

**DEPARTMENT OF CIVIL AVIATION  
MALAYSIA  
AIRWORTHINESS NOTICE**

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Date: 15 May 2005

**AIRWORTHINESS FLIGHT TEST**

**1. Introduction**

- 1.1 MCAR Regulations 26 and 27 requires Malaysian registered aircraft to have valid Certificates of Airworthiness (C of A).
- 1.2 Airworthiness Flight Testing is established as part of an aircraft's Certificate of Airworthiness issue/ renewal requirements as well as the approval of aircraft modification after the issuance of a C of A. Please refer to DCA Airworthiness Notices No. 1 and 2 for the full requirements for the issuance/ renewal of an aircraft's C of A as well as DCA Airworthiness Notice No. 78 for the requirements of the approval of modification.
- 1.3 Airworthiness Flight Tests are accomplished to establish that the aircraft's performance, handling characteristics and systems functionality do not differ significantly from those similar aircraft that were type certificated.

**2. Definitions**

Airworthiness Flight Test Schedule (AFTS)

- A planned flight testing form that details numerous ground and flight tests to be accomplished.

Airworthiness Flight Test Report

- A report which details the ground and flight test results.

**3. Applicability**

- 3.1 An airworthiness flight test shall be applicable to any Malaysian registered aircraft;
  - i) for the purpose of issuance or renewal of a C of A.
  - ii) for the approval of modification which require flight testing.

**4. Airworthiness Flight Test Schedule (AFTS)**

- 4.1 The AFTS shall be prepared by the Aircraft Operator and submitted together with a completed DCA's Statement of Compliance (SOC) to enable DCA to review and approve the AFTS.

Note: Any AFTS that are generic in nature i.e. not applicable to specific aircraft types , for example, CAA UK's AFTS applicable for single, piston-engined aeroplanes up to 2730 kg (6000 lb) MAW, can be used by Aircraft Operators 'as-is' and does not require DCA Airworthiness Division's approval.

- 4.2 The Aircraft Operator may develop the AFTS based on specific CAA UK's AFTS or manufacturer's production flight test schedule.

Note: CAA UK's AFTS were developed specifically for UK registered aircraft and shall not be used 'as-it-is' by any Malaysian operator due to their differing standards. Certain CAA UK's AFTS are available on CAA UK website, [www.caa.co.uk](http://www.caa.co.uk).

- 4.3 Upon satisfactory review of the Operator's AFTS, DCA Airworthiness Division shall approve the AFTS by endorsing the Statement of Compliance (SOC).

**5. Amendment of Airworthiness Flight Test Schedule (AFTS)**

- 5.1 Amendments to the AFTS shall be submitted together with a completed SOC for DCA review and approval.
- 5.2 Upon satisfactory review of the Operator's amended AFTS, DCA Airworthiness Division shall approve the AFTS by endorsing the SOC.

**6. Contents of the Airworthiness Flight Test Schedule (AFTS)**

The Operator's AFTS shall contain the following:-

- (a) AFTS Reference Number and Date

- (b) Policies/ Procedures in respect of Minimum Flight Test Crew including Cabin Crew, Carriage of Passengers during Test Flight, Aircraft Flight Manual limitations and Approved Pilots for Flight Test.

Note: Aircraft Flight Manual limitations shall not be exceeded during the test flight or the C of A may be invalidated.

- (c) Flight Test Certificate
- (d) Flights conducted under 'A' or 'B' Conditions or with valid C of A.
- (e) Mandatory placards/ markings checking
- (f) Defects encountered during the test flight and their rectifications.
- (g) Individual tests, for example, climb test, low speed handling test, autorotation test, stall test, dive to never-exceed speed test etc.
- (h) Load sheet

## 7. Approval of Pilots to Carry Out Airworthiness Flight Test

- 7.1 Aircraft Operators shall nominate pilots who are properly qualified and adequately experienced to carry out Airworthiness Flight Test. The pilot's experience requirements shall be as per Paragraph 7.2.

Note: Per DCA Aeronautical Information Circular (AIC) 8/97, pilots shall be approved to conduct **Airworthiness Flight Testing**.

### 7.2 (a) AEROPLANE < 5,700 kg.

- (1) A minimum of 400 hours total flying time for single-engined aircraft, or 800 hours total flying time, including a minimum of 100 hours on light twin engined aircraft as pilot in command, for twin-engined aircraft; AND
- (2) Recent experience on the particular aircraft type or similar aircraft types, amounting to at least 10 hours in the last 12 months for single-engined aircraft and 20 hours in the last 12 months for twin-engined aircraft; AND
- (3) Familiarity with, and in current spinning practice for, testing of aircraft certified for spinning.

### (b) HELICOPTER

- (1) A minimum of 400 hours total flying time for single-engined helicopters, or 800 hours total flying time for twin-engined helicopters; AND
- (2) Recent experience on the particular helicopter type or, for single engine helicopters below 2,730 kg, similar helicopter types, amounting to at least 20 hours in the last 12 months.

### (c) AEROPLANE > 5,700 kg.

- (1) Recent experience on the particular aircraft type, amounting to at least 50 hours in the last 12 months, and are designated as DCA Authorised Examiners.

Note: When a pilot does not meet the above requirements, DCA may accept if they are professional test pilots or flying instructors. DCA may also accept applications from sole owners of Private category aircraft up to 2730 kg MAW.

- 7.3 Nominated pilots shall complete DCA's application form "Pilot's application to conduct Airworthiness Flight Test" and submit to DCA Airworthiness Division for review and approval. Note: Pilots that were previously approved by DCA to conduct Airworthiness Flight Testing shall also complete and submit DCA's application forms for DCA Airworthiness Division's review and approval.

- 7.4 Pilots intending to carry out Airworthiness Flight Test shall be briefed by DCA on the safety precautions and flight test techniques.

- 7.5 After the briefing, DCA may fly together with the pilot to complement the briefing.

- 7.6 When the process is satisfactorily completed, DCA shall approve the pilot concerned.

## **8. Insurance Cover for Airworthiness Flight Tests**

When the Airworthiness Flight Test involves any DCA personnel, the Aircraft Operator shall ensure that each DCA personnel are provided insurance coverage against all air risks. This insurance coverage for DCA personnel shall be at par with the Operator's Flight Crew insurance coverage.

## **9. Post Flight Procedures and Aircraft Performance Analysis**

9.1 Upon completion of the Airworthiness Flight Test, the pilot shall record in the Flight Test Certificate, as well as, in the Technical Log any defects arising from the Flight Test. If a re-flight test is required, the pilot shall ensure all areas to be flight tested are completed.

9.2 After the Airworthiness Flight Test, the pilot shall ensure that all flight test results are available and properly recorded.

9.3 Upon completion of the Airworthiness Flight Test, the pilot shall ensure that the aircraft's performance analysis is completed and compared with the Aircraft Flight Manual's performance data. If the aircraft's performance is found to be worse when compared with the Aircraft Flight Manual, the pilot shall record in the Flight Test Certificate, as well as, in the Technical Log for corrective action.

9.4 If an "Airworthiness Flight Test" Engineer or Aircraft Maintenance Engineer is part of the Aircraft Operator's Airworthiness Flight Test Team, this Engineer shall ensure that the flight test results including aircraft's performance analysis are complete and properly recorded.

## **10. Post Flight Reporting**

10.1 An Aircraft Operator shall ensure the Airworthiness Flight Test Report is completed satisfactorily prior to submission to DCA Airworthiness Division. Any incomplete or unsatisfactory Airworthiness Flight Test Report submitted may be rejected and the aircraft may be subjected to a repeat of the flight test.

10.2 An Aircraft Operator shall submit the following together with the Airworthiness Flight Test Report i.e.

(a) Load Sheet

(b) Achieved/ Actual Performance Climb Graph

(c) Scheduled Performance Climb calculations including Flight Manual's climb graph/ chart

(d) Scheduled Stall calculations including Flight Manual's stall graph/ chart

(e) Power Assurance Checks calculations including Flight Manual's power assurance graph/ chart (for helicopters)

(f) Autorotation Checks calculations including autorotation graph/ chart (for helicopters)

(g) Aircraft defects encountered during Airworthiness Flight Test and their rectifications

## **11. Aircraft Operator's Fleet Airworthiness Flight Testing**

11.1 An Aircraft Operator having an approved organization quality system may carry out Airworthiness Flight Testing on Ten (10) percent of the Operator's aircraft fleet.

11.2 Such an Operator (paragraph 11.1) having a fleet of different aircraft types shall carry out Airworthiness Flight Testing on Ten (10) percent of each of the Operator's aircraft types.

11.3 However, even with an approved Quality System, an Aircraft Operator may be required to carry out Airworthiness Flight Testing exceeding the required Ten (10) percent if their aircraft performance is degrading or the Airworthiness Flight Test Report submitted to DCA Airworthiness Division is unsatisfactory.

## **12. Quality Audits by DCA**

12.1 An Aircraft Operator shall notify DCA Airworthiness Division in advance of airworthiness flight test plans, for example, annually, semi-annually or quarterly to enable DCA personnel to conduct appropriate quality audits of Airworthiness Flight Testing.

## **13. Guidance**

13.1 Guidance material relating to Airworthiness Flight Testing may be available in "CAA Handbook for Continued Airworthiness Flight Testing" i.e. on CAA UK website, [www.caa.co.uk](http://www.caa.co.uk).

**14. Cancellation**

14.1 This Notice cancels Airworthiness Notice No. 45 Issue 3 dated 1 October 2002, which should be destroyed.

DIRECTOR GENERAL  
DEPARTMENT OF CIVIL AVIATION  
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