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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-21173; Directorate Identifier 2005-CE-22-AD; Amendment 39-14321; AD 2005-20-25]

RIN 2120-AA64

Airworthiness Directives; The Cessna Aircraft Company Models 401, 401A, 401B, 402, 402A, 402B, 402C, 404, 411, 411A, 414, 414A, 421, 421A, 421B, 421C, 425, and 441 Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA adopts a new airworthiness directive (AD) for certain The Cessna Aircraft Company (Cessna) Models 401, 401A, 401B, 402, 402A, 402B, 402C, 404, 411, 411A, 414, 414A, 421, 421A, 421B, 421C, 425, and 441 airplanes equipped with certain avionics bus circuit breaker switches. This AD requires you to inspect the avionics bus circuit breaker switch to determine the date code and replace any without a date code. This AD also imposes a 1,000-hour safe life limit on avionics bus circuit breaker switches with a date code earlier than 0434. This AD results from reports of smoke and a burning smell in the cockpit. We are issuing this AD to prevent failure of the avionics bus circuit breaker switch, which could result in smoke and a burning smell in the cockpit. This failure could lead to reduced ability to control the airplane.

DATES: This AD becomes effective on November 9, 2005.

As of November 9, 2005, the Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulation.

ADDRESSES: To get the service information identified in this AD, contact The Cessna Aircraft Company, Product Support P.O. Box 7706, Wichita, Kansas 67277; telephone: (316) 517-5800; facsimile: (316) 942-9006.

To view the AD docket, go to the Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-001 or on the Internet at <http://dms.dot.gov>. The docket number is FAA-2005-21173; Directorate Identifier 2005-CE-22-AD.

FOR FURTHER INFORMATION CONTACT: Gerald Pilj, Aerospace Engineer, FAA, Wichita ACO, 1801 Airport Road, Mid-Continent Airport, Wichita, Kansas 67209; telephone: (316) 946-4151; facsimile: (316) 946-4107.

SUPPLEMENTARY INFORMATION:

Discussion

What events have caused this AD? We have received failure reports of certain Tyco Electronics circuit breaker switches installed on the master avionics bus of Cessna Models 401, 401A, 401B, 402, 402A, 402B, 402C, 404, 411, 411A, 414, 414A, 421, 421A, 421B, 421C, 425, and 441 airplanes. Failure of these circuit breaker switches causes smoke and a burning smell in the cockpit.

Analysis of the circuit breaker switch revealed the copper braid inside the switch had frayed. Continued use causes an internal short. The internal short could result in the internal switch components or external wiring melting because it is no longer protected by the circuit breaker.

The affected circuit breaker switches have a date code earlier than 0434 or do not have a date code on them.

The date code consists of four digits. The first two represent the year and the last two represent the week of the year the part was made.

What is the potential impact if FAA took no action? If not prevented, failure of the avionics bus circuit breaker switch could cause smoke and a burning smell in the cockpit. This failure could lead to reduced ability to control the airplane.

Has FAA taken any action to this point? We issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to certain Cessna Models 401, 401A, 401B, 402, 402A, 402B, 402C, 404, 411, 411A, 414, 414A, 421, 421A, 421B, 421C, 425, and 441 airplanes equipped with certain avionics bus circuit breaker switches. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on June 9, 2005 (70 FR 33720). The NPRM proposed to require you to:

- inspect the avionics bus circuit breaker switch to determine the date code;
- replace all avionics bus circuit breaker switches without a date code; and
- implement a 1,000-hour safe life limit for all avionics bus circuit breaker switches with a date code earlier than 0434.

Comments

Was the public invited to comment? We provided the public the opportunity to participate in developing this AD. We received no comments on the proposal or on the determination of the cost to the public.

Conclusion

What is FAA's final determination on this issue? We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed except for minor editorial corrections. We have determined that these minor corrections:

- are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition;
- and
- do not add any additional burden upon the public than was already proposed in the NPRM.

Changes to 14 CFR Part 39—Effect on the AD

How does the revision to 14 CFR part 39 affect this AD? On July 10, 2002, the FAA published a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's AD system. This regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance. This material previously was included in each individual AD. Since this material is included in 14 CFR part 39, we will not include it in future AD actions.

Costs of Compliance

How many airplanes does this AD impact? We estimate that this AD affects 7,125 airplanes in the U.S. registry.

What is the cost impact of this AD on owners/operators of the affected airplanes? We estimate the following costs to accomplish the inspection and replacement:

For Models 401, 401A, 401B, 402, 402A, 402B, 402C, 404, 411, 411A, 414, 414A, 421, 421A, 421B, and 421C airplanes:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
4 work hours × \$65 an hour = \$260.	\$119 each.	\$498 (if 2 switches are required).	\$498 × 6,527 = \$3,250,446.

For Models 425 and 441 airplanes:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
8 work hours × \$65 an hour = \$520.	\$119 each.	\$758 (if 2 switches are required).	\$758 × 598 = \$453,284.

Authority for This Rulemaking

What authority does FAA have for issuing this rulemaking action? 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 AD.

Regulatory Findings

Will this AD impact various entities? We have 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.

Will this AD involve a significant rule or regulatory action? For the reasons discussed above, I certify that 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 summary of the costs to comply with this AD (and other information as included in the Regulatory Evaluation) and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under ADDRESSES. Include "Docket No. FAA-2005-21173; Directorate Identifier 2005-CE-22-AD" in your request.

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 Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. FAA amends § 39.13 by adding a new AD to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at www.faa.gov/aircraft/safety/alerts/

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and 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 (reference 14 CFR part 39, subpart 39.3).

2005-20-25 The Cessna Aircraft Company: Amendment 39-14321; Docket No. FAA-2005-21173; Directorate Identifier 2005-CE-22-AD.

When Does This AD Become Effective?

- (a) This AD becomes effective on November 9, 2005.

What Other ADs Are Affected By This Action?

- (b) None.

What Airplanes Are Affected by This AD?

- (c) This AD affects the following airplane models and serial numbers that are:

- (1) Equipped with an avionics bus circuit breaker switch, part number (P/N) CM3589-50, 593-250-101, 593-250-102, W31-X2M5A-50, or W31-X1000-50; and
(2) certificated in any category:

Model	Serial numbers
401	655 and 401-0001 through 401-0322.
401A	655 and 401A0001 through 401A0132.
401B	401B0001 through 401B0221.
402	402-0001 through 402-0322.
402A	402A0001 through 402A0129.
402B	402B0001 through 402B0122, 402B0201 through 402B0249, 402B0301 through 402B0455, 402B0501 through 402B0640, 402B0801 through 402B0935, 402B1001 through 402B1100, 402B1201 through 402B1250, and 402B1301 through 402B1384.
402C	689, 402C0001 through 402C0125, 402C0201 through 402C0355, 402C0401 through 402C0528, 402C0601 through 402C0653, 402C0801 through 402C0807, and 402C0808 through 402C1020.
404	682, 404-0001 through 404-0136, 404-0201 through 404-0246, 404-0401 through 404-0460, 404-0601 through 404-0695, and 404-0801 through 404-0859.
411	642 and 411-0001 through 411-0250.
411A	411-0251 through 411-0300.
414	667, 414-0001 through 414-0099, 414-0151 through 414-0175, 414-0251 through 414-0280, 414-0351 through 414-0437, 414-0451 through 414-0550, 414-0601 through 414-0655, 414-0801 through 414-0855, and 414-0901 through 414-0965.

Model	Serial numbers
414A	414A0001 through 414A0121, 414A0201 through 414A0340, 414A0401 through 414A0535, 414A0601 through 414A0680, 414A0801 through 414A0858, and 414A1001 through 414A1212.
421	693 and 421-0001 through 421-0200.
421A	421A0001 through 421A0158.
421B	421B0001 through 421B0056, 421B0101 through 421B0147, 421B0201 through 421B0275, 421B0301 through 421B0486, 421B0501 through 421B0665, and 421B0801 through 421B0970.
421C	421C0001 through 421C0171, 421C0201 through 421C0350, 421C0401 through 421C0525, 421C0601 through 421C0715, 421C0801 through 421C0910, 421C1001 through 421C1115, 421C1201 through 421C1257, 421C1401 through 421C1413, and 421C1801 through 421C1807.
425	425-0001 through 425-0236.
441	698 and 441-0001 through 441-0362.

What is the Unsafe Condition Presented in This AD?

(d) This AD is the result of reports of smoke and a burning smell in the cockpit. The actions specified in this AD are intended to prevent failure of the avionics bus circuit breaker switch, which could result in smoke and a burning smell in the cockpit. This failure could lead to reduced ability to control the airplane.

What Must I do to Address This Problem?

(e) To address this problem, you must do the following:

Actions	Compliance	Procedures
(1) Inspect the avionics bus circuit breaker switch to determine the part number (P/N) and date code. (i) If the P/N is CM3589-50, 593-250-101, 593-250-102, W31-X2M5A-50, or W31-X1000-50; and (ii) The date code is 0434 or later; then (iii) No further action is required.	Within the next 200 hours time-in-service (TIS), the next 12 months, or at the next scheduled inspection, after November 9, 2005 (the effective date of this AD), whichever occurs first.	<i>For Models 425 and 441 airplanes,</i> follow the procedures in Cessna Conquest Service Bulletin CQB05-2, dated February 21, 2005, and the applicable maintenance manual. <i>For all other affected airplane models,</i> follow the procedures in Cessna Multi-engine Service Bulletin MEB05-1 dated February 21, 2005, and the applicable maintenance manual.
(2) If the P/N is CM3589-50, 593-250-101, 593-250-102, W31-X2M5A-50, or W31-X1000-50 and there is no date code, replace the avionics bus circuit breaker switch with a P/N CM3589-50 that has a date code of 0434 or later.	Before further flight after the inspection required in paragraph (e)(1) of this AD.	<i>For Models 425 and 441 airplanes,</i> follow the procedures in Cessna Conquest Service Bulletin CQB05-2, dated February 21, 2005, and the applicable maintenance manual. <i>For all other affected airplane models,</i> follow the procedures in Cessna Multi-engine Service Bulletin MEB05-1, dated February 21, 2005, and the applicable maintenance manual.

Actions	Compliance	Procedures
(3) If the P/N is CM3589-50, 593-250-101, 593-250-102, W31-X2M5A-50, or W31-X1000-50, or W31-X1000-50 and the date code is earlier than 0434, the part has a safe life limit of 1,000 hours TIS and must be replaced within the 1,000-hour time limit with a P/N CM3589-50 that has a date code of 0434 or later.	Within the 1,000-hour TIS safe life limit	<i>For Models 425 and 441 airplanes,</i> follow the procedures in Cessna Conquest Service Bulletin CQB05-2, dated February 21, 2005, and the applicable maintenance manual. <i>For all other affected airplane models,</i> follow the procedures in Cessna Multi-engine Service Bulletin MEB05-1, dated February 21, 2005, and the applicable maintenance manual.
(4) Do not install a P/N CM3589-50, 593-250-101, 593-250-102, W31-X2M5A-50, or W31-X1000-50 that does not have a date code or has a date code earlier than 0434.	As of November 9, 2005 (the effective date of this AD).	Not applicable.

May I Request an Alternative Method of Compliance?

(f) You may request a different method of compliance or a different compliance time for this AD by following the procedures in 14 CFR 39.19. Unless FAA authorizes otherwise, send your request to your principal inspector. The principal inspector may add comments and will send your request to the Manager, Wichita Aircraft Certification Office (ACO), FAA. For information on any already approved alternative methods of compliance, contact Gerald Pilj, Aerospace Engineer, FAA Wichita ACO, 1801 Airport Road, Mid-Continent Airport, Wichita, Kansas 67209; telephone: (316) 946-4151; facsimile: (316) 946-4107.

Does This AD Incorporate Any Material by Reference?

(g) You must do the actions required by this AD following the instructions in Cessna Conquest Service Bulletin CQB05-2, dated February 21, 2005, and Cessna Multi-engine Service Bulletin MEB05-1, dated February 21, 2005. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To get a copy of this service information, contact The Cessna Aircraft Company, Citation Marketing Division, Product Support P.O. Box 7706, Wichita, Kansas 67277; telephone: (316) 517-5800; facsimile: (316) 942-9006. To review copies of this service information, go to the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html or call (202) 741-6030. To view the AD docket, go to the Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-001 or on the Internet at <http://dms.dot.gov>. The docket number is FAA-2005-21173; Directorate Identifier 2005-CE-22-AD.

Issued in Kansas City, Missouri, on September 28, 2005.

David R. Showers,
Acting Manager, Small Airplane Directorate, Aircraft Certification Service.
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