



Electronic Search/Point Based Search - MO

Objective: To practice Electronic search techniques.

Duration: 1.7 hours

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



ii. Assigned Area _____

PRE-FLIGHT PLANNING

1. Discuss the purpose of the flight.
2. Plan to navigate to the assigned grid via pilotage.
3. Using the details below, complete the pre-flight planning using the appropriate sections of the flight guide.
4. Discuss the crew duties. Review individual responsibilities and who manages what equipment (for example, how the air band radios will be used and by whom).
5. Do all normal pre-flight activities (mentor calls for a weather briefing and prepares weight and balance, etc.)
6. Trainee prepares a CAPF-104 a. and b.

PRIOR TO DEPARTURE

1. Review as necessary the operation of the following:
 - a. Nav/Comms
 - b. DME
 - c. GPS
 - d. VHF-FM (CAP) radio
 - e. Audio panel
 - f. Intercom
 - g. Push-to-talk buttons and mike
 - h. Have the trainee identify emergency exits and egress procedures
2. The trainee should assist with set up the CAP radio, DF, and FAA radios. Enter the first destination in the GPS. The mentor should review the setup of the audio panel. The MO candidate should verbalize what she/he is doing. The MO candidate should call the base with Engine Start time.

FLIGHT

1. Enroute (use pilotage only to the assigned grid)
 - a. Fly at the briefed altitude.
 - b. Discuss what to look for during a visual search. Whenever possible, have the trainee point out objects on the ground which resemble search visual clues, such as:
 - i. Light colored or shiny objects
 - ii. Smoke and fire
 - iii. Blackened areas
 - iv. Local discoloration of foliage
 - v. Fresh bare earth
 - vi. Breaks in cultivated field patterns
 - vii. Water and snow
 - viii. Tracks and signals
 - ix. Birds and animals
2. The MO candidate should call the base with In-Grid and Ops Normal Calls.
3. Route Search
 - a. Prior to reaching the start of the assigned route (but no farther than 2 miles) descend to the search altitude (1000 feet AGL). The trainee should report entering the search route. The route search should be performed with two-three legs with 1NM spacing at 90KIAS. The trainee should initiate all turns immediately after crossing the assigned grid boundary.
4. Point Based 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.
5. ELT Location
 - a. Once the approximate ELT location has been identified, call ground team to begin ground search.
 - b. Altitude at pilots discretion within 3NM of ELT location.
 - c. Assist ground team as necessary to travel to target location.
6. Return to Base
 - a. Have the trainee report out of the area, RTB, and wheels down.
 - b. Discuss anticipated taxi instructions, and with assistance as necessary let the MO 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 specialty qualification training record (SQTR) tasks below are completed and sign the trainee's SQTR.

REQUIRED SQTR TASKS

1. Complete Task O-2011 - Operate the VOR And DME
 - a. Use (or discuss) the ADF to determine approximate position.
 - b. Determine aircraft position with the VOR, and discuss how to use the VOR to fly to/from a station. Also determine position by cross-radials.
 - c. Determine aircraft position with the DME, and discuss the limitations of DME.
 - d. Discuss the limitations of each navaid.
2. Complete Task O-2109 - Assist in Planning and Performing a Route Search
 - a. Sign into the mission.
 - b. Receive a sortie briefing, asking questions as necessary.
 - c. Assist in planning a route search from Point A to B and back. Include:
 - i. a. Position coordinates for the route (lat/long and VOR radials/cross-radials).
 - ii. b. Altitude restrictions, obstacles and other hazards (e.g., MTRs and SUAs).
 - iii. c. Scanner assignments (discuss as necessary).
 - 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, as applicable.
 - h. Setup the CAP FM radio and perform all required radio reports (may be simulated).
 - i. Assist in a route search. 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. Ensure the aircraft is secured at the end of the sortie (ready for next sortie).
 - k. Assist in filling out the remainder of the CAPF 104 and debrief the sortie.
3. Complete Task O-2112 - Assist in Planning and Performing a Point-Based Search
 - a. Sign into the mission.



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- 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 enroute, 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.
 - 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.
4. Complete Task O-2108 - Perform ELT Searches
- a. Locate a practice beacon using the following search methods:
 - i. a. Homing to a non-reflected signal.
 - ii. b. Homing to a non-reflected signal at night (combine with 1.d, if possible).
 - iii. c. Homing to a reflected signal.
 - iv. Wing null to a non-reflected signal.
 - 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.