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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2009-0496; Directorate Identifier 2008-NM-139-AD; Amendment 39-16001; AD 2009-18-05]**

**RIN 2120-AA64**

**Airworthiness Directives; Fokker Model F.27 Mark 050 and F.28 Mark 0100 Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Several incidents have been reported where an electrical burning smell was noted in the cockpit, originating from the Electrical Power Centre. Troubleshooting revealed a partly molten terminal, which normally attaches a wire or bus bar to a stud of an Electrical Power Contactor, Part Number (P/N) SG02206. Furthermore, heat damage to the contactor stud itself was found. \* \* \*

\* \* \* \* \*

This condition, if not corrected, could lead to further cases of overheating of terminals and studs of Electrical Power Contactors P/N SG02206, possibly resulting in the loss of electrical power systems, electrical arcing and fire/smoke in the cockpit.

\* \* \* \* \*

We are issuing this AD to require actions to correct the unsafe condition on these products.

**DATES:** This AD becomes effective October 1, 2009.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of October 1, 2009.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Tom Rodriguez, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1137; fax (425) 227-1149.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on June 2, 2009 (74 FR 26322). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

Several incidents have been reported where an electrical burning smell was noted in the cockpit, originating from the Electrical Power Centre. Troubleshooting revealed a partly molten terminal, which normally attaches a wire or bus bar to a stud of an Electrical Power Contactor, Part Number (P/N) SG02206. Furthermore, heat damage to the contactor stud itself was found. Material investigation revealed that the terminal, which was attached to the stud, was not properly torque tightened when the incident occurred. Loss of torque is considered to have occurred during operation, for reasons not fully understood. Further loosening may have taken place in-service under influence of vibration. As a result, poor contact caused electrical arcing during which extremely high temperatures were developed, leading to partial melting of the terminal.

Investigation of some other burned contactors revealed evidence (flat spring lock washer) of a fully torqued terminal/stud connection when the overheating occurred. The exact cause for the increase in temperature in the contactor and the terminal/stud could not be determined. However, it could not be excluded that an increase of the temperature inside the contactor could lead to reduction of the reliability of the contactor stud/terminal connection due to loss of lock washer tension. The affected Electrical Power Contactor is used on several locations in the electrical power system, i.e., Generator Line Contactor (GLC), Bus Tie Contactor (BTC), Auxiliary Power Contactor (APC) and External Power Contactor (EPC).

This condition, if not corrected, could lead to further cases of overheating of terminals and studs of Electrical Power Contactors P/N SG02206, possibly resulting in the loss of electrical power systems, electrical arcing and fire/smoke in the cockpit.

For the reasons described above, this EASA Airworthiness Directive (AD) requires the replacement of the current nut and spring washer of the standard contactor P/N SG02206 with a new self-locking nut.

You may obtain further information by examining the MCAI in the AD docket.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

## **Conclusion**

We reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed.

## **Differences Between This AD and the MCAI or Service Information**

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow our FAA policies. Any such differences are highlighted in a NOTE within the AD.

## **Costs of Compliance**

We estimate that this AD will affect 5 products of U.S. registry. We also estimate that it will take about 8 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$80 per work-hour. Required parts will cost about \$5,715 per product. Where the service information lists required parts costs that are covered under warranty, we have assumed that there will be no charge for these parts. As we do not control warranty coverage for affected parties, some parties may incur costs higher than estimated here. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$31,775, or \$6,355 per product.

## **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new AD:



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**2009-18-05 Fokker Services B.V.:** Amendment 39-16001. Docket No. FAA-2009-0496; Directorate Identifier 2008-NM-139-AD.

**Effective Date**

- (a) This airworthiness directive (AD) becomes effective October 1, 2009.

**Affected ADs**

- (b) None.

**Applicability**

- (c) This AD applies to Fokker Model F.27 Mark 050 and F.28 Mark 0100 airplanes, certificated in any category, all serial numbers.

**Subject**

- (d) Air Transport Association (ATA) of America Code 24: Electrical power.

**Reason**

- (e) The mandatory continuing airworthiness information (MCAI) states:

Several incidents have been reported where an electrical burning smell was noted in the cockpit, originating from the Electrical Power Centre. Troubleshooting revealed a partly molten terminal, which normally attaches a wire or bus bar to a stud of an Electrical Power Contactor, Part Number (P/N) SG02206. Furthermore, heat damage to the contactor stud itself was found. Material investigation revealed that the terminal, which was attached to the stud, was not properly torque tightened when the incident occurred. Loss of torque is considered to have occurred during operation, for reasons not fully understood. Further loosening may have taken place in-service under influence of vibration. As a result, poor contact caused electrical arcing during which extremely high temperatures were developed, leading to partial melting of the terminal.

Investigation of some other burned contactors revealed evidence (flat spring lock washer) of a fully torqued terminal/stud connection when the overheating occurred. The exact cause for the increase in temperature in the contactor and the terminal/stud could not be determined. However, it could not be excluded that an increase of the temperature inside the contactor could lead to reduction of the reliability of the contactor stud/terminal connection due to loss of lock washer tension. The affected Electrical Power Contactor is used on several locations in the electrical power system, i.e. Generator Line Contactor (GLC), Bus Tie Contactor (BTC), Auxiliary Power Contactor (APC) and External Power Contactor (EPC).

This condition, if not corrected, could lead to further cases of overheating of terminals and studs of Electrical Power Contactors P/N SG02206, possibly resulting in the loss of electrical power systems, electrical arcing and fire/smoke in the cockpit.

For the reasons described above, this EASA Airworthiness Directive (AD) requires the replacement of the current nut and spring washer of the standard contactor P/N SG02206 with a new self-locking nut.

## **Actions and Compliance**

(f) Unless already done, do the following actions:

(1) Except as provided by paragraphs (f)(2) and (f)(3) of this AD: Within 36 months after the effective date of this AD, remove the standard nuts and lock washers from the contactors having P/N SG02206, install new self-locking nuts, and perform the applicable tests on the Alternating Current Bus Transfer system, in accordance with the Accomplishment Instructions of Fokker Service Bulletin SBF100-24-041 or SBF50-24-031, both dated January 29, 2008, as applicable. If any test fails, before further flight, repair using a method approved by either the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or European Aviation Safety Agency (EASA) (or its delegated agent).

(2) Accomplishment of paragraph (f)(1) of this AD is not required for Model F.28 Mark 0100 airplanes that have been modified in service in accordance with Fokker Service Bulletin SBF100-24-037, dated October 2, 2003. Accomplishment of Fokker Service Bulletin SBF100-24-037, dated October 2, 2003, within the compliance time specified in paragraph (f)(1) of this AD is considered an acceptable method of compliance with the requirements of paragraph (f)(1) of this AD.

(3) Accomplishment of paragraph (f)(1) of this AD is not required for Model F.27 Mark 050 airplanes that have been modified during production to incorporate Fokker Engineering Change Record (ECR) 51780, or for airplanes that have been modified in service in accordance with Fokker Service Bulletin SBF50-24-030, dated November 6, 2003. Accomplishment of Fokker Service Bulletin SBF50-24-030, dated November 6, 2003, within the compliance time specified in paragraph (f)(1) of this AD is considered an acceptable method of compliance with the requirements of paragraph (f)(1) of this AD.

(4) As of 36 months after the effective date of this AD, no person may install a contactor having P/N SG02206 on any airplane unless it has been modified in accordance with Goodrich Power Systems Service Bulletin SG02206-24-01, dated March 4, 2008.

## **FAA AD Differences**

Note 1: This AD differs from the MCAI and/or service information as follows: The MCAI does not include a corrective action for airplanes on which the test required by paragraph (f)(1) of this AD fails. This AD requires the corrective action specified in paragraph (f)(1) of this AD.

## **Other FAA AD Provisions**

(g) The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Tom Rodriguez, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1137; fax (425) 227-1149. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local flight Standards District Office.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) Reporting Requirements: For any reporting requirement in this AD, under the provisions of the Paperwork Reduction Act, the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

## Related Information

(h) Refer to MCAI EASA Airworthiness Directive 2008-0091, dated May 13, 2008, and the service information listed in Tables 1, 2, and 3 of this AD for related information.

**Table 1 – Service Information**

<b>Service Bulletin</b>	<b>Date</b>
Fokker Service Bulletin SBF50-24-030, including the drawings identified in Table 2 of this AD	November 6, 2003
Fokker Service Bulletin SBF50-24-031	January 29, 2008
Fokker Service Bulletin SBF100-24-037, including Manual Change Notification – Maintenance Documentation MCNM F100-076, dated October 2, 2003, and including the drawings identified in Table 3 of this AD	October 2, 2003
Fokker Service Bulletin SBF100-24-041	January 29, 2008
Goodrich Power Systems Service Bulletin SG02206-24-01	March 4, 2008

**Table 2 – Drawings Included in Fokker Service Bulletin SBF50-24-030**

<b>Fokker Drawing –</b>	<b>Sheet –</b>	<b>Issue –</b>	<b>Dated –</b>
W7980-236	02	H	August 1, 2003
W7980-253	40	BK	September 17, 2003
W7980-253	41	BK	September 17, 2003
W7980-253	42	BK	September 17, 2003
W7980-253	43	BK	September 17, 2003
W7980-253	44	BL	September 17, 2003
W7980-253	45	BK	September 17, 2003
W7980-253	46	BL	September 17, 2003
W7980-253	47	BK	September 17, 2003
W7980-253	48	BK	September 17, 2003
W7980-253	49	BL	September 17, 2003
W7980-253	50	BL	September 17, 2003
W7980-253	51	BL	September 17, 2003
W7980-253	52	BL	September 17, 2003
W7980-253	53	BL	September 17, 2003
W7980-253	54	BK	September 17, 2003
W7980-253	55	BL	September 17, 2003
W7980-253	56	BL	September 17, 2003
W7980-253	57	BK	September 17, 2003
W7980-253	58	BL	September 17, 2003

W7980-253	59	BK	September 17, 2003
W7980-253	60	BK	September 24, 2003
W7980-253	61	BK	September 24, 2003
W7980-253	62	BK	September 24, 2003
W7980-253	63	BL	September 24, 2003
W7980-253	64	BK	September 24, 2003
W7980-253	65	BL	September 24, 2003
W7980-253	66	BK	September 24, 2003

**Table 3 – Drawings Included in Fokker Service Bulletin SBF100-24-037**

<b>Fokker Drawing –</b>	<b>Sheet –</b>	<b>Issue –</b>	<b>Dated –</b>
W43255	01	A	July 30, 2003
W43255	02	Original	July 30, 2003
W43255	03	A	August 4, 2003
W43255	04	A	July 30, 2003
W43255	05	Original	July 30, 2003
W43255	06	A	July 30, 2003
W43255	07	A	August 4, 2003

### **Material Incorporated by Reference**

(i) You must use the service information contained in Table 4 of this AD, as applicable, to do the actions required by this AD, unless the AD specifies otherwise. If you do the optional actions specified in this AD, you must use the service information specified in Tables 2, 3, and 5 of this AD, as applicable, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For Fokker service information identified in this AD, contact Fokker Services B.V., Technical Services Dept., P.O. Box 231, 2150 AE Nieuw-Vennep, the Netherlands; telephone + 31 (0)252-627-350; fax + 31 (0)252-627-211; e-mail [technicalservices.fokkerservices@stork.com](mailto:technicalservices.fokkerservices@stork.com); Internet <http://www.myfokkerfleet.com>.

(3) For Goodrich service information identified in this AD, contact Goodrich Corporation, Power Systems, 1555 Corporate Woods Parkway, Uniontown, Ohio 44685-8799; telephone 330-487-2007; fax 330-487-1902; e-mail [twinsburg.techpubs@goodrich.com](mailto:twinsburg.techpubs@goodrich.com); Internet <http://www.goodrich.com/TechPubs>.

(4) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221 or 425-227-1152.

(5) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

**Table 4 – Documents Incorporated by Reference for Actions Required by this AD**

<b>Service Bulletin</b>	<b>Date</b>
Fokker Service Bulletin SBF50-24-031	January 29, 2008
Fokker Service Bulletin SBF100-24-041	January 29, 2008
Goodrich Power Systems Service Bulletin SG02206-24-01	March 4, 2008

**Table 5 – Documents Incorporated by Reference for Optional Actions Specified in this AD**

<b>Service Bulletin</b>	<b>Date</b>
Fokker Service Bulletin SBF50-24-030 including the drawings identified in Table 2 of this AD	November 6, 2003
Fokker Service Bulletin SBF100-24-037, including Manual Change Notification – Maintenance Documentation MCNM F100-076, dated October 2, 2003, and including the drawings identified in Table 3 of this AD	October 2, 2003

Issued in Renton, Washington, on August 17, 2009.

Ali Bahrami,  
Manager, Transport Airplane Directorate,  
Aircraft Certification Service.