

National Emergency Services Academy, CIVIL AIR PATROL
Mission Aircrew School Flight Syllabus
FLIGHT #6: ELT ELECTRONIC SEARCH TRAINING FLIGHT

Objective: To practice route search techniques.

Duration: 1.5 hours or less

SCENARIO

PRE-EXERCISE PLANNING

The trainee should use a sectional chart to plan this exercise. The trainee should have planned for:

1. An electronic search beginning at the latest SARSAT merge coordinates as provided by AFRCC, listed on the Area Specific Targets sheet. Students should take note the general accuracy (or inaccuracy) of SARSAT coordinates.
2. The students should perform a terrain analysis in the area of the SARSAT hit to determine where the signal can most likely be acquired.
3. Begin the search at a medium to high altitude. After the signal is acquired vary the altitude as needed to positively locate the practice beacon.
4. Students should be familiar with the Latitude/Longitude of airspace boundaries
5. Mark the sectional accordingly.

PRE-FLIGHT BRIEFING

1. Complete a pre-flight briefing using the appropriate section of the flight guide. Highlight differences from the previous flights; already-briefed items can be abbreviated and reviewed only as necessary. The mission pilot candidate should ride in the left front seat, the observer track trainee in right front seat, and the mission instructor will ride in the rear left seat. The instructor will:
2. Have the trainee discuss the observer's duties during:
 - a. Preflight and taxi
 - b. Departure
 - c. En route
 - d. ELT search.
 - e. Approach and landing
3. Discuss electronic search patterns (may refer to CAP Pamphlet 2), including:
 - a. Altitude selection.
 - b. SARSAT information, including how to transfer the data to a sectional.
 - c. Basic operation of the DF, including signal strength and DF meters.
 - d. Signal null (wing block) method, using both the DF and COMM receivers separately.
4. Discuss use of the GPS, VOR, and DME during an ELT search.
5. Discuss how the search will be accomplished.
6. Trainees shall complete a CAPF-104.
7. Show the trainee the DF equipment in the aircraft, including identifying the location of the DF and COMM antennas.
8. Ensure that the trainee has a sectional chart, a clipboard with blank paper, and an aeronautical protractor.

PREFLIGHT AND TAXI

1. Have the trainee set up the proper communications frequencies for the CAP radio, DF, ATIS, clearance delivery/ground, tower, and departure control. Demonstrate setup of the audio panel. Then have the trainee:
 - a. Set up the audio panel switches.

- b. Obtain ATIS information.
- c. Handle communications with clearance delivery/ground, tower, and departure control.
- d. Give wheels up, time in the grid, time out of the grid, and wheels down reports.

PROCEED TOWARD THE BEACON

During the flight, the trainee should concentrate on learning to use the aircraft DF equipment.

Secondly, the trainee should use the aircraft navigational aids to support the electronic search. The trainee should also handle as much of the communications load as practical during this exercise, but this is of least importance (however, the trainee should report wheels up, time in the grid, time out of the grid, and wheels down). Proceed to the area at cruise speed. Climb to approximately 2000' AGL and begin the search as soon as practical. The trainee should track the route on the sectional and be prepared to use the VORs, DME, and/or GPS to locate a position.

1. Conduct a normal electronic search pattern, keeping the trainee informed as to your actions. Discuss the observer's role in the search.
2. Have the trainee move to another position. Have the trainee determine current position and the heading to the beacon from this position. The trainee will then triangulate to estimate the position of the practice beacon by extending the headings on the sectional until they cross. Discuss this method of determining the possible location of an ELT.
3. Demonstrate the signal null (wing block) method. Coordinate with the observer trainee to determine headings to the beacon. The trainee should note the positions and headings on the sectional or on a sketch. Discuss this method of determining the possible location of an ELT.
4. Point out where the beacon is located. Have the trainee fix its position on the sectional and draw a sketch of the area.

RETURN TO BASE

1. Have the trainee determine the proper heading for the return to AMA, and let the trainee set up the navigational instruments as necessary.
2. Have the trainee obtain ATIS information and then contact AMA Approach Control.
3. Have the trainee handle communications with approach, tower, and ground control.
4. Practice air-to-ground coordination techniques by using a vehicle on a highway. Keep up with it for a period of time, then demonstrate how you would tell it to turn at an intersection. Advance the complexity as proficiency improves.

DEBRIEFING

1. Answer any questions. Ensure that the trainee thoroughly understands all aspects of electronic searches.
2. Let the trainee provide the information for the debriefing (104).
3. Sign the trainee's qualification card or 101-T.