

**CHAPTER - 13**

**SEARCH AND RESCUE MISSIONS**

**Introduction**

1. L 410 UVP-E20 aircraft is capable of carrying out limited search and rescue mission over the land and sea. SAR missions are to be carried out for training, exercise or operational requirements.

**Authority**

2. All missions are to be carried out with the approval of air HQ (Dte of air operations) except the approved training syllabus.

**Mission Requirement**

3. In case of SAR mission, in addition to the normal preparation and requirements given in AP-3456 the followings are to be included in the mission requirements:

a. **Land search.**

- (1) VHF communication.
- (2) Observe with binoculars.
- (3) Portable camera.
- (4) Signaling equipments.
- (5) First aid kits.

b. **Sea search.**

- (1) VHF communications.
- (2) Observe with binoculars.
- (3) Portable camera.
- (4) Dinghies.
- (5) Mae West.
- (6) Personal survival packs.
- (7) Signaling equipments.
- (8) Food and water.

- (9) First aid kits.

### **Crew qualification**

4. All operating crews must have valid category 'c' except for the U/T crew in case the mission is undertaken for the purpose of training.

### **Weather**

5. Min weather conditions during SAR mission:
- a. Surface visibility must be more than three KM.
  - b. Cloud not more than 2 octas below operating height.

### **Fuel**

6. Aircraft is to be refueled to its full capacity unless otherwise specified.

### **Operating Height**

7. Minimum operating height under the above mentioned weather is restricted to 1000 ft AGL/MSL. In case of no cloud below the operating height the minimum height over the land and sea are restricted to 500 ft AGL and 700 ft MSL respectively.

### **Operating hours**

8. SAR missions are to be undertaken only during the period commencing from half an hour after official sunrise to half an hour before official sunset.

### **Operating speed and Duration of mission**

9. Normal operating speed for SAR mission is 140 Kts. Nevertheless the operating speed may vary within 135-150 kts (IAS) in case of changed mission profiles. SAR missions are to be discontinued whenever fuel quantity drops to the fuel required for RIGHTB plus 300 kgs.

### **Use of Radar**

10. Airborne radar of the L 410 UVP-E20 aircraft may be used for detecting the distressed ships.

### **Search area**

11. The search area over the sea is limited by the following co-ordinates 2030N, 9220E, 7030N, 9200E, 2100N, 9115E, 2100N, 8930E, 2140N, 8905E.
12. For training search mission over the sea, the distance from the coast is limited up to 15 NM.
13. Search pattern remains as of AP 3456 J, part-3, Sec 1, chap 2. Type of search pattern will depend on the weather, terrain and mission requirements.

**Co-ordination with Navy**

14. All exercises and operational missions over the sea are to be carried out in co-ordination with Bangladesh Navy. During the execution of search mission the naval ships are to be positioned in and around the search area. Both ways R/T communications between the search and the naval ship is to be maintained.

**Crew duties**

15. Prior to any search missions under mentioned procedures are to be followed:

a. **Captain is to.**

- (1) Obtain detail information about the incident/accident from the OC Operations wing/SAR coordinators.
- (2) Determine the area of search and specify the search pattern in consultation with the navigator.
- (3) Finally brief the SAR crew about the incident, object of search and total plan of actions.

b. **Co-Pilot is to.**

- (1) Collect the Met report/weather forecast of the base and the area of incident; and in case of sea search collect the pre hand sea state information (wind speed & direction etc) through the SAR coordinator.
- (2) Collect large scale map with search area of location of incident drawn in it.
- (3) Collect the latest NOTAM available for the areas around the search point.
- (4) Brief about the weather conditions & area & pattern of search
- (5) Ensure the readiness of SAR aircraft and aircrew along with mission requisites.
- (6) Collect specific SAR/radar frequency for easy communication between SAR aircraft and rescue unit.
- (7) Incase of sea SAR missions; ensure that proper liaison is made with naval ships and units along with the coast line.

d. **Load Master.** Load master is to check availability of the mission requisites physically and ensures its positioning in the aircraft.

e. **Observer.** Following are the duties:

- (1) To search/locate the missing objects/survivors
- (2) To pin point the object in reference to Clock code for direction and approximate distance.

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- (3) To keep a sharp look out for enemy or intruder in a patrol mission.
- (4) To help the captain by giving the name and color of the ship whenever possible.
- (5) To ensure the essential search requisites are on board.

**Emergencies**

16. The possible emergencies during a SAR mission may be as following:

- a. **One Engine failure.** Take actions as per the check list. Discontinue the search and RIGHTB.
- b. **Both Engine failure.** If over land force land as per set procedure. If over sea considering the high tans distance from the shore a quick decision must be taken whether to make a force landing on the sea shore or ditching in the sea.
- c. **Ditching.** In case of ditching the actions are as per the check list and the flight manual.
- d. **Unsure of position.** In case of unsure of position discontinue search & climb up to safety height, determine the position with the help of the navigator aids. Once sure of position the captain is to decide whether to resume search or discontinue depending on the situation. Otherwise contact BAF radar/SAR coordinator and follow their instructions.
- e. **Survival at sea.** The instructions of sea survival booklet must be followed. The load master must check availability of the book in survival kids.

**NOTE:**

- 1. No sea and mountain search is to be carried out at night.
- 2. Radio altimeter is to be kept on to the minimum operating height during the mission.
- 3. All persons on board are to wear mea west over the sea.
- 4. Through out the mission a positive R/T contact has to be ensured with other SAR agencies.
- 5. From the beginning of the mission a positive radar contact has to be made and time to time cross checking of positions are to be ensured.
- 6. After the mission, a after mission report has to be raised and submitted to Air HQ (Dte of Air Operations)