

**DEPARTMENT OF CIVIL AVIATION
MALAYSIA
AIRWORTHINESS NOTICE**

No: 72	Issue: 2	Page: 1
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ELECTRICAL GENERATION SYSTEMS - BUS-BAR LOW VOLTAGE WARNING SINGLE ENGINED AIRCRAFT WITH MALAYSIAN CERTIFICATE OF AIRWORTHINESS.

1. Introduction.

- 1.1 Aircraft systems which were once fitted only in the more complicated twin-engined, general aviation aircraft, have now been developed and fitted to single engined aircraft. Thus, greater reliance is being placed on the integrity of the electrical power supplies for such aircraft.
- 1.2 The purpose of this notice is to extend the requirement for a clear and unmistakable warning of the loss of generated electrical power (to the main bus-bar) as detailed in paragraph 2.1. This will be by introduction, where necessary, of retrospective modifications.

2. Requirements

- 2.1. For all single-engined aircraft with a Malaysian Certificate of Airworthiness equipped with an engine-driven electrical generating system, compliance with paragraph 2.2 and 2.3, or with a DCA approved alternative providing an equivalent level of airworthiness is required not later than 01 July 1998.

2.1.1. Where an aircraft is equipped to operate under day VMC conditions only and the loss of generated electrical power could not prejudice continued safe flight and landing, the DCA on application will waive the requirement of this Notice, where it is satisfied that compliance would not be justified in the circumstances of a particular case.

Note: The intent of this Notice will be covered in JAR 23 Airworthiness Requirements and will therefore not be applicable to aircraft Type Certificated to this code.

- 2.2. A clear and unmistakable red visual warning shall be provided, within the pilot scan of vision, to give indication of the reduction of the voltage of the aircraft bus-bar to a level where the battery commences to support all or part of the electrical load of the aircraft.
- 2.3. Guidance shall be given to the appropriate aircraft manual(s) on any actions to be taken by the pilot should the warning operate. See also paragraph 3.2.

3. Additional Information

- 3.1. The recommended voltage levels for operating the warning required under paragraph 2.2 of this Notice are 25 volts to 25.5 volts for a nominal 24 volts dc system and 12.5 volts to 13 volts for a nominal 12 volts dc system.
- 3.2. The battery duration should be sufficient to make a safe landing and should be not less than 30 minutes, subject to the prompt completion of any drills. This duration need only a reasonable estimate and not necessarily calculated by a detailed electrical load analysis. However, when making this estimate, only 75% of the battery name-plate capacity should be considered as available because of loss of battery efficiency during service.
- 3.3. Owners and operators are recommended to contact the aircraft constructor or main agent for Information regarding suitable means of compliance with this Notice.
- 3.4. Owners and operators may, on application, submit proposal for their means of compliance to the DCA for approval of the modification in accordance with Airworthiness Notice No. 78.

DIRECTOR GENERAL
DEPARTMENT OF CIVIL AVIATION
MALAYSIA