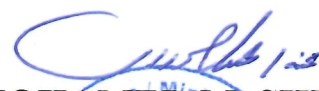


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| STATE OF LIBYA<br>MINISTRY OF TRANSPORT<br>CIVIL AVIATION AUTHORITY |  | دولة ليبيا<br>وزارة المواصلات<br>مصلحة الطيران المدني |
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## FLIGHT TESTING, AIRWORTHINESS / MAINTENANCE CHECK FLIGHT

Published by Libyan Civil Aviation Authority, and Approved By:

  
**Dr. MOHAMED M. SHLEBIK**  
**President of Libyan Civil Aviation Authority**



## [FLIGHT TESTING, AIRWORTHINESS / MAINTENANCE CHECK FLIGHT]

### 1. GENERAL.

**1.1 Flight testing** of an aircraft is a required means of establishing compliance with certification requirements for new aircraft and changes to aircraft. Other flight testing activities, referred to as **check flights** or **in-flight surveys**, may be required to be carried out periodically on in-service aircraft as one of the processes to ensure that an aircraft continues to comply with the applicable airworthiness requirements.

**1.2** The term “**flight testing**” should be understood to mean pre-type certification action normally conducted by the Design Approval Holder.

**1.3 Airworthiness check flights** is to ensure that the aircraft’s flight characteristics and its functioning in flight do not differ significantly from the normal characteristics for the type and to check the flight performance against the appropriate sections of the flight manual. This may include;

- a) Handling characteristics are satisfactory and typical of the type.
- b) Climb performance equals or exceeds the scheduled data.

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| <i><b>Note:</b> Data is necessary in order to assess any future deterioration of performance in service.</i> |
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- c) The aircraft and its equipment function satisfactorily.
- d) Additional Requirements and Special Conditions, where applicable, have been complied with.

**1.4 Maintenance check flights** are identified as part of the continuing airworthiness tasks necessary to ensure the serviceability of operational and emergency equipment post any maintenance activity, as required.

### 2. CHECK FLIGHT REQUIREMENTS.

**2.1** An aircraft shall be subject to **Airworthiness Check Flight**.

- I) Prior to the initial issue of Libyan Certificate of Airworthiness in any category, if deemed necessary by LyCAA (President of Libyan Civil Aviation Authority).
- II) Annually within 15 days immediately preceding the date of renewal of Libyan Certificate of Airworthiness, if deemed necessary by LyCAA (President of Libyan Civil Aviation Authority).
- III) Whenever the LyCAA requires the aircraft to be checked for considerations of safety.

**2.2** An aircraft shall be subjected to **Maintenance Check Flight** should the maintenance data issued by the design approval holder (e.g. aircraft maintenance manual (AMM)) require that a maintenance task is performed in flight as a necessary condition to complete the maintenance ordered.

**2.3** An aircraft may be subject to ‘**Maintenance Check Flight**’ to provide reassurance of the aircraft’s performance or to establish the correct functioning of a system that cannot be fully established during ground checks;

- a) After modification, repair, engine or flight control removal installation or maintenance as required by the operator; or
- b) As required by the maintenance organization for verification of a successful defect rectification; or
- c) To assist with fault isolation or troubleshooting.

**2.4** An aircraft may subject to an ‘**Elective Check Flight**’ at the beginning or end of a lease period to check functionality of equipment used by crew during routine operations.

### **3. AIRWORTHINESS CHECK FLIGHTS.**

#### **3.1 Airworthiness Check Flight Crew.**

**3.1.1** The qualifications and experience of personnel involved in flight checking under the provisions of this Advisory Circular. Shall be acceptable to LyCAA. Flight check personnel shall be provided with adequate facilities and equipment for the effective performance of their duties.

**3.1.2** A Check Flight Observer nominated by LyCAA, when deemed necessary by President of Libyan Civil Aviation Authority and when on board, will be a member of flight crew during the check flight of an aircraft conducted for the purpose of issue or renewal of Certificate of Airworthiness or approval of a modification or repair.

**3.1.3** As a general principle, only personnel essential to complete the flight (crew - specialists and Check Flight Observer, when deemed necessary by President of Libyan Civil Aviation Authority) should be on board.

**3.1.4** The Pilot-in-Command shall be a pilot authorized by LyCAA to act as an Airworthiness Check Pilot. Any pilot authorized to be Instructor Pilot is also authorized to be a Check Pilot on the types for which his licence is valid. In the case of multi pilot aircraft the second pilot should be a commander qualified on the aircraft type.

#### **3.2 Check Flight Results.**

**3.2.1** The Pilot in Command shall complete the Airworthiness Check Flight Report in conjunction with other crew members. The report should contain the following.

- a) Performance data observed and recorded during take-off, climb and cruise, prescribed aerial maneuvers, descent and landing.
- b) Any defects, deficiencies or unexpected occurrences observed during the check flight and any indications of performance.

**3.2.2** Deficiencies and unsatisfactory features of airworthiness nature revealed during the check flight or noted at other times during the flight(s) should be rectified prior to release to service of aircraft for operation unless handled in accordance with the **MEL** procedures applicable to the aircraft.

**3.2.3** A complete copy of the check flight report duly signed by the pilot in command shall be submitted to the Flight Safety Department / Airworthiness Division of LyCAA.

3.2.4 The Airworthiness Check Flight Report shall be preserved until the aircraft is removed from the Libyan Register or when another check flight supersedes such check flight.

## **4. MAINTENANCE CHECK FLIGHTS.**

### **4.1 Applicability.**

4.1.1 Before conducting maintenance check flights, the operator shall determine the applicable level of the maintenance check flight, as follows

a) Level A maintenance check flights 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) Level B maintenance check flights are maintenance check flights other than level A.

### **4.2 Maintenance Check Flight Schedule.**

4.2.1 Before conducting a Level A maintenance check flight with a complex motor-powered aircraft, the operator shall develop a Check Flight Schedule.

4.2.2 The procedure containing the checks to be performed in flight should be thoroughly developed by the operator using applicable current data and should be available as read-and-do checklist, including.

- In-flight briefings;
- Limits (not to be exceeded);
- Specific-entry-conditions;
- Task sharing and call-outs;
- Contingency plans;
- Information to additional crew and ATC.

4.2.3 The detailed Check Flight Schedule will be the responsibility of, and under the control of the operator, agreed with the operator's **CAMO** and, where necessary, in liaison with the applicable maintenance organization.

4.2.4 For both **Elective and Maintenance Check Flights**, where only checks for functionality of equipment used by crew during routine operations are required, the schedule may consist of a simple list of checks to be performed, the order of the checks and the required flight conditions.

Where the checks require operation outside normal Standard Operating Procedures (**SOPs**), the Check Flight Schedule should be constructed with the relevant conditions appertaining

### **4.3 Maintenance Check Flight Crew**

4.3.1 Level A maintenance check flight crew shall meet the requirement of paragraph [3.1] above.

4.3.2 Level B maintenance check flights may be conducted by normal complement of flight crew cleared for normal operation of the aircraft using standard operating procedures.

### **4.4 Systems and Equipment**

4.4.1 When a **maintenance check flight** is intended to check the proper functioning of a system or equipment, this shall be identified as potentially unreliable, and appropriate mitigation means shall be agreed prior to the flight in order to minimize risks to flight safety.

## 5. RELEASE TO SERVICE CERTIFICATE FOR CHECK FLIGHTS

5.1 Where a **maintenance check flight** is required as per paragraph [2.2];

- a) Certificate of release to service after incomplete maintenance when in compliance with M.A.801 (g) or 145.A.50 (e) should be issued by the maintenance organization and the aircraft can be flown for this purpose under its airworthiness certificate.
- b) A new entry on the aircraft technical log to identify the need for a maintenance check flight should be made, containing or referring, as necessary to data relevant to perform the maintenance check flight, such as; aircraft limitations due to incomplete maintenance, maintenance data reference and maintenance actions to be performed after the flight.

5.2 Where an operator wishes to perform a maintenance check flight under conditions stated in paragraph [2.3 (a) or (b)] while maintenance data does not call for such flight, after the maintenance has been properly carried out, a certificate of release to service should be issued and the aircraft airworthiness certificate remains valid for this flight.

5.3 Where an operator wishes to perform a maintenance check flight under conditions stated in paragraph [2.3 (c)], as confirmation that the solution applied has restored the airworthiness of the aircraft, since during the maintenance performed the maintenance instructions would have been followed for the complete restoration of the system, a certificate of release to service should be issued before the flight. The airworthiness certificate is valid for the flight.

An open entry requesting this flight should be recorded in the aircraft technical log.

5.4 Where an aircraft system is found to have failed, and the satisfactory diagnosis of the cause of the fault can only be performed in flight, since the aircraft cannot fly under its airworthiness certificate because it has not been released to service after maintenance, a Permit to Fly issued in accordance with LyCAR. Part 21 Subpart P is required.

5.5 Where there is a need to fly a Libyan registered aircraft when a Libyan certificate of airworthiness is not in force and a flight is necessary for the issue or renewal of such a certificate:

- a) The aircraft may only fly under a LyCAA Permit to Fly issued for the purpose.

***Note:** The process for such an application and the procedures to be followed are detailed in LyCAR. Part 21 Subpart P.*

- b) When prescribed as a condition associated with the Permit to Fly with the exception of a pre-flight inspection, any maintenance performed on an aircraft whilst operating on such a Permit will require the issue of a Certificate of Release to Service (CRS). The issue of a CRS will be in accordance with LyCAR [145.A.50] or LyCAR [M.A.801] as appropriate.

- c) A new entry on the aircraft technical log to identify the need for an airworthiness check flight should be made, containing or referring, as necessary to the check flight schedule and other data relevant to perform the check flight.

5.6 Prior to a flight being made under the terms of a Permit to fly, a Flight Release Certificate shall be issued. The format of a Flight Release Certificate is referenced in **Appendix-1** of this Advisory Circular.

5.7 The Flight Release Certificate shall be issued only by the following:

- a) The holder of a valid B1 or B2 aircraft maintenance engineer's licence granted under LyCAR Part-66, appropriately endorsed for the aircraft type and
- b) The holder of a valid and appropriate authorization issued by an organization approved under LyCAR Part-145 and in accordance with the terms of that authorization.
- c) A person authorized/approved by LyCAA as being competent to issue such certification in a particular case.

**5.8** Where there is a need to fly a Libyan registered aircraft when a Libyan certificate of airworthiness is still in force and a flight is necessary for the renewal of such a certificate:

- a) A person authorized/approved by LyCAA as being competent to issue such certification in a particular case.
- b) The aircraft may be released for the airworthiness check flight with a Technical Log Book **CRS**
- c) A new entry on the aircraft technical log to identify the need for an airworthiness check flight should be made, containing or referring, as necessary to the check flight schedule and other data relevant to perform the check flight.

## Appendix [1]

### FLIGHT RELEASE CERTIFICATE

AIRCRAFT TYPE :

REGISTRATION : 5A –

SERIAL No. :

It is hereby certified that the aircraft defined hereon has been inspected and is considered fit for flight provided it is properly loaded.

This Certificate is associated with LyCAA Certificate of Airworthiness No. ( ).

And Permit to Fly is valid from ..... until..... or until the airworthiness condition of the aircraft is altered, whichever is earlier.

Licence / Authorization No: ..... / .....

Date: .....

Signed: .....

Name: .....

Organization: .....

Organization Approval Number: .....