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This Service Bulletin
partly supersedes Service
Bulletin SBF28-28-007

FUEL

"This Service Bulletin is associated with the Fuel Tank Safety Program"

Fuel Quantity Indication System - Improvement of FQIS Circuit Cable Shielding in the Fuel Tanks

1. Planning Information

A. Effectivity

(1) F28 aircraft serial numbers:
11003 thru 11241
11991 thru 11994.

B. Concurrent Requirements

(1) Not applicable.

C. Reason

(1) The design review of the F28 Mk 1000/2000/3000/4000(C) fuel system in accordance with the guidelines related to FAA SFAR 88 and JAA INT/POL/25/12 revealed that an unsafe condition can develop in the wing tanks.

(2) Based on this review of the fuel tank system, it was recognized that, for the shielded Fuel Quantity Indication (FQI) system cables in the main and collector fuel tanks of aircraft serial numbers 11003 thru 11041 and 11991 thru 11994, a by-pass wire must be installed between the housings of the FQI cable plugs and the cable shield. This is to prevent that interrupted shield contacts can form spark gaps that could result in an ignition source inside the tank.

Page	1	2	3	4	5	6	7	8	9	10	11	12					
Revision	1	1	1	1	1	1	1	1	1	1	1	1					

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(3) For aircraft serial numbers 11042 thru 11241 an improved (Souriau pn 20P227-2) plug was introduced. This plug has an improved shield connection to the housing of the plug. So for these aircraft the installation of a by-pass wire is not applicable.

(4) For all F28 aircraft serial numbers a CDCCL item is introduced to assure that, for the shielded FQI cables in the fuel tanks, either a Souriau type plug pn 20P227-2 or a by-pass wire remains installed.

(5) SBF28-28-011 is revised together with this Service Bulletin to ensure that a by-pass wire is (re)installed when crimp type coaxial plugs are replaced with solder type coaxial plugs in accordance with SBF28-28-011.

(6) SBF28-28-007 is partly superseded by this Service Bulletin. The modification as introduced per SBF28-28-007 remains applicable for the plugs outside the fuel tanks. For the in-tank plugs, this Service Bulletin supersedes SBF28-28-007.

Reason for Revision

(1) This revision is made to:
- Change the Service Bulletin layout (header)
- Change approval statement in paragraph 1.F.(1) ("Approval")
- Change the NOTE in paragraph 1.L.(1).(c) to clarify the applicability of the CDCCL
- Change instruction A in Part 3 of paragraph 3 ("Accomplishment Instructions").

D. Description

(1) This Service Bulletin tells you how to;

- Part 1 (applicable to F28 serial numbers 11003 thru 11041 and 11991 thru 11994)
  - Check for the Presence of the by-pass wire between the housings of the in-tank FQI cable plugs and the cable shield.

- Part 2 (applicable to F28 serial numbers 11003 thru 11041 and 11991 thru 11994)
  - Introduce the by-pass wires, if not yet installed.

- Part 3 (applicable to F28 serial numbers 11003 thru 11241 and 11991 thru 11994)
  - Incorporate a CDCCL Item.

E. Compliance

(1) Recommended

- Part 1 For F28 serial numbers 11003 thru 11041 and 11991 thru 11994:
  Fokker Services recommends the accomplishment of Part 1 of this Service Bulletin not later than 1 May 2017.

- Part 2 For F28 serial numbers 11003 thru 11041 and 11991 thru 11994:
  If applicable, Fokker Services recommends the accomplishment of part 2 of this Service Bulletin before further flight after accomplishment of part 1.

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- Part 3 For F28 serial numbers 11003 thru 11041 and 11991 thru 11994:
During accomplishment of part 1 of this Service Bulletin

For F28 serial numbers 11042 thru 11241:
Within 3 months after the issue date of this Service Bulletin

NOTE: Because of the required tank opening it is efficient to do this Service Bulletin concurrently with a scheduled tank inspection before the above compliance date.

NOTE: It is expected that EASA will issue an Airworthiness Directive (AD) with respect to this subject with the same compliance terms. Refer to the EASA website for the publication of a Proposed Airworthiness Directive for comments.

F. Approval

(1) The technical content of this document is approved under the authority of DOA nr. EASA.21J.059.

G. Manpower

(1) Approximately 6 man-hour is necessary to do Part 1 of this Service Bulletin on 1 aircraft. Elapsed time estimated 3 hours.

This table of manpower will help you to schedule and do part 1 of this Service Bulletin:

Instructions	Men	Man-hours	Elapsed time (hours)
Removal	-	-	-
Inspection	2	6,0	3,0
Installation			
Testing			
Total		6,0	3,0

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(2) Approximately 7 man-hours are necessary to do Part 2 of this Service Bulletin on 1 aircraft. Elapsed time estimated 4 hours.

This table of manpower will help you to schedule and do part 2 of this Service Bulletin:

Instructions	Men	Man-hours	Elapsed time (hours)
Removal	-	-	-
Modification	2	3,0	1,5
Installation	2	3,0	1,5
Testing	1	1,0	1,0
Total		7,0	4,0

The estimated hours are for direct labor done by experienced personnel. They are calculated based on the conditions given in SBF28-00-001 (Service Bulletin Introduction, section 2.C., "Manpower").

NOTE: This estimate does not include:
- the time necessary for the paint to dry and the sealant to cure.
- to ventilate the fuel tank necessary for doing safe maintenance in the fuel tank Ref AMM Task 28-11-00-860-813-A.

H. Weight and Balance

(1) Weight change: None
Index change: None.

I. Electrical Load Data

(1) Not affected.

J. Software Accomplishment Instructions

(1) Not applicable.

K. References

(1) F28 Wiring Diagram Manual (WDM)
Fokker 28 Service Bulletin (SB):
- SBF28-28-007
- SBF28-28-011

Fokker internal reference(s):
- ECR 15686.

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L. Publications Affected

(1) This SB affects the publications listed below:

(a) Maintenance Documentation

- Fokker 28 Wiring Diagram Manual (WDM) - chapter 20-20

NOTE: See attached Manual Change Notification MCNM F28-036

(b) Maintenance Programs

- Not affected.
-

(c) Special Instructions for Continued Airworthiness (ICA)

This Service Bulletin requires a revision to the Instructions for Continued Airworthiness (ICA) for:

	YES	NO
- Fuel Tank Safety (FTS)	X	-

NOTE: The Fuel CDCCL items as specified below shall be followed and incorporated in the approved aircraft maintenance program documents.

CDCCL-1: (applicable for F28 serial numbers 11003 thru 11041 and 11991 thru 11994) For all in-tank coaxial plugs of the FQIS shielded wiring, it shall be assured that a by-pass wire is installed between the cable shield and the outside surface of the plug housing.

CDCCL-2: (applicable for F28 serial numbers 11042 thru 11241). For all in-tank coaxial plugs of the FQIS shielded wiring, it shall be assured that Souriau pn 20P227-2 type plugs are installed.

(d) Operational Documentation

Not affected.

(2) For incorporation of this Service Bulletin in your documentation refer to the Service Bulletin Introduction, section 4 "Incorporation of Service Bulletins in Documentation of Fokker Services".

M. Interchangeability or Intermixability of Parts

(1) Not applicable.

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2. Material Information

A. Material – Price and Availability

(1) You can order the necessary parts against list price.

B. Material Required

(1) These parts, which are necessary to complete this Service Bulletin on 1 aircraft, are not part of the mod kit.

New Part Number	Qty	Keyword	Info	Old Part Number	Instructions/ Disposition
F0N9-1230-8	6	Sleeve	-	-	Local source
F0N9-1927Z220	1m	Wire	-	-	Local source
F0N1-3613-12	1m	Sleeve	-	-	Local source
F0N1-9001-20	AR*	Solder	-	-	Local source

NOTES: * Use as much as necessary

(2) These parts are necessary to do this Service Bulletin on 1 aircraft.

(a) Not applicable.

C. Tooling – Price and Availability

(1) Not applicable.

D. Drawings Required

(1) Not applicable.

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3. Accomplishment Instructions

General:
- Refer to the WDM for the Component Location.
- For finish codes reference, refer to "Myfokkerfleet.com/Documentation/FC".
- For CML material number references, refer to "Myfokkerfleet.com/Documentation/CML.
- For easy reference, the aircraft serial numbers are divided in the following blocks:

Part 1: (F28 Mk1000 serial number 11003 thru 11041 and 11991 thru 11994)

A. The job Set-up.

(1) Remove all electrical power (Refer to the MM, chapter 24-00-00)

(2) Put up warning signs to tell persons:
- "DO NOT CONNECT THE ELECTRICAL POWER"
- "DO NOT CONNECT THE BATTERIES".

(3) Drain L.H. and R.H. main- and collector tanks completely.

B. On main circuit breaker panel no. 3 trip circuit breakers:
- Quant. Ind. L.H. tank, position K-22
- Quant. Ind. R.H. tank, position L-22
- Boosterpumps L.H. tank position A-22, C-22
- Boosterpumps R.H. tank position D-22, F-22.

C. Open L.H. and R.H. collector tanks and L.H. and R.H. main tanks by removing access panels nrs. 71A, 72A, 73A and 74A.

D. Gain access to the following plugs:

EK 15-710 2EK 15-720	(collector tank L.H. (collector tank R.H.	Tank empty
EK 24-710 2EK 24-720	(collector tank L.H. (collector tank R.H.	Tank empty
EK 26-731 2EK 26-741	(tank comp't 2 L.H. (tank comp't 2 R.H.	Tank empty

E. Check for the presence of the by-pass wire, (ref. Fig. 1)

F. If a by-pass wire is correctly installed on all 6 plugs, perform step F (except step F2) and step G of Part 2 of this Service Bulletin.

G. If a by-pass wires is not installed or not installed correctly on one or more plugs, continue with Part 2 of this Service Bulletin.

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Part 2: (F28 Mk1000 serial number 11003 thru 11041 and 11991 thru 11994)

A. Install a short length of by-pass wire F0N9-1927Z220 to the Fuel Quantity Indication (FQI) system cable:

(1) Disconnect the coaxial plug(s) and remove the plug from the cable.

(2) Remove a small part from the jacket of shielded FQI system cable, close to the coaxial plug, using a sharp knife (see fig. 2)

(3) Put the conductor of the stripped by-pass wire on the stripped FQI system cable and push the solder sleeve over both the shielded cable and by-pass wire.

NOTES:
- The largest diameter of the solder sleeve shall fit the insulation of both cables,
- The solder ring of the solder sleeve shall be in the middle of the stripped FQIS cable,
- The thermoplastic rings shall be on the un-stripped part of the FQI system cable.

(4) Put the heat gun or the infrared heating tool with the reflector round the solder sleeve.

(5) After heating, the thermoplastic rings have melted and flowed along the insulation and the solder ring has melted and flowed along the screen.

(6) Check the finished solder sleeve:

NOTES:
- Solder must be flowed between conductor wires and shield wires,
- Inserts flowed,
- No discolouring of the sleeve,
- Contour of solder perform is no longer visible,
- Be careful to prevent overheating of the cable.

(7) Slide shrink sleeve pn F0N1-3613-12 over the solder sleeve pn F0N9-1230-8.

(8) Connect the coaxial plug(s) to the cable as shown in figure 3.

B. Solder the other end of the wire to the plug body as shown in figure 1.

NOTE: Ensure that movable locking part of the plug can be moved freely after soldering.

C. Rework the solder sleeve with shrink sleeve F0N1-3613-12, to insulate and to prevent fuel ingress (see fig. 1)

D. Before reconnecting the coaxial plug(s), check the resistance between the center contact and the shielding using test set TF-20. Refer to F.28 Wiring Diagram Manual, Chapter 20-20-0. The resistance should be at least 10 meg. Ohms.

E. Reconnect the coaxial plug(s).

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F. The Job Closure and tests.

(1) Reset circuit breakers mentioned in Part 1 step B.

(2) Check fuel quantity indicating system according to F.28 Maintenance Manual, Chapter 28-41-0, Calibration (preferred method.

(3) Close collector tank and main tank access panels.

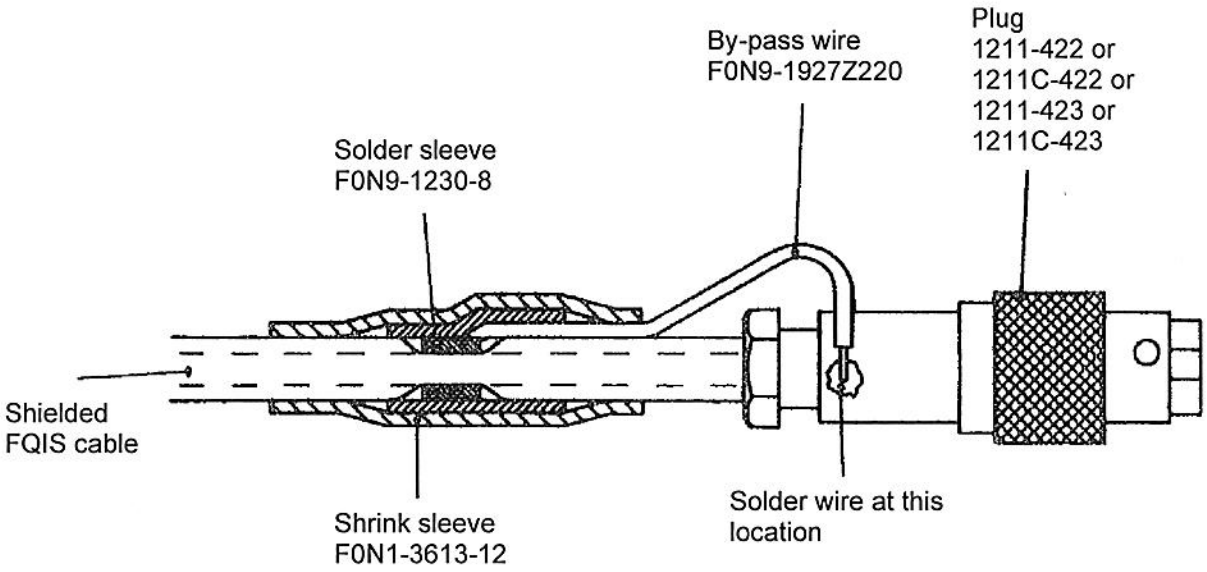
(4) Pressure refuel the wing tanks partly to check correct operation of refuel and defuel control system, fuel quantity indication and possible leakage of fuel tank access panels.

G. State in your Aircraft Logbook that the aircraft is post SBF28-28-053.

Part 3: (F28 Mk1000/2000/3000/4000(C) aircraft serial numbers 11003 thru 11241 and 11991 thru 11994)

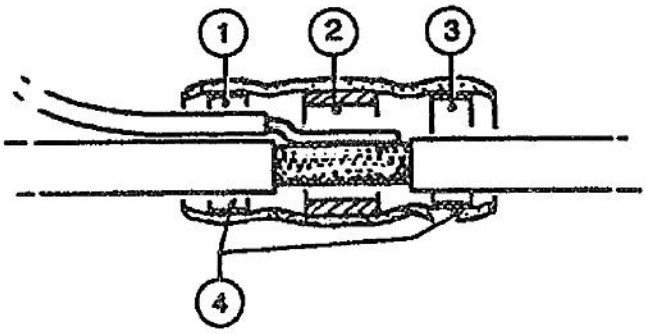
A. Incorporate the applicable CDCCL Item in the approved aircraft maintenance program documents. For the contents of the CDCCL Item refer to paragraph 1.L.(1).(c) of this Service Bulletin.

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The Installation of the by-pass wire
Figure 1

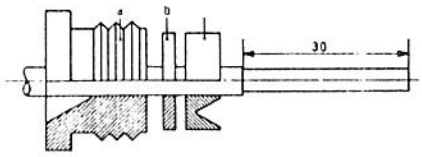
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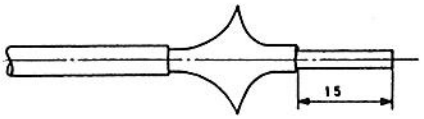
1. Larger diameter
2. Solder ring
3. Smallest diameter
4. Thermoplastic rings

The Installation of the solder sleeve
Figure 2

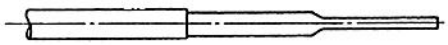
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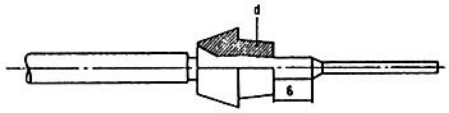
SLIDE HEX NUT (a), FLAT WASHER (b) AND V-GASKET (c) OVER CABLE JACKET. STRIP JACKET OVER A LENGTH OF 30 mm



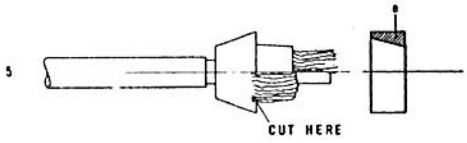
2. PUSH UP SHIELDING AND CUT OFF A PIECE OF 15 mm FROM INNER CONDUCTOR.



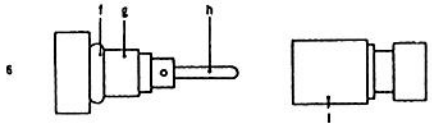
3 SLIDE BACK AND TWIST SHIELDING



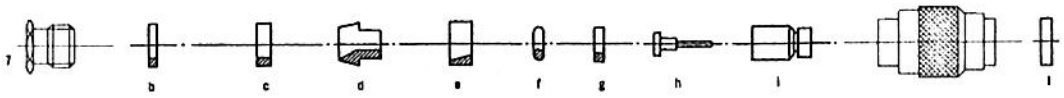
4 SCREW THREADED CLAMP (d) ON SHIELDING (BE CAREFULL WITH THE USE OF PLIERS).



5 UNBRAID SHIELDING AND STRAIGHTEN STRANDS. PUSH BACK THE STRANDS OVER THE CLAMP AND CUT THEM AS SHOWN. PRESS COLLAR (e) ON CLAMP



6 STRIP INSULATION OF INNER CONDUCTOR OVER A LENGTH OF 2 mm. SLIDE O-RING (f) AND NYLON RING (g) OVER INSULATION. TIN INNER CONDUCTOR AND SOLDER CONTACT PIN (OR SOCKET) TO INNER CONDUCTOR, THROUGH SIDE HOLE. MAKE SURE OUTSIDE SURFACES ARE FREE OF SOLDER. AVOID APPLICATION OF EXCESSIVE HEAT. REAR EDGE OF CONTACT PIN (OR SOCKET) SHOULD TOUCH INSULATION. PLACE NYLON INSULATOR (i) ON CONTACT PIN (OR SOCKET).



7 APPLY LOCKTITE SEALANT GRADE A TO HEX NUT THREADS. INSERT COMPLETE ASSEMBLY INTO SHELL (k) AND TORQUE TO 4-5 POUND INCHES, USING A CALIBRATED OR DIAL TYPE TORQUE WRENCH. INSTALL MOISTURE SEAL (l) IN CONNECTOR SHELL.

Assembly of plug
Figure 3