

**ETHIOPIAN CIVIL AVIATION AUTHORITY  
AERODROME SAFETY AND STANDARDS  
DIRECTORATE**

**WATER RESCUE EMERGENCY GUIDANCE  
MANUAL**

2011

**Subject: Document Approval**

This Airport Water Rescue Emergency Plan and Equipment Guidance has been prepared by Aerodrome Safety and Standard Directorate to aid in the effort of the Ethiopian Airport Enterprise to maintain the provision of effective Emergency manual on water body within the Ethiopian Airports.

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It is important to note that this material is applicable to all Ethiopian Airports near to the water body especially, to Bahir Dar International Airport.

The Director General of Ethiopian Civil Aviation Authority has here by approved this guidance manual on March 31, 2011 to be implemented by EAE and amended from time to time upon introduction new methods and techniques through the International Civil Aviation Organization (ICAO)



**Ethiopian Civil Aviation Authority**

## **Advisory Circular ECAA-AC-AGA002**

**March, 2011**

### **WATER RESCUE EMERGENCY GUIDANCE MANUAL**

#### **1. PURPOSE.**

This Advisory Circular (AC) provides guidance to assist Ethiopian airport operators in preparing for water rescue operations.

#### **2. APPLICABILITY.**

The Ethiopian Civil Aviation Authority (ECAA) recommends the guidelines and standards in this AC for the operation of civil airports where aeronautical activity is conducted near a significant body of water. This AC provides guidance in meeting the requirements ICAO and National regulation regarding Airport Emergency Plan near water body. The standards contained in this AC must be used for the development of new Airport Water Rescue Plans and are to be implemented on aerodromes that have a significant water body near the airport and have to be implemented no later than one year from the effective date of this AC issuance.

#### **3. METRIC UNITS.**

To promote an orderly transition to metric units, the text and figures include both English and metric dimensions. The metric conversions are based on operational significance and may not be exact equivalents. The conversion procedure used throughout the AC

applies the relationship of 1 foot equals 0.3 meter, except for a few instances where rounding was used in order for linear dimensions to sum correctly. Until there is an official changeover to the metric system, the English dimensions should be used.

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## **1. INTRODUCTION.**

This AC provides guidance on the special considerations airport operators must consider when preparing for water rescue operations in the vicinity of an airport. These include preplanning issues, such as delineation of responsibilities, the planning process, training, and equipment.

## **2. BACKGROUND.**

**2.1 Inputs from Other Agencies.** This AC incorporates FAA's experience and source of information about water rescue training from other countries.

**2.2 Water Rescue Preparedness.** Airport officials responsible for emergency preparedness must develop an airport emergency plan that includes a section on water rescue. It should specify any specialized rescue training and equipment needed to provide safe water rescue services given by the airport's proximity to bodies of water. In addition the plan should address the unique character or "type" of water around the airport, as it may be a critical factor in emergency planning. Many airports will need to rely on mutual aid partners for resources and personnel related to response to an aircraft accident/incident in the water. These mutual aid partners also have a significant role in planning as well as the execution of water rescue drills and exercises.

## **3. SPECIAL CONSIDERATIONS.**

**3.1 Major Survival Factors.** Survivors of aircraft accidents in water may be subjected to post impact fires, fuel/vapor inhalation, ingestion, hypothermia, further injury from debris, drowning, and/or attack by marine life.

Air crash survivability in a water environment depends on certain factors:

- a. The deceleration forces do not exceed the known tolerable limits of the human body.

- b. The restraint system-seatbelts, seat structure, and seat anchorage points remain intact.
- c. The occupied areas remain relatively intact to prevent ejection and to provide living space for the occupants.
- d. The rapid response of trained rescue personnel.
- e. Availability of a sufficient number of rescue craft.

If any of the above is absent, the likelihood of a successful rescue is significantly diminished.

**3.2 Water Temperature.** Survivors of water crashes must depend more on rescue personnel than survivors of similar incidents on dry land because of exposure related issues. Not only will the passengers be unprepared to be in water, but they will also experience increased body-cooling rates due to evaporating fuel. It is recommended that rescue personnel consider all survivors to suffer from hypothermia until medical personnel determine otherwise.

**3.3 Duration of Exposure.** Water Rescue plans must also take into account the proper treatment of survivors after their rescue. The water rescue plan should include provisions for removing fuel from survivors (particularly from their eyes) as soon as possible. Water rescue craft should carry the appropriate number of blankets based on their anticipated rescue capacity. These blankets can be used to wrap each victim while in transit to medical facilities. The blankets on rescue craft should be made of wool and not polartec, fleece, space blanket material, or other fabrics.

**3.4 Evacuation.** Water rescue planning must account for problems transporting survivors from the water to casualty collection areas, e.g., pre-determined triage, decontamination and transportation zones.

**3.5 Nature of Injuries.** Passengers in aircraft accidents may have sustained a variety of injuries prior to being rescued from the water. First responders should use

prudent judgment in the handling and transportation of these victims, who have not yet been assessed or triaged.

**3.6 Specific Hazards and Preparation for Treatment.** Certain bodies of water near an airport may have known specific hazards which may further compromise the safety of victims or rescuers. These hazards may include marine life such as alligators or sharks and natural hazards to people in the water such as waterfalls, swift currents, and coral reefs. The water rescue plans should include precautions to be taken by boat operators and rescuers as well as special instructions related to reducing risks for these hazards or treating victims affected by these hazards.

**3.7 Seasonal Procedures.** Certain elements of the water rescue plan may change significantly based on seasonal and climatic changes. Increased congestion of waterways during recreational boating seasons or loss of available resources may change procedures or require modification of plans.

**3.8 Approach Lighting Systems.** Runway end lighting systems present a significant structural impact hazard as well as an acute electrical hazard, requiring the need to preplan for the approach of emergency vehicles, rescue vessels and de-energizing the electrical system.

#### **4. WATER RESCUE RESPONSIBILITIES.**

**4.1 Certificated Airports.** In accordance with ECAA Certification Regulation Manual (Chapter 22), certificated airport operators are to include in their airport emergency plans provisions for the rescue of aircraft accident victims from significant bodies of water or marsh lands situated adjacent to the airport and beneath the approach and departure flight paths of air carriers.

- a. **Significant Body of Water.** A body of water or marshland is significant if the area exceeds one-quarter square mile (0.6 sq km) and cannot be traversed by conventional land rescue vehicles. The emergency plan should include all significant bodies of water and marshlands located within at least 2 miles (3.2

km) of the end of an airport runway which cannot be traversed by conventional and rescue vehicles, including detention ponds.

- b. **Identification of Responders.** The airport emergency plan should include the name, address, and telephone number of each water rescue unit, service, or government agency.

**4.2 Primary Response Agency Other Than Airport.** Even when the airport operator is not the primary response agency, it has responsibility for implementing the airport emergency plan and ensuring that the appropriate rescue agency/agencies are formally notified of the possibility of an aircraft accident where there is a significant body of water.

- a. **Mutual Aid.** Because of jurisdictional or logistical reasons, an airport operator may need to develop a water rescue plan that consists of a written mutual aid agreement identifying an entity other than the airport to act as the primary response agency. A water rescue plan may also contain additional signed agreements with private entities, such as tug operators, medical helicopter services, crane operators, and construction or recovery crews.
- b. **Responders Identified and Involved in Exercises.** At certificated airports, the airport operator should specify the responsibilities and duties in a written mutual aid agreement with another entity. In accordance with ECAA Chapter 22, Certification Regulation, the airport's emergency plan (including responders identified and involved in exercises) must be thoroughly reviewed periodically, e.g., an annual tabletop and a full-scale exercise every 2 years. The airport operator should also periodically evaluate the airport water rescue component as part of either the annual tabletop or tri-annual, full-scale emergency exercise. The role of mutual aid responders, whether they are the primary response agency or a support agency, is critical to the success of a water rescue plan. It should be noted that each of these agencies has their own primary mission. Fulfilling that primary mission may commit or relocate assets and personnel to

events other than the aircraft accident/incident. Airport planners should factor in these contingencies when developing a water rescue plan.

## **5. WATER RESCUE PLANNING.**

**5.1 Response Assignments.** The water rescue plan should state what equipment and personnel actions each participating agency will be expected to provide and establish which agency will assume the primary response role.

**5.2 Support Inventory.** The water rescue plan should include an inventory of what services, equipment capabilities, and facilities each agency will provide, and locations and plans for mobilizing personnel and equipment. The airport operator should maintain an inventory list and update it regularly to ensure that the necessary equipment and personnel are available. To the extent practicable, the plan should provide for the use of rescue vessels with enough combined capacity to accommodate the maximum number of persons that can be carried on board the largest air carrier aircraft that the airport reasonably can be expected to serve.

**5.3 Incident Command.** The Incident Command System (ICS) should be established, clearly defined in the airport water rescue plan and used throughout the incident. The Airport Fire Department should provide a qualified representative to the Command Post. If the Airport serves as the lead agency for an aircraft accident in the water, the Aircraft Rescue Fire Fighting (ARFF) representative may serve as the Incident Commander (IC).

**5.4 Additional or Unplanned Assistance.** The plan should recognize that recreational boaters who see the accident will want to rescue passengers in the water. In addition once news of the accident spreads, other members of the public might want to assist. Because they are not likely to be familiar with aircraft or experienced in emergency response, they may inadvertently increase the danger to survivors in the water and to themselves. It is very important to establish effective "absolute" control procedures to prevent their involvement in the rescue. Commercial vessels such as water shuttles, ferries and tugboats are resources that may be very helpful during water

rescue operations. These vessel operators should be considered as a resource and included in the water rescue planning.

**5.5 Handling of Survivors.** The plan should set forth practices and procedures for rescue of survivors from floating and/or submerged sections of fuselage. The airport operator or primary response agency should pre-establish suitable casualty collection areas. The selection of docking and landing areas should be made, taking into consideration the following:

- a. Routes through the airport proper might not provide the most direct access to hospitals with facilities appropriate for treating survivors.
- b. The ability to secure the site from intrusion by the public and the media.
- c. Have adequate space to accommodate triage, fuel decontamination, ambulance staging, ambulance loading, ambulance turn around, etc.
- d. Have dock heights compatible with rescue craft.
- e. Resources for addressing the incident may include floating docks and gangways, not ladders.
- f. Be illuminated for night operations, or include portable lighting equipment as part of the plan.
- g. Have sufficient draft to accommodate rescue craft being routed to this location at all tides.
- h. Have adequate turning basin to support docking and undocking of the rescue craft being routed to this location.
- i. Be located in an area that remains navigational during all weather conditions.
- j. Have a water supply to support decontamination operations, e.g., hydrants.

**5.6 Other Considerations.** In addition to the items outlined above, the plan should address the following issues:

- a. Notification system for all agencies involved.
- b. Jurisdictional authority or authorities for each required emergency service, e.g., Fire – Rescue, Law Enforcement, and Dive Teams.
- c. Rescuer Accountability System: Accountability system to keep track of rescuers in the hot zone, e.g., divers or rescue swimmers in the water, rescuers making entry to floating fuselage, etc.
- d. Memorandums of understanding (MOUs) or Letters of Agreement (LOAs) with response agencies with a role in the plan.
- e. Response times.
- f. Hazardous material, and/or other special considerations.
- g. Personnel recall.
- h. Security.
- i. Traffic control.
- j. Medical, rescue, firefighting services.
- k. An inventory of specialized services and equipment.
- l. Training.
- m. Drills.
- n. Triage.
- o. Services for uninjured passengers.
- p. Airline support.

- q. Fatality management planning.
- r. The resumption of normal operations.
- s. Family assistance planning.
- t. Environmental response, e.g., HAZMAT, pollution control, clean up.
- u. Establish evidence collection areas (primary and alternate) on shore having capabilities for the management of evidence such as aircraft parts, personal affects, crash scene debris, etc.” Suitability requirements should include the following:
  - (1) Ability to support heavy equipment.
  - (2) Ability to secure the area from intrusion by the public and media.
  - (3) Have space to accommodate required functions, e.g., fuel decontamination, crane operations, truck loading, truck turnaround, etc.
  - (4) Have sufficient draft and free board for barges.
  - (5) Be lit for night operations or include lighting plan if not so equipped.

## **6. TRAINING.**

**6.1 Designated Personnel.** At airports that plan to provide water rescue, the rescue personnel are generally selected from among trained aircraft rescue and fire fighting and/or airport police personnel. Rescue personnel should receive additional training in rescue boat handling in the specific rescue craft used at the airport. Training must be provided by competent, qualified, experienced personnel. Medical screening or questionnaires may help determine the appropriateness of certain assignments for personnel. Persons susceptible to sea sickness should not be assigned as a rescue boat operator or as a crew member. Training should include hazard recognition, the proper use of personal protective equipment and techniques for removing victims from the water and into various types of rescue craft as identified in the plan. An example of

personal protective equipment includes floatation devices, thermal protection clothing, and blood borne pathogen protection.

**6.2 Topics for Training.** The airport operator should ensure that its rescue personnel that are expected to engage in water rescue activities are familiar with airport and water rescue planning, techniques, rescue boat handling skills, and victim handling procedures. Victim handling procedures should include handling the victim while he/she is in the water, methods used to move the victim into various types of rescue crafts, and procedures for treatment once aboard the rescue craft. The airport operator should ensure that all airport rescue personnel that may engage in any rescue swimming activities should be trained in rescue swimming.

This training should address the subjects in the basic outlines provided below:

**a. Boat Training**

- (1) Vessel maneuvering, e.g., operating a rescue boat in a crash environment
- (2) Construction and characteristics of rescue boats
- (3) Propulsion systems
- (4) Vessel dynamics
- (5) Search patterns
- (6) Using specialized equipment during searches, e.g., spotlights, vessel-mounted Forward Looking Infra Red (FLIR) cameras, handheld Thermal Imaging Cameras (TICs)
- (7) Rescue planning
- (8) Ocean dynamics
- (9) Limited visibility

- (10) Recovery of persons in water/extrication skills, provide emergency medical care, first aid
- (11) Towing procedures
- (12) Rescue swimmer deployment
- (13) Identify types and quantities of lifesaving equipment carried and their use
- (14) Use of communication devices

**b. Rescue Swimming**

**(1) Safety Fundamentals**

- (a) Deployment considerations; tethering and tending of swimmers
- (b) Confined space and submerged space prohibitions
- (c) Environmental hazards/aircraft hazards

**(2) Rescue Swimmer Equipment**

- (a) Thermal protection and floatation aids
- (b) Mask, snorkel, and fins
- (c) Tethering systems
- (d) Signaling/identification aids
- (e) Water rescue helmet

**(3) Communications**

- (a) Hand, whistle, and line signals

**(4) Immersion Hypothermia and Cold Water Drowning**

- (a) Recognition and treatment
- (5) **Physiological Aspects of Rescue Swimming**
  - (a) Respiration and circulation
  - (b) Alterations in breathing patterns
  - (c) Muscle cramps
  - (d) Importance of conditioning
- (6) **Swimmer Operations**
  - (a) Dressing and deployment skills
  - (b) Swim training
  - (c) Victim handling
  - (d) Recovery of conscious, unconscious, and panicking survivors
  - (e) Line system
  - (f) Multiple victims

## **7. COMMUNICATIONS.**

The planning and implementation of proper and effective communications for water rescue operations is complex. In an accident on an airport, it is the airport certificate holder's responsibility during air carrier operations to provide rescue capability in accordance with ECAA Chapter 22, Certification Regulation. However, in an aircraft accident in the water another governmental agency might provide incident command. In such cases the airport operator must quickly communicate to the primary response agency that an accident has taken place and dispatch airport representatives to the Incident Command Post.

**7.1 Notification of Airport Rescue Personnel.** Airport rescue personnel in the aircraft rescue and fire fighting station or water rescue substation should be notified of an aircraft in the water. Cross-trained personnel located in the terminal building or elsewhere on the airport should be notified by a reliable means of communication, e.g. radio, or cell phone.

**7.2 Notification of Mutual Aid Partners.** A reliable voice and electronic communications system should be available between the airport and other official agencies or parties specified in the mutual aid agreement. The system may make use of telephone and/or radio technology. A mobile or waterborne command post, if available, may enhance communications capabilities at the scene. An interoperable communications system is required when multiple agencies are operating at a single incident.

- The emergency plan should address the establishment and location of a command center to direct rescue operations, as well as the method(s) of communication to be used.

**7.3 Coordination.** Rescue operations between rescue personnel on the water and on land must be coordinated to ensure that survivors are brought to the designated areas on shore for triage, decontamination, and surface transportation. Accountability and tracking of rescue personnel and survivors is an essential component of the water rescue plan coordination.

## **8. RESCUE VEHICLES AND EQUIPMENT.**

### **8.1 Types of Vehicles.**

- a. Vehicles used in conducting water rescue operations must be appropriate for the particular water environment involved. Collectively including mutual aid arrangements, they should have enough capacity to accommodate the maximum number of passengers carried by the largest type of aircraft serving the airport. To ensure the appropriate selection of water rescue vehicles for the specific

airport, people responsible for acquiring these vehicles must consider seasonal weather variations and daily tide conditions.

- b. Normally, various types of boats will be the primary water rescue vehicles. Other vehicles may include helicopters, air cushion vehicles, and shallow draft "air boats." All rescue craft may have advantages and disadvantages. For example, water jet drive boats operate well in shallow water; but tend to intake floating debris. Amphibious and track vehicles may have some utility in swamp rescue operations.

## 8.2 Use of Vehicles and Equipment.

- a. **Conventional Boats.** These vessels are useful for transporting rescue personnel and equipment, deploying flotation equipment, picking up survivors, firefighting, securing the scene, communications, etc. Some boats are designed for and may be used in the same manner as rapid intervention vehicles in conventional aircraft rescue and fire fighting responses.
- b. **Rescue Boats.** These fiberglass or aluminum-hulled boats may have inboard or outboard engines capable of speeds up to 60 mph (95 kph). Some of the boats are designed to allow for the removal of a section of the hull (freeboard) to provide easy access into and out of the water. The boats can vary in length from 17 to over 40 feet (5–12 m). Depending upon the size of the vessel, enclosed or at least sheltered accommodations may be available to protect survivors from the environment. It is important that the boat have easy access around most of the topsides to allow rescue personnel to deploy raft canisters or to assist survivors out of the water. Rescue boats should have 2 engines so if one becomes inoperable; the other becomes the back up.
- c. **Helicopters.** Helicopters, and fixed wing aircraft in some cases, are most useful for transporting and deploying rescue personnel and equipment because they are faster than any surface vehicle. They are particularly useful for shuttling additional personnel and equipment to the scene providing weather conditions

are acceptable. Helicopters can also provide spot lights useful in searches and can assist with communications and secondary command post activities. Helicopters with infra-red capability can be particular useful for night activities. Some helicopters have video downlink capability which may serve as a decision support tool for incident command. However, they can disorient and frighten survivors in the water because of rotor noise and downwash, which can cause debris to become airborne. Helicopter operations in narrow rivers may be constrained by obstructions, trees, bridges, power lines, etc. If helicopters are to be used in water rescue operations, functions they can safely perform should be determined early in the planning process. Planners should not rely solely on helicopters for rescuing survivors.

- d. **Other Equipment that Should Be Available.** Area maps and navigation charts, bailing buckets, water pumps, blankets, bull horns, communications equipment, emergency lights, flares, forcible entry tools, marine night vision binoculars, life rafts (with oars or paddles), medical kits, navigational equipment, medical equipment, portable 500-watt or greater floodlights, rescue nets, stretchers/litters, rescue throwing bags, and anchors should be available and readily accessible.

### 8.3 Specific Applications.

- a. **Large Lakes.** Coastal airport operators or their primary response agencies should consider boats to be their primary response vehicles. Helicopters that can be dispatched by the airport or secured from other agencies for the transportation of rescue personnel and/or flotation equipment are also of prime importance. Such airport operators should consider fast rescue boats capable of carrying and deploying the appropriate amount of flotation gear such as inflatable rescue platforms.
- b. **Inland Waters.** Boats, inflatable, and/or air cushion vehicles may be the primary response vehicle at airports located adjacent to rivers and small lakes. Boats of appropriate size and capability should be available for immediate response. Airport operators should consider a relatively small, fast boat(s) capable of

carrying the appropriate amount of flotation gear, plus having some firefighting capability and also a larger boat capable of taking survivors on board and providing other support such as medical, communications, etc.

- c. **Wetlands/Swamps.** Water rescue operations in swamps may call for shallow draft boats, "air boats," air cushion vehicles, helicopters; various track vehicles, and "high flotation" and/or amphibious vehicles. The swamp should be traversed or examined by air prior to selecting the appropriate rescue equipment.
- d. **Swift Water.** Rescue operations occurring in areas with rapidly moving water conditions will normally require the use of special watercraft. This watercraft can include inflatable and/or polyethylene hulled boats. They should have the ability to be transported quickly and be launched with the minimum amount of effort, preferably without access to a boat ramp. Before conducting operations in swift water, a risk assessment of the moving water conditions should be made as to the hazards to the victims and the rescuers. In certain instances, the use of a helicopter may provide an alternative rescue option. Swift water rescue presents significant unique challenges and hazards to rescuers and victims in the water.

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## **APPENDIX A. SAMPLE AIRCRAFT WATER RESCUE PLAN**

**A.1 INTRODUCTION.** List Airport name, description, location, and operator. Identify by name, type, size, location and proximity of water hazards with distance and direction from airport.

**A.2 PURPOSE.** To promptly deploy water rescue equipment and crews in support of an aircraft accident or mutual aid assistance in or near bodies of water.

**A.3 RESPONSE.** Initial responders' reaction will be to follow the Water Rescue Plan as listed in the Airport Emergency Plan.

Describe the procedure for notifying airport personnel of an aircraft accident/incident occurring in a nearby body of water. First notification will generally be from the Airport Tower to the Airport Dispatch.

- **Support Inventory:** Identification of facilities, vessels, equipment, services, specialized teams, staffing and support that may be available to participate in a water rescue effort.

**A.4 RESPONSE AGENCIES.** Identify the agencies to be contacted in the order of priority as per the airport operators' Water Rescue Plan. Indicate who is responsible for notification as well as updates. Identify communications methods used, e.g., Computer Aided Dispatch, automated call systems, manual calling, etc.

### **A.5 STAFFING.**

- Internal Airport Organization:** List the individual's title and responsibilities, e.g., Water Rescue Captain, Boat Operations Officer, etc. .
- Composition:** Include title for the individual member(s) in charge of water rescue equipment inventory, maintenance, inspection and replacement .

Incident Command System (ICS): Include ICS flow chart(s) based on Memorandums of Understanding (MOUs), or Mutual Aid Agreements (MAAs).

## **A.6 OPERATIONS.**

- a. **Training:** Identify each team's training requirement and frequency, e.g., First Responder certification, Boating Safety Course, water lifesaving course.
- b. **Water Rescue Equipment:** List water rescue equipment maintained in inventory required in water rescue operations. Include storage location, quantities, sizes, type, inspection, maintenance, testing and replacement cycles. Indicate any personal equipment used, e.g., diving gear, should be approved for use by the Water Rescue Commander.
- c. **Boat Inspection Procedures:** Indicate the frequency each boat/rescue craft and stored equipment should be inspected (daily, weekly, and monthly) and the individual checks, and documentation method required. Include communication checks and the list of radio frequencies to be verified.
- d. **Vehicle Based Water Rescue Equipment Inspection Procedures:** Indicate the frequency that each piece of vehicle stored water rescue equipment should be inspected (daily, weekly, and monthly) and the individual checks, and documentation method required.
- e. **Victim Treatment:** The primary objective of the water rescue team is the rapid removal of victims from the water and transportation to the shoreline for proper treatment. Emergency treatment at the scene will be accomplished within the constraints of the incident situation. Identify the equipment required to be on scene, e.g., blankets, oxygen bags, long boards, C-spine collars, etc.

## **A.7 PROCEDURES.**

- a. As in any emergency response the Incident Command System should be followed.
- b. Upon arrival on the scene, the Incident Commander (IC) will establish a Command and complete an initial assessment of the situation in order to determine the action to be taken and the response required.

- c. The IC will identify the location of the Command Post, either waterborne or land based, and the Water Rescue Operations Chief will operate on the water as needed until the incident is concluded.
- d. The IC working with available Command Staff should establish the Incident Action Plan (IAP) as soon as possible and communicate it to all personnel through appropriate Section Chiefs involved in the incident.
- e. Survival Reference Section: Include the typical or seasonal conditions of the water hazards within the water rescue plans response areas:
  - Water temperatures by season, with reference or link to Hypothermia survival tables.
  - Wildlife hazards to survivors and rescuers in the water or along shorelines.
  - Significant currents, speed of water, waterfalls, dams, tributaries.
  - Local hazards, i.e., High Voltage on instrument landing system (ILS) Piers, entanglement hazards, diving hazards, hazards to navigation.

#### **A.8 RESCUE/RECOVERY ASPECTS.**

- a. **Priorities:** The first priority for any responders should be to quickly locate and rescue survivors. The recovery of deceased victims and wreckage should never interfere with the job of rescuing survivors.
- b. **Legal Authority:** Indicate any legal requirements such as local Medical Examiner, state or Federal authority, foreign government, military restricted areas.
- c. **Recovery Equipment/Storage:** Indicate the number and location of body bags required for the size of the emergency as well as the location site for the deceased victims.

## **A.9 POST RESPONSE.**

- a. A Critical Incident Stress Debriefing (CISD) may be required and called in following any water rescue incident especially in the case of loss of life or significant injuries.
- b. All equipment should be cleaned, dried and inspected after each use and then placed back into service.
- c. Infectious control procedures should be observed.
- d. As soon as possible after responders have been relieved, they should provide full accounting of the incident identifying actions, observations, concerns and recommendations. This information will be helpful during incident critique for the updating and revision of the Water Rescue Plan in AEP, MOUs, MAAs and during the investigation phase.
- e. Schedule after action critique with internal and external response agencies within 7 days.
- f. Update water rescue plans and procedures with lessons learned during incident critique.

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**APPENDIX B. SAMPLE AIRCRAFT WATER RESCUE CHECKLIST**

ITEM	DESCRIPTION	SPECIAL NOTES	REMARKS
1.	Describe body/bodies of water involved.	Type, approximate size, average depth, seasonal weather, climatic conditions (including ice, water temperatures, wave height, hours of daylight, prevailing winds). Include map(s), nautical charts with concentric rings indicating distance from airport. Identify runway designations and outer markers.	
2.	List name, address, and telephone numbers of each water rescue participant along with their qualification(s).	Should be verified and updated as specified in the Water Rescue Plan.	
3.	Notification of jurisdictional authority(s) (IC)*, based on location of incident.		
4.	Hazardous materials*, pollution containment.		
5.	Personnel recall*	Identify systems, manual or auto recall. Test auto systems at least annually, verify / update contact information	

ITEM	DESCRIPTION	SPECIAL NOTES	REMARKS
6.	Security*		
7.	Traffic and access control*		
8.	Emergency Medical Services (EMS)*		
9.	ARFF*		
10.	Triage*		
11.	Firefighting*		
11.	Dive teams, rescue or recovery		
12.	Rescue Swimmers		
13.	Services, facilities for uninjured*		
14.	Airline support*		
15.	Air Support	Helicopter or fixed wing for search and rescue / communications plan for air support	
16.	Removal of deceased*	Mass fatality plan / coordination with Coroner's Office / Forensic Teams	
17.	Family assistance plan*, Red Cross / Airline / Airport Plan		
18.	Resumption of normal services*,		
19.	Define incident command system, National Incident Management Systems (NIMS) Compliance		
20.	Describe incident response, recovery actions, procedures of ARFF, LEO, Airport Operations, EMS, public information.		

ITEM	DESCRIPTION	SPECIAL NOTES	REMARKS
21.	Mutual aid agreements between airport, each response agency, and private companies; list each and describe responsibilities, equipment, etc. Identify agency in command based on location or other factors.		
22.	Air Traffic Control Tower (ATCT) role description		
23.	Sanitation services for extended operations		
24.	Drinking water, Rehab		
25.	CISD, Critical Incident Stress Debriefing Plan		
26.	Ropes, barricades, barrier tape for land side support, marine safety zone for incident location, search areas		
27.	Portable lighting, landside for docking, landing facilities / ambulance loading etc Agencies / vessels equipped with scene lighting.		
28.	Decontaminate equipment		
29.	Portable address system (PAS)		
30.	Communication equipment (cell phones, 2-way radios, etc.)		
31.	Communication protocols		
32.	Communication procedures		
33.	Mobile telephone banks		
34.	Marine band capability		

ITEM	DESCRIPTION	SPECIAL NOTES	REMARKS
35.	Specific triage , passenger transfer site(s) by location		
36.	Agreements with commercial boat fleets / ferries / water shuttles		
37.	Specific fuel decontamination site		
38.	Location , plans for mobilizing personnel, equipment, staging areas		
39.	Describe water craft by type, capacity, staffing, and equipment carried. Seasonal availability.		
40.	Nautical charts identifying response areas or zones. Limitations for rescue craft based on draft or special requirements.		
41.	Rescue boat facilities & locations. Limitations / weather, tide, access.		
42.	Establish specific docking/landing areas onshore. Considerations for this location, flexible float heights, ambulance staging, and road access.		
43.	Training for water craft operation, handling; rescue swimming, table top, triennial exercises when applicable	Minimum standards, frequencies, organizations or agencies providing training	
44.	Annual Review of Plan / Tabletop Exercise		

\*policy + procedures

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## APPENDIX C. LIST OF ACRONYMS

AC	Advisory Circular
AEP	Airport Emergency Plan
ARFF	Aircraft Rescue Fire Fighting
ATCT	Air Traffic Control Tower
COMDTINST	Commandant's Instruction
EMS	Emergency Medical Services
FLIR	Forward Looking Infra Red
FM	Frequency Modulated
HAZMAT	Hazardous Material
IAP	Incident Action Plan
IC	Incident Command
ICS	Incident Command System
ILS	Instrument Landing System
LEO	Law Enforcement Officer
LOA	Letter of Agreement
MAA	Mutual Aid Agreement
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NFPA	National Fire Protection Association
NIMS	National Incident Management System
NTSB	National Transportation Safety Board
PAS	Portable Address System
SAR	Search and Rescue
SOG	Standard Operating Guideline
SOP	Standard Operating Procedure
TIC	Thermal Imaging Camera
VHF	Very High Frequency