# COMMONWEALTH OF AUSTRALIA CIVIL AVIATION SAFETY AUTHORITY SCHEDULE OF AIRWORTHINESS DIRECTIVES

## **AIRWORTHINESS DIRECTIVE**

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

#### Fokker F100 (F28 Mk 100) Series Aeroplanes

## On-Ground Wing Leading Edge Heating System

3/2009

Applicability: F28 Mark 0070 and Mark 0100 aircraft, all serial numbers.

Note 1: Aircraft with serial numbers 11496, 11518, 11562, 11566, 11567, 11568, 11571, 11572, 11575, 11579, 1581, 11582 and 11583 are known to have been delivered with an On-Ground Wing Leading Edge Heating System (OGWLEHS) installed, although this may have since been removed or deactivated.

Requirement: Install an OGWLEHS in accordance with the Accomplishment Instructions of Fokker (Pro Forma) SBF100-30-018 or Revision 1 or later revision approved by the European Aviation Safety Agency (EASA) and the associated Appendix (identified by Roman numerals I through VIII) as applicable to aircraft serial number.

Note 2: After modification of an aircraft as required this Directive, safe winter operation of the aircraft remains an operational responsibility. The system will certainly aid in keeping wing leading edges free of ice, frost and snow accumulation, but it does not replace the required procedures to prevent take-off with contaminated wings. Consequently, modification of the aircraft as required by this Directive does not relieve the operator from the responsibility to maintain the clean aircraft concept as required by regulation. This includes appropriate inspections whenever icing conditions exist, as well as the application of de-icing and/or antiicing fluids based on the decision logic in an approved winter operation program. When the aircraft is operated in accordance with the approved Aircraft Flight Manual (AFM), the actual use of wing leading edge heating on the ground may - only under certain specific conditions described in the AFM - relieve the operator of the requirement to perform a tactile inspection of the upper surface of the wing leading edge after treatment with de-icing and/or anti-icing fluid, as applicable.

Note 3: In an operational environment where ground-icing conditions as defined in the AFM can be completely excluded over the full calendar year and the operator's complete operating network, the operator may consider submitting an application to obtain an exemption for the actions required by this Directive.

Note 4: EASA AD 2009-0008 refers.

Compliance: Within 24 calendar months after the effective date of this Directive.

#### COMMONWEALTH OF AUSTRALIA

# CIVIL AVIATION SAFETY AUTHORITY

SCHEDULE OF AIRWORTHINESS DIRECTIVES

### Fokker F100 (F28 Mk 100) Series Aeroplanes

AD/F100/93 (continued)

This Airworthiness Directive becomes effective on 12 March 2009.

Background: Subsequent to a fatal accident with a Fokker F28 Mark 0100 in 1993, the last few aircraft from the production line were fitted with an OGWLEHS, which activates the wing antiicing system on the ground when engine anti-icing is selected ON. The standard wing anti-icing system, if selected ON, operates only during flight.

This modification, which provides an additional safety feature during winter operation, was also made available as an option to in-service aircraft through Pro-Forma Service Bulletin SBF100-30-018 in 1997.

During the last few years, at least two serious winter operation events with F28 Mark 0100 aircraft are known to have occurred, associated with leading edge ice contamination, as a result of which the two aircraft were written off.

Apparently, the required inspections for wing contamination by ice, frost or snow and the associated de-/anti-icing treatments are not always fully complied with in the actual operational environment. As a consequence, a clean aircraft prior to take-off cannot be taken for granted.

If these events would have been directly attributable to design-related causes, this occurrence rate would be beyond the acceptable limit for continuing airworthiness. However, these events are established to have been caused by operational (human) factors instead. Nevertheless, the potential of further accidents due to similar causes can be more effectively reduced by a single design change, rather than by additional operational measures (however necessary) to improve the operational assurance of a clean aircraft take-off.

It is highly probable that the two aircraft losses referred to above would not have occurred if the aircraft had been equipped with an OGWLEHS.

James Coyne Delegate of the Civil Aviation Safety Authority

27 January 2009