GR No. 18 Electrical Power Supplies for Aircraft Radio Systems

(Previously Issued as Airworthiness Notice No. 76, Issue 4, 29 October 2001.)

1 Introduction

1.1 Previous Issues of Airworthiness Notice No. 76 (now GR No. 18) drew attention to the dangers of operation of aircraft in which the entire radio installation was supplied via a single electrical feeder circuit, and stated that Certificates of Airworthiness would not be issued or renewed in respect of aircraft certificated in the Transport Category with such systems.

1.2 Issue 4 of Airworthiness Notice No. 76 took account of the withdrawal of the General Purpose Category Certificate of Airworthiness and, following consultation with industry, extended the applicability of the Requirements to include multi-engine aircraft in any Category. Interpretative material has been added to give guidance on the extent of the assessment to be made. At first issue, this Generic Requirement reproduces Airworthiness Notice No. 76 at Issue 4 with changes made necessary by the implementation of EU legislation.

1.3 It is not intended that aircraft, for which compliance with the requirements of paragraph 2 of previous Issues of Airworthiness Notice No. 76 has been established, should be re-examined.

2 Requirement

The electrical feeder arrangements shall be such that:

a) Where more than one radio system is installed, no likely single failure (e.g. a fuse or a relay) will result in the loss of all radio systems.

NOTE: It is strongly recommended that such a failure should only result in the loss of one radio system.

b) Where duplicate radio systems, or radio systems which can duplicate a function, are installed, no likely single failure (e.g. a fuse or a relay) will result in the loss of both systems.

3 Interpretation

In examining electrical feeder arrangements to establish compliance with paragraph 2, the examination for likely single failures should include:

a) the mechanical and electrical aspects of the supply circuit, including the return path of the electrical supply;

b) the location within the electrical circuit of fuses, circuit breakers and power switching relays, their physical location in the aircraft and the manner in which they are interconnected; and

c) panels for integrated control of radio systems, audio integration systems, and dimmer control equipment for electronic displays.

4 Implementation

4.1 Aircraft used for the purposes of public transport of passengers or cargo must comply with the requirements of paragraph 2.

4.2 Multi-engined aircraft used for any purpose must comply with the requirements of paragraph 2.

4.3 The CAA will consider applications for a waiver to this Generic Requirement in respect of multi-engined aircraft that is not used for the purposes of public transport, when it can be satisfied that the aircraft is fitted with such limited radio equipment, or is restricted to operations under such limited conditions, that the loss of the electrical supply to all radio equipment would not significantly affect the safety of the aircraft during its permitted normal operation.

5 Recommendation

It is strongly recommended that all single-engined aircraft (in addition to those for which compliance is required) should comply with the requirements of this Generic Requirement.