



Electronic Search/Point Based Search - MP

Objective: To practice electronic search techniques.

Duration: 2.0 hours or less

SCENARIO

ELT North:

Multiple ELT signals have been heard from aircraft near CAP Grid _____. The following are airborne reports of a 121.5 signal heard: 1) 5000 AGL over _____ Airport, 2) 3500 AGL over _____ Airport, and 3) 3200 AGL over _____ Airport. A local aircraft from _____ Airport is over-due and had a flight plan from _____ Airport to _____ Airport. The airport managers at _____ Airport and _____ report that aircraft is not at their respective airports and have no reports of any unusual aircraft activity in their areas. The _____ County Sheriff's Department has also stated that they have no unusual aircraft reports within the county.

ELT South:

Multiple ELT signals have been heard from aircraft near CAP Grids _____ and _____. The following are reports of a 121.5 signal heard: 1) 5000 AGL over _____, 2) 5000 AGL over _____, and 3) 2000 AGL over _____. A local aircraft from _____ Airport in route to _____ Airport reported trouble of an unknown type to _____ Approach and was last known to attempt a landing at _____ Airport. The aircraft was not picked-up on any tower's radar and there was no flight plan filed. The airport manager at _____ Airport report that aircraft is not at their airport and have no reports of any unusual aircraft activity in their areas. The _____ County Sheriff's Department has also stated that they have no unusual aircraft reports within the county.

ELT East:

Multiple ELT signals have been heard from aircraft near CAP Grids _____ and _____. The following are airborne reports of a 121.5 signal heard: 1) 5000 AGL over _____ Airport, 2) 3500 AGL over _____ Airport, and 3) 1200 AGL over _____ Airport. A local aircraft from _____ Airport is over-due and had a flight plan from _____ Airport to _____ Airport. The airport managers at _____ Airport and _____ report that aircraft is not at their respective airports and have no reports of any unusual aircraft activity in their areas. The _____ County Sheriff's Department has also stated that they have no unusual aircraft reports within the county.

ASSIGNMENT

1. Multiple airborne reports of an ELT.
2. Restrictions during search
 - a. Assigned Altitude _____
 - b. Assigned Area _____
3. Plan an expanding square search in your assigned grid _____ with 1NM track spacing.



PRE-FLIGHT PLANNING

1. Discuss the purpose of the flight.
2. Discuss the theory of electronic search and equipment operation.
3. Using the details below, complete the pre-flight planning.
4. Discuss the crew duties. Review individual responsibilities and who manages what equipment (for example, how the airband radios will be used and by whom).
5. Do all normal pre-flight activities (call for a weather briefing, prepare weight and balance, etc.)
6. Prepare a CAPF-104 a. and b.

PRIOR TO DEPARTURE

1. Review any areas requiring extra attention.
2. Have the trainee give an aircraft passenger and safety briefing:
3. The mission pilot candidate should treat the mentor pilot as a Mission Observer and divide duties accordingly.

FLIGHT

1. Enroute
 - a. Fly at the briefed altitude.
 - b. Confirm the trainee is competent with all aircraft equipment.
 - c. Discuss emergency procedures.
2. ELT Location
 - a. Once the approximate ELT location has been identified, call base for approval to descend.
 - b. Call ground team to begin ground search.
 - c. Altitude at pilots discretion within 3NM of ELT location.
 - d. Assist ground team as necessary to travel to target location.
3. Expanding Square Search
 - a. Cross over the LKP at the proper heading, altitude, and airspeed.
 - b. Conduct a normal expanding square search at 1000 feet AGL and at 90 to 100KIAS.
4. Return to Base
 - a. Discuss anticipated communications with tower, and let the trainee handle communications during the approach and landing. Have the trainee report out of the area and wheels down.
 - b. Discuss anticipated taxi instructions, and let the trainee handle communications with ground control.

DEBRIEFING

1. Review the flight and answer any questions.
2. Complete the CAPF 104 and 104a.
3. Ensure that the required SQTR tasks below are completed and sign the trainee's specialty qualification training record (SQTR).



REQUIRED SQTR TASKS

1. Complete Task O-2101 - Describe how ELT's are Detected
 - a. Discuss the various types of ELTs.
 - b. Describe how an ELT is detected and a search is launched.
2. Complete Task O-2001 - Operate the Aircraft Audio Panel
 - a. Set up and use the audio panel:
 - i. Power and volume controls.
 - ii. Microphone selector switch and receiver switches (describe all positions).
 - iii. Split mode (describe all transmitter combinations).
 - iv. Intercom modes (describe all modes).
3. Complete Task O-2005 - Operate the Aircraft DF
 - a. Describe how the aircraft DF works.
 - b. Set up the DF.
 - c. Use the DF during a typical ELT search. Discuss how the DF should respond during the initial phase (include signal fade), when you are getting close, and when you pass over the practice beacon.
4. Complete Task O-2006 - Perform ELT Searches
 - a. Locate a practice beacon using the following search methods:
 - i. Homing to a non-reflected signal.
 - ii. Homing to a non-reflected signal at night (combine with 1.d, if possible).
 - iii. Homing to a reflected signal.
 - iv. Wing null to a non-reflected signal (one during the day and one at night).
 - b. Locate a practice beacon using the following search methods (may be simulated):
 - i. Aural.
 - ii. Signal.
 - c. Discuss night and IFR searches, with particular emphasis on the hazards and precautions.
 - d. Discuss signal reflection and interference.
5. Complete Task O-2009 - Demonstrate Air/Ground Team Coordination
 - a. Discuss crew responsibilities during a combined air/ground team mission.
 - b. Discuss factors to consider before you or the ground team leaves mission base.
 - c. Demonstrate basic ground team coordination, with and without comm.
6. Complete Task O-2007 - Locate and Silence an ELT on the Ground (May be completed as a Group)
 - a. Locate a practice beacon in an open area on the ground.
 - b. Locate a practice beacon in an aircraft inside a hanger.
 - c. Discuss the typical physical location of ELTs in various types of aircraft.
 - d. Demonstrate (may simulate) how gain access to and silence an aircraft ELT.
 - e. Install an aluminum foil 'tent' over an aircraft's ELT antenna.
 - f. List information (required by AFRCC) that you should record during an ELT search.
 - g. Discuss the legal issues involved in silencing an ELT.
7. Complete Task O-2105 - Demonstrate Planning and Flying a Point Based Search
 - a. Sign into the mission.
 - b. Receive a sortie briefing, asking questions as necessary.
 - c. Assist in planning a point-based search (expanding square or sector). Include:
 - i. Estimated time en route, time in the search area, and fuel requirements.
 - ii. Position coordinates for the entry and exit points (lat/long & VOR radials/cross-radials).
 - iii. Position coordinates for the legs (lat/long and VOR radials/cross-radials).
 - iv. Altitude restrictions, obstacles and other hazards (e.g., MTRs and SUAs).
 - v. Discuss observer/scanner assignments for all possible combinations.



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- d. Assist in filling out the flight plan and preliminary mission data on the CAPF 104.
- e. Receive pilot safety and mission briefings, asking questions as necessary.
- f. Demonstrate and discuss safety during each critical phase of the flight. In particular, demonstrate collision avoidance and enforce sterile cockpit rules.
- g. Demonstrate proper ATC communications.
- h. Setup the CAP FM radio and perform all required radio reports (may be simulated).
- i. Perform the point-based search (expanding square or sector). Demonstrate:
 - i. Proper use of nav aids (GPS as primary; VOR as backup).
 - ii. Proper use of radios (ATC as required, and CAP FM radio reports).
 - iii. Proper scanner assignment (may be simulated).
 - iv. Ability to spot the search target (if applicable).
- j. Demonstrate proper attention to fuel management.
- k. Ensure the aircraft is secured at the end of the sortie (ready for next sortie).
- l. Assist in filling out the remainder of the CAPF 104 and debrief the sortie.