



## Airworthiness Directive of The Netherlands

Bijzondere Luchtwaardigheids Aanwijzing - BLA

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### Caution

*In accordance with the Civil Air Navigation Regulations (RTL), Articles 76 and 88, the following Airworthiness Directive (BLA) is issued by the Director-General of Civil Aviation of the Netherlands (Directeur-Generaal van de Rijksluchtvaartdienst-RLD). Airworthiness Directives affect aviation safety. These are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive.*

BLA nr : 1995-089/4 (A)

Date : September 30, 1996

■ FOKKER SERVICES B.V.

■ (formerly Fokker Aircraft B.V.)

Model F.28 Mk.0070 and Mk.0100

RLD Type Certificate Nr.:

T-100-87

### ELECTRICAL POWER - DC BUS TRANSFER SYSTEM - MODIFICATION

#### Description:

On August 21, 1995, a diode failed on a Fokker F.28 Mk.0100 and the flight crew had no indication of this until the battery voltage dropped below a certain value. Then, on August 31, 1995, a similar incident occurred, this time on a Fokker F.28 Mk.0070, where the Emergency DC Bus (**EMER DC BUS**) supply Transformer Rectifier Unit No.3 (**TRU3**) circuit breaker tripped. This resulted in an oscillating behaviour of the electrical relays, causing not only the systems powered by the **EMER DC BUS**, but also the systems powered by the Emergency AC Bus to fail. Subsequent investigation has shown that on both Fokker Model F.28 Mk.0070 and Mk.0100 aircraft, the possibility of recurrence exists for either failure described above, depending on configuration. The affected diode was introduced with Fokker Service Bulletin (SB) F100-24-009 to prevent oscillation of the **EMER DC BUS** during a battery-power-only situation, and was made mandatory by Airworthiness Directive (BLA) 90-001 dated January 10, 1990. As this diode was located in the main feeder line of the **EMER DC BUS**, failure would prevent power transfer to take place.

■ To solve this, Fokker issued SB F100-24-030, recommending the rewiring of the affected diode to the supply line of **TRU3**. Apparently, this modification did not fully remedy the problem. RLD issued Airworthiness Directive (BLA) 1995-089, requiring the amendment of the Airplane Flight Manual (AFM), pending a permanent solution. This was subsequently revised twice to reflect changing insights. Fokker has now issued SB F100-24-032, which enables operators to improve the switching logic of the **EMER DC BUS**. Since an unsafe condition has been identified that may still exist or develop on other aircraft of similar type design, the presently revised BLA requires a modification of the DC Bus Transfer System, and wiring changes to reduce the **EMER DC BUS** load on some Mk.0070 aircraft. After compliance with all modification requirements, the previously required amendments must be removed from the AFM, and a note must be added to Section 4 - ABNORMAL PROCEDURES, Sub-section 4.04.05 Bus Equipment List.

■ Applicability: **Fokker Aircraft B.V.** Model F.28 Mk.0070 and Mk.0100 aircraft, serial numbers as listed in Fokker SB 100-24-032.

■ Effective date: October 15, 1996

Compliance: Required as indicated, unless accomplished previously.

(a) Before further flight, amend the applicable AFM as indicated below. This may be accomplished by inserting a copy of this AD into the respective sections of the AFM. For all affected aircraft, except as indicated in the individual Appendices:

(1) Amend Section 4 - ABNORMAL PROCEDURES, Sub-section 4.04 - Electrical Power in accordance with **Appendices I** and **III** of this directive; and

(2) Amend Section 5 - NORMAL PROCEDURES, in accordance with **Appendix II** of this directive;

■ (b) Within 6 calendar months after the effective date of this directive, as applicable, modify the aircraft wiring in accordance with the Accomplishment Instructions of Fokker 70/100 SB F100-24-034 Revision 1 dated September 12, 1996 or a later RLD-approved revision;

■ (c) Within 12 calendar months after the effective date of this directive, modify the DC Bus Transfer System in accordance with the Accomplishment Instructions of Fokker 70/100 SB F100-24-032 dated September 12, 1996 or a later RLD-approved revision;

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(d) After accomplishment of the modifications as required by paragraphs (b) and (c) of this directive, as applicable, the AFM Procedures amendments as required by paragraph (a) of this directive no longer apply, and may be removed from the AFM. Instead, before further flight, amend Section 4 - ABNORMAL PROCEDURES, Sub-section 4.04.05 Bus Equipment List in accordance with **Appendix IV** of this directive;

(e) An alternative method of compliance that provides an equivalent level of safety may be used only when approved by the Manager, Airworthiness Division, Directorate-General of Civil Aviation of the Netherlands (RLD).

Remarks:

- Operators of the affected aircraft may obtain copies of the referenced service information upon request directly from **Fokker Services, Technical Support Dept., P.O.Box 75047, 1117 ZN Schiphol Airport, The Netherlands; telephone (31) 20-605-2136; facsimile (31) 20-605-2790.**
- Compliance with this AD must be recorded in the proper Aircraft Flight Manual and Log Book(s).
- This revision supersedes and cancels Airworthiness Directive (BLA) 1995-089/3 dated May 31, 1996, including the correction issued June 21, 1996; and BLA 90-001 dated January 10, 1990.

Address inquiries concerning this AD to:

Bureau Coordination & Technical Information (CTI); Telephone 31-(0)23-566 3155; Facsimile 31-(0)23-562 3848; Telex 74592 rldi nl

## Appendix I

**Applicable to F.28 Mk.0070, except when in post-SB F100-24-033 -,  
and post-SB F100-24-034 -configuration;  
and F.28 Mk.0100, except when in pre-SB F100-24-030 -,  
or post-SB F100-24-033 -configuration.**

### Section 4 - Abnormal Procedures

add to Sub-section 4.04 - Electrical Power

#### STANDBY ANNUNCIATOR PANEL RED AC SUPPLY LIGHT "ON"

On overhead electric panel:

GEN LOAD ..... CHECK

■ If all generator loads are approximately zero:  
LOSS OF AC SUPPLY PROCEDURE ..... APPLY

■ If not all generator loads are approximately zero:  
DC EMER BUS SUPPLY TRU3 CIRCUIT BREAKER ..... CHECK

● If circuit breaker has tripped:  
DC EMER BUS SUPPLY TRU3 CIRCUIT BREAKER ..... RESET

● If reset is unsuccessful :  
L and R AUDIO ..... ALTN  
Anticipate the effects of an eventual EMER DC BUS failure,  
see EMER DC BUS FAULT procedure.

● If circuit breaker has **not** tripped:  
L and R AUDIO ..... ALTN  
Anticipate the effects of an eventual EMER DC BUS failure,  
see EMER DC BUS FAULT procedure.

## Appendix II

Applicable to F.28 Mk.0070, except when in post-SB F100-24-033 -,  
and post-SB F100-24-034 -configuration;  
 and F.28 Mk.0100, except when in pre-SB F100-24-030 -,  
 or post-SB F100-24-033 -configuration.

### Section 5 - Normal Procedures

insert in front of Sub-Section 5.01.01 - Take-off

- After engine start, select the Standby Annunciator Panel (SAP) backup mode **ON** via the **BACKUP** p/b at the SAP.
- Keep the SAP in the backup mode for the whole duration of flight until engine shutdown.
- Monitor the SAP.

**NOTE:** Failure conditions as presented on the SAP bypass the Flight Warning Computer (FWC) and are not subject to alert inhibition. Be aware that the red LG light on the SAP will illuminate in case one or both thrustlever(s) are below the minimum take-off position and the landing gear is not down.

## Appendix III

Applicable to F.28 Mk.0070 aircraft, except when in post-SB F100-24-033 -,  
and post-SB F100-24-034 -configuration;  
 and F.28 Mk.0100 aircraft, except when in pre-SB F100-24-030 -,  
 or post-SB F100-24-033 -configuration.

### Section 4 - Abnormal Procedures

add to Sub-section 4.04 - Electrical Power

### ERRATIC ELECTRICAL SYSTEM BEHAVIOUR

- In case of a continuous rattling sound, caused by the fast switching of relays and accompanied by blanking or erratic behaviour of the three displays on the electric panel :

BATTERIES ..... SELECT MOMENTARILY OFF, THEN ON  
 AFFECTED SYSTEMS ..... RESTORE IF REQD

- If the red AC SUPPLY light on the SAP comes ON :  
 SAP RED AC SUPPLY LIGHT "ON" PROCEDURE ..... APPLY

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## Appendix IV

Applicable to all F.28 Mk.0070 and Mk.0100 aircraft,  
when in post-SB F100-24-032 -configuration.

### Section 4 - Abnormal Procedures

#### Sub-section 4.04.05 - Electrical Power - Bus Equipment List

Insert a marker ☐ in each Bus Equipment List table, at the top of the column marked :  
EMERGENCY - DC.

Add the following note at the beginning of the affected sub-section :

- NOTE:** ☐ When an "EMER DC BUS" fault is presented on the MFDU, check whether electric panel readout is operative.
- If operative, the EMER DC bus is supplied from the battery chargers via the batteries for 90 minutes and all services connected to this bus will remain available. After this time period, batteries will start to discharge and the effects of an EMER DC BUS fault should then be expected.
  - If inoperative, continue with the EMER DC BUS FAULT procedure.

At the bottom of each succeeding page (Bus Equipment List table) of sub-section 4.04.05, make a clear reference to the note marked ☐ located at the beginning of sub-section 4.04.05.

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