

Maintenance Check Flight Considerations related to ANNEX VIII (Part-SPO) Subpart E: Specific Requirements Section 5 – Maintenance Check Flights (MCFS)

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Introduction SPO.SPEC.MCF.100 Levels of maintenance check flight - Regulation (EU) 2019/1387

Before conducting a maintenance check flight, the operator shall determine the applicable level of the maintenance check flight as follows:

- (a) “Level A” maintenance check flight for a flight where the use of abnormal or emergency procedures, as defined in the aircraft flight manual, is expected, or where a flight is required to prove the functioning of a backup system or other safety devices;
- (b) a “Level B” maintenance check flight for any maintenance check flights other than a “Level A” maintenance check flight. SPO.SPEC.MCF.105 Flight programme for a 'Level A' maintenance check flight

Level A Maintenance Check Flight (MCF) Regulation (EU) 2019/1384

- Before conducting a Level A maintenance check flight with a complex motor-powered aircraft, the operator shall develop and document a flight programme. GM1 SPO.SPEC.MCF.105 Flight programme (ED Decision 2019/019/R)

Documentation when Developing a Flight Programme

- Operator should consider TCH documentation or other support information such as the Flight Safety Foundation Functional Check Flight Compendium. (See Sofema Download Area)
- SPO.SPEC.MCF.110 Maintenance check flight manual for a 'Level A' maintenance check flight

Regulation (EU) 2019/1384 - The operator conducting a “Level A” maintenance check flight shall:

- (a) describe those operations and associated procedures in the operations manual referred to in point ORO.MLR.100 of Annex III or in a dedicated maintenance check flight manual;
- (b) update the manual when necessary;
- (c) inform all affected personnel of the manual and of its changes that are relevant to their duties;
- (d) provide the competent authority with the manual and its updates.

AMC1 SPO.SPEC.MCF.110 Maintenance Check Flight Manual - Contents of the Maintenance Check Flight Manual (ED Decision 2019/019/r)

The items to be covered in the manual for a 'Level A' maintenance check flight (MCF) with complex motor-powered aircraft should be as follows:

(a) General considerations:

- (1) conditions requiring a MCF (e.g. heavy maintenance);
- (2) appropriate maintenance release before the MCF;
- (3) flight authorisation by the operator;
- (4) process to develop a flight programme and procedures;
- (5) relevant procedures to document MCFs in the aircraft records; and
- (6) policy for the determination of a 'Level A' or 'Level B' MCF.

(b) Aircraft status:

- (1) requirements for the status of the aircraft prior to departure (e.g. MEL, CDL and multiple defects) for the purpose of conducting an MCF;
- (2) fuel loading, if applicable;
- (3) mass and balance, if applicable; and
- (4) specific test and safety equipment.

(c) Crew selection and other persons on board:

- (1) qualifications;
- (2) experience and recency;
- (3) training; and
- (4) persons on board.

(d) Briefings:

- (1) briefing participants;
- (2) specific pre-flight briefing topics:
 - aircraft status,
 - summary of maintenance,
 - flight programme, specific procedures and limitations,
 - crew members' responsibilities and coordination, and
 - documents on board;
 - Information to ATC; and
 - Post-flight briefing.

(e) Contents of the flight programme and procedures:

- The flight programme should be thoroughly developed by the operator using applicable current data. It should contain the checks to be performed in-flight and may include 'read and do' checklists where practicable.
- The following items should be included in the overall procedure:
 - (1) in-flight briefings;
 - (2) limits (not to be exceeded);
 - (3) specific entry conditions;

- (4) task-sharing and call-outs;
- (5) potential risks and contingency plans;
- (6) information to additional crew; and
- (7) adequate available airspace and coordination with ATC.

(f) External conditions:

- weather and light conditions;
- terrain;
- ATC, airspace; and
- airport (runway, equipment)/operating site.

(g) Documentation:

- specific documentation on board;
- in-flight recordings;
- results of the MCF and related data; and
- accurate recording of the required maintenance actions after the flight.

**SPO.SPEC.MCF.115 Flight crew requirements for a 'Level A' maintenance check flight
Regulation (EU) 2019/1384**

(a) The operator shall select adequate flight crew members considering the aircraft complexity and the level of the maintenance check flight. When selecting flight crew members for a “Level A” maintenance check flight with a complex motor-powered aircraft, the operator shall ensure all of the following:

- that the pilot-in-command has followed a training course in accordance with point SPO.SPEC.MCF.120; if the training has been conducted in a simulator, the pilot shall conduct at least one “Level A” maintenance check flight as a pilot monitoring or as an observer before flying as a pilot-in-command on a “Level A” maintenance check flight;
- that the pilot-in-command has completed on aircraft of the same aircraft category as the aircraft to be flown a minimum of 1 000 flight hours, of which at least 400 hours as a pilot-in-command in a complex motor-powered aircraft and at least 50 hours on the particular aircraft type.

Note - If the operator introduces a new aircraft type to its operation and has assessed the pilot's qualifications in accordance with an established assessment procedure, the operator may select a pilot having less than 50 hours experience on the particular aircraft type.

- Pilots holding a flight test rating in accordance with Regulation (EU) No 1178/2011 shall be given full credit for the training course stipulated in point (a)(1) of this point, provided that the pilots holding a flight test rating have obtained the required initial and recurrent crew resource management training in accordance with points ORO.FC.115 and ORO.FC.215 of Annex III.

- A pilot-in-command shall not perform a “Level A” maintenance check flight on a complex motor-powered aircraft unless the pilot-in-command has carried out a “Level A” maintenance check flight within the preceding 36 months.
- Recency as pilot-in-command on a “Level A” maintenance check flight is regained after performing a “Level A” maintenance check flight as an observer or a pilot monitoring, or after acting as the pilot-in-command in a “Level A” maintenance check flight in a simulator. GM1 SPO.SPEC.MCF.115 and SPO.SPEC.MCF.120 Flight crew requirements for a “Level A” maintenance check flight & Flight crew training course for Level A maintenance check flights

ED Decision 2019/019/R Definition of Aircraft Category

Note - In respect of the term ‘aircraft category’ used in the context of point (a) of SPO.SPEC.MCF.115 and point (c) of SPO.SPEC.MCF.120, it should be understood as ‘category of aircraft’ as defined in Commission Regulation (EU) No 1178/2011 (the Aircrew Regulation).

SPO.SPEC.MCF.120 Flight crew training course for Level A maintenance check flights Regulation (EU) 2019/1384

- The training course required for a “Level A” maintenance check flight shall be conducted in accordance with a detailed syllabus.
- The flight instruction for the training course shall be conducted in either of the following ways:
 - (1) in a simulator which, for training purposes, adequately reflects the reaction of the aircraft and its systems to the checks being conducted;
 - (2) during a flight in an aircraft demonstrating maintenance check flight techniques.
- A training course followed on one aircraft category is considered valid for all aircraft types of that category.
- When considering the aircraft used for the training and the aircraft to be flown during the maintenance check flight, the operator shall specify whether differences or familiarisation training is required and describe the contents of such a training.

Course Syllabus

- In the case of aeroplanes and helicopters, the training course syllabus should include the following subjects:
 - Legal aspects: regulations concerning MCFs.
 - Organisation of MCFs: crew composition, persons on board, definition of tasks and responsibilities, briefing requirements for all participants, decision-making, ATC, development of a flight programme.
 - Environmental conditions: weather and light requirements for all flight phases.

- Flight preparation: aircraft status, weight and balance, flight profile, airfield limitations, list of checks.
- Equipment and instrumentation: on-board access to various parameters.
- Organisation on board: CRM, crew coordination and response to emergency situations.
- Ground checks and engine runs: review of checks and associated techniques.
- Taxi and rejected take-off: specifications and techniques.
- Techniques for checks of various systems:
- Review of failure cases specific to these checks.
- Post-flight analysis.

SPO.SPEC.MCF.145 Cockpit voice recorder, flight data recorder and data link recording requirements for AOC holders Regulation (EU) 2019/1384

For a maintenance check flight of an aircraft otherwise used for CAT operations, the provisions for cockpit voice recorders (CVR), flight data recorders (FDR) and data link recorders (DLR) of Annex IV (Part-CAT) shall continue to apply.

Next Steps

Sofema Aviation Services Provides the following courses as either Classroom or Webinar
Managing EASA Maintenance Check Flight (MCF) and Permit to Fly (PtF) Requirements – 1 Day
Please see www.sassofia.com or email team@sassofia.com