

# F91 Mission Pilot Checkout

## F91 PROCEDURE

The applicant for a CAPF 91 check ride should bring the following materials for review by the mission check pilot:

1. Evidence of current CAPF 5 valid for the aircraft used for the mission flight check.
2. Evidence to show completion of initial mission pilot qualification training requirements (CAPF 101 or MP-SQTR).
3. CAPF 91 with identifying data entered (sent as PDF).
4. Valid FAA pilot certificate and current FAA medical certificate.

The mission check pilot will review all materials and conduct the CAPF 91. All forms will be returned to the applicant at the conclusion of the check ride for uploading into the CAP Pilot Ops Qual system.

The CAPF-91 check ride consists of a (simulated) SAR assignment. The applicant must complete the appropriate briefing documents, brief his/her aircrew, fly the assigned tasks, complete the post-flight debrief, and complete the post-flight documents. Some maneuvers or procedures (e.g. ditching) may be impractical to complete. The Check Pilot may evaluate satisfactory knowledge of the subject by oral quizzing. The applicant must also demonstrate the ability to command an aircrew and show mastery of the aircraft, with the successful outcome of a procedure or maneuver never seriously in doubt. The applicant must be able to demonstrate the proper usage of any equipment in the aircraft he provides. This includes ALL avionics.

## Applicant's CAPF 91 Flight Check Checklist

1. Appropriate CAP Uniform
2. CAPF 91 – top part filled out and sent in advance as PDF
3. FAA-compliant Weather Briefing
4. FAA Flight Plan
5. Aircraft Manual (including W&B)
6. Current Sectional Chart(s)
7. Gridded Sectional Chart
8. FAR/AIM
9. Flight Computer and Plotter
10. Qualification Records
  - a. CAP Membership Card
  - b. Pilot Logbook (Endorsements, 90-day Currency)
  - c. FAA Pilot Certificate
  - d. ICUT Qualification
  - e. CAPF 101 (for renewals) or MP SQTR
11. Survival Kit (may be in the aircraft) and Personal survival gear

The following explanations correspond to the related sections of CAPF91, Dec 17. In addition to the references cited, the applicant should be familiar with *MART Vol 2, Mission Observer and SAR/DR Mission Pilot* (rev June 2013) and *Mission Aircrew Task Guides, SAR/DR Mission Pilot* (rev May 2013). All references to IAMSAR are to the United States National Search and Rescue Supplement to the IAMSAR, May 2000.

## **I. ORAL DISCUSSION**

**Objective:** To determine that the applicant can satisfactorily plan a SAR sortie, complete the appropriate mission forms, and demonstrate his/her knowledge through oral quizzing. A MP is expected to fluently know the major procedures and processes that relate to the duties and responsibilities of a Mission Pilot. An occasional look-up of a specific parameter MAY be permitted by the Check Pilot. Excessive reference to written materials for answers to oral questions shall be deemed as not meeting standards.

### **A. CAPF 116 Written Exam Passed**

**Acceptable Performance Guidelines:** The applicant shall provide satisfactory evidence of completing the CAPT 116 Written Exam via Ops Quals.

### **B. Mission Base Procedures and AZWG SOPs**

**Acceptable Performance Guidelines:** The applicant shall demonstrate knowledge of sign-in, sign-out, and mission dispatch procedures, and the AZWG SOPs which pertain to Mission Pilots

**Reference:** CAPR 70-1, 60-3, 60-4.

### **C. Air-to-ground Signals**

**Acceptable Performance Guidelines:** The applicant shall demonstrate knowledge of FAA recommended air-to-ground signals.

**Reference:** SAR-DR Pilot Task Guides, MP O-2009, MO/SAR-DR Mission Pilot Reference Text, Ch 2

### **D. Mission Safety Principles**

**Acceptable Performance Guidelines:** The applicant shall demonstrate knowledge of Mission Safety Principles including knowledge, use of the CAPF-71, and aircraft safety issues on the ground and in flight.

**Reference:** CAPR 62-1, CAPF 71, AIM, AFM.

### **E. CAP Radio Procedures (as req)**

**Acceptable Performance Guidelines:** The applicant shall demonstrate knowledge of CAP Radio Procedures including knowledge of primary and alternate frequencies, repeaters in the search and base areas, and proper channels to use when communicating with SAR base, high bird, and ground teams.

**Reference:** CAPR 100-1. CAP Radio Manual.

### **F. Individual & Crew Equipment/Clothing**

**Acceptable Performance Guidelines:** The applicant shall present himself in the appropriate SAR uniform with insignia as applicable. He shall have a basic knowledge of survival equipment and techniques, and be able to list the contents of his/her personal survival gear.

**Reference:** CAPM 39-1. AIM.

## **G. Search Procedures**

**Acceptable Performance Guidelines:** The applicant shall demonstrate knowledge of CAP Search Procedures, and know various search techniques that may or may not be applicable to the given SAR scenario, such as the parallel search, creeping search, expanding square search and contour search technique

**Reference:** IAMSAR Chap 5.

## **H. Map and Chart Reading**

**Acceptable Performance Guidelines:** The applicant shall demonstrate knowledge of the CAP Grid System, pre-flight planning techniques and how to navigate to the grid with an awareness of aircraft that might be in grids on route.

**Reference:** IAMSAR Appendix E. Sectional Charts. TAC Charts.

# **II. PREFLIGHT PLANNING**

**Objective:** To determine that the applicant can satisfactorily plan a SAR sortie by consulting the appropriate information sources, properly brief his/her crewmembers, and coordinate Ground Team Resources as appropriate.

## **A. Determine Performance Limitations**

**Acceptable Performance Guidelines:** The applicant shall determine aircraft and aircrew performance based on available information and prevailing conditions.

**Reference:** AC 00-45E, POH/AFM, FAR 91.103, AIM, CAPR 60-1, PCR 60-1.

## **B. Obtain Mission Briefing**

**Acceptable Performance Guidelines:** The applicant shall obtain a briefing for a mission sortie. He/she shall inquire on the results of CAP intelligence gathered, special circumstances, and any additional information necessary to satisfactorily complete a sortie.

**Reference:** IAMSAR Chap 5.

## **C. Gridded Sectional**

**Acceptable Performance Guidelines:** The applicant shall present a Sectional Chart of the search area (need not be current) Gridded to CAP specifications.

**Reference:** IAMSAR Appendix E.

## **D. Observer Briefing**

**Acceptable Performance Guidelines:** The applicant shall brief his/her crewmembers with respect to general safety issues, and those specific to the assigned sortie. The examiner will act the role of Mission Observer.

**Reference:** AIM.

## **E. Fuel Planning and Reserve**

**Acceptable Performance Guidelines:** The applicant shall plan and fly the assigned sortie within FAA and CAPR 70-1 fuel requirements.

**Reference:** FAR 91.151, CAPR 70-1.

## **F. Ground Team Coordination**

**Acceptable Performance Guidelines:** The applicant shall communicate or direct the communication with Ground Teams using the appropriate CAP or FAA Aeronautical frequencies and corresponding phraseology. This may be verified by the Check Pilot by verbal quizzing.

**Reference:** CAPR 100-1.

## **III. VISUAL SEARCH PATTERNS & PROC**

**Objective:** To determine that the applicant can satisfactorily fly a SAR sortie and use the appropriate search patterns.

### **A. Locate Grid or Area (without electronic aids)**

**Acceptable Performance Guidelines:** The applicant shall locate the Grid, Route, or other Area visually **without** the use of ANY electronic NAVAIDs (VOR, DME, NDB, or GPS). The applicant shall specify his/her visual references to the Check Pilot. Once in the specified area, the Check Pilot **may** allow the use of these NAVAIDs as a backup. The applicant will be expected to demonstrate during the Check Ride their mastery of the GPS system on the aircraft. The applicant shall configure the aircraft and establish the appropriate airspeed **before** entering the Grid or as otherwise agreed with the Check Pilot.

**Reference:** IAMSAR.

### **B. Establish Search Altitudes**

**Acceptable Performance Guidelines:** The applicant shall establish the appropriate search altitude before entering the search area. For a Grid, this is normally 2000 feet above the highest obstacle. Once the corners of the Grid have been visually identified, the search altitude may be adjusted as necessary, but not less than 1000 feet AGL or beyond safe gliding distance to an emergency landing site.

**Reference:** FAR 91.119. CAPR 70-1.

### **C. Grid Search Procedures**

**Acceptable Performance Guidelines:** The applicant shall demonstrate or verbally describe Parallel Search Procedures to the Check Pilot and when it is preferred over other search techniques. They should be able to determine the starting point and which direction the pattern will be flown and why. This should be done with and without the use of the GPS.

**Reference:** IAMSAR.

### **D. Creeping Line Search Procedures**

**Acceptable Performance Guidelines:** The applicant shall demonstrate or verbally describe Creeping Line Search Procedures to the Check Pilot and when it is preferred over other search techniques.

**Reference:** IAMSAR.

### **E. Expanding Square Search Procedures**

**Acceptable Performance Guidelines:** The applicant shall demonstrate or verbally describe Expanding Square Search Procedures to the Check Pilot and when it is preferred over other search techniques.

**Reference:** IAMSAR.

### **F. DAART System Procedure**

**Acceptable Performance Guidelines:** These have not yet been established.

**Reference:**

## **G. Airborne Photographer Procedure**

**Acceptable Performance Guidelines:** The applicant shall demonstrate flying a 4-square imaging pattern at prescribed distances and altitudes (AGL).

**Reference:** AZWG Airborne Photographer training documents 4-square R1, MART Vol 3, Airborne Photographer, Attachment 4 and 4

## **IV. ELECTRONIC SEARCH PATT & PROC**

**Objective:** To determine that the applicant can satisfactorily use electronic search equipment (DF, COMM) while flying the SAR sortie.

### **A. Locate Starting Point (with elec.)**

**Acceptable Performance Guidelines:** The applicant shall navigate to the initial search point with the use of electronic NAVAIDs (VOR, DME, NDB, or GPS). Use of the GPS for lat/long verification shall be demonstrated.

**Reference:** IAMSAR.

### **B. Establish Appropriate Search Altitude**

**Acceptable Performance Guidelines:** The applicant shall select an appropriate search altitude dependent upon the type of electronic search to be performed, and the applicants comfort range to remain safe.

**Reference:** FAR 91.119, IAMSAR.

### **C. VHF-DF Procedures**

**Acceptable Performance Guidelines:** The applicant shall demonstrate proper use of the airborne Direction Finding (DF) equipment. This task includes configuring the unit and setting the audio panel so that the observer and scanner can hear the DF output. When using the Becker, demonstrates knowledge of its operation with the various page selections.

**Reference:** CAPP 2, L-Tronics publications, Becker publications.

### **D. Wing Null Procedures**

**Acceptable Performance Guidelines:** The applicant shall demonstrate his/her ability to locate a specified radio source using Wing Null procedures. A ground or flight discussion may precede the evaluation concerning Wing Null procedures with the specific aircraft or other aircraft as described by the Check Pilot.

**Reference:** Becker manuals.

### **E. Aural (Build-Fade) Procedures**

**Acceptable Performance Guidelines:** The applicant shall demonstrate or verbally describe Aural (Build-Fade) Procedures to the Check Pilot.

**Reference:** CAPP 2, L-Tronics publications.

## **V. MOUNTAINOUS TERRAIN PROCEDURES**

**Comment:** Mountainous Terrain Procedures are a set of maneuvers for completion of the CAPF-91. To be “Mountain Qualified”, the applicant must demonstrate completion of a mountain flying course, (AOPA, CAP Mountain Fury, or equivalent) and satisfactorily complete the maneuvers listed below. Otherwise, the Check Pilot will note “NOT Mountain Qualified” on the applicant’s CAPF-91.

**Objective:** To determine that the applicant has sufficient skill and knowledge to conduct safe SAR operations in Mountainous Terrain.

### **A. Locate Grid/Area (with & without elec. nav)**

**Acceptable Performance Guidelines:** The applicant shall locate the Grid or search area without the use of NAVAIDs (VOR, DME, or GPS). Once established in the Area, he/she may use the NAVAIDs to verify his/her location.

**Reference:** IAMSAR.

### **B. Establish Search Altitude**

**Acceptable Performance Guidelines:** The applicant shall select an appropriate search altitude for Mountainous Terrain Procedures. He/she shall maintain this altitude  $\pm 100$  feet, and his/her chosen airspeed  $\pm 10$  knots.

**Reference:** FAR 91.119, CAPR 70-1.

### **C. Contour Search Procedures**

**Acceptable Performance Guidelines:** The applicant shall fly search contours over the terrain at the appropriate altitudes. He/she shall maintain the search altitude  $\pm 100$  feet and airspeed  $\pm 10$  knots. Course reversals and altitude changes shall be executed using recommended CAP procedures. Minimum altitudes shall be maintained in the interest of safety.

**Reference:** FAR 91.119, CAPR 70-1. IAMSAR Chap 5.

### **D. Canyon Search Procedures**

**Acceptable Performance Guidelines:** The applicant shall fly canyon search patterns over the terrain at the appropriate altitudes. He/she shall maintain the search altitude  $\pm 100$  feet and airspeed  $\pm 10$  knots. Course adjustments and altitude changes shall be executed using recommended CAP procedures. Minimum altitudes shall be maintained in the interest of safety. Knowledge of hazards of canyon searches shall be demonstrated by oral quizzing.

**Reference:** IAMSAR Chap 5

### **E. Ridge Crossing Procedures**

**Acceptable Performance Guidelines:** The applicant shall demonstrate preferred ridge crossing procedures. Minimum altitudes shall be maintained in the interest of safety. Knowledge of hazards of ridge crossing procedures shall be demonstrated by oral quizzing.

**Reference:** IAMSAR Chap 5.

### **F. Communication Procedures**

**Acceptable Performance Guidelines:** The applicant shall communicate or direct the communications with the SAR base, ATC, or other authorities using the proper phraseology.

**Reference:** CAPM 100-1, AIM.

## **G. Wind/Updrafts/Downdrafts**

**Acceptable Performance Guidelines:** The applicant shall describe the likely areas of turbulence in a particular grid as proposed by the Check Pilot. This process may be interactive with the Check Pilot providing additional or more complex conditions with each step in the evaluation process.

**Reference:** Aviation Weather, Aviation Weather Services.

## **H. Mountain Wave Effect**

**Acceptable Performance Guidelines:** The applicant shall describe weather conditions conducive to the formation of mountain waves, possible visible phenomena, and areas to avoid. This knowledge should include Foehn clouds, lenticulars, and rotor clouds.

**Reference:** Aviation Weather, Aviation Weather Services.

# **V. SAFETY AWARENESS**

## **A. Clearing and Collision Avoidance**

**Acceptable Performance Guidelines:** The applicant shall execute clearing turns and maintain a concerted effort in avoiding other aircraft and obstacles. The applicant may solicit input from other crewmembers, but shall be responsible for the ultimate safety of the flight.

## **B. Vigilance**

**Acceptable Performance Guidelines:** The applicant shall continuously monitor aircraft performance, crew performance, and other safety issues during the flight.

## **C. Cockpit Resource Management**

**Acceptable Performance Guidelines:** The applicant shall coordinate and use available resources in order to accomplish his/her task. These resources may be ground, air, the same crew, or piece(s) of equipment that satisfy the particular needs.

## **D. Risk Management**

**Acceptable Performance Guidelines:** The applicant shall continuously monitor the risks throughout the flight and weigh them against the probable outcome. Should his/her personal limits be exceeded, it is expected that the applicant will discuss the issue with the Check Pilot for the provided scenario.

**Reference:** CAP Operational Risk Management.