Airline Wet Drill

Communication and Coordination

Welcome all to the class

Topics

- Importance of communication during a ditching emergency.
- Coordination with air traffic control (ATC) and search and rescue (SAR) teams.
- Use of emergency communication equipment.

Welcome all to the class

Aircraft with Slide/Raft/Hatches

- *Source: Aviation International News, https://www.wsj.com/articles/SB123301773654017857*

Importance of Communication During a Ditching Emergency

Crew Coordination:

- **Clear Instructions:** Effective communication among the flight crew is essential to ensure that everyone understands their roles and responsibilities. This includes executing the ditching checklist, configuring the aircraft for ditching, and coordinating passenger preparations.

- **Passenger Management:** The cabin crew must clearly communicate instructions to passengers to ensure they know how to brace for impact, use life vests, and evacuate the aircraft efficiently.

Importance of Communication During a Ditching Emergency

Passenger Reassurance:

- **Calming and Informing:** Clear and calm communication helps reduce panic and confusion among passengers. Reassuring passengers with precise and confident instructions increases their likelihood of following safety procedures correctly.

Coordination with Air Traffic Control (ATC) and Search and Rescue (SAR) Teams

Initial Communication with ATC:

- **Emergency Declaration:** The pilot must quickly declare an emergency (MAYDAY) to ATC, providing details about the situation, intentions, and location. This allows ATC to prioritize the aircraft and clear airspace if needed.

- **Coordination:** ATC can provide valuable information such as weather updates, the location of nearby airports, and potential landing sites. They also initiate coordination with SAR teams.

Coordination with Air Traffic Control (ATC) and Search and Rescue (SAR) Teams

Search and Rescue Coordination:

- **Distress Signal:** Once a ditching is imminent, the pilot should activate the aircraft’s Emergency Locator Transmitter (ELT), which sends distress signals to alert SAR teams of the aircraft's location.

- **Rescue Planning:** ATC communicates with SAR units, providing the aircraft's last known position, ditching location, and any other relevant details. This enables SAR teams to plan and execute rescue operations efficiently.

Use of Emergency Communication Equipment

- **Emergency Locator Transmitter (ELT):**

- **Activation:** The ELT automatically activates upon impact, sending distress signals that include the aircraft's location. Pilots can also manually activate the ELT if needed.

- **Signal Transmission:** ELTs transmit on emergency frequencies monitored by SAR satellites and ground stations, helping locate the aircraft quickly.

Sources: https://emergencylocatortransmitter.wordpress.com/2013/06/23/the-history-of-the-emergency-locator-transmitter/

Use of Emergency Communication Equipment

Emergency Locator Transmitters (ELTs):

- Operation:
  - Activation: ELTs can be activated automatically upon impact or manually by the survivors. They transmit distress signals on 121.5 MHz and 406 MHz frequencies.
  - Signal: ELTs transmit distress signals that can be picked up by satellites and search and rescue teams. The 406 MHz frequency provides more accurate location information and has a longer range compared to the 121.5 MHz frequency.
- Duration of Signal:
  - Battery Life: ELTs typically have a battery life that lasts at least 24 to 48 hours once activated. Some modern ELTs also have a built-in GPS, which provides more precise location data.
  - Effectiveness: Ensure that ELTs are regularly tested and maintained according to the manufacturer's instructions to guarantee their effectiveness in an emergency.

Use of Emergency Communication Equipment

Personal Locator Beacons (PLBs):

- Operation:
  - Activation: PLBs are manually activated devices that transmit a distress signal via satellite. They are often carried by individuals for personal safety.
  - Signal: PLBs transmit signals on the 406 MHz frequency, providing accurate location data and a unique identifier for the individual.
- Duration of Signal:
  - Battery Life: PLBs typically transmit signals for at least 24 to 48 hours, similar to ELTs. Some models have additional features such as GPS for enhanced location accuracy.
  - Usage: PLBs should be registered and tested regularly to ensure they function correctly when needed.


Break for 10 minutes

Use of Emergency Communication Equipment

- **Portable Emergency Radios:**

- **Crew Usage:** Cabin and flight crew are often equipped with portable emergency radios to communicate with each other and SAR teams after evacuation.

- **Survivor Communication:** These radios can be used to coordinate rescue efforts, guide rescuers to the survivors' location, and provide status updates on the condition of passengers.

Use of Emergency Communication Equipment

- **Satellite Phones:**

- **Long-Range Communication:** Some aircraft are equipped with satellite phones for long-range communication in areas without radio coverage. These phones enable direct communication with SAR units and other emergency services.

Use of Emergency Communication Equipment

- **Signaling Devices:**

- **Visual Signals:** In addition to communication equipment, aircraft are equipped with visual signaling devices such as flares, smoke signals, and signal mirrors to attract the attention of rescuers.

Sources: https://www.msq.qld.gov.au/Safety/Distress-signals.aspx

Use of Emergency Communication Equipment

1. Types of Flares:

- **Handheld Flares:**
  - **Description:** These are manually ignited by the user and are designed to be held or placed on the surface to signal distress.
  - **Use:** They are typically used by survivors to attract attention to their location. They can burn brightly and are effective at night or in low visibility conditions.
- **Parachute Flares:**
  - **Description:** These flares are ejected into the air and descend slowly under a parachute, providing illumination over a larger area.
  - **Use:** They are effective for signaling from a life raft or the water, as they can illuminate the area for a longer period.

Use of Emergency Communication Equipment

2. Operational Considerations:

- **Location and Deployment:**
  - **Visibility:** Flares should be deployed in a location where they can be seen by rescuers. If deployed from a life raft, ensure they are visible above the raft's sides.
  - **Safety:** Use flares away from any flammable materials and ensure they are deployed according to the manufacturer's instructions to avoid accidents.
- **Example:** During the ditching of a commercial aircraft, passengers and crew on the life raft should deploy parachute flares to maximize visibility for rescuers who may be searching from aircraft or ships.

Use of Emergency Communication Equipment

2. Operational Considerations:

- **Weather Conditions:**
  - **Effectiveness:** Wind, rain, or fog can affect the visibility and effectiveness of flares. In poor weather, multiple flares may be needed to ensure visibility.
  - **Shelter:** If possible, use flares when the weather conditions are relatively stable to ensure they are seen by rescuers.

Use of Emergency Communication Equipment

2. Operational Considerations:

- **Duration of Burn:**
  - **Burn Time:** Handheld flares generally burn for 1-3 minutes, while parachute flares can burn for around 5-10 minutes.
  - **Usage:** Knowing the burn time helps in planning the deployment of additional flares and coordinating with rescue operations.


Q & A