergency Plan.

2-1.8 Training Costs. Detailed training and planning are outlined in various annexes that follow. Funding for training costs may be available from local, state, or federal resources. Planning for training costs should include not only consumables such as fuel, foam, agent, medical supplies, notebooks, etc., but also food and insurance for all participants involved in drills as discussed in Chapter 10, "Airport/Community Emergency Plan Drill."

2-2 Types of Emergencies.

2-2.1 Different types of emergencies that can be anticipated are: emergencies involving aircraft; emergencies not involving aircraft; medical emergencies; or a combination of these emergencies.

2-2.2 Emergencies involving aircraft include:

(a) Aircraft accident — on airport.

(b) Aircraft accident — off airport.

(c) Aircraft emergencies in flight.

2-3 Types of Alerts.

2-3.1 The terms used to describe various categories of aircraft alerts are not standardized. The Federal Aviation Administration (FAA) terms — Alert I, Alert II, or Alert III — and the International Civil Aviation Organization (ICAO) terms — Local Standby, Full Emergency, and Aircraft Accident — are equivalent.

2-3.2 Alert I — Local Standby. An aircraft that is known or suspected to have an operational defect should be considered local standby. This defect should not normally cause serious difficulty in achieving a safe landing.

Alert I should also be initiated when an aeromedical evacuation or presidential/VIP aircraft is arriving or departing.

Airports should have management policies for implementation of Alert I procedures whenever required response times cannot be achieved. Factors that may affect response time include construction work, field maintenance, and adverse weather conditions such as snow, ice, or low visibility.

Airports should have management policies for implementation of Alert I procedures during arrival and departures of certain categories or types of aircraft not normally utilizing the airport.

Under Alert I conditions, at least one aircraft rescue and fire fighting vehicle should be manned and positioned to permit immediate use in the event of an incident. The Aircraft Rescue and Fire Fighting (ARFF) personnel should be advised of (1) the type of aircraft, (2) the number of passengers and crew, (3) the type and amount of fuel, (4) the nature of the emergency, (5) the type, amount, and location of dangerous goods, and (6) the number of nonambulatory passengers on board, if any. All other ARFF vehicles should be available for immediate response.

2-3.3 Alert II — Full Emergency. An aircraft that is known or is suspected to have an operational defect that affects normal flight operations to the extent that there is danger of an accident is an Alert II — Full Emergency. ARFF personnel should be provided with detailed information that allows preparation for likely contingencies. A full response should be made with the emergency equipment manned and positioned with engines running and all emergency lights operating so that the fastest response to the incident/accident site can be accomplished. It is important that appropriate radio frequencies be continuously monitored by ARFF personnel. One or more major aircraft rescue and fire fighting vehicles should be able to initiate fire suppression within the briefest period of time following the aircraft's coming to rest. Standby positioning of vehicles should be established for a variety of anticipated circumstances. The ARFF personnel should be informed of any changes in a distressed aircraft's emergency conditions that could affect the touchdown point or the ultimate behavior of the aircraft.

2-3.4 Alert III — Aircraft Accident. This alert denotes an aircraft accident has occurred on or in the vicinity of the airport. Regardless of the source of this alarm, full airport fire and rescue response procedures should be put into effect. When possible, all known pertinent information should be relayed via radio by Air Traffic Control (ATC) to responding emergency units and include as accurately as possible the location of the accident using grid-map coordinates and landmarks.

When such information is not available, the ARFF personnel should anticipate the worst situation and prepare accordingly.

The officer in charge should advise ATC of conditions at the site, particularly if such conditions could interfere with flight operations.

2-3.5 Emergencies not involving aircraft include:

(a) Non-aircraft accident related airport emergencies.

(b) Natural disasters.

(c) Medical emergencies.

Chapter 3 Agencies Involved

3-1 Agencies.

3-1.1 Current telephone number should be verified monthly for all agencies and revised phone number lists reissued to all agencies involved in the Airport/Community Emergency Plan.

3-1.2 The first step in a viable airport emergency plan is to have the cooperation and participation of all the concerned airport/community authorities. Agencies to be considered are:

(a) air traffic services;

(b) rescue and fire fighting services (departments);

(c) police and/or security services;

(d) airport authority;

(e) medical services, which include ambulance services;

(f) hospitals;

(g) aircraft operators;

(h) communication services;

(i) airport tenants;

(j) transportation authorities (land, sea, and air);

(k) rescue coordination center;

(l) civil defense;

(m) mutual aid agencies;

(n) military;

(o) harbor patrol or coast guard;

(p) clergy;

(q) public information office/news media;

(r) veterinary service;

(s) civil engineering contractors;

(t) post office;

(u) environmental protection (EPA);

(v) customs;

(w) public utilities;

(x) mental health agencies;

(y) other.

3-2 Air Traffic Services.

3-2.1 When the emergency involves an aircraft, the airport control tower (or airport flight service station) is required to contact the rescue and fire fighting service and 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 airport emergency plan may specify that air traffic services should initiate the calling of the local fire departments and other appropriate organizations in accordance with the procedures laid down in the plan, giving the grid-map reference, rendezvous point and, where necessary, the airport 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 if known, and the name of the aircraft operator, if appropriate. If the airport must be closed because of the emergency situation at hand, air traffic services are expected to take action as necessary in respect to aircraft desiring to land or depart.

3-3 Rescue and Fire Fighting Services (Departments).

3-3.1* The prime responsibility of airport rescue and fire fighting personnel is to save lives. Property endangered by aircraft incidents and accidents occurring on or near the airport should be preserved as far as practicable. To achieve this object, fire control normally is defined as "securing" the area to prevent any reignitions. There are aircraft accidents, however, where fire may not occur, or where the fire may be rapidly extinguished. In every case the actions taken are all aimed at providing the most immediate attention possible to survivors of the accident.

3-3.2 Unless the seriously injured are rapidly stabilized, they may become fatalities. Responding rescue and fire fighting personnel should receive training to locally required emergency medical standards, as 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. Coordination with other responding personnel having the required medical expertise should be addressed in the airport community emergency plan.

3-3.3 The fire fighting officer in command should be identified by his/her standard distinctive uniform. He/she should also wear a red vest with reflective lettering "CHIEF FIRE OFFICER" displayed front and back.

3-3.4 Only fire fighters and those wearing approved fire fighting protective clothing and equipment should be allowed in close proximity to an aircraft accident site [50 ft (15 m) from any point on the aircraft or any fuel spillage is usually considered a safe distance].

3-4 Police and/or Security Services.

3-4.1 In an airport emergency, it is expected that the first police or security officer to arrive at the scene will secure the site and request reinforcement if needed. It is expected that his/her responsibilities will continue until relieved by the law enforcement agency that has designated authority over the area. The plan should include arrangements for the rapid and effective reinforce-

ment of the security cordon by local police, military, or other units under governmental control.

3-4.2 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 are allowed at the scene of the accident and to route the normal traffic away from or around the accident site.

3-4.3 The plan should provide for the control of crowds that always collect at an accident site and for preserving the entire area undisturbed, as far as practicable for investigation purposes.

3-4.4 A mutual aid program should be instituted between all potentially involved security agencies, e.g. airport, city, local, and governmental security forces; mail inspectors; and, where appropriate, military police and customs officials.

3-4.5 A method of easy identification of responding emergency personnel should be implemented at security check points to ensure that appropriate emergency personnel have immediate access to the accident site. "Emergency Access" identification can be pre-issued by the airport authority to emergency personnel for use during an emergency.

3-4.6 In many cases it may not be possible or practicable for vehicles of mutual aid fire departments, ambulances, etc., to proceed directly to the accident/incident site. It is essential that the emergency plan include procedures for meeting at a designated rendezvous point or points. A rendezvous point can also be used as a staging area where responding units can be held until needed at the accident site. Those controlling the rendezvous point should also consider the suitability of vehicles to adverse terrain conditions at the accident site to prevent obstruction of the access route by disabled vehicles. Staging vehicles can prevent traffic jams and confusion at the accident scene.

3-4.7 For distinctive and easy identification, the on-scene security/police officer in command should wear a blue vest with reflective lettering "POLICE CHIEF" displayed front and back.

3-5 Airport Authority.

3-5.1 The airport authority is responsible for establishing, promulgating, and implementing the plan and designating a person to be in charge of the overall operation at the command post. The plan should call for the airport authority to ensure that the information on names and telephone number of offices or people involved in an airport emergency is kept up-to-date and distributed to all concerned. Coordination of all agencies responding to an emergency is expected to be carried out by the airport authority. It will also set up necessary meetings of the airport emergency plan coordinating committee, composed of key personnel from participating agencies for critique of the plan, after it has been tested or implemented. The airport authority should be responsible for closing the airport and ensuring that aircraft operations are resumed only when circumstances permit aircraft to operate safely without interfering with rescue activities.

3-5.2 For distinctive and easy identification, the airport operations officer in charge should wear an international orange vest with reflective lettering "AIRPORT ADMINISTRATION" displayed back and front.

3-6 Medical Services.

3-6.1 The purpose of medical services is to provide triage, first aid, transportation, and medical care so as:

(a) to save as many lives as possible by locating and stabilizing the most seriously injured whose lives may be in danger if not taken care of immediately;

(b) to provide comfort to the less seriously injured and to administer first aid; and

(c) to transport casualties to the proper medical facility.

3-6.2 It is essential that the provision of medical services, such as triage, stabilization, first aid, medical care, and the transporting of the injured to the hospital(s) be carried out in the most expeditious manner possible. To this end, well-organized medical resources (personnel, equipment, and medical supplies) should be available at the accident site in the shortest possible time. The medical aspects of the emergency plan should be integrated with the local community emergency plans as agreed upon in the mutual aid emergency agreement.

3-6.3 A medical coordinator should be assigned to assume command of the emergency medical operations at the accident site. If airport medical services exist, the medical coordinator may be designated from the airport medical staff. In some cases, it may be necessary to appoint an interim medical coordinator, who will be relieved when the regular medical coordinator arrives. The interim medical coordinator can be designated from the airport rescue and fire fighting personnel.

3-6.4 Medical and ambulance services may be an integral part of the airport organizational structure. If these services are not available at the airport, prearrangements with local, private, or public medical and ambulance services should be made. The plan has to ensure the dispatch of a satisfactory assignment of personnel, equipment, and medical supplies. Prearrangements are necessary for the availability of extra hospital staffing of doctors and other medical personnel for all airport emergencies. The plan should list a sufficient number of doctors to offset the probable absence of some doctors at the time an emergency occurs. Sufficient medical staff must remain at the hospital for backup. 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.

3-6.5 The plan should designate a medical transportation officer whose responsibilities would include:

(a) Alerting hospitals and medical personnel of the emergency.

(b) Directing transportation of casualties to proper hospitals suited to the particular injury.

(c) Accounting for casualties by recording route of transportation, hospital transported to, and casualty's name and extent of injuries.

(d) Advising hospitals when casualties are en route.

(e) Maintaining contact with hospitals, medical transportation, the senior medical officer, on-scene command post, and the command post.

3-7 Hospitals.

3-7.1 Participating hospitals should have contingency emergency plans for blood donations and to provide for mobilization of necessary medical teams to the accident site in the shortest possible time. Availability of qualified personnel and adequate facilities at the hospitals to deal with airport emergency situations is vital. In this respect, it is mandatory to establish in advance an accurate list of surrounding hospitals classified according to their effective receiving capacity and specialized features such as neurosurgical ability or burn treatment.

3-7.2 The distance from the airport and the ability to receive helicopters should be considered. Reliable two-way communication should be provided between the hospitals and ambulances and helicopters. The alert of an aircraft accident should be made to a single medical facility which then alerts all other facilities according to a local medical communications network.

3-8* Aircraft Operators.

3-8.1 It is important that arrangements be made in the plan for full details of aircraft-related information, such as number of persons aboard, fuel, and carriage of any dangerous goods, to be available. Aircraft operators are expected to be responsible for providing this information. They are also responsible for first arrangements for any uninjured survivors who may require to continue their journey, or need accommodation or other assistance. They may also be responsible for contacting deceased passenger's next of kin. Clergy, police, and/or international relief agencies (Red Cross, etc.) will normally assist in the accomplishment of this task.

3-9 Government Authorities.

3-9.1 In order to avoid conflict and confusion between participants, the airport emergency plan should clearly define the obligation, controls, and limitations placed on the airport authority by government agencies. Post-accident investigation, unlawful seizure of aircraft, bomb threats, and bombings may fall into jurisdiction other than that of the airport authority.

3-10 Communication Services.

3-10.1 Arrangments are expected to be made for all airport agencies involved in an emergency to have two-way communication capabilities. The plan should also cover an adequate communication network to be maintained with the off-airport agencies responding to an emergency. The plan should call for the command post and emergency operations center to have the capability of freely communicating with all participating agencies.

3-11 Airport Tenants.

3-11.1 Airport tenants and their employees should be considered a prime source of readily available equipment and manpower who may have intimate knowledge of the airport and aircraft. They can be invaluable, especially if their backgrounds include medical training or food preparation or are transportation-related. It is important that these persons be deployed under supervision and assigned specific functions to avoid duplication of efforts and the possibility of disrupting other emergency operations.

3-12 Transportation Authorities (Land, Sea, Air).

3-12.1 In an emergency, vehicles are needed to carry out rescue operations, transport personnel, and haul supplies and debris. Responsibility for the control of vehicles to be used during an emergency should be assigned to a designated transportation officer. All of the transportation equipment and drivers available at the airport, such as buses, trucks, maintenance vehicles, and automobiles should be inventoried and their use included in the emergency plan. Arrangements in advance might also be made to obtain additional vehicles from bus companies, leasing companies, or garages. Also, by prior agreement, the use of vehicles owned by airport employees might be included in the emergency plan. All plans for vehicle use should include qualified operators for the vehicles.

3-12.2 In airport emergencies, provision should be made for an easily identifiable guide vehicle(s), equipped with two-way radio communication, to lead groups of vehicles from the rendezvous point(s) or staging area to the accident site so as to avoid interference with aircraft operations.

3-12.3 For distinctive and easy identification, the transportation officer in charge should wear a lime green vest with distinctive reflective lettering, "TRANSPORTATION OFFICER" displayed back and front.

3-12.4 Suitable rescue equipment and services should be available for use at an airport where the area to be covered by the appropriate services includes water or swampy areas or other difficult terrain that cannot be fully served by conventional wheeled vehicles. This is particularly important where a significant portion of approach/departure operations take place over these areas.

3-13 Rescue Coordination Center.

3-13.1 Rescue coordination centers may play a significant role in the case of an aircraft accident occurring in the vicinity of an airport if the site of the accident is not known or if rescue facilities additional to those available at or near the airport are required to be brought into action. Rescue coordination centers should have means of immediate communication with all rescue units within their areas of responsibility, including units able to provide aircraft, helicopters, and special rescue teams, and, where appropriate, with coastal radio stations capable of alerting and communicating with surface vessels. Assistance from some of these units can be essential in responding to an accident in the vicinity of the airport. It is therefore suggested that the potential role of the rescue

coordination center be specifically highlighted in the proposed airport emergency plan document in a separate paragraph.

3-14 Civil Defense.

3-14.1 The airport emergency plan should be integrated with the local community overall civil defense emergency plan and with local search and rescue teams. Consideration should be given to the role the airport may have, as a result of coordination with civil defense officials, in support of any state and regional defense requirements.

3-15 Mutual Aid Agencies.

3-15.1* Airport emergencies may be of such magnitude that local rescue and fire fighting, security, law enforcement, and medical services are inadequate to handle the situation. It is therefore strongly recommended that written mutual aid programs be initiated to ensure the prompt response of adequate rescue and fire fighting, security, law enforcement, and medical services.

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

3-15.2 All mutual aid agreements should be reviewed or revised annually. Telephone and personnel contacts should be reviewed and updated monthly.

3-16 Military.

3-16.1 Where a military installation is located on or in the vicinity of an airport, a mutual aid agreement should be initiated to integrate personnel with command, communication, and coordination functions of the emergency plan.

3-17* Harbor Patrol and Coast Guard.

3-17.1 Harbor patrol and coast guard services are vital to airports adjacent to large bodies of water. Coordination of such services should be included in the airport emergency plan where applicable. These services usually interface with rescue coordination centers and mutual aid police units. Communication requirements to obtain the immediate response of such services are an essential ingredient of the plan.

3-18 Clergy.

3-18.1 Arrangements should be made to contact the clergy of all faiths to provide comfort to casualties and relatives and to perform religious services where and when appropriate.

3-19 Public Information Officer.

3-19.1 A public information officer should be designated. This officer should coordinate and release factual information to the news media and should also coordinate public information statements between all parties involved. It is recommended that the television and radio news media be requested to withold the release of accident information for at least fifteen minutes (or longer, if possible). This will allow sufficient time for adequate security to be established around the accident site and for road blocks to be established on ingress and egress roads to the accident site and on roads for use by participating emergency medical agencies and other services.

3-20 Mental Health Agencies.

3-20.1 The emergency plan should include the local mental health agencies. Therapeutic treatment as well as follow-up procedures for dealing with the possible long-term effects of the emergency should be available for survivors, relatives, and eyewitnesses, and to emergency scene personnel.

Chapter 4 Functions of Each Agency for Each Type of Emergency

4-1 Accident — Aircraft on Airport.

4-1.1 The airport/community emergency plan should be implemented immediately upon an aircraft accident occurring on the airport. Responding agencies should take the following action.

4-1.2 Action by Air Traffic Control (ATC) Services.

4-1.2.1 Initiate emergency response by using the alarm communications system. (*See Figure 4-1.2.1.*)

4-1.2.2* Call the rescue and fire fighting service, providing information on the location of the accident, giving grid-map reference and all other essential details. These details should include:

(a) time of accident; and

(b) type of aircraft.

Subsequent calls may expand this information by providing details on the number of occupants, fuel on board, aircraft operator, if appropriate, and any dangerous goods (hazardous materials) on board, including quantity and location, if known.

4-1.2.3 Initiate the calling of the police and security services, airport authority, and medical services in accordance with the procedure in the airport/community emergency plan, giving grid map reference, rendezvous point and/or staging area and, where necessary, airport entrance to be used.

4-1.2.4 Restrict airport operations and minimize vehicle traffic on that runway to prevent disturbance of accident investigation evidence.

4-1.2.5 Issue the following Notice to Airmen (NOTAM) immediately:

> Airport rescue and fire fighting service protection unavailable until (time) or until further notice. All equipment committed to an aircraft accident.

4-1.2.6 Confirm that the actions above were completed, by written or computer checklist, indicating time and name of person completing action.

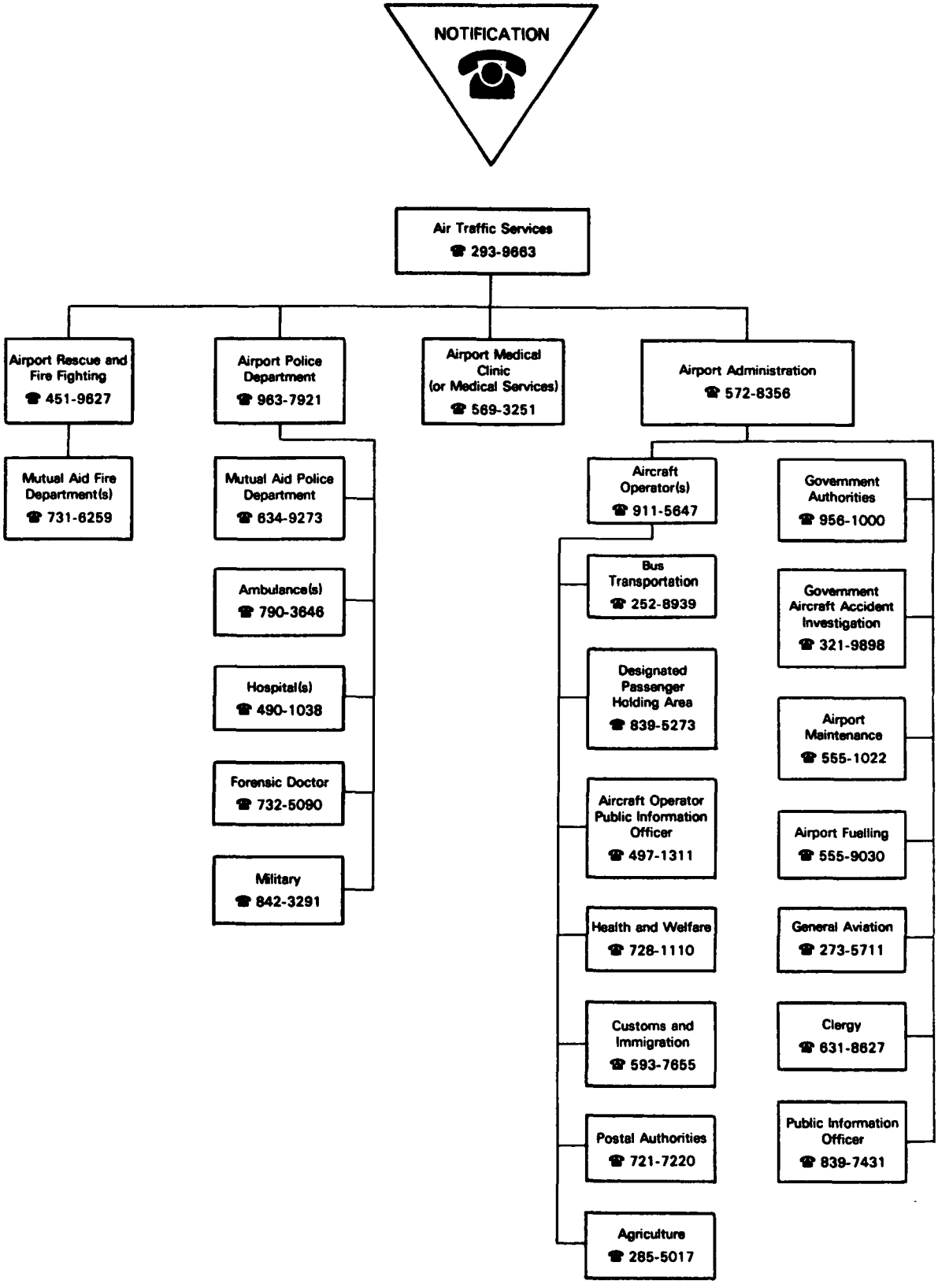

Figure 4-1.2.1 Flow Control Chart — Aircraft Accident on Airport.

4-1.3 Action by Rescue and Fire Fighting (RFF) Services.

4-1.3.1 Alarm for an aircraft accident on the airport will normally be received from the air traffic control services. When, however, an alarm is received from any other source, or an accident is observed, or there is reason to consider that one is imminent, the airport rescue and fire fighting services should take action in the same manner as if the air traffic control services had originated the alarm, and the air traffic control services should be informed by the responding fire fighting services as to the nature of the alarm, its location, and of the response initiated.

4-1.3.2 Airport rescue and fire fighting services should:

1. Proceed via established access routes to the site indicated by air traffic control services.

2. Advise mutual aid fire department(s) while en route of:

(a) rendezvous point;

(b) staging area;

(c) manpower and equipment required for support, if known;

(d) any other pertinent information.

3. Establish immediately an On-Scene Command Post.

4-1.3.3 Command authority at any accident site should be predetermined according to the jurisdictional responsibilities of the agencies involved and as designated in the airport/community emergency plan.

4-1.3.4 Prior agreement should be reached between the on-airport rescue and fire fighting service and the off-airport mutual aid fire departments as to who is best equipped to fight fires in aircraft hangars or other airport structures. Additionally, there should be prior agreement as to which agency will be in command when an accident involves an aircraft and/or an airport structure.

4-1.4 Action by Police and/or other Security Services.

4-1.4.1 The first security/police officer to arrive should, to the degree possible, initiate security responsibility, establish immediately free traffic lanes on ingress and egress roads for emergency vehicles, and request reinforcements as needed. He/she should remain in command of security until relieved by the law enforcement authority who has jurisdiction over the area.

He/she should notify the airport security communications center or local security/police communications center (where appropriate) of the location of the accident, access ingress and egress roads available, and where responding security personnel should make initial response and recommendations for setting up road blocks away from the accident site to aid responding emergency vehicles. Responding police vehicles should not proceed directly to the accident site (unless instructed to by police communications center officer) to view the scene, but set up appropriate road blocks at least two to three blocks away, as directed by the local security communications center. The local/police communication officer should set up appropriate road block locations as indicated on the local grid map to prevent road congestion.

4-1.4.2 Security personnel and police should handle traffic in the vicinity of the accident site, admit only authorized emergency personnel to the scene, keep unauthorized persons from the accident site, and be responsible for preservation of the accident scene.

4-1.4.3 All unnecessary traffic should be routed away from and around site of accident.

4-1.4.4 The emergency site should be cordoned off as soon as possible to exclude intruders, press, sightseers, onlookers, and souvenir hunters. Appropriate marking should be prominently displayed to advise all persons of possible hazards that may cause serious injury should they encroach on the area.

4-1.4.5 Communications between all security check points and the command post and/or emergency operations center should be established as soon as possible.

4-1.4.6 Identifying arm bands, site passes, or I.D. tags should be issued by the authority having jurisdiction and monitored by the security services.

4-1.4.7 Special security provisions should be instituted for the protection of the flight data and cockpit voice recorders, any mail involved, and any dangerous goods (hazardous materials) that may be present.

4-1.5 Action by Airport Authority.

4-1.5.1 The airport authority should go to the accident site and, when required, set up an easily identifiable mobile command post. The mobile command post should be adequately staffed by senior representatives able to make decisions involving:

(a) airport operations;

(b) security operations;

(c) medical operations; and

(d) aircraft operator involved.

4-1.5.2 The airport authority should commence written check list procedures to verify that:

(a) the airport emergency operations center has been activated;

(b) mutual aid police procedures have been initiated and secondary notification calls have been made;

(c) medical and ambulance services have been alerted and their arrivals verified at the designated rendezvous point or staging area;

(d) mutual aid fire departments have been notified and escort has been provided for their access to the accident site;

(e) the affected aircraft operator has been notified and information obtained on any dangerous goods (hazardous materials) on board the aircraft, e.g. explosive substances, flammable gases and liquids, combustible solids, oxidizing substances, poisonous substances, radioactive materials or corrosives;

(f) liaison has been established with air traffic control services concerning the closure of airport areas, designation of emergency response corridors, issuing of voice advisories and Notice to Airmen (NOTAM) advising of reduced airport rescue and fire fighting protection;

(g) government aircraft accident investigation authorities [National Transportation Safety Board (NTSB)] have been notified (if military aircraft is involved the appropriate military organization should be notified);

(h) the meteorological department has been notified to make a special weather observation;

(i) arrangements have been made for the affected runway to be immediately surveyed by the appropriate personnel to identify the location of crash debris, and that the debris be secured pending release by investigating agencies;

(j) airspace reservation coordination offices (Air Traffic Flow Control Office), if any, have been advised of reduced airport capabilities.

4-1.5.3 In conjunction with mutual aid police, the airport authority should:

(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 personnel to the accident site, particularly the provision of escort for ambulances responding to the rendezvous point, and from the staging area;

(c) assign parking areas for escort vehicles and ambulances with consideration for rapid deployment when dispatched.

4-1.5.4 After consulting with the on-scene commander, the airport authority or its designee should coordinate the activities of mutual aid rescue personnel and direct their activities to maximize their effort, while not unduly endangering the rescue personnel.

4-1.5.5 The airport authority should also, to the extent possible, arrange to have available the following services as may be required:

(a) portable emergency shelter for use by other than medical services;

(b) lavatories;

(c) drinking water;

(d) ropes barriers, etc.;

(e) food service;

(f) mobile or portable lighting;

(g) portable heating system;

(h) cones, stakes, flags, and signs;

(i) machinery — heavy equipment — extraction tools;

(j) communications equipment such as megaphone, portable telephone, etc.;

(k) fuel removal equipment.

4-1.5.6 The airport authority should provide the initial briefing for their airport public information officer. He/she should then coordinate, when appropriate, with the public information officer of the aircraft operator involved:

(a) press releases for the various press officers from the agencies involved;

(b) briefing and statements that will be released to the press.

4-1.5.7 Upon concurrence of the chief fire officer, police/security chief, and the medical coordinator, the airport authority's on-scene commander should notify all participating mutual aid organizations of termination of the airport emergency. Note that this may not terminate all actions and responsibilities of participating agencies.

4-1.6 Action by Medical Services.

4-1.6.1 The medical coordinator should coordinate with the medical transportation officer and medical services to:

(a) verify that mutual aid medical and ambulance services have been alerted and verify their subsequent arrival at the rendezvous point or staging area and that a medical communication network is established.

(b) organize the necessary action for triage and treatment of the casualties, and their eventual evacuation by appropriate means of transportation;

(c) ensure, together with the transportation officer, the control and dispatch of the casualties to the appropriate hospitals by land, sea, or air;

(d) maintain an accurate list of the casualties including their names and their destination for treatment;

(e) coordinate, with the aircraft operator concerned, the transportation of the uninjured to the designated holding area;

(f) arrange for the restocking of the medical supplies, if necessary.

4-1.7 Action by Hospitals.

4-1.7.1 Hospitals listed in the emergency plan should be prepared to:

(a) Provide doctors and trauma teams in accordance with the airport/community emergency plan;

(b) Provide medical care to the casualties when they arrive;

(c) Ensure that adequate doctors and nurses, blood, operating rooms, intensive care, and surgical teams are available for emergency disaster situations, including aircraft accidents.

4-1.8 Action by Aircraft Operators.

4-1.8.1 The senior aircraft operator respresentative should report to the mobile command post to coordinate the aircraft operator activities with the person in charge.

4-1.8.2 The senior aircraft operator representative should provide information regarding passenger load, flight crew complement, and dangerous goods (hazardous materials) on the aircraft. These include explosive substances, flammable liquids or gases, combustible solids, oxidizing substances, poisonous substances,

radioactive materials, and corrosives. Information of this nature should be relayed as soon as possible to the chief fire officer and the medical coordinator.

4-1.8.3 The senior aircraft operator representative should make arrangements for bus transportation from the accident site to the designated uninjured holding area. Transportation of the "walking wounded" from the scene should be permitted only after consultation with the medical coordinator.

4-1.8.4 The aircraft operator staff should proceed to the designated uninjured holding area. The senior aircraft operator representative at the uninjured holding area should appoint a receptionist, registrars, and welfare coordinators from staff who have been previously trained in these functions.

4-1.8.5 The aircraft operator representative who is in command of the uninjured holding area oversees the overall operations by making arrangements for commissary items, clothing, telephone facilities, and additional medical services if required.

4-1.8.6 The receptionist should 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 should also explain where toilet facilities and telephones are located.

4-1.8.7 The registrar should record the passenger's name on the manifest and determine what reservation requirements are desired, i.e. hotel accommodation, 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 should then make out an identification tag or sticker, and place it on the passenger. The registrars then direct passengers to the welfare coordinators when their registration is completed.

4-1.8.8 Welfare coordinators trained in stress management should:

(a) give support and comfort to relatives and friends of persons on board the aircraft involved;

(b) register relatives and friends waiting at the airport for information about persons on board;

(c) provide care, comfort, and assistance to the walking injured and uninjured survivors and responding personnel (if required);

(d) assist in the provision and serving of refreshments to waiting relatives and friends.

4-1.8.8.1 The welfare plan should provide for a suitable location to carry out the functions as well as procedures for alerting and coordinating welfare organizations.

4-1.8.9 The aircraft operator should provide notification of the aircraft accident to:

(a) health and welfare agencies;

(b) customs, where applicable;

(c) immigration, where applicable; and

(d) post office.

4-1.8.10 A senior aircraft operator official should arrange for the initial notification of relatives and friends.

4-1.8.11 News releases by aircraft operators should be prepared in conjunction with the airport public information officer and liaison officers from other agencies involved in the accident.

4-1.8.12 The aircraft operator is responsible for the removal of the wrecked or disabled aircraft, as soon as authorized by the National Transportation Safety Board or their designee. For aircraft removal technique see: *International Civil Aviation Organization Airport Services Manual*, Part 5, "Removal of Disabled Aircraft." Also see International Air Transport Association - *Guidelines for Airport Operaters and Airport Authorities on Procedures for Removal of Disabled Aircraft.*

4-1.9 Action by Government Authorities.

4-1.9.1 The following government authorities may be required to take appropriate action as indicated in their emergency plan:

(a) National Transportation Safety Board;

(b) Federal Aviation Administration;

(c) health and welfare;

(d) post office;

(e) customs;

(f) immigration;

(g) agriculture; and

(h) public works.

4-1.10 Action by the Public Information Officer.

4-1.10.1 All press personnel should be directed to a designated press staging area for press personnel authorized to cover an airport emergency. At this area the following should be provided:

(a) latest briefing;

(b) communications (telephones); and

(c) transportation service to and from the scene of emergency, when permissible and when it will not interfere with rescue, medical treatment of casualties, and the accident investigation.

4-1.10.2 Only members of the press, freelance reporters, and photographers wearing a valid regular police working press card will be admitted to the briefing area, or permitted to the designated press staging area, or transported to the scene of the emergency.

4-1.10.3 In general, the official authority for news releases concerning an aircraft emergency should be that of:

(a) a public information officer designated by the airport authority; and/or

(b) the representative of the aircraft operator involved.

4-1.10.4 Under no circumstances should the press or any other personnel not involved in life saving or fire fighting operations be permitted inside security lines until all rescue operations have been completed and the area

has been declared safe by the chief fire officer. When establishing security lines the interests of news coverage should be taken into account insofar as rescue operations permit.

4-2 Accident — Aircraft off Airport.

4-2.1 The airport/community emergency plan, as well as the mutual aid emergency agreement, should be implemented immediately upon an aircraft accident occurring off the airport.

4-2.2 Action by Air Traffic Control Services.

4-2.2.1 Initiate emergency response by using the alarm communications system. (*See Figure 4-2.2.1.*)

4-2.2.2* Call the fire department having jurisdiction over the accident area, providing information on the location of the accident, giving grid-map reference and all other essential details. These details should include:

(a) time of accident; and

(b) type of aircraft.

Subsequent calls may expand this information by providing details on the number of occupants, fuel on board, aircraft operator, if appropriate, and any dangerous goods (hazardous materials) on board, including quantity and location, if known.

4-2.2.3 Alert the airport rescue and fire fighting service, police and security services, airport authority, and medical services in accordance with the procedure in the airport/community emergency plan, giving grid-map reference.

4-2.2.4 If requested by the fire department having jurisdiction over the accident area, dispatch the airport rescue and fire fighting service in accordance with the airport/community emergency plan and the mutual aid emergency agreement.

4-2.2.5 Issue the following Notice to Airmen (NOTAM) if required.

> Airport rescue and fire fighting service reduced to category (indicate category number) until further notice.

4-2.2.6 Confirm that the actions above were completed by written or computer checklist, indicating time and name of person.

4-2.3 Action by Police and Security Services.

4-2.3.1 The first security police officer to arrive should initiate accident site security procedures. He/she should notify the local security communications center of the location of the accident, access ingress and egress roads available, and where responding security personnel should set up road blocks to expedite rapid access of responding emergency vehicles. Responding police vehicles should avoid proceeding directly to the accident site (unless instructed to) but should set up appropriate road blocks (as instructed by the police communications center). The local police communication officer should set up appropriate road block locations as indicated on local grid map to prevent road congestion.

4-2.3.2 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.

4-2.3.3 Normal traffic should be routed away from and around the accident site.

4-2.3.4* The emergency site should be cordoned off as soon as possible to exclude intruders, press, sightseers, onlookers, and souvenir hunters. Appropriate markings should be prominently displayed to advise all persons of possible hazards that may cause serious injury should they encroach on the area. Flares should not be used within 50 ft (15 m) of the accident site to prevent ignition of fuel vapors.

4-2.3.5 Communications between all security check points and the command post and/or emergency operations center should be implemented as soon as possible.

4-2.3.6 Identifying arm bands, site passes, or I.D. tags should be issued by the controlling authority and monitored by the security/police officer and his/her team.

4-2.3.7 Special security provisions are necessary to protect the flight data and cockpit voice recorders, any mail involved or dangerous goods (hazardous materials) that may be present.

4-2.4 Action by Airport Rescue and Fire Fighting Services.

4-2.4.1 A call for an aircraft accident off the airport normally is received from the air traffic control services, local police, or local fire departments. Designated vehicles should be sent in accordance with the existing mutual aid department agreements.

4-2.4.2 Responding airport rescue and fire fighting services should:

(a) Proceed via pre-established access routes to the off-airport accident site in coordination with local police/security direction.

(b) While en route, advise or request of fire department having jurisdiction over the area:

1. rendezvous point and/or staging area;
2. staffing and equipment responding; and
3. any other pertinent information.

4-2.4.3 The senior airport fire officer should report to the senior fire officer of the fire department having jurisdiction over the area and request orders.

4-2.4.4 Prior agreement should be achieved between the on-airport rescue and fire fighting service and the local fire department in command and mutual aid fire departments as to who is best equipped to fight fires involving aircraft and/or structures. Additionally, there should be agreement as to which agency will act in command when an accident involves both an aircraft and an off-airport structure.

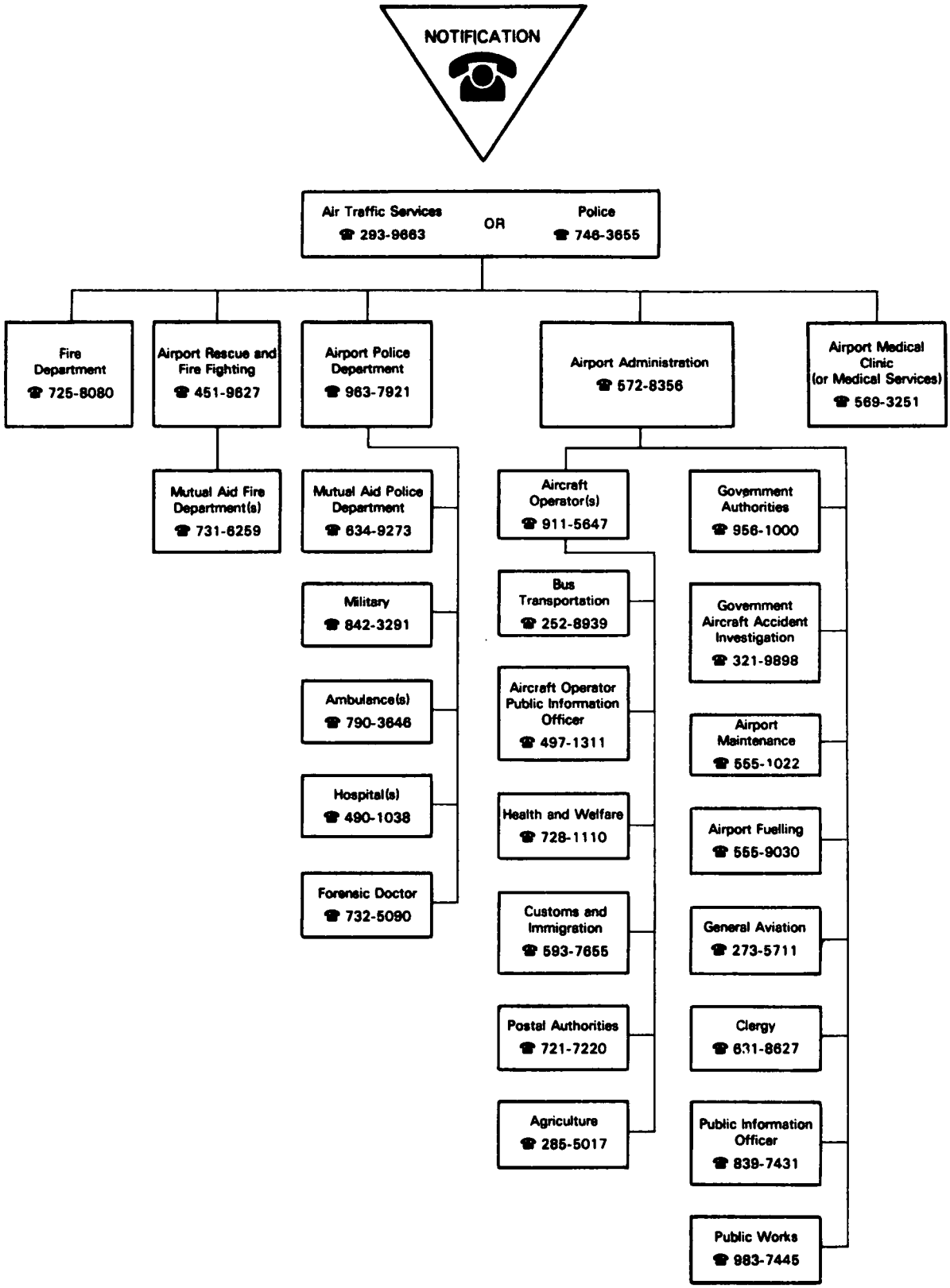

Figure 4-2.2.1 Flow Control Chart — Aircraft Accident off Airport.

4-2.5 Action by Community Medical Services.

4-2.5.1 Local medical authorities with the assistance of civil defense officials (where applicable) are normally responsible for organizing the medical response. The medical response indicated in the airport community emergency plan is an appropriate model for mass casualty accidents occurring off the airport.

4-2.5.2 Local military installations with medical facilities should be contacted to determine their willingness to be integrated into the community medical response plan.

4-2.6 Action by Hospitals.

(a) Provide doctors and trauma teams to the accident site as soon as they are notified of the emergency;

(b) Provide medical care to the casualties when they arrive;

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

(d) Notify coroner/medical examiner.

4-2.7 Action by Airport Authority.

4-2.7.1 If previously agreed in the airport mutual aid emergency agreement with the surrounding community, the following actions may be taken by the airport authority:

(a) go to the accident site;

(b) ensure that, if required, the airport emergency operations center and the mobile command post are activated;

(c) extend as much emergency aid as requested by the jurisdiction agency in command of the off-airport accident/incident;

(d) notify the aircraft operator involved;

(e) notify other agencies as required;

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

4-2.8 Action by Aircraft Operators.

4.2.8.1 The senior aircraft operator representative should report to the command post to coordinate the aircraft operator activities with the person in charge.

4-2.8.2 The senior aircraft operator representative should provide information regarding passenger load, flight crew complement, and dangerous goods (hazardous materials) on the aircraft. These include explosive substances, gases, inflammable liquids or solids, oxidizing substances, poisonous substances, radioactive materials and corrosives. Information of this nature should be relayed as soon as possible to the chief fire officer and the medical coordinator.

4-2.8.3 The senior aircraft operator representative should make arrangements for bus transportation from the accident site to the designated uninjured holding area. Transportation of the "walking wounded" from the scene should be permitted only after consulting with the medical coordinator.

4-2.8.4 The aircraft operator staff should proceed to the designated uninjured holding area. The senior aircraft operator representative at the uninjured holding area will appoint a receptionist, registrars, and welfare coordinators from staff who have been previously trained in these functions.

4-2.8.5 The aircraft operator representative who is in command of the uninjured holding area oversees the overall operations by making arrangements for commissary items, clothing, telephone facilities, and additional medical services if required.

4-2.8.6 The receptionist should 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 should know where support facilities are located, i.e. toilet facilities, telephones, clothing, drinking water, etc.

4-2.8.7 The registrar should record the passenger's name on the manifest and determine what reservation requirements are desired, i.e., hotel accommodation, air transportation or other modes of transportation, etc., and names of any persons to be notified of the passenger's physical and/or mental condition and potential plans. The registrar should make out an identification tag or sticker (available from the emergency kit) and place it on the passenger. The registrars should then direct the passengers to the welfare coordinators when their registration is completed.

4-2.8.8 Welfare coordinators trained in stress management should attempt to stimulate passenger conversation.

4-2.8.9 The aircraft operator should provide notification of the aircraft accident to:

(a) health and welfare agencies;

(b) customs, where applicable;

(c) immigration, where applicable;

(d) post office;

(e) agriculture agencies;

(f) environmental agency (EPA);

(g) national investigative agency (FBI).

4-2.8.10 A senior aircraft operator official should be responsible for the initial notification of relatives and friends.

4-2.8.11 News releases by aircraft operators should be prepared in conjunction with the airport public information officer and liaison officers from other agencies involved in the accident.

4-2.8.12 The aircraft operator is responsible for the removal of the wrecked or disabled aircraft, as soon as

authorized by the aircraft accident investigation authority. For aircraft removal technique see: *International Civil Aviation Organization Airport Services Manual*, Part 5, "Removal of Disabled Aircraft."

4-2.9 Action by Government Authorities.

4-2.9.1 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;

(b) health and welfare;

(c) post office;

(d) customs;

(e) immigration; and

(f) agriculture.

4-2.10 Action by the Public Information Officer.

4-2.10.1 The responsibility for news releases concerning off-airport emergency should be that of:

(a) the representative of the aircraft operator;

(b) a public information officer designated by the service government authority in command; and

(c) a public information representative designated by the airport authority.

4-2.10.2 Under no circumstances should the press or any other personnel not involved in life saving or fire fighting operations be permitted inside security lines until all rescue operations have been completed and the area is declared safe for entry without protective clothing by the chief fire officer. When establishing security lines the interests of news coverage should be taken into account insofar as rescue operations permit.

4-3 Full Emergency Incident — Aircraft in Flight.

4-3.1 The agencies involved in the airport/community emergency plan should be alerted to "full emergency" status when it is known that an aircraft approaching the airport is, or is suspected to be, in such trouble that there is a strong likelihood of an accident.

4-3.2 Action by Air Traffic Services.

4-3.2.1 Call the airport rescue and fire fighting service to stand by at the predetermined standby positions applicable to the runway to be used and give as many of the following details as possible:

(a) type of aircraft;

(b) nature of trouble;

(c) runway to be used;

(d) estimated time of landing;

(e) aircraft operator, if appropriate;

(f) fuel on board;

(g) number of occupants, including special occupants — handicapped, immobilized, blind, deaf; and

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

4-3.2.2 Initiate the calling of the mutual aid fire department(s) and other appropriate organizations in accordance with the procedure laid down in the airport/community emergency plan, giving where necessary rendezvous point and airport entrance to be used.

4-3.3 Action by Other Agencies.

4-3.3.1 The subsequent specific responsibilities and roles of the various agencies itemized in 4-1.2 to 4-1.10 for responding to an aircraft accident on the airport can be paralleled for "full emergency" as required by local operating requirements.

4-4 Local Standby.

4-4.1 The agencies involved in the airport/community emergency plan should be alerted to "local standby" status when an aircraft approaching the airport 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.

4-4.2.1 Call the airport rescue and fire fighting service to stand by as requested by the pilot, or stand by as local airport agreements require at the predetermined standby positions applicable to the runway to be used and give as many of the following details as possible:

(a) type of aircraft;

(b) nature of trouble;

(c) runway to be used;

(d) estimated time of landing;

(e) fuel on board;

(f) number of occupants, including special occupants — handicapped, immobilized, blind, deaf;

(g) aircraft operator, if appropriate; and

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4-4.3.1 The subsequent specific responsibilities and roles of the various agencies itemized in 4-1.2 to 4-1.10 for responding to an aircraft accident on the airport can be paralleled for "local standby" as required by local operating requirements.

4-5* Occurrences Involving Dangerous Goods (Hazardous Materials).

4-5.1 Certain dangerous goods (hazardous materials) (explosives, flammable and nonflammable compressed gases, flammable and combustible liquids, flammable solids, oxidizing materials, poisonous substances, radioactive materials, corrosives, biological agents, irritating substances, etc.) may be shipped by air. Collections of such dangerous goods (hazardous materials) may exist in airport cargo buildings, on aircraft loading ramps, in aircraft cargo compartments, etc. Rescue and fire fighting personnel should therefore be aware of the potential dangers involved in these operations and be prepared to cope with emergencies involving such dangerous goods (hazardous materials). Accidents involving aircraft carrying such materials in cargo compartments present special rescue and fire control problems, but knowledge of the existence of such cargoes may not be

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.

4-8.2 Development of weather patterns, prediction and tracking of movement of storms, and notification to the public of potential danger resulting thereon will normally be carried out by a meteorological service in the area.

4-8.3 The airport/community emergency plan should provide for initial protective measures, personnel shelter, and post-storm clean up and restoration. Aircraft operations may be impossible for several hours before the arrival of the storm and until several hours after its passing.

4-8.4 As soon as severe storm warnings are received all owners of aircraft based or on the ground at the airport should be notified, and warnings issued to all aircraft pilots en route to the airport. Aircraft owners and pilots should be responsible for their aircraft but, if possible, all aircraft on the ground should be evacuated to airports outside the storm area. Aircraft in flight should be advised to divert to an alternative destination. Aircraft on the ground that cannot be dispersed should be put under cover or tied down so as to face into the approaching winds.

4-8.5 Power interruptions are common during a natural disaster, either by damage to generating plants or by destruction of transmission lines. Airports located in severe storm areas should take measures to ensure minimum interruption to power supply, either by providing standby electrical generators or dual sources of commercial power for essential functions.

4-8.6 Regarding building protection, specific personnel assignments should be made in the airport/community emergency plan to collect or secure all loose objects that may be blown about by the winds, and to fill and place sandbags if there is any possibility that the storm may be accompanied by floods.

4-9 Medical Emergencies.

4-9.1 In a medical emergency the degree or type of illness or injury and the number of persons involved will probably determine the extent to which the airport/community emergency plan is utilized. It is not necessary to address minor first aid in the emergency plan. However, plans should be made for the management of communicable diseases, collective food poisoning, and sudden serious illness or injury that may occur on the airport.

4-10 Flow Control Charts.

4-10.1 The examples illustrated in Figures 4-1.2.1 and 4-2.2.1 assist in rapid communication in the event of an emergency. Accordingly, they should contain all the vital telephone numbers.

4-10.1.1 Separate flow control charts should be developed for each type of emergency included in the plan. It is important that the method of notification be clearly outlined in the airport/community emergency plan.

4-10.2 Telephone numbers should be verified monthly and a revised list issued if necessary. In order to require only one page to be reissued when a change occurs, each flow control chart should be printed on one sheet.

Chapter 5 Emergency Operations Center and Mobile Command Post

5-1 Emergency Operations Center.

5-1.1 An emergency operations center should be available for the purpose of dealing with emergency situations at each airport.

5-1.2 The descriptive elements of the emergency operations center are:

(a) its fixed location;

(b) its support of the on-scene commander in the mobile command post for aircraft accidents/incidents;

(c) its use as command, coordination, and communication center for unlawful seizure of aircraft and bomb threats; and

(d) its operational availability 24 hours a day.

5-1.3 The location of the emergency operations center should provide a clear view of the movement area and isolated aircraft parking position, wherever possible.

5-2 Mobile Command Post. (*See Figure 5-2.*)

Figure 5-2 Mobile Command Post

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(d) its operational availability 24 hours a day.

5-1.3 The location of the emergency operations center should provide a clear view of the movement area and isolated aircraft parking position, wherever possible.

5-2 Mobile Command Post. (*See Figure 5-2.*)

Figure 5-2 Mobile Command Post

5-2.1 Certain emergency situations will also require a mobile command post at the scene. This mobile unit is normally under the direction of the airport authority's on-scene commander.

5-2.2 Usually the mobile command post is adequate to coordinate all command and communications functions. The emergency operations center is a fixed designated area on the airport that is usually used in supporting and coordinating operations in accidents/incidents, unlawful seizure of aircraft, and bomb threat incidents. The unit should have the necessary communication 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 should be checked daily.

5-2.3 The mobile command post is a point where cooperating agency heads assemble to receive and disseminate information and make decisions pertinent to the rescue operations. The main features of this unit are:

(a) It is a mobile facility capable of being rapidly deployed.

(b) It serves as command, coordination, and communications center for aircraft accidents/incidents.

(c) It is operational during aircraft accidents/incidents.

5-2.4 In the event of any accident/incident, a designated, recognizable and highly visible mobile command post is a high-priority item. It should be established as quickly as possible, and preferably with the initiation of fire control and rescue activities. It is important that a continuity of command be maintained so that each agency reporting to the mobile command post can be adequately briefed on the situation before proceeding to assume control of its individual responsibilities.

5-2.5 The mobile command post unit should contain the necessary communications equipment and personnel to communicate with all agencies involved in the emergency, including the emergency operations center. The communication and electronic devices should be checked monthly or as periodically as required by local conditions.

5-2.6 Maps, charts, and other relevant equipment and information should be immediately available at the mobile command post.

5-2.7 The mobile command post should be easily recognizable by provision of an elevated distinguishing marker, such as a checkered flag, colored traffic cone, balloon, or rotating light.

5-2.8 It may be necessary to establish a subcommand post. When this is required, one location should be designated as a "master" command post with adequate communications to the subcommand post.

Chapter 6 Communications

6-1 Communications Network.

6-1.1 A communications network should be a prerequisite to any coordinated, large-scale operation that involves agencies from more than one jurisdiction.

6-1.2 A communications network should consist of a sufficient number of radio transceivers, telephones (both mobile and land line), and other communication devices to establish and maintain a primary and a secondary means of communication. These networks should link the emergency operations center and the command post with each other as well as with all participating agencies. (*See Command Flow Diagram, Figure 7-1.*)

6-1.3 The operational communications network should provide a primary and, where necessary, an alternate effective means for direct communications between the following, as applicable:

(a) The alerting authority (control tower or flight service station, airport manager, fixed-base operator, or airline office) and the airport fire and rescue service.

(b) Air traffic control tower and/or flight service station and the fire fighting and rescue crew en route to an aircraft emergency or at the accident/incident site.

(c) The fire department alarm room and fire fighting and rescue vehicles at the accident/incident site.

(d) The airport CFR service and appropriate mutual aid organizations located on or off the airport, including an alert procedure for all auxiliary personnel expected to participate.

(e) The CFR vehicles, including a communications capability, between crew members on each fire fighting and rescue vehicle.

6-2 Communications Equipment.

6-2.1 It is important to provide serviceable communications equipment in sufficient quantity to ensure rapid response of personnel and equipment to an emergency. The following communications equipment should be available for immediate use in the event of an emergency.

6-2.2 UHF and/or VHF Portable Transceivers. A sufficient number of portable, two-way radios should be available to provide the team leader within a jurisdiction adequate communication with the command post.

6-2.3 A sufficient number of UHF and VHF transceivers to communicate with participating agencies in the field should be available at the command post. Strict communications discipline must be employed to prevent jamming of emergency frequencies.

6-2.4 VHF-AM transceivers should be available at the Command Post to provide direct communication with the aircraft or ground controllers should it become necessary.

Direct communications may also be established between the pilot or the aircraft cockpit by use of cockpit-to-ground lines. This requires a proper connector, wire, microphone, and headset. Cooperation and coordination between the airport fire and rescue service and the in-

dividual air carrier(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 wheelwell interphone jack.

6-2.5 A sufficient number of telephone lines (both listed and unlisted) should be available at the command post to provide direct communication with agencies outside the airport, as well as within the airport. Direct lines save time and reduce the probability of overwhelming radio communication channels.

6-2.6 Medical facilities and ambulances should have telemetry capability to take advantage of advanced life support systems within the medical community.

6-2.7 A dedicated vehicle equipped with necessary communications equipment and self-contained electrical power is a definite asset to a good communication system. A well-equipped communications vehicle is an indispensable part of an efficient, well-managed, command post. Planning should always include a qualified vehicle driver/operator.

6-2.8 Recording devices, with time insertion units, should be installed at the operations center and/or mobile command post to ensure that all communications are recorded for later analysis. All emergency communications, including printed communication, should be recorded.

6-2.9 Runners should be assigned to the command post to augment other modes of communication. Their use may prove invaluable should a temporary lapse of communication occur.

6-3 Testing and Verification.

6-3.1 The communications system should be tested daily to verify the operability of all radio and telephone networks.

6-3.2 A complete and current list of interagency telephone numbers should be available to all agencies, and to personnel responsible for the airport/community emergency plan. These phone numbers should be verified monthly to be sure they are correct.

Chapter 7 Command and Coordination for Airport/Community Emergency Plan

7-1 General.

7-1.1 Once an accident has occurred on the airport, the direction and control of rescue and fire fighting operations are the responsibility of the airport rescue and fire fighting service officer in charge. Any transition of authority and command responsibility needs to be established previously in the emergency plan and exercised accordingly. Off-airport accidents are under the direction and control of the jurisdiction in which the accident occurred.

7-1.2 The plan should call for the designation of other coordinators to accomplish particular functions. A diagrammatic representation is shown in Figure 7-1.

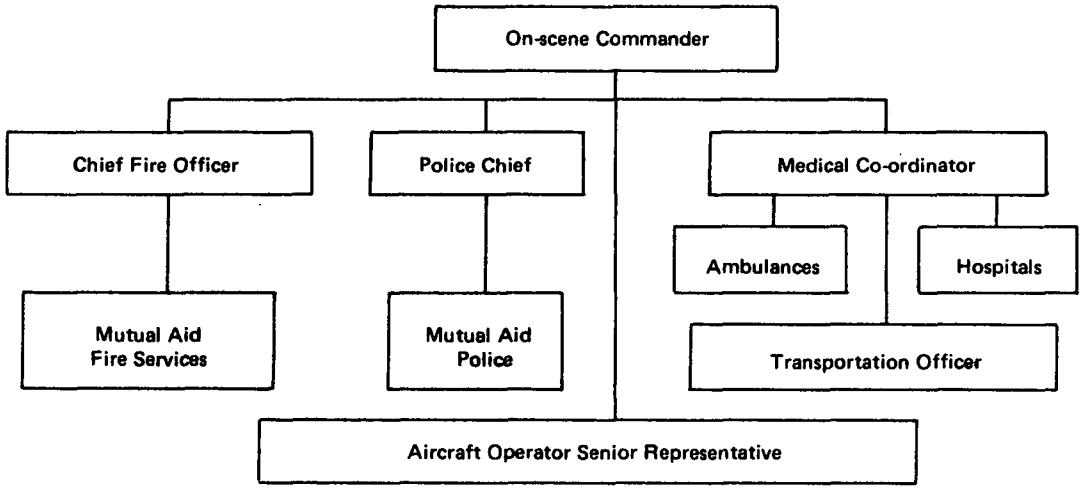


Figure 7-1 Command Flow Diagram

Chapter 8 Emergency Medical Care

8-1 Basis of Recommendations.

8-1.1* These recommendations are based on the necessity of establishing a level of emergency medical care that will serve the legitimate needs of the public and airport personnel during normal airport operations. During an emergency it can be expanded into a comprehensive emergency medical response to an accident site.

8-1.2 Upon arrival, this emergency medical organization will treat, triage, stabilize, and transport mass casualties using methods of priority that will assure the survivability of the greatest number of persons involved in the aircraft accident/incident.

8-2 Emergency Medical Training of Airport Personnel.

8-2.1 All airport fire department personnel assigned to fire control and rescue duties and all "Public Contract" airport employees should ideally be given first aid and CPR training. At least two full-time members of the airport fire department per shift should be trained to an EMT level and be available to respond to any airport emergency of any severity.

8-2.2 The following subjects are the minimum that should be covered in a course of instruction to enable airport personnel to function effectively in providing emergency medical services:

(a) Airway management and cardipulomonary resuscitation (CPR).

(b) Control of bleeding and bandaging.

(c) Fractures and splinting with emphasis on spinal injuries.

(d) Burns.

(e) Shock.

(f) Emergency childbirth and immediate care of newborn, including prematures.

(g) Common medical diseases that may influence the outcome of injury (allergies, high blood pressure, diabetes, pacemaker, etc.)

(h) Basic measures for treatment and protection subsequent to spills or leaks of radioactive materials or toxic or poisonous substances.

(i) Basic measures for handling emotionally disturbed persons.

(j) Recognition and first aid for poisons, bites, and anaphylactic shock.

(k) Transportation techniques for injured persons.

(l) Heimlich maneuver — treatment of choking victims.

8-3 Airport Emergency Medical Supplies and Equipment.

8-3.1* Sufficient medical supplies to treat the capacity of the largest aircraft normally utilizing the airport should be available on or adjacent to the airport. Adequate supplies should be kept on hand to deal with routine medical emergencies (i.e., on-the-job injuries, cardiac arrest, etc.)

8-3.2 The type and quantity of such supplies should be determined by the principal medical authority for the airport.

8-3.3 Stretchers, blankets, cervical collars, backboards, and body bags should be located on the airport, preferably on a suitable vehicle (e.g., trailer) that can be transported to the accident site. Blankets are needed to alleviate the victims' exposure to shock and possible adverse weather conditions. The backboards and spine boards should be of a type designed to fit through access ways and aisles of commercial and business aircraft. They should have restraining straps available so the patient can be secured to the board. A cleat should be attached to the underside of the backboard to facilitate lifting by carrying personnel. Trauma victims in aircraft accidents sometimes sustain severe spinal injuries. Cervical collars and backboards should be used in removing the victim from the aircraft. This will alleviate the possibility of further spinal injury.

8-3.4 Sufficient emergency oxygen equipment should be available to treat smoke inhalation victims. This equipment must not be used around fuel or fuel soaked clothing.

8-3.5 Since the majority of nonaccidental medical emergencies at airports involve coronary difficulties, advanced life support systems should be readily available.

8-4 Airport Emergency Medical Service (EMS).

8-4.1 An airport first aid room/medical facility and its staff should be provided in accordance with the number of passengers served annually, the number of employees working at the facility, the industrial activity on the airport property, and the distance from adequate medical facilities. The airport authority should enter into mutual aid agreements with local medical agencies.

8-4.2 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 if not taken care of immediately;

(b) provide comfort to the less seriously injured and to administer first aid; and

(c) transport casualties to the proper facility.

8-4.3 It is essential that the provisions of medical services be carried out in the most expeditious manner possible. To this end, well-organized medical resources (personnel, equipment, and medical supplies) should be available at the accident site in the shortest possible time. The medical aspects of the emergency plan should be integrated with the local community plans as agreed upon in the mutual aid emergency agreement.

8-4.4 A medical coordinator should be assigned to assume control of the emergency operation at the accident site. If an airport medical services facility exists, the

medical coordinator may be designated from the airport medical staff. In some cases, it may be necessary to appoint an interim medical coordinator, who will be relieved when the regular medical coordinator arrives. The interim medical coordinator can be designated from the airport rescue and fire fighting personnel, or first trauma trained medical personnel to arrive at the scene.

8-4.5 Medical and ambulance services may be an integral part of the airport services, particularly the ambulance service which may, in many cases, be part of the airport rescue and fire fighting service. If medical and ambulance services are not available at the airport, prearrangements with local private or public medical and ambulance services should be made. The plan has to ensure the dispatch of a satisfactory assignment of trauma-trained medical 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 airport emergencies. The plan should list a sufficient number of doctors to offset the probable absence of some doctors at the time an emergency occurs.

8-4.6 The plan should call for a medical transportation officer alerting those doctors and other medical personnel needed in a particular case, for obtaining ambulance assistance and for ensuring effective priority casualty transportation to appropriate hospitals, taking into consideration the type of casualty injury and specialty training of the receiving hospital (i.e., burn cases to burn hospitals, etc.). The medical transportation officer should have a plan recognized by the ambulance authority that regulates in progression an entry point, a collection point, and a departure route from the disaster area. The medical transportation officer should record the routing of individual vehicles and the names of the casualties carried in each vehicle. The plan should emphasize the importance of alerting local hospitals for casualty reception and maintaining liaison with hospitals so that casualties are directed to hospitals where beds and necessary services are available, and no one hospital is overloaded with casualties. A count by a registrar of the number of casualties and the extent of injuries will provide an estimate of required medical assistance.

8-4.7 Participating hospitals should have contingency emergency plans to provide for mobilization of necessary medical teams to the accident site in the shortest possible time. Availability of qualified personnel and adequate facilities at the hospitals to deal with airport emergency situations is vital. In this respect, it is mandatory to establish in advance an accurate list of surrounding hospitals classified according to their effective receiving capacity and specialized features such as neurosurgical ability, burn treatment, etc.

8-4.8 The distance from the airport and the ability to receive helicopters should be considered. Reliable two-way communications should be provided between hospitals, and ambulances and helicopters. The alert of an aircraft accident should be made to a single communication controlling medical facility which then alerts all other facilities according to local medical communications network. Prior provision for police escort vehicles and helicopters for medical staff should be arranged in the preplan.

8-5 Airports Without a Medical Care Facility.

8-5.1 At airports where a medical care facility (medical clinic or first aid room) is not available, the airport authority should make arrangements to have available sufficient personnel trained in advanced first aid to cover all active hours of airport operation. Equipment for first aid work at these airports should consist, at minimum, of an emergency medical care bag. This bag should be readily available to be carried on a designated airport emergency vehicle and should contain at least:

(a) one plastic sheet [1.80 m × 1.80 m (6 ft × 6 ft)], with four spikes;

(b) seven hemostats (one package of three, one package of four);

(c) two field dressings [one 45 cm × 56 cm (18 in. × 22 in.) one 56 cm × 91 cm (22 in. × 36 in.)];

(d) ten abdominal pads (five packages of two);

(e) forty 10 cm × 10 cm (4 in. × 4 in.) gauze pads (four packages of ten);

(f) two tourniquets;

(g) one artificial airway;

(h) three disposable airways (each with No. 2, No. 4, No. 5);

(i) one bulb syringe with two catheters (No. 12, No. 14 FR);

(j) two large bandage scissors;

(k) twenty disposable syringes with No. 25 GA 1.6 cm (5.8 in.) needle;

(l) twelve ace bandages [two 15 cm (6 in.), four 7.5 cm (3 in.), six 5 cm (2 in.)];

(m) twelve alcohol sponge packages;

(n) four rolls of gauze bandage [two 7.5 cm (3 in.), two 5 cm (2 in.)];

(o) two rolls of adhesive tape;

(p) four vaseline gauze dressings [15 cm × 91 cm (6 in. × 36 in.)];

(q) box of 100 bandaids, assorted sizes;

(r) one blood pressure cuff and gage;

(s) two clipboards [22 cm × 28 cm (8½ in. × 11 in.)];

(t) six pencils (pens, grease pencils, etc.);

(u) sufficient supply of casualty identification tags (*see A-8-6.7*);

(v) one set of inflatable splints;

(w) one resuscitube;

(x) one short spine board;

(y) one flashlight;

(z) two cervical collars;

(aa) one bite-stick wedge;

(bb) one disposable obstetric kit.

8-6 Immediate Need for Care of Injured in Aircraft Accidents. (*See Figure 8-6.*)

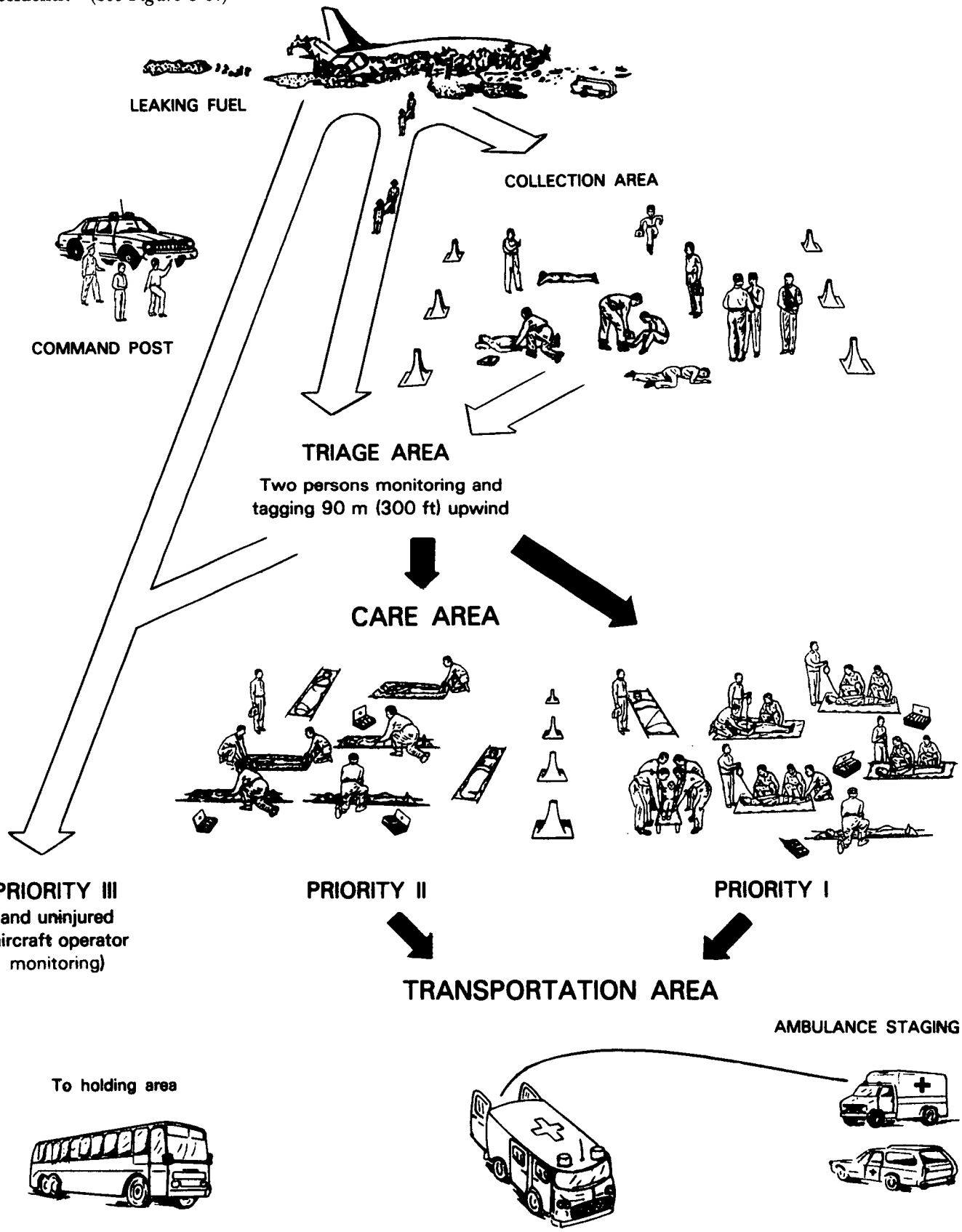


Figure 8-6 Triage and Medical Care at Aircraft Accident Site

8-6.1 In the aftermath of an aircraft accident many lives may be lost and many injuries aggravated if immediate medical attention is not provided by trauma-trained rescue personnel. Survivors should be examined, given available emergency medical aid as required, and then promptly transported to appropriate medical facilities.

8-6.2 'Triage" is the sorting and classification of casualties to determine the order of priority for treatment and transportation.

8-6.3 Casualties should be classified into four categories:

Priority I:	Immediate care
Priority II:	Delayed care
Priority III:	Minor care
Priority 0:	Deceased

8-6.4 Initial triage should be conducted by the first qualified medically trained person to arrive at the site until relieved by a more qualified person or the designated airport medical coordinator (triage officer). Medical diagnosis and treatment only to the stabilization level should be attempted at the scene of the accident. After stabilization, the casualties should be transported, if necessary, to appropriate medical facilities for further treatment.

8-6.5 Every effort should be made to ensure that Priority I casualties are treated first and receive immediate ambulance transportation priority when stabilized. This is the responsibility of the medical coordinator (triage officer).

8-6.6 Triage should be performed in the vicinity of the accident at a point well away from any remaining fire fighting operations, and upwind from the scene, if possible. The location should be selected so as to require minimum travel for stretcher bearers. It may be adjacent to, but not interfere with, the command post operations (*see Figure 8-6*).

8-6.7* Triage of casualties should include the use of casualty identification tags to aid in the sorting and transportation to hospital of the injured. This technique is especially suited to multilingual situations.

8-7 Care Principles.

8-7.1 Stabilization of the seriously injured should be accomplished at the accident scene. The immediate transportation of the seriously injured before stabilization should be avoided.

8-7.2 In accidents occurring on or adjacent to the airport, rescue and fire fighting personnel are generally the first emergency personnel on the scene. 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 fire fighting personnel, casualty stabilization should be commenced immediately under the direction of the most qualified trauma-trained individual on the scene. First response rescue vehicles should carry initial supplies of victim-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 should be available for use of rescue and fire fighting personnel.

8-7.3 Usually, the first few minutes of medical treatment will aim at stabilizing the casualties until more qualified medical care is available. When specialized trauma teams arrive, medical care will be more sophisticated.

8-7.4 The triage procedure and subsequent medical care should be placed under the command of one authority, the designated medical coordinator, upon his/her arrival. Prior to arrival, the command of triage should be assumed by the designee of the on-scene commander until relieved by the predesignated medical coordinator.

8-7.5 The medical coordinator will be responsible for triage and for implementing the total airport/community medical emergency plan. His/her primary function in implementing the plan will be as an administrator and not as a member of the medical team treating the injured.

8-7.6 For distinctive and easy identification, the medical coordinator should wear a white industrial hard hat and canvas vest with reflective red lettering "MEDICAL COORDINATOR" displayed front and back.

8-7.7 Care of Priority I Casualties. This type of casualty includes but is not necessarily limited to:

(a) major hemorrhages;

(b) severe smoke inhalation;

(c) asphyxiating thoracic and cervico-maxillo-facial injuries;

(d) cranial trauma with coma and rapidly progressive shock;

(e) open fractures and compound fractures;

(f) extensive burns (more than 30 percent);

(g) crush injuries including internal organs;

(h) any type of shock; and

(i) spinal cord injuries.

8-7.8 Care of Priority II Casualties. This type of casualty includes but is not necessarily limited to:

(a) non-asphyxiating thoracic trauma;

(b) closed fractures of the extremeties;

(c) limited burns (less than 30 percent);

(d) cranial trauma without coma or shock; and

(e) injuries to soft parts.

8-7.9 Care of casualties sustaining injuries that do not need emergency medical treatment to sustain life can be delayed until Priority I casualties are stabilized. Transportation of Priority II casualties should be performed following minimum care given on the site.

8-7.10 Care of Priority III Casualties. This type of casualty includes minor injuries only. Certain

accidents/incidents will occur where passengers have either minor or no injuries, or appear to be uninjured. Because this type of casualty can interfere with other priorities and operations it is important that these passengers be transported away from the accident/incident site to the designated passenger holding area where they may be re-examined.

8-7.11 It is important that provisions be made for Priority III casualty care, comfort, and identification. This should be provided through the aircraft operator, where involved, airport operations, or international relief organization (Red Cross, etc.). Specific treatment areas 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.) should be predesignated for this purpose. Any such area selected should be equipped with heating or cooling systems, electric light and power, water and toilet facilities. Adequate telephones should be available. A number of such preselected sites should be chosen so that when an accident occurs, the most convenient in regard to travel distance and space needs (number of casualties involved) can be selected. All aircraft operator personnel and airport tenants should know the location of such designated facilities.

8-8 Control of the Flow of the Injured.

8-8.1 The injured should pass through four areas which should be carefully located and easily identified (*see Figure 8-6*).

(a) Collection area — The location where initial collection of the seriously injured from the aircraft and/or debris is accomplished. 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 fire rescue personnel to medical services at this point.

(b) Triage area — The triage areas should be located at least 90 m (300 ft) upwind of the accident site if fire and smoke is imminent. If necessary, more than one triage area may be established.

(c) Care area — Initially this will be a single care area only. Subsequently it should 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 identified by colored traffic cones, bicycle flags, colored blankets, etc. (Red — Immediate, Yellow — Delayed, and Green — Minor).

(d) Transportation area — A transportation area for the recording, dispatching, and evacuation of survivors should 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 communication between them.

8-8.2 Mobile quarters for the stabilization and medical treatment of Priorities I and II casualties are recommended. Ideally these quarters should be operational upon arrival or in less than half an hour. Their design must therefore permit rapid conveyance to the site and rapid activation to receive casualties. [*See Mobile Emergency Hospital (MEH), A-8-1.1.*]

8-9 Standardized Casualty Identification Tags.

8-9.1 Need for Standardized Tags. Casualty identification tags should be standardized through color coding and symbols to make the tags 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.

8-9.2 Tag Design. Standardized tags have been designed that require only minimal information to be entered thereon, are usable under adverse weather conditions, and are water resistant. An example of such a tag is illustrated in Figures A-8-6.7 (a) and (b). In this tag, numerals and symbols indicating medical priority classify casualties as follows:

Priority I or immediate care:	RED colored tag; roman numeral I; rabbit symbol.
Priority II or delayed care:	YELLOW colored tag; roman numeral II; turtle symbol.
Priority III or minor care:	GREEN colored tag; roman numeral III; ambulance with X symbol.
Priority 0 or deceased:	BLACK colored tag; cross symbol.

8-9.3 Where tags are unavailable, casualties may be classified using roman numerals on adhesive tape or by markings made directly on the forehead or on other exposed skin area to indicate priority and/or treatment needs. Where marking pens are unavailable, lipstick can be used. Felt-tipped pens are not advisable as they may smear in rain, snow, and under other climatic and body conditions.

8-10 Medical Care of Ambulatory Survivors.

8-10.1 The aircraft operator (where involved), the airport authority and/or other predesignated agency selected for the purpose should be available to:

(a) select from among the predesignated passenger holding areas designated in the airport/community emergency plan the most suitable one for the particular emergency;

(b) provide for the transportation of uninjured passengers from the accident site to the designated holding area;

(c) arrange for doctor(s), nurse(s), or emergency medical personnel teams qualified in first aid to examine and treat supposedly uninjured passengers, especially for nervous traumatism (shock) and/or smoke inhalation where pertinent;

(d) interview uninjured passengers and record their names, addresses, and phone numbers, and where they can be reached for the next 72 hours;

(e) notify relatives or next of kin where deemed necessary;

(f) coordinate efforts with the designated welfare agency (Red Cross, etc.); and

(g) provide security from unauthorized interference by persons not officially connected with the rescue operation in progress.

8-10.2 Prearrangements should be made for the immediate transportation by bus or by other suitable transport of the "walking wounded" and uninjured from the accident site to the designated holding area. This plan should be implemented automatically following notification of the emergency. A nurse, or a person trained in first aid, should accompany these survivors to the holding area. Each and every passenger should be examined for shock and smoke inhalation. Cold or inclement weather may require additional provisions for the passengers' protection and comfort.

8-10.3 Occupants evacuating an aircraft may have been barefoot when evacuation slides were used and may also be without proper wearing apparel. Prior planning should recognize this potentiality, and emergency footwear, eyeglasses, clothing, and blankets should be available to take care of this situation. Where the aircraft accident occurred in water or in a marshy area, survivors will be wet and uncomfortable. Where such potentials exist, it may be necessary to establish a special designated staging area where survivors can be stabilized prior to transporting them to the normal holding area, and to preplan provision for blankets and temporary protective clothing to prevent hypothermia.

Chapter 9 Care of Deceased (Black Tag, Cross Symbol)

9-1 Basis for Recommendations.

9-1.1* The concept of preservation of evidence must be applied when caring for the deceased at an aircraft accident site. It is important to realize that an undisturbed site will produce the most reliable evidence for determing cause and/or corrective action that would help prevent a similar incident in the future.

9-2 Care Prior to Site Investigation.

9-2.1 Airport fire fighters and other rescue personnel should understand the basic need for and the techniques and procedures used in aircraft accident investigation. Whenever possible, the wreckage should remain undisturbed until the arrival of the appropriate investigating agency.

9-2.2 Areas immediately surrounding the location of the deceased should be completely secured. Areas in which a large number of deceased or dismembered casualties are located should be left undisturbed until the arrival of the forensic doctor and the National Transportation Safety Board investigator or his/her designee.

9-2.3 If it becomes necessary to move bodies or parts of the wreckage, photographs should also be taken showing the relative position of bodies and parts within the wreckage and a sketch of their respective positions prior to removal should be made. In addition, tags should be affixed to each body or part displaced and corresponding stakes or tags should be placed where the parts were found in the wreckage. A journal should be kept of all tags issued. Special precautions should be taken to avoid disturbing anything in the cockpit area. Should any control be displaced, photographs, drawings, or notes should be taken.

9-2.4 Extrication of the deceased and removal of personal effects prior to the arrival of the coroner or appropriate authority should be accomplished only to prevent their destruction by fire or other similar compelling reasons. When bodies must be moved, previously mentioned precautions should apply. Provisions should be made to obtain sufficient body bags to contain all bodies as well as personal effects.

9-2.5 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 airport are desirable.

9-3 Care after Site Examination.

9-3.1 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 cooperation of forensic teams and other specialists.

9-3.2 Accidents that produce 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 should be available. This may be provided either through a permanently located cooler, or refrigerated semitrailers. The area for post-mortem examination should be located near the refrigerated storage and be arranged to provide a high level of security. This area should be large enough for initial body sorting. Electricity and running water should be provided, in addition to a suitable working area.

9-3.3 The morgue should be isolated and in an area remote from places where relatives or general public have access.

9-3.4 After identification of victims, efforts to contact next of kin should commence. Agencies such as Aircraft Operators representatives, public service organizations (i.e. Red Cross, Salvation Army), or clergy should be utilized.

9-3.5 The accident investigation team generally has the authority and the need to require autopsies and toxicological analyses on crew members, and in special cases, passengers. The need for these tests should be established prior to the release of bodies.

9-3.6 As soon as practical after the emergency, all participants in the fire fighting and rescue effort should be debriefed. Their observations should 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 parts removed from their position are invaluable tools for investigators.

Chapter 10 Airport/Community Emergency Plan Drill

10-1 Emergency Plan Drill.

10-1.1 The purpose of an airport/community emergency plan drill is to test the adequacy of the following:

(a) the airport/community emergency plan and related procedures;

(b) response of all personnel involved;

(c) emergency equipment and communications.

10-1.2 It is therefore important that the plan contain procedures requiring that the airport/community emergency plan be tested so as to correct as many deficiencies as possible and to familiarize all personnel and agencies concerned with the airport environment, the other agencies, and the role of each agency/person in the emergency plan.

10-2 Need for and Types of Airport/Community Emergency Plan Drills.

10-2.1 The airport/community emergency plan should be subject to full-scale emergency exercises to test all facilities and associated agencies at intervals of about one year. The exercise should be followed by a full debriefing, critique, and analysis. Representatives of all organizations that participate in the exercise should also actively participate in the preparation for the drill and the final critique.

10-2.2 It is important that simulated emergency exercises, aimed at testing and reviewing the response of individual participating agencies, such as the rescue and fire fighting service as well as parts of the plan such as the communications system, be held at more frequent intervals than the full-scale emergency exercise.

10-2.3 It is desirable that, in addition to the full-scale and simulated emergency exercises, a "tabletop" exercise, involving the airport/community emergency plan coordinating committee, be held at least annually but not coincidental with any of the above emergency exercises.

10-3 Planning for Full-Scale Emergency Exercises.

10-3.1 The first step in planning full-scale emergency exercises is to have the support of all airport and community authorities concerned.

10-3.2 Each agency head must be thoroughly familiar with the airport/community emergency plan and must develop a plan for his department in coordination with the general plan. The agency heads should meet in regular sessions to develop an understanding of their agency's responsibilities and requirements in cooperation with other agencies.

10-3.3 An aircraft representative of the largest aircraft using the airport should be sought for the full-scale emergency exercise to add realism to the exercise and to familiarize participants with the problem of removing casualties from aircraft. If an aircraft is not available, a bus or similar large vehicle may be used.

10-3.4 The emergency exercises should be held in locations that will provide maximum realism while ensuring minimum disruption to the operations of the airport or the orderliness of the community.

10-3.5 At least 120 days prior to the scheduled full-scale emergency exercise, a meeting of all key supervisory personnel of principal participating agencies should be called by the authority in charge. At this time, the aims of the exercise should be outlined, a scenario formulated, work tasks assigned, and duties of all agencies and personnel defined. A suggested time schedule and check list is as follows:

D -120 days	Organizational meeting of supervisory personnel of participating agencies. Aims outlined, scenario formulated, work tasks assigned, emergency plan coordinators selected;
D - 90 days	First progress report on arrangements;
D - 70 days	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 fire fighting personnel, civil defense, 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" communications exercise is held;
D - 21 days	Fourth meeting of the individual committee representatives. Make-up team training and arrangements for volunteer casualties completed;
D - 14 days	Final meeting and briefing for all participants, including critique team;
D - 7 days	Final meeting of supervisory personnel to review assignments;
D - 0 days	The exercise;
D + 1-7 days	A critique following the exercise so that all participants may hear the observers' reports; and

D + 30 days — The supervisory personnel meet to review written critiques submitted by observers and participants and revise procedures to correct mistakes and shortcomings indicated in the exercise.

10-3.6 In preparing the scenario, the use of real names of aircraft operators and types of aircraft should be avoided. This will prevent any possible embarrassment to companies or agencies involved in civil aviation.

10-3.7 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 comprised of members who are familiar with mass casualty accident proceedings should be organized. A chairman of the team should be appointed, and he/she should be present at all meetings. The team should be present at the final organizational meeting (seven days prior to the drill) and, in coordination with the authority in charge, ensure that significant problems are introduced into the exercise. Each member of the critique team should observe the entire exercise and complete the appropriate emergency drill critique forms.

10-4 Review of the Airport Emergency Plan Drill.

10-4.1 Experience has shown that quite often the provisions set forth in the airport emergency plan will not be found practical during a drill or an actual emergency, resulting in confusion and undue inefficiency by some of the participants.

10-4.2* A critique and review of the procedures followed by the participants in an emergency drill or an actual accident/incident should be scheduled as soon as all data can be acquired from all agencies. This critique should be held not more than seven days after the drill or emergency.

10-4.3 The airport authority should make every effort to contact other airport authorities involved in actual aircraft accidents and those who have conducted full-scale emergency exercises to acquire data and procedures to correct and upgrade their airport emergency plan.

Appendix A

This Appendix is not part of the recommendations of this NFPA manual, but is included for information purposes only.

A-1-3 Authority Having Jurisdiction. The phrase "authority having jurisdiction" is used in NFPA documents in a broad manner since jurisdictions and "approval" agencies vary as do their responsibilities. Where public safety is primary, the "authority having jurisdiction" may be a federal, state, local or other regional department or individual such as a fire chief, fire marshal, chief of a fire prevention bureau, labor department, health department, building official, electrical inspector, or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the "authority having jurisdiction." In many circumstances the property owner or his designated agent assumes the role of the "authority having jurisdiction"; at government installations, the commanding officer or departmental official may be the "authority having jurisdiction."

A-2-1 Outline of an Airport/Community Emergency Plan. This guideline is intended to ensure uniformity in the development of airport/community emergency plans. It is the function of the airport authority to develop a plan and procedures for emergencies applicable to the airport's particular characteristics and operations and, within these guidelines, to perform the following:

(a) Define the responsibilities of the airport authority and other participating agencies.

(b) Create effective lines of communication and adequate communication facilities as indicated by flow chart; call system to include persons/agencies to be contacted. Where possible, a 24-hour coverage should be maintained.

(c) Arrange for the availability of a fixed emergency operations center and a mobile command post at the airport for use during an emergency.

(d) Integrate assistance from local support services such as fire departments, security, medical, civil defense, government agencies, and local amateur radio organizations, etc.

(e) Describe the function of air traffic services (airport control tower or airport flight information service) relating to emergency actions; and

(f) Give instructions for response to accidents/incidents.

Sections of the airport/community emergency plan document should contain identifiable subjects pertinent to local airport and community conditions.

The emergency plans and procedures should be issued under the airport or appropriate authority, who will define and negotiate functions of all agencies and personnel on or off the airport who would or could be involved in an emergency affecting the airport.

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

Example of Contents of Emergency Plan Document

Section 1 — Emergency Telephone Numbers. This section should be limited to essential telephone numbers according to site needs, including:

(1) air traffic control services
(2) rescue and fire fighting services (departments)
(3) police and security
(4) medical services:
  a. hospitals
  b. ambulances
  c. doctors — business/residence
(5) aircraft operators

(6) government authorities
(7) civil defense
(8) others.

Section 2 — Aircraft Accident on the Airport.

(1) action by air traffic control services (airport control tower or airport flight information service)
(2) action by rescue and fire fighting services
(3) action by police and security services
(4) action by airport authority
a. vehicle escort
b. maintenance
(5) action by medical services
a. hospitals
b. ambulances
c. doctors
d. medical personnel
(6) action by aircraft operator involved
(7) action by emergency operations center and mobile command post
(8) action by government authorities
(9) communications network (emergency operations center and mobile command post)
(10) action by agencies involved in mutual aid emergency agreements
(11) action by transportation authorities (land, sea, air)
(12) action by public information officer(s)
(13) action by local fire departments when structures involved
(14) action by all other agencies.

Section 3 — Aircraft Accident off the Airport.

(1) action by air traffic control services (airport control tower or airport flight information service)
(2) action by rescue and fire fighting services
(3) action by local fire departments
(4) action by police and security services
(5) action by airport authority
(6) action by medical services
a. hospitals
b. ambulances
c. doctors
d. medical personnel
(7) action by agencies involved in mutual aid emergency agreements
(8) action by aircraft operator involved
(9) action by emergency operations center and mobile command post
(10) action by government authorities
(11) communication networks (emergency operations center and mobile command post)
(12) transportation authorities (land, sea, and air)
(13) action by public information officer
(14) action by all other agencies.

Section 4 — Malfunction of Aircraft in Flight (Full Emergency or Local Standby).

(1) action by air traffic services (airport control tower or airport flight information service)
(2) action by airport rescue and fire fighting services
(3) action by police and security services
(4) action by airport authority
(5) action by medical services
a. hospitals
b. ambulances
c. doctor
d. medical personnel
(6) action by aircraft operator involved
(7) action by emergency operations center and mobile command post
(8) action by all other agencies.

Section 5 — Structural Fires.

(1) action by air traffic control services (airport control tower or airport flight information service)
(2) action by rescue and fire fighting services (local fire departments)
(3) action by police and security services
(4) action by airport authority
(5) evacuation of structure
(6) action by medical services
a. hospitals
b. ambulances
c. doctors
d. medical personnel
(7) action by emergency operations center and mobile command post
(8) action by public information officer
(9) action by all other agencies.

Section 6 — Sabotage Including Bomb Threat (Aircraft or Structure).

(1) action by air traffic control services (airport control tower or airport flight information service)
(2) action by emergency operations center and mobile command post
(3) action by police and security services
(4) action by airport authority
(5) action by rescue and fire fighting services
(6) action by medical services
a. hospitals
b. ambulances
c. doctors
d. medical personnel
(7) action by aircraft operator involved

(8) action by government authorities

(9) isolated aircraft parking position

(10) evacuation

(11) searches (dog and human) of helicopter, aircraft

(12) handling and identification of luggage and cargo on board aircraft

(13) handling and disposal of suspected bomb

(14) action by public information officer

(15) action by all other agencies.

Section 7 — Unlawful Seizure of Aircraft (Hijacking).

(1) action by air traffic control services (airport control tower or airport flight information service)

(2) action by rescue and fire fighting services

(3) action by police and security services

(4) action by airport authority

(5) action by medical services

a. hospitals

b. ambulances

c. doctors

d. medical personnel

(6) action by aircraft operator involved

(7) action by government authorities

(8) action by emergency operations center and mobile command post

(9) isolated aircraft parking position

(10) action by public information officer

(11) action by all other agencies.

Section 8 — Incident on the Airport.

An incident on the airport may require any or all of the action detailed in "Aircraft Accident on the Airport." Examples of incidents the airport authority should consider include fuel spills at the ramp, passenger loading bridge, and fuel storage area; dangerous goods (hazardous materials) occurrences at freight handling areas; collapse of structures; vehicle/aircraft collisions, etc.

Section 9 — Persons of Authority — Site Roles.

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

On-airport

(1) Airport authority

(2) Airport chief fire officer

(3) Police and security — officer-in-charge

(4) Medical coordinator

Off-airport

(1) Local chief fire officer

(2) Government authority

(3) Police and security — officer-in-charge

(4) Medical coordinator.

The on-scene commander will be designated as required from within the prearranged mutual aid emergency agreement.

Previous documented experience indicates that confusion in identifying command personnel in accident situations is a serious problem. To alleviate this problem it is suggested that distinctive colored vests with reflective lettering be issued to command personnel for easy identification. The following colors are recommended:

RED	— CHIEF FIRE OFFICER
BLUE	— POLICE CHIEF
WHITE (RED LETTERING)	— MEDICAL COORDINATOR
INTERNATIONAL ORANGE	— AIRPORT ADMINISTRATION
LIME GREEN	— TRANSPORTATION OFFICER
DARK BROWN	— FORENSIC CHIEF

An on-scene commander should be appointed as the person in command of the overall emergency operation. The on-scene commander should be easily identifiable and can be one of the persons indicated above or any other person from the responding agencies.

A-3-3.1 For a comprehensive description of training and skills required see NFPA 1003, *Standard on Airport Fire Fighter Professional Qualifications*.

A-3-8 Responsibilities of Aircraft Operations Personnel Following an Aircraft Accident. Airline personnel often are the only force on the airport available for quick response to passenger service in an emergency since fire, police, and airport operation departments are usually required to respond to the accident site.

An air carrier emergency plan should be coordinated with the airport/community emergency plan so that airline personnel know which responsibilities the airport will assume and what response is required by the airline. A checklist form should be developed by the airline for the company coordinator's use. This form should be time-correlated to document notification time of the accident, company communications, personnel assignments, response, and other actions taken. From this log of events a critique of airline and airport/community emergency plans can be analyzed for future improvement.

Training should be initiated by the airlines to prepare all station personnel for emergency procedures. In all emergencies the individuals 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 the individuals to unusual stress and apprehension and to be able to cope effectively with disturbed persons. The best possible preparation for effective behavior under disaster conditions is education and practice. Education should include instructions in the nature and actions of disturbed individuals and the general type of reaction to be expected from each. There should be participation in simulated emergency drills to help establish effective patterns of behavior under emergency conditions and practice the basic principles of "psychological first aid."

A holding area for uninjured persons should be designated in order to assemble and process passengers not injured in the emergency. The area selected should provide for both passenger comfort and security from the news media. Upon notification of an accident, designated airline personnel should immediately respond to the holding area to receive the passengers evacuated from the accident scene. The airline personnel should be at this

station before the passengers arrive. Emergency kits should be prepared and be readily available for the passenger service representatives to effectively carry out their duties. While waiting for the evacuees, an organizational meeting should be held by the person in command, delegating a receptionist, registrar, and welfare coordinator for the survivors.

The following organization and description of required duties are suggested:

The Airline Coordinator. Normally this would be the senior representative from the airline whose aircraft had the accident. In the event of a charter or nonscheduled flight, the representative of the airline designated to provide ground services for that flight should take charge. In the event of an over-flight or carrier without personnel based at the airport, representative authority would have to be determined by those responding. The person in charge should have radio communication to the airline operations or other designated emergency center. Telephones should be available in the holding areas. The person in command oversees the overall airline operations, making arrangements for additional medical services if required, commissary items, etc.

The receptionist should 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 should know where toilet facilities are located.

Registrars. The registrars will have emergency kits available to them. 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 manifest and determine what reservation requirements are desired, i.e., hotel accommodations or another flight, transportation, etc., and any persons to be notified of the passenger's condition and 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 made. More importantly this will indicate that the passenger has been processed. The registrars will direct the victims to the welfare coordinators when their registration is completed.

Welfare coordinators are the nucleus of psychological first aid. They should attempt to stimulate passenger discussion. Special attention should 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 those persons sympathetic understanding can be the first step toward helping them. Overwhelming victims with pity may only increase their fear and feelings of helplessness. A person who exhibits bodily trembling, rapid breathing, rapid pulse, shortness of breath, etc., should be engaged in conversation and professional medical attention requested as soon as available.

A sizable personnel force can be provided by most air carriers; however, there will be a problem at airports with a small operation. As a result, a mutual-aid assistance program of all airline personnel (and, if necessary, other airport tenants based at the airport) should be established. Training can be acquired from local mental health care and Red Cross units. This training is not extensive but would provide education for passenger service in an emergency. In addition to care for the victims evacuated from an accident site, training should also include a possible traumatic situation that could develop in the gate area of the terminal building.

Emergency Kits. Each airline should prepare an emergency kit that can be readily available to all airline personnel during all hours of operation. This kit should never be placed in an office that is locked during certain hours of the day. All station personnel should have knowledge of the location of the emergency kit. The contents of the kit must include:

1. Tablets or forms to list the victims to include name, address, and home phone number of passenger; name and phone number of person to be notified of passenger's condition; accommodation request of passenger (i.e., future flight, hotel, transportation within the local area, etc.).

2. Stick-on, adhesive-type name tags to identify passengers who have been processed and identification of victim when accommodations have been made.

3. Telephone numbers:

(a) *Doctors to Attend to Minor Injuries.* Each airline should have a letter of agreement with physicians who will respond to a designated holding area.

(b) *Hotels where Victims can be Billeted.* It is beneficial to place victims in the same hotel or at least in groups at hotels.

(c) *Linguists.* Preferably people who work on the airport for quick response. Available on 24-hour call basis are the ALTRUSA Language Banks:

In Chicago:	312-221-1460
In Seattle:	206-622-4250

These banks have a capacity of 73 languages.

(d) *Caterer.* If commissary items are required.

(e) All Airline Reservations Offices.

(f) *Ambulance Companies.* In case a victim requires hospitalization.

(g) Taxicab Companies.

4. A current copy of the Official Airline Guide (OAG). Local airline schedules would be most helpful for registrars who will be making arrangements on future flights.

5. Sample of Registrar's Form.

Passenger **Person(s) to be Notified**

Name _____ Name _____

Address _____ Relation _____

Phone number _____ Phone number _____

Accommodations _____

_____ .

Flight _____, Hotel, Local Phone Number, etc.

A-3-15.1 Mutual Aid Emergency Agreements.

The close proximity of an airport to surrounding communities and the possibility of an off-airport aircraft acci-

dent gives rise to the need for mutual aid emergency agreements.

A mutual aid emergency agreement should specify initial notification and response assignments. It should not specify the responsibilities of the agency concerned, as this will be contained in the emergency plan.

Mutual aid emergency agreements must be prearranged and duly authorized. A sample of a letter of agreement is included in Figure A-3-15.1. Should more complicated jurisdictional or multiagency agreements be necessary the airport authority may have to act as coordinating agency. This appendix contains guidelines compiled to assist the preparation of mutual aid emergency agreements with local fire departments for accidents occurring on and off the airport.

A-3-15.1.1 Procedure for Local Fire Department(s) — Aircraft Accident on Airport.

(a) A call to an aircraft accident on the airport will normally be received from air traffic services.

(b) The mutual aid fire department(s) should report to the rendezvous point or staging area on arrival at the airport. Escort by airport police/security will be provided from the rendezvous point or staging area to the accident site.

(c) Upon arrival at the accident site:

1. The senior officer of the airport rescue and fire fighting service receiving mutual aid should have full authority at the scene unless other laws or agreements contradict this statement.

2. Fire department mutual aid communications should be carried out on the predesignated communications channel.

3. Communications transmissions will be prefaced by airport rescue and fire fighting/local fire department call number.

A-3-15.1.2 Procedure for Local Fire Department(s) — Aircraft Accident off Airport.

(a) A call to an aircraft accident off the airport will normally be received from air traffic services or police. Should that not be the case, the local fire department should notify air traffic services or police via radio or telephone that an accident has occurred giving the approximate location on the grid map.

(b) Upon arrival at the accident site, the local fire department should:

1. Ensure that the mutual aid emergency agreement is initiated.

2. Establish a command post. (This may be a temporary post until the airport authority mobile command post is available and operative.)

3. Ensure that all communications are on the designated aircraft accident channel.

(c) The local fire department should 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 where fire units should respond.

4. Any request for specialized equipment, if necessary.

AGENCY: (Name and Address)

. . . . . .

. . . . . .

. . . . . .

Endorses the XYZ (International) Airport Emergency Plan, associated airport emergency plan document dated (insert date), and attached procedures (included as A-3-15.1.1 and A-3-15.1.2), and agrees to comply with all the procedures and instructions, and fulfill all applicable responsibilities therein.

. . . . . .

Signature of Authorized Representative

. . . . . .

Date

Figure A-3-15.1 XYZ (International) Airport Emergency Plan

Letter of Emergency Mutual Aid Agreement*

*See Appendix E "Sample Procedural Agreements" of NFPA 402M, *Manual for Aircraft Rescue and Fire Fighting Operational Procedures.*

A-3-17 Aircraft Accidents in the Water.

Where airports are situated adjacent to large bodies of water (such as rivers or lakes) or where they are located on coastlines, special provisions should be made for rescue and fire fighting operations in event of an aircraft accident/incident in the water. Specialized equipment for rescue and fire fighting may include fire/rescue boats; air-cushion vehicles (ACV); helicopters; coastal patrol boats; etc.

Consideration of unusual terrain and water conditions, such as tidal flats, swamps and the like, may dictate the choice of the particular type vehicle most suitable to these conditions. Helicopters, air cushion, and amphibious vehicles as well as conventional watercraft may be found to provide this specialized service.

In developing the water rescue service, consideration should be given to private or 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, pipeline or oil field operators, lumbering industry, 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 should be prearranged.

Many aircraft do not carry personnel flotation devices on board, especially those not engaged in extensive overwater operations. Such flotation devices should be available in numbers sufficient to meet the needs of the maximum passenger capacity of the largest aircraft in

regular service at the airport. Where the largest aircraft is in scheduled over-water operation and all other operations are over-water in character, the airport may reduce the amount of personnel flotation devices by 50 percent.

Probability of Fire. In such incidents the possibility of fire is normally reduced, hopefully because of the suppression of ignition sources by the water contact and the cooling of heated surfaces. In situations where fire is present, its control and extinguishment present unusual problems unless the proper equipment is available.

Spillage of Fuel on Water Surfaces. It should be anticipated that the impact of the aircraft hitting the water might rupture fuel tanks and lines. It is reasonable to assume that quantities of fuel will thus 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. Wind and water currents should be taken into consideration in order to deal effectively with floating fuel to keep it from moving into areas where it would be hazardous to rescue operations or initiate fire. As soon as possible, pockets of fuel should either be broken up or moved with large volume nozzles, neutralized by covering them with foam or a special inerting material, or boomed to contain the fuel in a safe area prior to absorption, dilution, or removal. Preplanning with the EPA's Water Pollution Control Division may provide emergency assistance during this operation.

Rescue Boats. Rescue boats should 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 diminish the hazards of puncture and injury by being equipped with fan-type guards or cowls.

Boats and other rescue vehicles should be so located that they can be brought into action in minimum time. Special boathouses or launching facilities should be provided when such will contribute materially to the rapidity of the launching process.

The boats should be of such size as to carry efficiently the flotation equipment required with adequate space for the crew and sufficient working space to permit rapid dispersal of the flotation devices. Inflatable life rafts should be the prime flotation equipment carried, and there should be an adequate number of life rafts to accommodate the largest aircraft occupancy served by the airport. Once this flotation equipment has been dispensed, the space in the boat used to carry it should be sufficient to accommodate a limited number of litter cases brought aboard in the process of rescue.

In order to permit communications with other rescue units, such as helicopters, air cushion or amphibious equipment, and water-land based units, adequate two-way radio equipment should be provided in all rescue boats.

A minimum of two floodlights should be provided for night operations.

Radar reflectors should be used to facilitate navigation and rendezvous efforts.

Organizing Diving Units/Use of Divers. Diving units should 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 should be highly trained in both scuba diving and underwater search and 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. The qualifications of the individual divers should be established by training and practical examination.

In all operations where divers are in the water, standard divers' flags should be flown and boats operating in the area should be warned to exercise extreme caution.

Where fire is present, approach should be made afer wind direction and velocity and water current and swiftness are taken into consideration. Fire may be moved away from the area by using a sweeping technique with hose streams. Foam and other extinguishing agents should be used where necessary.

It should be anticipated that victims are more apt to be found downwind or downstream. This should be taken into consideration in planning the attack. Where only the approximate location of the crash is established upon arrival, divers should use standard underwater search patterns marking the locations of the major parts of the aircraft with marker buoys. If sufficient divers are not available, dragging operations should be conducted from surface craft. In no instance should dragging and diving operations be conducted simultaneously.

Where occupied sections of the aircraft are found submerged, the possibility remains that enough air may be trapped inside to maintain life. Entry by divers should be made at the deepest point possible.

Figure A-3-17 The "Winchester" Class Hovercraft (built by the British Hovercraft Corporation) which is in service at the Auckland International Airport in New Zealand. It is utilized to protect aircraft operations that are largely over the Manukau Harbor that borders the airport. The primary mission is rescue of occupants in event of an accident in the harbor or mudflats (which exist at low tide).

Other Considerations.

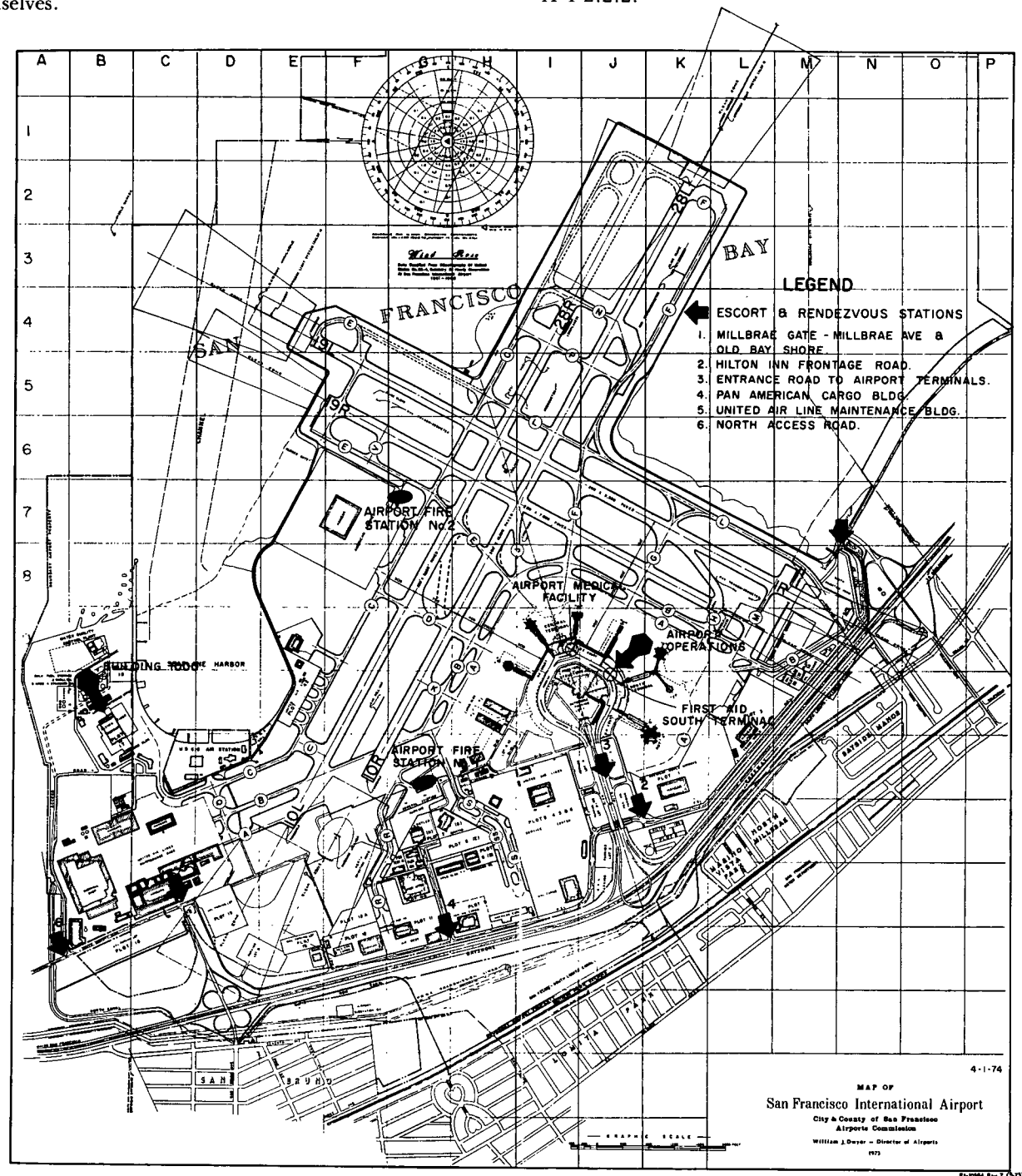
When the distance offshore is within range, synthetic fibre-covered, rubber-lined fire hose can sometimes be floated into position by divers or boats and used to supplement other means of fire attack.

Great care should be exercised in maintaining the watertight integrity of occupied aircraft sections found afloat. Removal of the occupant(s) should be accomplished as smoothly and quickly as possible. Any shift in weight or lapse in time may result in its sinking, and rescuers should use caution to avoid becoming trapped themselves.

A command post should be established at the most feasible location on adjacent shore. This should be located in a position to facilitate implementing the airport/community emergency plan in accordance with guidelines established by the authority having jurisdiction.

A-4-1.2.2 Airport Grid Map. See Figure A-4-1.2.2.

A-4-2.2.2 Airport/Community Grid Map. See Figure A-4-2.2.2.



AIRPORT EMERGENCY RENDEZVOUS POINTS & FACILITIES

Figure A-4-1.2.2 Typical Airport Grid Map SK-720222-T.C.-Rev. 3

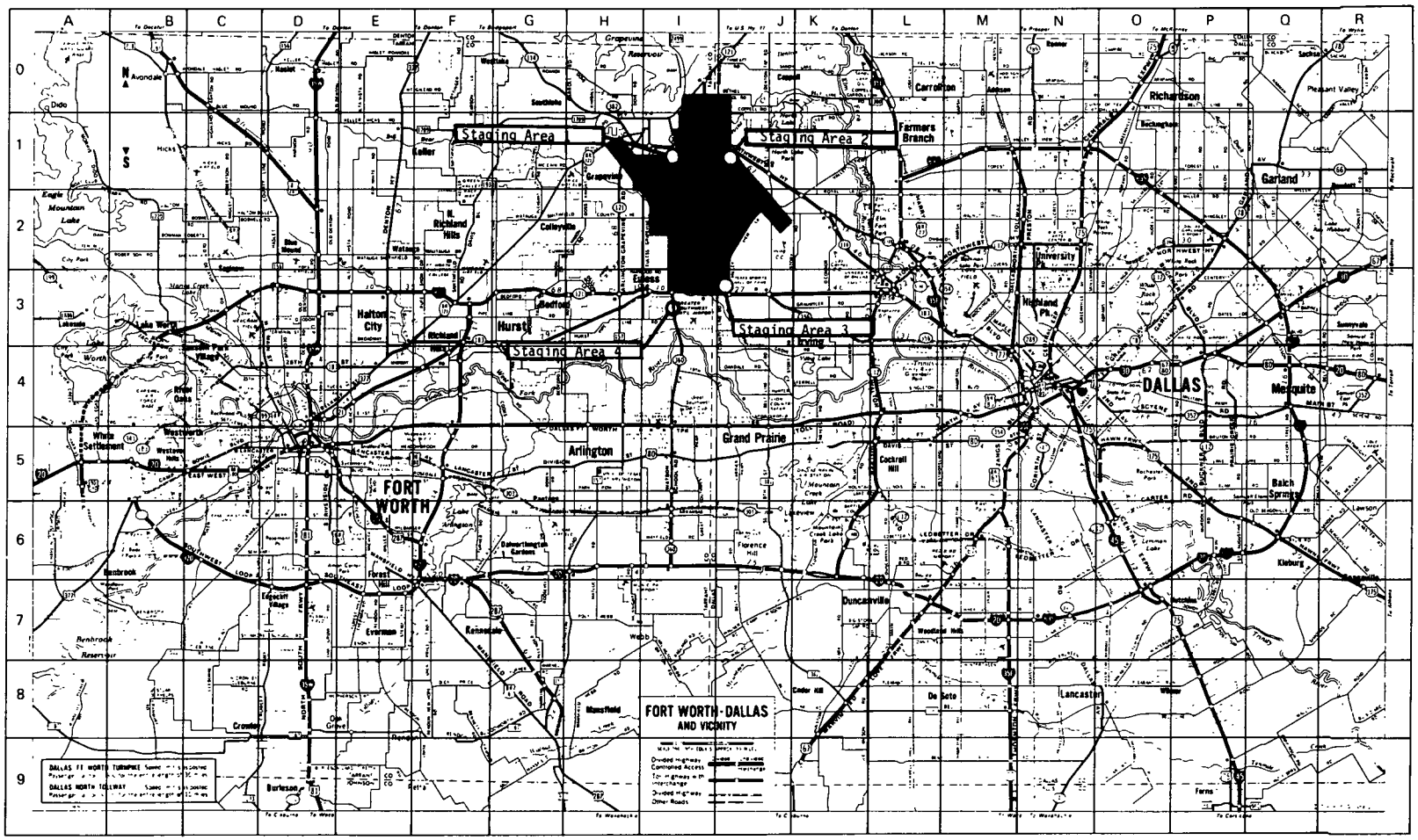


Figure A-4-2.2.2 Typical Airport Grid Map

A-4-2.3.4 The first security officer to arrive will assume security responsibility, survey the scene, and request reinforcements as needed. He/she should remain in command until relieved by the appropriate security authority with jurisdiction over the area.

The security chief should be highly visible. Typically, a blue industrial hard hat with reflective lettering displayed fore and aft, and imprinted "SECURITY CHIEF," should be issued to the security officer in charge.

Security personnel and police will be needed to handle traffic, to keep unauthorized personnel from the crash site, and to assume custody of personal effects removed from the aircraft. Ingress and egress roads should be established for congestion-free traffic lanes for emergency vehicles.

Normal traffic should be routed away from and around the crash site.

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

Arm bands, site passes, or I.D. tags should be issued by the controlling authority and monitored by the security coordinator and his/her team.

A mutual aid program should be instituted between all potentially involved security agencies, e.g., airport, city, county, state, and federal security forces; mail inspectors; and, where appropriate, military police and customs officials.

Special security provisions are necessary to protect any mail involved and any dangerous goods that may be present, and to protect against radioactive materials exposure.

A-4-5 Dangerous Goods (Hazardous Materials Incidents).

Commercial Air Transport of Radioactive Materials.

The carriage in commercial transport aircraft of radioactive cargo is closely controlled by national and international regulations.[1] Reference should be made to the applicable regulations for full details.

Radioactive materials are being carried in commercial transport aircraft, particularly in cargo aircraft, regularly. While the containers used to transport these materials are rugged, the possibility of breakage cannot be overlooked and this introduces the hazard of radioactive contamination of an accident site. By knowing and recognizing the radioactive symbols (see references), fire fighters can be alerted to this hazard. The following procedures should then be followed in the U.S. (similar procedures are followed in other countries):

Where broken containers that could cause injury to or affect the health of exposed aircraft occupants or rescue personnel (particularly from radioactive, etiological, or toxic materials) are found, special precautions should be taken as appropriate, and preidentified trained personnel assembled to deal with the problems involved.

Suspected material should be identified but not handled until it has been monitored and released by monitoring personnel. Clothing and tools used at the accident scene should be segregated until they can be checked by a radiological emergency team.

The nearest authority concerned with atomic energy or the nearest military base or civil defense organization to the accident site should be notified immediately. They may be able to respond with a radiological team to the accident.

Injured should be removed from the area of the accident with as little contact as possible and held at a transfer point. Any measures necessary should be taken to save lives, but only minimal first aid and surgical procedures carried out until help is obtained from the radiological team physicians or other physicians familiar with radiation medicine. Whenever recommended by a doctor, an injured individual should be removed to a hospital or office for treatment, but the doctor or hospital should be informed when there is reason to suspect that the injured individual has radioactive contamination on his/her body or clothing.

Fires should be fought as far upwind of an accident as possible — avoiding related smoke, fumes, or dust — and handled as incidents involving toxic chemicals (using self-contained gas masks and gloves). Suspected material should not be handled before it has been monitored and released by monitoring personnel. Clothing and tools used in fire fighting should be segregated until inspected by the radiological emergency team.

No eating, drinking, or smoking should be allowed in the area. Food or drinking water that may have been in contact with material from the accident should not be used.

The public should be restricted as far from the scene as practical, and souvenir collectors forbidden.

Fire fighters who have had possible contact with radioactive material should be segregated until further examination by competent authorities.

All hospitals should be notified immediately that radioactive materials are involved so that all hospitals and medical personnel can institute a radioactive decontamination area in the hospital.

Many publications are available dealing with handling dangerous goods. The NFPA publication, *Fire Protection Guide on Hazardous Materials*, is particularly useful to fire departments, and has an instructional package, "Handling Transportation Emergencies Involving Hazardous Materials for Emergency Service Personnel" (not dealing specifically with airport emergencies).

In the U.S. the Manufacturing Chemists Association has a Chemical Transportation Emergency Center (CHEMTREC) that provides immediate information on

[1] In the U.S. an Official Air Transport Restricted Articles Tariff has been issued by the Airline Tariff Publishers Inc., 1825 K Street, N.W., Washington, D.C. 20006. Code of Federal Regulations, Title 49, Part 103 on Transportation of Dangerous Articles and Magnetized Materials is published by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 in Title 14, Parts 40 to 199. Policy decision on all transportation modes in the U.S. are promulgated by the Hazardous Materials Regulations Board, U.S. Department of Transportation, 400 Sixth Street, S.W., Washington, D.C. 20590. The International Air Transport Association has issued "IATA Dangerous Goods Regulations," available from IATA, 2000 Peel St Quebec, Canada 43A 2R4.

what do to in case of spills, leaks, fires, or exposures to chemical products on receipt of a toll-free phone call from the scene of a chemical transportation accident. The telephone number is: 800-424-9300. (From Washington, D.C., use 483-7616; from Alaska and Hawaii, use 202-483-7616). The caller will be asked to identify the accident location, the name of the chemical product(s), the United Nations classification number, the nature and extent of the accident, the shipment source, name of the company that made shipment, the carrier and the consignee, whether there are injuries, and any local conditions that may affect the hazard. The CHEMTREC communicator will provide the caller with pre-established information on file such as the kind of hazards to be expected from the product involved, and what to do in case of spills, leaks, fire, or exposure. The communicator then will relay the details of the accident immediately by phone to the shipper, who becomes responsible for any future action in regard to the emergency.

Poison Information Centers (Poison Control Centers) have been established in most areas of the U.S. to provide emergency information on the prevention and treatment of accidents involving ingestion of poisonous and potentially poisonous substances. The telephone number of the nearest center is normally prominently listed in the telephone directory of each community and this source of information on emergencies involving poisons should be contacted for immediate help.

Etiological Agents (Biomedical Material).

For information on handling or disposition of leaking or damaged etiological-agent containers contact the Center for Disease Control, Atlanta, GA, U.S. The telephone number is 404-633-5313.

Military Aircraft Carrying Nuclear Weapons.

While most military aircraft will attempt to return to a military airbase in case of emergency, this is sometimes impossible and landings are frequently made at non-military airports. There are also many cases where "joint-use" airports serve both the military and civil aircraft operations. For these reasons it is advisable for aircraft rescue and fire fighting crews to be familiar with the various types of military aircraft operating in the area. For this purpose, training visits to promote knowledge of the special features of military aircraft at nearby military installations are of value. Such liaison is encouraged by the military.

Pilot's Guide to Dangerous Goods ICAO Regulations.

The volume of dangerous goods moving by air continues to increase dramatically. This increase means personnel have to be more informed and vigilant in their efforts to ensure that this accepted practice can be accomplished safely. It is fortunate that there is an ongoing effort to improve regulations and procedures to minimize exposure and danger. If these complex regulations are adhered to in preparation and handling, the hazard is limited.

Though pilots must, to a great extent, trust in the system, it is essential that they be aware of what is involved in the transport of dangerous goods so that they may monitor the system and properly carry out their responsibilities. Certain airline mishaps involving dangerous goods have had devastating consequences. With that thought, this pilot's guide has been prepared to assist pilots.

Definitions.

Dangerous Goods. Substances or materials that have been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and that have been so designated.

They have been given 9 classifications, which include:

Class 1 — Explosives

Class 2 — Gases: compressed, liquefied, or dissolved under pressure

Class 3 — Flammable liquids

Class 4 — Flammable solids, substances liable to spontaneous combustion; substances that on contact with water emit flammable gases

Class 5 — Oxidizing substances; organic peroxides

Class 6 — Poisonous toxic and infectious substances

Class 7 — Radioactive materials

Class 8 — Corrosives

Class 9 — Miscellaneous dangerous goods

Further information as to degree of potential danger is given by the packing group number where:

Packing Group
1 - Great Danger
2 - Medium Danger
3 - Minor Danger.

It is also necessary to be aware of undocumented hazardous airline company materials and other hazards that may not be immediately apparent.

Flash Point. The lowest temperature, determined by standard methods, at which flammable vapor is given off by a liquid or a solid in sufficient quantity to be ignited in air when momentarily exposed to a source of ignition. It does not mean the temperature at which a liquid ignites spontaneously.

N.O.S. Not Otherwise Specified.

Radioactive Materials. Materials that constitute a particular hazard in that they emit certain particles, rays, or gases that may be hazardous and cannot be detected except by properly calibrated instruments. Radioactive materials offered for air transportation fall into three cateogries:

Category I — The material emits minimal radiation.

Category II — The Transportation Index (TI) not to exceed 1.0 per package.

Category III — The material does not exceed 10 TI per package.

Transportation Index (TI). The highest radiation dose rate expressed in millirem per hour at a distance 1 meter (3 ft) from any accessible external surface of the package. The TI number is placed on a package to designate the degree of control to be exercised by the carrier during transportation. The total sum of the Transportation Indexes, the location of packages (must

be located on the floor of cargo compartment), and package integrity, are primary concerns to the pilot to ensure that exposure to hazardous radiation is minimized. The limitations for your aircraft type can be obtained from your airline.

Provisions of Transport.

ICAO and IATA Technical Instructions state that no person may transport any dangerous goods in commerce within the world unless that material is properly classed, described, packaged, marked, labeled, and handled and is in the condition for shipment as specified in the Technical Instructions.

An operator of an aircraft in which dangerous goods are to be carried must provide the pilot-in-command as soon as practicable prior to departure with written information on a dedicated form that specifies at least the following:

(a) the Air Waybill number;

(b) the proper shipping name and UN number or ID number.

(c) the Class or Division, and subsidiary risks for which labels are required, by numerals and in the case of Class I, the compatibility group;

(d) the Packing Group when applicable;

(e) the number of packages, the net quantity of each package and their exact loading location. For radioactive materials see (f) below;

(f) for radioactive materials the number of packages, their category, their transport index, if applicable, and their exact loading location;

(g) whether the package must be carried on cargo aircraft only;

(h) the aerodrome at which the package(s) is to be unloaded; and

(i) confirmation that there is no evidence that any damage or leaking packages have been loaded on the aircraft.

The written information to the pilot-in-command must be readily available to him/her during flight.

Cargo Aircraft Only.

Packages bearing the "Cargo Aircraft Only" label must be loaded so that they can be seen, handled, and, when size and weight permit, separated from other cargo in flight. This requirement does not apply to:

(a) substances of Class 3, Packing Group III, with a flash point above 32°C (90°F) and without a subsidiary risk;

(b) poisons and infectious substances (Class 6);

(c) radioactive materials (Class 7);

(d) miscellaneous dangerous goods (Class 9).

Labels.

Each package containing Dangerous Goods must carry an appropriate label or labels, which are 100 mm × 100 mm (unless otherwise noted in the accompanying illustrations). Radioactive Materials labels must contain specific information to include the TI and must be affixed to opposite sides of the package. Subsidiary risk labels, when required, must also be affixed to the package.

Noncompatible Materials.

The ICAO/IATA documents are followed closely by cargo personnel in order to ensure that segregation is maintained.

Procedures.

Crew's Obligations:

(a) To inform the appropriate agency, in the event of an incident, of the class of Dangerous Goods on board the aircraft so response teams can be more adequately prepared.

(b) To ensure that a hard copy (written) of the Pilot Notification Form is on board and is available for the next crew.

(c) To ensure that Transportation Index and stowage of radioactive materials are within limits for aircraft type.

(d) To monitor compasses if magnetic materials have been loaded.

Crew's Authority:

(a) May delay the flight, if necessary, to determine proper stowage, quantity, and documentation of Dangerous Goods shipments.

(b) Should refuse carriage of any Dangerous Goods that are not in compliance with government regulations or airline exemptions.

The flight crew is the final decision-making authority in determining and ensuring that the system remains safe. It is essential to obtain notification of dangerous goods shipments as early as possible to monitor procedures and ensure that all rules, regulations, and procedures are adhered to.

Airlines' Obligations:

(a) Ensure that all personnel, including pilots, involved in the acceptance, documentation, handling, and transportation of Dangerous Goods, are initially and recurrently trained to appropriate standards.

(b) Ensure that any Dangerous Goods accepted for air transport comply with government regulation and airline exemptions.

(c) Ensure that the pilot-in-command receives timely written notification of any Dangerous Goods on Board.

(d) Display a prominently visible notice to passengers concerning the requirements and penalties associated with the carriage of Dangerous Goods aboard aircraft either as carry-on items, checked baggage, or cargo shipments.

Shippers', Packers', and Forwarders' Obligations:

Properly package, identify, and document all Dangerous Goods.

There are a number of exceptions, exemptions, and items, such as limited quantities, that are listed in the regulations and thus may present a hazard. The most common are shown below for your guidance.

(a) Dry ice (carbon dioxide solid) in quantities not exceeding 2 kg (4.4 lb) per package utilized as a refrigerant in passenger baggage.

(b) Medicinal and toilet articles carried by a crew member or in carry-on baggage when total is less than 2 kg (2.2 lb) or 2 L (2 qt).

(c) Cartridges (securely packaged) for sporting purposes not to exceed 5 kg (11 lb).

(d) Human beings with implanted devices or injected/ingested radiopharmaceuticals.

(e) A human organ/child transport incubator properly marked, labeled, filled, and maintained.

(f) Oxygen carried for medical use by a passenger in accordance with regulations.

(g) Signaling devices, first aid kits, fire extinguishers, aerosol dispensers, and other equipment authorized for carriage aboard aircraft.

The list is presented for your information. It is not all-inclusive. Consult your carrier's operation policy for additional information and/or restrictions.

Emergency Steps for Flight Crews.

Under normal circumstances there should be no problems presented by Dangerous Goods on board your aircraft. However, in the event of on-board situations such as fire, noxious odor, etc., the following is recommended:

(a) Use protective breathing device and smoke goggles.

(b) Illuminate "No Smoking" sign.

(c) Consider landing at nearest suitable airport.

(d) Notify ATC and your carrier's flight operations department and advise of information contained on the Dangerous Goods Pilot Notification Form. Have them contact the appropriate Dangerous Goods emergency response facilities.

Summary.

Dangerous Goods can be transported safely by air under the many complex rules and regulations regarding their packing, labeling, and storage. The manufacture and sale of Dangerous Goods are carefully monitored and regulated. Shippers are required to package materials in approved containers, identify, document, and label the materials. Carriers must inspect, document, handle, properly load the materials aboard the aircraft, and provide complete, timely notification to the pilot-in-command. As pilots you should have confidence that all these procedures have been properly followed. But, it is imperative that you also monitor the system, which, like all human endeavors, has been known to be less than perfect. If you find compliance with the requirements of ICAO and IATA Technical Instructions, you should be able to concur with the carriage of Dangerous Goods.

In the event of an incident, ATC should be advised that your flight is carrying Dangerous Goods so that the airport emergency services will be aware of a possible additional hazard. Many commodities have characteristics that are not compatible with standard rescue and fire fighting techniques. Airport crash rescue services should be aware that special response techniques and equipment may be required.

This guide cannot, nor is it intended to, cover all aspects of Dangerous Goods. However, as the pilot-in-command bears the ultimate responsibility for the safety of the aircraft and its contents, the carriage of Dangerous Goods can be safely accomplished only with his/her informed concurrence. It is hoped that this guide will be useful to all pilots and assist them in exercising their responsibility.

This guide has been prepared by the IFALPA Dangerous Goods Study Group and USALPA Hazardous Materials Committee.

A-4-6.1 Detailed information on procedures for dealing with unlawful interference is given in the ICAO *Security Manual for the Prevention of Unlawful Acts Against Aircraft*.

A-4-6.3 Bomb Threats.

I. Aircraft Bomb Threats.

A. Reporting Bomb Threats.

1. Notify aircraft operator involved.

2. If aircraft operator not specified notify Airport Communications (phone no.).

II. Action to Be Taken.

A. The aircraft operator involved will determine whether bomb threat is definite or indefinite.

1. If DEFINITE, notify Airport Communication, Federal Bureau of Investigation (FBI) and Federal Aviation Administration (FAA) Security.

2. If INDEFINITE, the aircraft operator will notify FBI and FAA Security.

B. If airline not specified, the Airport Communication will notify all aircraft operators, FBI, FAA Security, Airport Tower and the local police agencies.

III. Responsibility.

A. Aircraft Operator.

1. Passenger handling and safety.

2. Location and searching of aircraft, baggage, and cargo.

3. Termination of incident.

4. Statements to the press.

B. Airport.

1. Follow notification procedure.

2. Public safety.

3. Facility safety [no bomb search within 300 ft (90 m) of terminal building, unless otherwise directed by the Airport Authority].

4. Coordinate selection of search area within airlines and ATC.

5. Establish Command Post Communications Center, if requested.

6. Escorting equipment/buses to and from search area, if required.

7. Fire department stand by.

8. Airport police are responsible for security and crowd control on the airport.

C. FAA Tower.

1. Responsible to direct the aircraft to the airline designated search area.

2. Route ground traffic as required.

D. FAA Security.

1. Responsible for ensuring notification of the bomb.

2. Evaluating nonspecified airline threats and disseminating information.

E. FBI.

1. Responsible for investigating all aircraft bomb threats.

F. Local Law Enforcement Agency.

1. Joint responsibility with the FBI investigating all aircraft bomb threats occurring on the ground.

AIRPORT OPERATIONS SUPERVISOR SUSPICIOUS MATERIAL CHECKLIST

DATE: _____

	YES	NO
1. All proper departments notified by airline involved?	____	____
2. Was Airport Operations informed and given all details?	____	____
3. Was search area proper location?	____	____
4. Were the following on the scene?	____	____
A. Airport Fire Department	____	____
B. Police	____	____
C. FBI	____	____
D. Bomb Squad	____	____
E. Baggage Search Unit	____	____
5. Did airline involved require radio or other assistance from Airport Operations?	____	____
6. Was 300 ft (90 m) separation ruling abided by?	____	____
7. Was suspicious material directive followed properly?	____	____
8. Was any suspicious material found?	____	____
9. Length of time involved in search:		
A. Time started:	_____ hrs.	
B. Time secured:	_____ hrs.	
10. Name of Airline involved: _____		

REMARKS: _____

_____

BOMB THREAT FORM

TIME CALL RECEIVED: _____

EXACT WORDS OF CALLER: _____

_____

QUESTIONS TO ASK CALLER:

1. WHEN IS BOMB GOING TO EXPLODE? ____
2. WHERE IS THE BOMB RIGHT NOW? _____
3. WHAT KIND OF BOMB IS IT? _____ (Pipe, Dynamite, Concealed, etc.)
4. WHAT DOES IT LOOK LIKE? _____
5. WHY DID YOU PLACE THE BOMB? _____

_____

6. WHAT IS YOUR PHONE NUMBER? _____
7. WHERE ARE YOU CALLING FROM? _____

_____

PERSON RECEIVING CALL _____

DEPARTMENT ____ TELEPHONE NUMBER ____

HOME ADDRESS _____

HOME TELEPHONE NUMBER _____ DATE _____

TIME CALLER HUNG UP _____

COMMENTS _____

ADDITIONAL COMMENTS ON REVERSE _____

DESCRIPTION OF CALLER'S VOICE

MALE _____ FEMALE _____

YOUNG _____ MIDDLE AGED _____ OLD _____

TONE OF VOICE _____

ACCENT _____

BACKGROUND NOISE _____

IS VOICE FAMILIAR? _____

IF SO, WHO DID IT SOUND LIKE? _____

REMARKS _____

_____

_____

A-8-1.1 Airport Medical Services. Medical services and supplies should be available to an airport. Provision of medical services should generally not present great difficulties at large airports or airports near a large city, as the personnel and material will normally be available. What is required is the development of the necessary coordination between the airport and the emergency medical assistance system in the community.

Provision of medical services may present some difficulties at small airports not located near populated areas. These airports, however, should arrange to have available emergency medical services to provide medical care in the event of an aircraft accident, taking into account the largest aircraft using the airport.

The capability of medical personnel can be greatly enhanced by additional resources for improving the environment of the treatment area. Many airport/community areas contain valuable support equipment that is not utilized because someone failed to determine if it was available. Local agencies such as transportation departments, boards of health, park departments, departments of natural resources, etc. can be good sources. Federal agencies such as the Corps of Engineers, Department of Transportation, Armed Forces (both active and reserve elements) possess a wide variety of support equipment and material. Examples of support equipment are mobile structures, auxiliary power and heating devices, water tankers, fuel supplies, lighting devices, sawhorses and lighting for roadblocks, etc.

Portable shelters such as mobile hospitals, tents, and recreation vehicles can be used where extremes in climate or weather can affect patient survivability. Consider the use of adjacent buildings such as aircraft hangars, gymnasiums, auditoriums, warehouses, etc. if distance and transportation resources are favorable to their utilization.

Ideally all personnel assigned to rescue duties, and "public-contact" airport employees should be given first aid and CPR (cardiopulmonary resuscitation) training.

Rescue and fire fighting personnel should have the ability to stabilize seriously injured casualties. At least two full-time members per shift of the airport rescue and fire fighting service or other on-airport personnel should 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 fire fighting personnel as is practicable receive training to meet minimum standards of medical proficiency and preferably be highly qualified in first aid. Accordingly, they should have sufficient medical equipment at their immediate disposal to initiate stabilization until transportation of casualties to adequate medical facilities is provided.

As many airport personnel as practicable should also be trained in CPR (cardiopulmonary resuscitation) as taught by the appropriate medical authority. Periodic exercises and drills in CPR techniques are necessary to maintain proficiency.

The everyday medical problems at large airports may serve to promote an increased proficiency in emergency medical techniques of airport-based emergency personnel. It should 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.

Airports are encouraged to include volunteer on-airport personnel, other than rescue and fire fighting personnel, to provide an auxiliary response to assist casualties resulting from emergencies. Volunteers should be trained by accredited agencies in first aid or rescue response duties. In case of an emergency they should respond to a designated staging area for assignment. The question of liability is a matter for each appropriate authority.

Due to the many conflicting national and international standards and nomenclature of medical personnel, for the purpose of this manual, the following definitions are prescribed as guidelines:

(a) Advanced First Aid: 56 hours instruction.

(b) Emergency Medical Technician (EMT): 96 hours instruction (80 hours classroom; 10 hours hospital emergency room apprentice service; 6 hours of ambulance apprentice duty).

(c) Paramedic: 500 hours instruction (200 hours classroom; 100 hours hospital emergency room apprentice service; 200 hours of ambulance apprentice duty).

(d) Recurrent training should be provided in each specialty and recertification achieved at least on an annual basis, or as required by the local jurisdiction.

Emergency Medical Supplies and Equipment. The airport authority should arrange to have available on or in the vicinity of the airport sufficient medical supplies to treat the passenger capacity of the largest aircraft normally using the airport. Experience has shown, however, that more than one aircraft can be involved in an aircraft accident and consequently medical supplies to handle this possibility should be considered. The type and quantity of such supplies should be determined by the principal medical authority for the airport using the statistical information given in Table A-8-1.1(a) below.

Table A-8-1.1(a)
Estimated Maximum Number of Casualties at an Aircraft Accident at an Airport

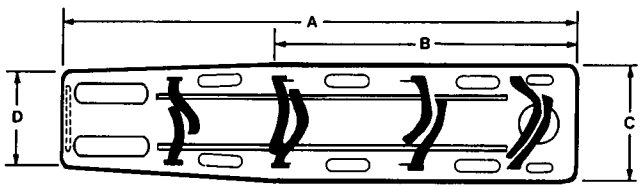
Aircraft Occupants	Number of Casualties	20 Percent Casualties Immediate Care Priority I	30 Percent Casualties Delayed Care Priority II	50 Percent Casualties Minor Care Priority III
500	124	24	38	62
450	112	22	34	56
400	100	20	30	50
350	87	17	26	44
300	75	15	23	37
250	62	12	19	31
200	50	10	15	25
150	38	8	11	19
100	25	5	8	12
50	12	2	4	6

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 airport is estimated to be no more than 25 percent of the aircraft occupants.

To cope with an emergency involving a large aircraft it is recommended that the general emergency medical supplies and equipment included in Table A-8-1.1(b) be available at the airport or otherwise be available from outside sources. Table A-8-1.1(b) 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, at any airport, only smaller aircraft will be handled during the foreseeable future, the suggested medical supplies and equipment should be adjusted to the largest aircraft expected to operate at the airport.

Table A-8-1.1(b) General Emergency Supplies And Equipment

Quantity	Description
100	stretchers, adaptable to the most commonly used ambulances
10	immobilizing mattresses for backbone fractures
10	backboards 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 tube, scissors, dressings
20	resuscitation chests containing material for intubation, infusion and oxygenation on the spot for about 20 casualties
2 or 3	manual or mechanical respirators
2 or 3	suction devices
300 to 500	plastic bags for the deceased

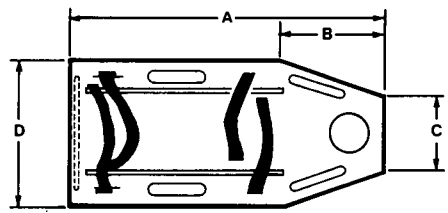


A — 1.90 m (74 in.)
B — 1.10 m (43 in.)
C — 0.46 m (18 in.)
D — 0.25 m (10 in.)

Thickness: 19 mm (¾ in.) plywood
Head hole: 14 cm (5½ in.) diameter
Hand holes: 25 cm × 5 cm (10 in. × 2 in.)
Foot holes: 25 cm × 7.5 cm (10 in. × 3 in.)

Note: 2.5 cm (1 in.) cleats should be placed longitudinally on the under side of the backboard to facilitate lifting.

Figure A-8-1.1(a) Long Backboard



A — 0.91 m (36 in.)
B — 0.30 m (12 in.)
C — 0.20 m (8 in.)
D — 0.41 m (16 in.)

Thickness: 16 mm (⅝ in.) plywood
Head hole: 11.4 cm (4½ in.) diameter
Hand holes: 15 cm × 3.8 cm (6 in. × 1½ in.)

Note: 2.5 cm (1 in.) cleats should be placed longitudinally on the under side of the backboard to facilitate lifting.

Figure A-8-1.1(b) Short Backboard

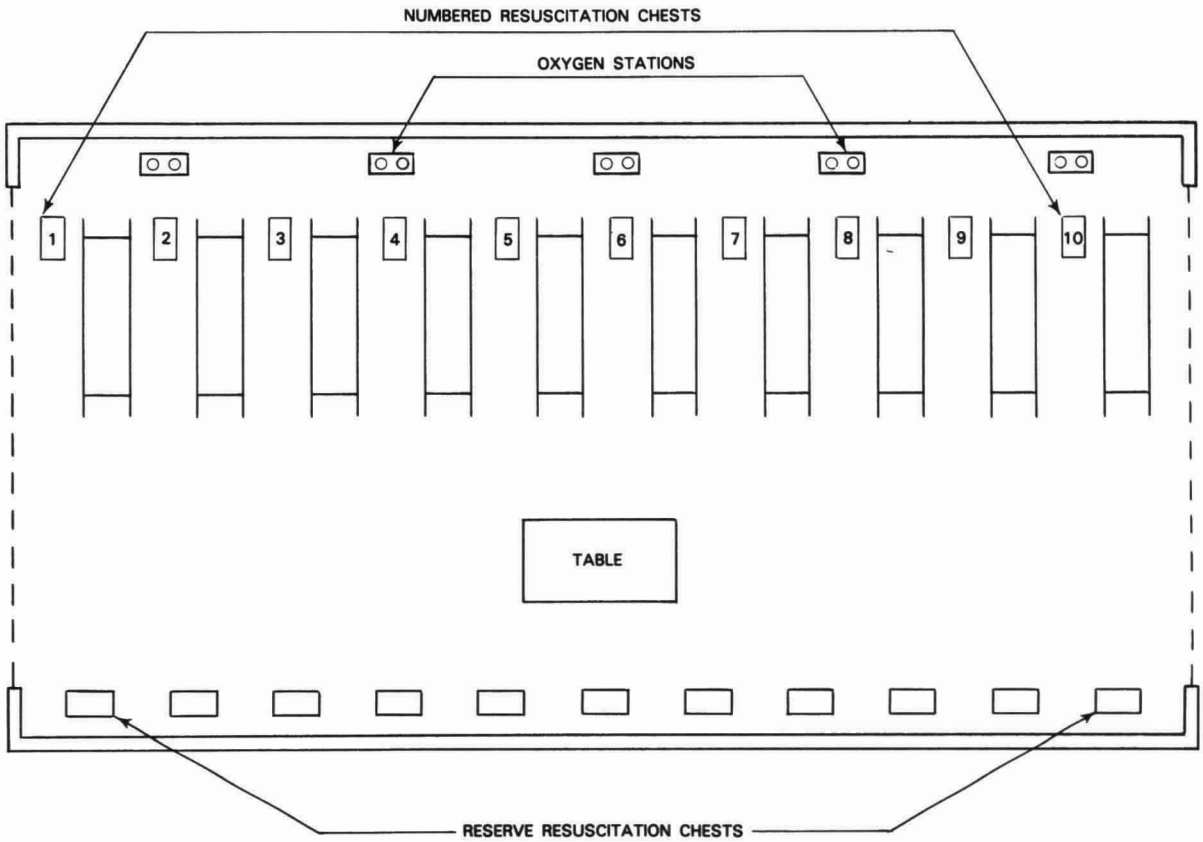


Figure A-8-1.1(c) Schema of An Inflatable Tent

Figure A-8-1.1(d) Containerized Hospital Emergency Mobile

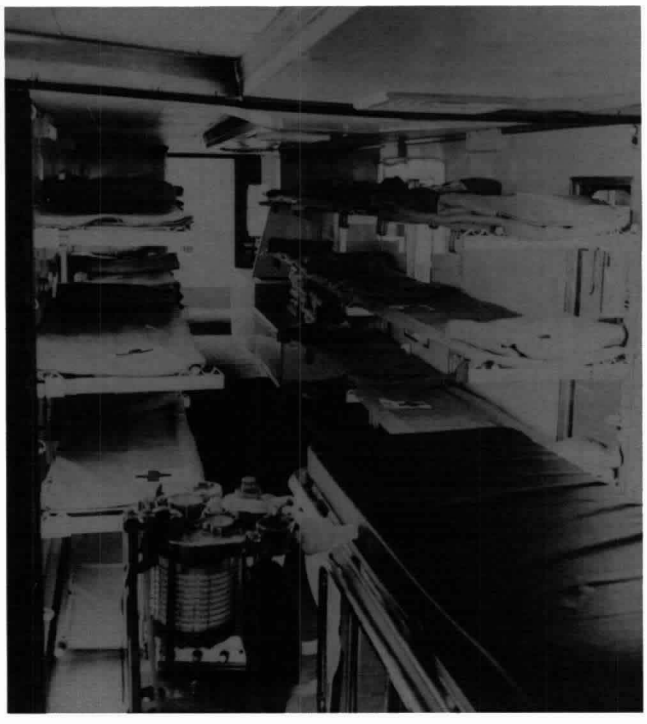


Figure A-8-1.1(e) Interior View of Containerized Hospital Emergency Mobile

Stretchers, blankets, backboards and/or immobilizing mattresses should be available for use, preferably on a suitable vehicle (e.g. trailer) that can be transported to the accident site. Blankets are needed to alleviate the casualty's exposure to shock and possible adverse weather conditions. Trauma victims in an aircraft accident sometimes sustain severe spinal injuries and backboards should be used in removing such casualties from the aircraft in order to minimize the possibility of further spinal injury. The backboards should be of a type designed to fit through access ways and narrow aisles of commercial and business aircraft.

The following material describes some of the items included in Table A-8-1.1(b):

Immobilizing Mattress: This apparatus consists of a plastic bag designed like a mattress, and filled with a lot of very small balls. An aspirator (mechanical or other) is used to take out the air so that the mattress is crushed by the atmospheric pressure and becomes as rigid as plaster. A human body, partly enveloped before the mattress is compressed, is completely wrapped and head, limbs, and backbone 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 (74 in.) and its width between 0.80 and 0.90 m (36 in.).

Backboards: These are classified as long and short backboards. The approximate dimensions for a long backboard are shown in Figure A-8-1.1(a). Although a backboard of 1.90 m (74 in.) is shown, some backboards of 1.83 m (72 in.) length should be available to move through the smallest aircraft emergency exits, 51 cm (20 in.) wide and 91.5 cm (36 in.) high. A 7.5-cm (3-in.) wide velcro retaining strap is normally required for legs, hips, upper torso, and head.

The appropriate dimensions for a short backboard are shown in Figure A-8-1.1(b) of this Appendix. A 7.5-cm (3-in.) wide velcro retaining strap is normally required for lower and upper torso.

Miscellaneous Items.

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

(b) Mobile emergency hospitals or inflatable tents, if available [see Figures A-8-1.1(c), A-8-1.1(d), and A-8-1.1(e)], or shelters can be used for on-site treatment of Immediate Care (Priority I - Red) and Delayed Care (Priority II - Yellow) casualties. These units should be readily available for rapid response. Planning should also include the assignment of personnel who can operate/assemble this equipment. A cardiac care ambulance unit can be used as an ideal shelter for immediate care (Priority I - Red) casualties.

Emergency Medical Communication System. Communication is a primary requisite of an airport/community emergency medical plan. The medical service communication system should ensure adequate communication during emergencies to disseminate warning information and obtain support operations. Without communications the hospital cannot know the number and type of casualties it will be receiving, ambulances cannot be directed to the facilities most capable of rendering the needed care, supplies available from outside sources cannot be called for, and medical personnel cannot be directed to the point where they are needed most.

The participating hospitals should have the capability of communicating with one another by means of a two-way radio communication network. Ideally, each hospital should have the capability of either calling other individual hospitals or, if the occasion arises, calling all other hospitals simultaneously. This capability is invaluable for hospitals experiencing an emergency such as a requirement for a certain blood type or an item of equipment in short supply. It is also recommended that the medical coordinator be able to communicate with participating hospitals directly.

Emergency Medical Transportation Facilities. The dispatch of casualties to hospitals from the accident site should take into consideration the hospital(s) medical personnel on staff, medical specialties, and beds readily available. Ideally, each airport should have available at least one on-call ambulance for routine medical emergencies. Written agreements with off-airport based ambulances should be prepared to provide for emergency transportation services.

In major emergency situations other means of transportation may be substituted for ambulances. Vans, buses, automobiles, station wagons, or other suitable airport vehicles may be used. Provision for immediate transportation should be available to transport the uninjured or apparently uninjured to a designated holding area.

An area grid map (with date of latest revision) of the airport's surrounding area should be carried by all rescue vehicles. All medical facilities should be depicted prominently on the grid map. (*See Figure A-4-1.2.2, Grid Map.*)

Assessment of Airport Medical Care Facilities Needs (Medical Clinic and/or First Aid Room)

General Factors Influencing Need. There are many general factors that influence the need for an airport first aid room or an airport medical clinic. Factors to be taken into consideration include:

(a) The number of passengers served annually and the number of employees based on the airport;

(b) The industrial activity on the airport 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 airport medical clinic be available when the airport employees number 3,000 or more and that a first aid room be available at every airport. The airport medical care or first aid room personnel and facilities should be integrated with the airport/community emergency plan.

The airport medical clinic, in addition to providing emergency medical care to the airport population, may

extend emergency care to communities surrounding the airport, if these communities have no emergency facilities of their own.

The airport medical clinic may be included in the community emergency services organization and planning. In the event of a large-scale non-airport local emergency, the airport medical clinic may function as the coordination site for direction of incoming medical personnel assistance as well as medical supplies and equipment.

Location of Airport Medical Care Facilities. The facilities should be readily accessible to the airport terminal building, to the general public, and to emergency transportation equipment (i.e. ambulances, helicopters, etc.). Site selection should avoid the problem of having to move injured persons through congested areas of the airport terminal building, while providing access to the facility by emergency vehicles. This suggests that the medical care facility be located so that access can be gained from the air side of the airport terminal building, as this provides control over unauthorized vehicles interfering with emergency equipment.

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

In general it is recommended that during the principal hours of airport activity at least one person trained to deal with the following be available within 3 to 5 minutes:

(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 prematures.

(h) Common medical conditions that may influence the outcome of injury (allergies, high blood pressure, diabetes, pacemaker, etc.).

(i) Basic measures for treatment and protection subsequent to spills or leaks of radioactive materials, or toxic or poisonous substances.

(j) Treatment of emotionally disturbed persons.

(k) Recognition of and first aid for poisons, bites, and anaphylactic shock.

(l) Transportation techniques for injured persons. The person responsible should have authority to order hospitalization if necessary and to arrange any needed transportation.

The airport authority should obtain the advice and direction of a consulting emergency medical care physician as to the allotment and design of equipment for the first aid room commensurate with the anticipated needs of the particular airport.

The equipment and the medical supply inventory of the airport medical clinic should be established by the staff in charge of the clinic.

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

Emergency oxygen and respiratory equipment should be available to treat smoke inhalation victims.

Since the majority of non-accident related medical emergencies at airports involve coronary problems, advance life support systems including oxygen, oxygen regulators, and other elements for cardiopulmonary care should 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) and chains, ropes, crowbars, and metal cutters should be available.

A-8-6.7 Casualty Identification Tag. Figures A-8-6.7(a) and A-8-6.7(b) illustrate an example of a casualty identification tag suitable for multilingual applications.

A-9-1.1 Preservation of Evidence for Aircraft Accident Investigations. Airport fire fighters and other rescue personnel should understand the basic need for and the techniques and procedures used in aircraft accident investigation. Whenever possible the wreckage should remain undisturbed until the arrival of the first accident investigator. However, when absolutely necessary for the rescue or fire suppression activities, the wreckage may be disturbed. Disturbance should be kept to a minimum. When circumstances permit, any bodies should be left as found.

If it becomes necessary to move bodies or parts of the wreckage, a sketch plan of their respective positions prior to removal should be made as soon as possible. Photographs should also be taken showing the relative position of bodies and parts within the wreckage. In addition, tags should be affixed to each body or part displaced and corresponding stakes or tags should be placed where they were found in the wreckage. Special precautions should be taken not to disturb anything in the cockpit area. Should any control be displaced voluntarily or accidentally, notes should be taken.

Security measures within the wreckage area should be established as soon as possible. All authorized personnel should have and display proper "Emergency Access" identification as required by the airport/community emergency plan.

All security personnel should 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 (hazardous materials), and scattered pieces of wreckage. All necessary safety precautions in the emergency area should be carried out rigidly; this includes exercising good judgment during fire control and

Table A-8-3.1 Aircraft Data

Aircraft Type	Passenger Capacity #	Dimensions: Span ft.	Span in.	Length ft.	Length in.	Gross Weight lbs.	No. of Engines	Pressurized
Aerospatiale-British Aerospace (BAC) Concorde	108/128	83	10	203	9	400,000	4	Yes
Aerospatiale Caravelle (All Series)	128/140	112	6	118	10	127,870	2	Yes
Aerospatiale Corvette	14	45	0	45	4	14,550	2	Yes
Aerospatiale Dauphin Helicopter (All Series)	14			43	6	6,615	1	No
Agusta A 109	6	36	1	35	1¾	5,402	2	No
Airbus Industrie (All Series)	201/345	147	1	175	11	313,060	2	Yes
Antonov AN22	28	211	3½	189	7½	551,156	4	
Antonov AN24	50	95	10	77	3	42,997	2	No
Antonov AN26	50	95	9½	77	2½	49,297	2	
Beechcraft (All Series)							2	No
Beechcraft Baron	4/6	37	10	28	0	5,120	2	No
Beechcraft Queen Air	7/11	50	3	35	6	8,800	2	No
Beechcraft Twin Bonanza	5	45	11½	31	6	6,300	2	No
Beechcraft 18	11/15	49	8	35	3	9,900	2	No
Beechcraft C99	15	45	8	44	6	10,900	2	No
Bell Helicopter (All Series)	4	33	3	39	1	3,200	1	No
Boeing 707 (Mixed Passenger/Freighter)	145	145	9	152	11	336,000	4	Yes
Boeing 707 Passenger (All Series)	100/181	130	10	145	1	258,000	4	Yes
Boeing 720/720B (707-020/02B)	167	130	10	136	9	235,000	4	Yes
Boeing 727 Passenger (All Series)	70/131	108	0	133	2	170,000	3	Yes
Boeing 727-100 (Mixed Passenger/Freighter)	96	108		133	2	160,000	3	Yes
Boeing 727-200	145	108	0	153	2	191,000	3	Yes
Boeing 737 Passenger (All Series)	115/138	93	0	94	0	111,000	2	Yes
Boeing 737-200 (Mixed Passenger/Freighter)	115/130	93	0	100	2	125,000	2	Yes
Boeing 737-200/200C Passenger	115/130	93	0	100	2	120,000	2	Yes
Boeing 737-300	138	94	9	105	7	135,000	2	Yes
Boeing 747 (Mixed Passenger/Freighter)	238	195	8	231	10	785,000	4	Yes
Boeing 747 Passenger (All Series Except SP)	452	195	8	231	10	833,000	4	Yes
Boeing 747 SP	430	195	8	184	9	700,000	4	Yes
Boeing 757 (All Series)	178/224	124	6	155	3	220,000	2	Yes
Boeing 767 (All Series)	211/290	156	1	159	2	312,000	2	Yes
British Aerospace (BAC) One-Eleven (All Series)	74/79	88	6	93	6	78,500	2	Yes
British Aerospace (BAC-Vickers) Vanguard Passenger	97/139	118	0	122	10½	146,500	4	Yes
British Aerospace (Hawker Siddeley) 748 (All Series)	40/56	98	6	67	0	46,500	2	Yes
British Aerospace (Hawker Siddeley) Trident (All Series)	103	95	0	114	9	135,500	3	Yes
British Aerospace Jetstream 31	18	52	0	47	1½	12,566	2	Yes
British Aerospace 146-100	88	86	5	85	10	74,600	4	Yes
British Aerospace 146-200	100	86	5	93	8	89,500	4	Yes
Britten-Norman Islander	10	49	0	35	8	6,300	2	No
Britten-Norman Trislander	18	53	0	43	9	9,350	3	No
Casa (Construcciones Aeronauticas, SA) NURT C212 Aviocar	22/28	62	6	45	10	16,427	2	No
Cessna (All Series)							1 or 2	No
Cessna Stationair 206	4/7	35	10	28	0	3,600	1	No
Cessna Stationair 207	4/7	35	10	31	9	3,800	1	No
Cessna 402 Twin Turbo	4/8	39	11	36	1	6,300	2	No
Convair (All Series)	56	105	4	79	2	54,600	2	Yes
Convair 880	90/104	120	0	129	4	193,000	4	Yes
Curtiss-Wright C46 Commando	40/60	108	1	76	4	40,000	2	No
Dassault-Breguet Mercure		100	3	114	3	120,150	2	Yes
Dehavilland of Canada DHC6 Twin Otter	20	65	0	51	9	12,500	2	No
Dehavilland of Canada DHC7 Dash-7	50	93	0	80	7	43,000	4	Yes
Dehavilland of Canada DHC8 Dash-8	32	84	0	75	6		2	
Dehavilland of Canada Beaver	10	48		30	3	5,100	1	
Dehavilland of Canada Otter	10	58	0	41	10	8,000	1	No
Dehavilland of Canada Turbo Beaver	10	48	0	35	3	5,370	1	No
Dehavilland Heron	14/17	71	6	48	6	13,500	4	No
Dornier DO28 Skyservant	15	51	1/4	37	1/4	8,852	2	
Dornier 228-100	15	55	7	49	3	12,570	2	
Embraer EMB 110 Bandeirante	19	50	2	49	5	12,500	2	No
Fairchild-Hiller FH227	44/52	95	2	83	1	43,500	2	Yes
Fairchild Swearingen Metro	19	46	3	59	4	12,500	2	Yes
Fokker-VFW-Fairchild F27 Friendship (All Series)	40/56	95	2	82	2	45,000	2	Yes
Fokker-VFW F28 Fellowship (All Series)	85	82	3	96	2	73,000	2	Yes
Government Aircraft Factories N22/N24 Nomad	12/16	54	0	43	0	8,500	2	No
Gulfstream Aerospace Corp. (Grumman) Albatross G-111	28	96	8	61	3	31,000	2	No
Gulfstream Aerospace Corp. (Grumman) Goose	10	49	0	38	4	8,000	2	No
Gulfstream Aerospace Corp. (Grumman) Gulfstream (Series II, III)	18/37	78	4	63	9	36,000	2	Yes
Gulfstream Aerospace Corp. (Grumman) Mallard	10	66	8	48	4	12,750	2	No

Table A-8-3.1 Aircraft Data (continued)

Aircraft Type	Passenger Capacity #	Dimensions: Span ft.	Span in.	Length ft.	Length in.	Gross Weight lbs.	No. of Engines	Pressurized
Handley Page Herald	60/74	113	0	96	10	82,000	2	Yes
Handley Page Jetstream	14/18	52	0	47	1	12,550	2	Yes
Hughes 500 Helicopter	5	26	5	30	6	3,000	1	No
Ilyushin IL14	18/24	104	0	69	11	36,380	2	No
Ilyushin IL18	75/125	122	8½	117	9½	119,000	4	Yes
Ilyushin IL62	186	141	3½	174	2	347,224	4	Yes
Ilyushin IL86	350	157	8¼	197	6½	454,152	4	Yes
Lockheed Electra L188	66/104	99	0	104	6½	116,000	4	Yes
Lockheed Electra L188 Mixed Configuration		99		104	6	116,000	4	
Lockheed L1011 (All Series)	250/400	155	3	177	7	430,000	3	Yes
Lockheed L1011-500	246/330	155	4	164	2½	496,000	3	Yes
Martin 404	44	93	3	74	7	44,900	2	Yes
McDonnell Douglas DC3/Dakota C47	21/30	95	0	64	6	25,200	2	No
McDonnell Douglas DC4/Skymaster C54	44/80	117	6	93	11	73,800	4	No
McDonnell Douglas DC6 (All Series)	52/80	117	6	101	6	93,200	4	Yes
McDonnell Douglas DC8 (All Series)	116/176	142	3	150	5	315,000	4	Yes
McDonnell Douglas DC8 (All 60/70 Series)	259	142	3	187	4	325,000	4	Yes
McDonnell Douglas DC8 (Mixed Passenger/Freighter)	180/259	142	4	187	5	325,000	4	Yes
McDonnell Douglas DC9-10 and 20 Series	90	93	3	104	4	98,000	2	Yes
McDonnell Douglas DC9-30, 40, 50 and 80 Series	125	93	3	125	6	121,000	2	Yes
McDonnell Douglas DC9 (All 30/40 Series)	139	93	3	133	5	122,200	2	Yes
McDonnell Douglas DC9 Super 80	137/172	107	10	147	10	140,000	2	Yes
McDonnell Douglas DC10 (All Series)	250/380	155	3	182	3	455,000	3	Yes
Mikhail MIL	28	50	2½	108	10¼	26,455	2	
Mitsubishi MU2	8	39	2	39	5	11,575	2	
Mooney Mark 20A	4	35	0	23	2	2,450	1	No
Nihon (Namco) YS11	52/60	105	0	86	3	51,800	2	Yes
Nord Aviation 262/Mohawk 298	27	71	10	63	3	23,370	2	Yes
Partenavia P68	7	39	4½	31	4	4,387	2	
Pilatus Turbo Porter		49	8	35	9	4,850	1	
Piper Aztec	6	37	4	31	2	5,200	2	No
Piper Aero Star 601	6	34	2	54	9	5,500	2	Yes
Piper Cherokee	6/7	32	10	27	8	3,400	1	No
Piper Chieftain	8	40	6	34	6	7,000	2	No
Piper Navajo	6/8	40	8	34	6	7,800	2	No
Piper Seneca	6/7	38	11	28	6	4,570	2	No
Piper T-1040	9	41	1	36	8	9,000	2	No
Rockwell Aero Commander (All Series)	5/7	49	6	35	1	6,750	2	No
Saab-Fairchild 340	34	70	4	63	9	25,020	2	Yes
Saunders ST-27-ST2	23	71	6	59	0	13,500	2	No
Short Bros. Skyliner	19	64	11	40	0	12,500	2	Yes
Short Bros. Skyvan	19	64	11	40	1	12,500	2	
Short Bros. 330	30	74	8	58	0	22,000	2	No
Short Bros. 360	36	74	10	70	10	26,000	2	No
Sikorsky S-58ET	7/16	56	0	47	3	13,000	1 or 2	No
Sikorsky 561 Helicopter	26/28	62	0	72	0	19,000	1 or 2	No
Tupolev TU124	44/56	91	10	101	8	79,360	2	Yes
Tupolev TU134	64/72	95	2	112	9	98,100	2	Yes
Tupolev TU154	164	123	2½	157	1¾	198,410	3	Yes
VFW-Fokker VFW 614	40/44	70	6	67	6	44,000	2	Yes
British Aerospace (BAC Vickers) Viscount (All Series)	75	93	8½	85	8	72,500	4	Yes
Westland W30 Helicopter	17/21	43	8	52	2	12,350	2	
Yakovlev YAK 42	100/120	112	2½	119	4¼	114,640	3	Yes
Yakovlev YAK 40	34/40	82	1	66	9	35,270	3	Yes

throughout all rescue efforts. Safety equipment and approved protective clothing should be worn by all personnel involved. All other personnel should remain outside the security perimeter until the chief fire officer declares the area safe.

As soon as practical after the emergency, all participants in the fire fighting and rescue efforts should 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 position are invaluable tools for investigators and should be handed to the investigator-in-charge upon his/her arrival.

In the United States major aircraft accidents are investigated by the National Transportation Safety Board, 800 Independence Avenue SW, Washington, D.C. 20591, except those delegated by the Board to the Federal Aviation Administration. Part 430 (Rules Pertaining to Aircraft Accidents, Incidents, Overdue Aircraft, and Safety Investigations) of the National Transportation Safety Board, Section 430.10 reads:

> Civil aircraft accident investigation is normally conducted by a number of investigators of the National Transportation Safety Board or their designees interested in establishing the probable cause. Federal or state governments are usually charged with the official responsibility but the operators, pilot

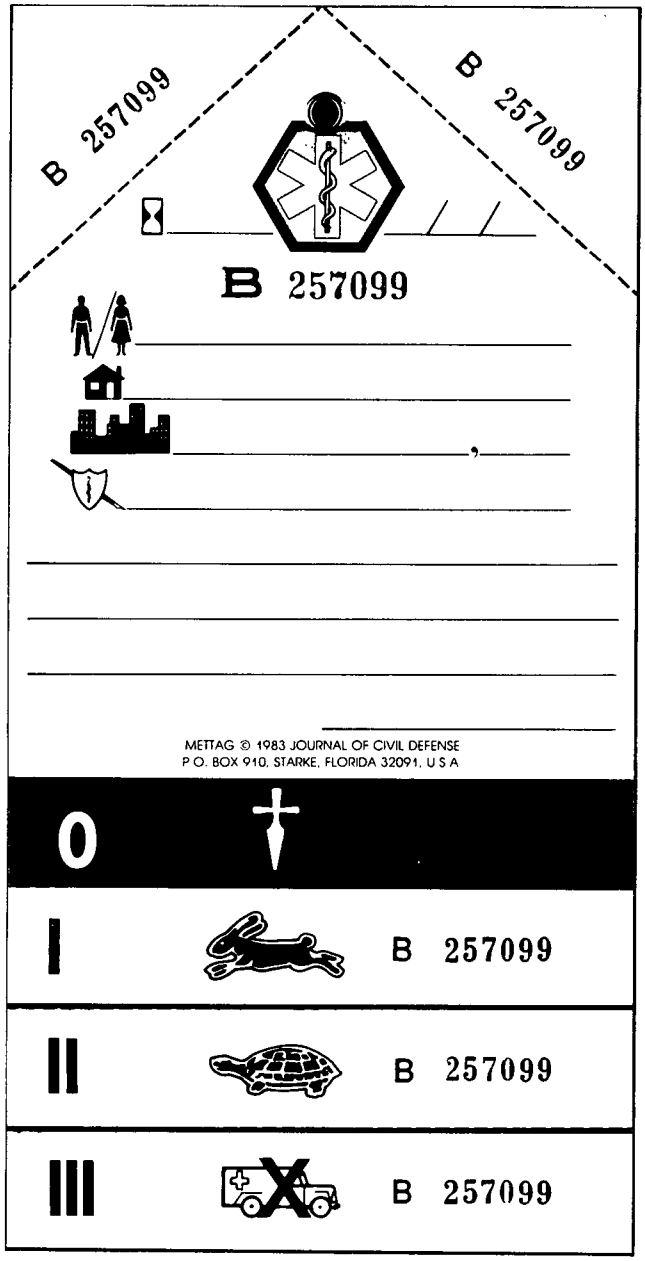


Figure A-8-6.7(a) Casualty Identification Tag - Front

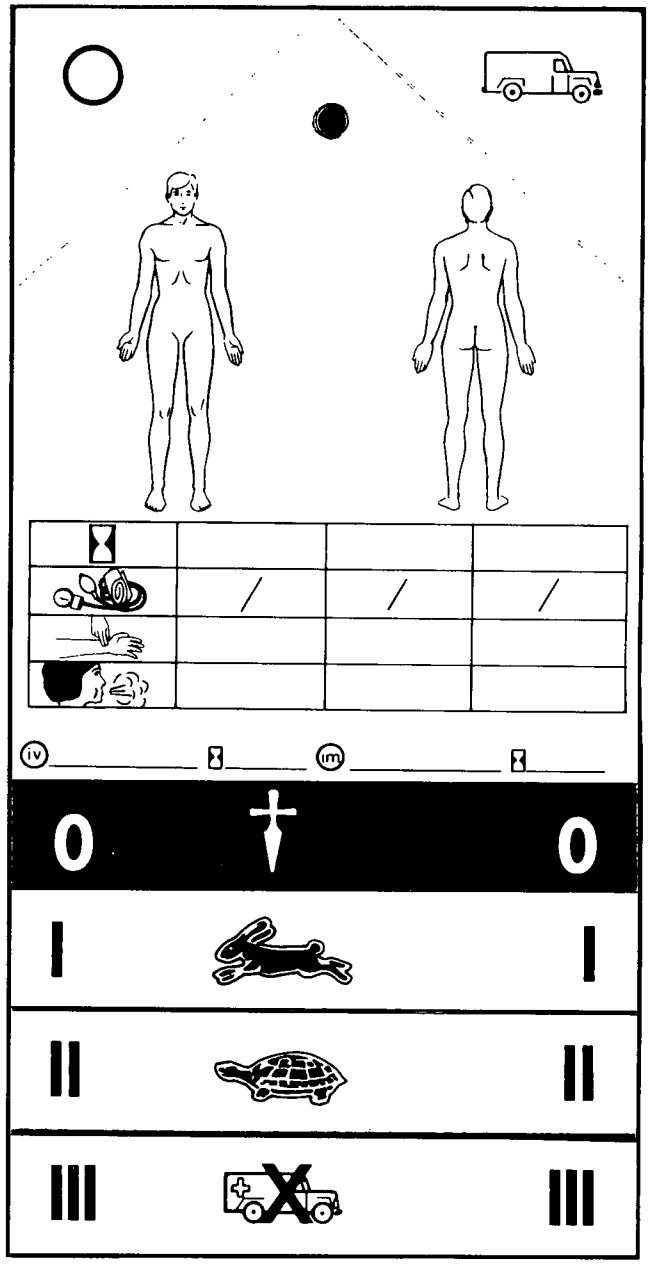


Figure A-8-6.7(b) Casualty Identification Tag - Back

groups, airport management, and others may be active in accident investigation work. Fire officials normally make their own investigation. To aid this, the NFPA's Manual for Aircraft Fire and Explosion Investigators, NFPA 422M, has been prepared to guide them in their study of the fire factors involved.

For further guidance on preservation of evidence see: NFPA 402M, *Manual for Aircraft Rescue and Fire Fighting Operational Procedures*, Chapter 7 and Appendix E; NFPA 422M, *Manual for Aircraft Fire and Explosion Investigators*, Chapter 4.

A-10-4.2

Emergency Drill Critique Form
XYZ International Airport

Person performing critique _____

GENERAL

1. Date and time of emergency _____
2. Emergency location _____
3. Type of emergency _____

RESCUE OPERATIONS

Person performing critique _____

Organization _____

4. Time of emergency notification _____

5A. First agency or individual to arrive at emergency_____

_____

B. Time of arrival _____

6A. Arrival time of airport rescue fire fighting service at emergency _____

B. Approximate number of fire personnel at site_____

C. Time and type of first fire protection action (foam, dry chemical, etc.)_____

7A. Time first casualty evacuated from aircraft_____

B. How evacuated _____

C. Number of casualties evacuated from inside aircraft_____

D. Time last casualty evacuated from aircraft _____

Comments: _____

8A. Number of injured_____

B. Number of non-injured _____

C. Number of dead_____

9A. Time first casualty transported to triage area _____

B. Time last casualty transported to triage area _____

10A. Name of other services participating in first aid _____

B. Who was in charge of these services?_____

C. How many persons involved?_____

11A. Name of other organizations participating in rescue orperations _____

B. How many persons involved?_____

12. Was the moulage realistic? _____

SECURITY

Person Performing Critique _____

Organization _____

13A. Time of emergency notification to police/security _____

B. Who was first police/security officer to arrive at emergency site? _____

C. Time of arrival _____

14A. How many persons involved?_____

B. Did command of security at emergency site change at any time? _____

If so, give sequence of command change and agency represented_____

15. Was the traffic satisfactorily controlled? _____

16. Was there any provision for the security of personal effects? _____

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

_____

_____

MEDICAL SERVICES

Person Performing Critique _____

Organization _____

18A. Who was first medical official to arrive at emergency site? _____
Medical facility associated with? _____

B. Time of notification _____

C. How notified?_____

D. By whom? _____

E. Arrival time at emergency site _____

19A. Who was the medical coordinator in charge of medical care and evacuation of casualties? _____

B. Time of notification _____

C. How notified?_____

D. By whom? _____

E. Arrival time at emergency site _____

20A. Number of physicians responding _____

B. Number of nursing personnel responding _____

21A. Was a triage designated at emergency site?_____

B. Was the triage area located to expedite the flow of casualties? _____

C. Were the casualties properly classified and tagged? _____

D. Were the casualties moved quickly to receiving hospitals? _____

22. How were medical and first aid personnel identified? _____

23A. What time were relief agencies (Red Cross, Salvation Army, etc.) notified? _____

B. How notified? _____

C. By whom? _____

D. Arrival time _____

E. Personnel participating _____

AMBULANCES

Person Performing Critique _____
Organization _____

24A. Time of notification to ambulances _____

B. How notified? _____

C. By whom? _____

D. Name of ambulance company _____

E. Time of arrival at accident site of first ambulance

25A. How many casualties did ambulance handle? _____

B. Time of departure _____

C. Hospital _____

D. Arrival time at hospital _____

26A. Was ingress or egress to accident site a problem?

Explain: _____

B. Any special problems driving from accident site to hospital? _____

Explain: _____

HOSPITALS

Person Performing Critique _____
Organization _____

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 _____

32A. Time first alert was received _____

B. Time disaster message authenticated _____

C. Time first casualties arrived _____

D. Time first casualties were seen by a physician _____

E. Time last casualties arrived _____

F. Time last casualties were seen by a physician _____

LEADERSHIP

Person Performing Critique _____
Organization _____

33. Did leadership by on-scene commander cause people to take effective action? _____

34. Were there any problems in the coordination of medical, fire, police, and other services? _____

35. Was the general spirit of the participants conducive to the success of the exercise? _____

36. Who demonstrated leadership? _____

_____

PUBLIC INFORMATION

Person Performing Critique _____
Organization _____

37A. Time of notification to airport public information officer _____

B. How notified? _____

C. Arrival time _____

38A. Who was the Public Relations Officer? _____

B. From what organization? _____

39. What special problems were indicated? _____

Explain: _____

_____

COMMUNICATIONS AND CONTROL

Person Performing Critique _____
Organization _____

40. Did the Command Post perform effectively? _____

41. Did the emergency operations center perform effectively? _____

42. Was the personnel call system effective? _____

43. Was the physician call system effective? _____

44. Was the emergency message accurately received? _____

45. Were communications with the hospitals effective?

46. Were there any problems with internal communications? _____

47. What kinds of communications systems were used?

A. two-way radio _____

B. telephone _____

C. walkie-talkie _____

D. messenger _____

E. other _____

NARRATIVE: Make any comments that may be helpful in evaluating this exercise _____

_____

_____

Appendix B Other Sources of Recommendations References

This Appendix is not a part of the recommendations of this NFPA document, but is included for information purposes only.

B-1 Referenced Publications.

B-1.1 NFPA Publications. The following publications are available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

NFPA 10-1984, *Standard for Portable Fire Extinguishers (ANSI)*

NFPA 402M-1984, *Manual for Aircraft Rescue and Fire Fighting Operational Procedures*

NFPA 403-1978, *Recommended Practice for Aircraft Rescue and Fire Fighting Services at Airports and Heliports*

NFPA 407-1985, *Standard for Aircraft Fuel Servicing (ANSI)*

NFPA 408-1984, *Standard for Aircraft Hand Fire Extinguishers*

NFPA 409-1985, *Standard on Aircraft Hangars (ANSI)*

NFPA 412-1974, *Standard for Evaluating Foam Fire Fighting Equipment on Aircraft Rescue and Fire Fighting Vehicles (ANSI)*

NFPA 414-1984, *Standard for Aircraft Rescue and Fire Fighting Vehicles (ANSI)*

NFPA 415-1983, *Standard on Aircraft Fueling Ramp Drainage (ANSI)*

NFPA 416-1983, *Standard on Construction and Protection of Airport Terminal Buildings (ANSI)*

NFPA 417-1985, *Standard on Construction and Protection of Aircraft Loading Walkways (ANSI)*

NFPA 418-1979, *Standard on Roof-top Heliport Construction and Protection*

NFPA 419-1983, *Guide for Master Planning Airport Water Supply Systems for Fire Protection*

NFPA 422M-1984, *Manual for Aircraft Fire and Explosion Investigators*

NFPA 1001, *Standard for Fire Fighter Professional Qualifications, 1981*

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications, 1982*

NFPA 1003, *Standard for Airport Fire Fighter Professional Qualifications, 1978*

NFPA 1981, *Standard on Self-Contained Breathing Apparatus for Fire Fighters, 1981*

Fire Protection Guide on Hazardous Materials.

B-1.2 Aircraft Rescue and Fire Fighting Manuals.

U.S. Navy Aircraft Firefighting and Rescue Manual, NAVAIR 00-80R-14, 1983. (Available from Naval Air Systems Command, Code 1416C, Washington, DC 20360.)

Aircraft Fire Protection and Rescue Procedures (3rd Edition 1984), IFSTA 206. (Available from International Fire Service Training Association. Oklahoma State University, Stillwater, OK 74074.)

Aircraft Emergency Rescue Information, Technical Manual, T.O. 00-105-9. (Available from Hq. NRAMA-MMSTD, Robins Air Force Base, Georgia 31093.)

B-1.3 Aircraft Rescue and Fire Fighting Publications.

AD 739-027, *A Proposed Method for Evaluating Fire Prevention Efforts by the Airport Manager of Non-Hub Airports*, 1970. (Available from National Technical Information Service, Springfield, VA 22151.)

AS-71-1, *Minimum Needs for Airport Fire Fighting and Rescue Service*, January 1971. (Available from National Technical Information Service, Springfield, VA 22151.)

AFAPL-TR-73-74, *Fire and Explosion Manual for Aircraft Accident Investigations*, August 1973, Joseph M. Kuchta, Pittsburgh Mining and Safety Research Center, Bureau of Mines Report No. 4193 published by U.S. Dept. of the Air Force, Air Force Aeoro Propulsion Laboratory, AFAPL/SFH, Wright-Patterson Air Force Base, OH 45433.

B-1.4 Typical ICAO Publications. Available from International Civil Aviation Organization, 1000 Sherbrooke St., W, Montreal, Quebec, Canada H3A 2R2.

International Standards and Recommended Practices — Aerodromes, Annex 14, Eighth Edition — March 1983.

Airport Services Manual, Part 1 — Rescue and Fire Fighting, Second Edition, 1984, Doc. 9137-AN/898, Part 1.

Airport Services Manual, Part 5, Removal of Disabled Aircraft, First Edition 1977, Doc. 9237-AN/898, Part 5.