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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-27747; Directorate Identifier 2007-CE-030-AD; Amendment 39-15904; AD 2009-10-09]

RIN 2120-AA64

Airworthiness Directives; Cessna Aircraft Company 150 and 152 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for Cessna Aircraft Company (Cessna) 150 and 152 series airplanes. This AD requires you to either install a placard prohibiting spins and other acrobatic maneuvers in the airplane or to replace the rudder stop, rudder stop bumper, and attachment hardware with a new rudder stop modification kit and replace the safety wire with jamnuts. This AD results from follow-on investigations of two accidents where the rudder was found in the over-travel position with the stop plate hooked over the stop bolt heads. While neither of the accident aircraft met type design, investigations revealed that aircraft in full conformity with type design can exceed the travel limits set by the rudder stops. We are issuing this AD to prevent the rudder from traveling past the normal travel limit. Operation in this non-certificated control position is unacceptable and could cause undesirable consequences, such as contact between the rudder and the elevator.

DATES: This AD becomes effective on June 17, 2009.

On June 17, 2009, the Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD.

ADDRESSES: To get the service information identified in this AD, contact Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, KS 67277; telephone: (316) 517-5800; fax: (316) 517-7271; Internet: <http://www.cessna.com>.

To view the AD docket, go to U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, or on the Internet at <http://www.regulations.gov>. The docket number is FAA-2007-27747; Directorate Identifier 2007-CE-030-AD.

FOR FURTHER INFORMATION CONTACT: Ann Johnson, Aerospace Engineer, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4105; fax: (316) 946-4107.

SUPPLEMENTARY INFORMATION:

Discussion

On April 10, 2007, 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 Aircraft Company (Cessna) 150 and 152 series airplanes. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on April 16, 2007 (72 FR 18925). The NPRM proposed to require replacement of the rudder stop, rudder stop bumper, and attachment hardware with a new rudder stop modification kit and replacement of the safety wire with jamnuts.

Comments

We provided the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and FAA's response to each comment:

Comment Issue No. 1: SAIB Instead of NPRM

Joseph Morales, Gary Iverson, Sr., Al Roesner, Gerald D. Clark, Al Dyer, Neal Trullson, McBride Aircraft Group, Matthew M. Gosslein, Samuel K. McCauley, Robert E. Hackman from the Aircraft Owners and Pilots Association (AOPA), and Tom Carr from the Cessna Pilots Association (CPA) comment that the FAA should withdraw the NPRM and issue a special airworthiness information bulletin (SAIB). The commenters state that if the aircraft is properly maintained and rigged, then no problems exist; problems should easily be detected visually during routine maintenance; and a rudder system that is built and installed correctly is virtually impossible to jam. The commenters state adequate regulations and requirements are in place to assure the inspection of the rudder system is completed during annual or 100-hour inspections in 14 CFR part 43, Appendix D and in the Cessna service publication. In addition, the commenters point out the following:

- Two service difficulty reports were found but none for a jammed rudder.
- In the Ohio accident, the rudder stop was installed inverted, and the functionality of the stop configuration was compromised.
- If you remove the right rudder return spring and disconnect the right rudder control cable, then the left locked rudder event from the Canadian accident could be duplicated.
- The two accident airplanes were not airworthy prior to flight.

The commenters further state that requiring replacement of the rudder stop, rudder stop bumper, attachment hardware, and substituting safety wire with jamnuts is an overreaction. The commenters request that the FAA withdraw the NPRM and issue an SAIB since the problem is with a very limited number of airplanes, specifically the Cessna Model 152, and improper maintenance was cited as the cause of the two previously mentioned accidents. The commenters state the airplanes have flown for 51 years and thousands of hours with no previous problems, and installing the original equipment manufacturer (OEM) kit on 17,090 domestic airplanes would put the airplanes at risk.

We do not agree that this action should be an SAIB instead of an AD. While the two accident aircraft were not airworthy, the issue that needs to be corrected is a design issue, not a maintenance issue. Follow-on investigations did reveal that rudders on aircraft in full conformity with type design can exceed the travel limits set by the rudder stops. Operation in this non-certificated control position is unacceptable and could cause undesirable consequences. Markings on one accident aircraft correspond with previous contact between the rudder and elevator, and similar markings were noted on several in-service airplanes. We will change the final rule AD to provide another option in lieu of

the actions in the proposed AD. For the new option, the limitations section in the airplane flight manual (AFM) and the pilots operating handbook (POH) must be changed to prohibit acrobatics. A placard would be displayed on the instrument panel in clear view of the pilot with the words "INTENTIONAL SPINS AND OTHER ACROBATIC/AEROBATIC MANEUVERS PROHIBITED PER AD 2009-10-09."

We retain as an option the actions complying with the service information as specified in the proposed AD. After such action is done, the specified operational limitations in the added option (if utilized) may be removed.

We are changing the final rule AD action by adding language to address the option of the operational limitations.

Comment Issue No. 2: How Is Change Justified

Cessna Aircraft Company states that the National Transportation Safety Board (NTSB) recommendation of mandating by AD the installation of the Cessna service kit would not have prevented the accidents. Cessna states that they have no data that indicates a flight or ground procedure can deflect the rudder stop to a position where the stop is behind the bolt. From the dirt in the accident photograph, Cessna believes forces generated in the accident moved the rudder relative to the rudder stop, and that is how it hooked behind the stop. Cessna states that in the Canadian accident the rudder was possibly pushed over the stop by hydrodynamic or inertia forces. Cessna notes that if both rudder pedals were pressed simultaneously, then the rudder stop would slip below the stop bolts and contact the fuselage skin without any tendency to jam; larger stops and bolts minimize this tendency. A Cessna service bulletin was issued in 2001 to address this concern. Cessna has no objection to adoption of an AD mandating installation of the service kit.

We agree with Cessna that the rudder stop can slip below the stop bolts and contact the fuselage skin but will not jam. This slippage below the stop bolt is not acceptable, and we agree that the Cessna kits will prevent this from occurring. In addition (and more central to this AD), installing the kits will prevent the rudder from exceeding its travel limits, which will prevent contact between the rudder and the elevator. One of the options for addressing the unsafe condition in this AD is the installation of such kits.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 3: Cost Is Excessive

Joseph Morales, Al Roesner, Gerald D. Clark, and Al Dyer comment that the expenses stated in the Cessna service bulletin and in the NPRM are excessive.

We disagree. We received an estimated parts cost of \$90 (as of January 2009) from the manufacturer with 4 hours of labor. At \$80 per hour, the total cost to install a kit would be about \$410 per airplane. The added operation limitation option, as described in Comment Issue No. 1, would permit compliance with the AD with minimal cost. Since we expect most operators will comply by simply installing the placard, the cost to the entire fleet would be greatly reduced.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 4: Rush to Judgment

Joseph Morales comments that the FAA rushed to judgment taking AD action for a condition that could be discovered during routine maintenance by the operator or mechanic. The commenter believes that the amount of actual accidents because of this condition proves this point.

We agree that some problems with the rudder system can be determined visually during routine maintenance. However, the issue that needs to be corrected is a design issue, not a maintenance issue. We disagree that this is a rush to judgment. By installing the kits, aircraft performing acrobatics/aerobatics will be protected from the rudder exceeding its travel limits. Operation in this

non-certificated control position is unacceptable and could cause undesirable consequences, such as rudder and elevator contact. Since the NPRM was published, even more thought was given to this AD by giving non-acrobatic/aerobatic operators the option of installing a placard, prohibiting acrobatic/aerobatics instead of installing the modification kit. We are not changing the final rule AD action based on this comment.

Conclusion

We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed except for the changes previously discussed and 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.

Costs of Compliance

We estimate that this AD affects 17,090 airplanes in the U.S. registry.
 We estimate the following costs to insert the operational limitation:

Labor Cost	Parts Cost	Total Cost Per Airplane	Total Cost on U.S. Operators
1 work-hour X \$80 per hour = \$80	Not applicable	\$80	\$1,367,200

We estimate the following costs to do the modification:

Labor Cost	Parts Cost	Total Cost Per Airplane	Total Cost on U.S. Operators
4 work-hours X \$80 per hour = \$320	\$90	\$410	\$7,006,900

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 AD.

Regulatory Findings

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.

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-2007-27747; Directorate Identifier 2007-CE-030-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:



2009-10-09 Cessna Aircraft Company: Amendment 39-15904; Docket No. FAA-2007-27747; Directorate Identifier 2007-CE-030-AD.

Effective Date

(a) This AD becomes effective on June 17, 2009.

Affected ADs

(b) None.

Applicability

(c) This AD applies to the following airplane models and serial numbers that are certificated in any category:

Models	Serial Numbers
(1) 150F	15061533 through 15064532
(2) 150G	15064533 through 15064969 and 15064971 through 15067198
(3) 150H	15067199 through 15069308 and 649
(4) 150J	15069309 through 15071128
(5) 150K	15071129 through 15072003
(6) 150L	15072004 through 15075781
(7) 150M	15075782 through 15079405
(8) A150K	A1500001 through A1500226
(9) A150L	A1500227 through A1500432 and A1500434 through A1500523
(10) A150M	A1500524 through A1500734 and 15064970
(11) F150F	F150-0001 through F150-0067
(12) F150G	F150-0068 through F150-0219
(13) F150H	F150-0220 through F150-0389
(14) F150J	F150-0390 through F150-0529
(15) F150K	F15000530 through F15000658
(16) F150L	F15000659 through F15001143
(17) F150M	F15001144 through F15001428

(18) FA150K	FA1500001 through FA1500081
(19) FA150L	FA1500082 through FA1500261
(20) FA150M	FA1500262 through FA1500336
(21) 152	15279406 through 15286033
(22) A152	A1520735 through A1521049, A1500433, and 681
(23) F152	F15201429 through F15201980
(24) FA152	FA1520337 through FA1520425

Unsafe Condition

(d) Aircraft in full conformity with type design can exceed the travel limits set by the rudder stops. We are issuing this AD to prevent the rudder from traveling past the normal travel limit. Operation in this non-certificated control position is unacceptable and could cause undesirable consequences, such as contact between the rudder and the elevator.

Compliance

(e) To address this problem, you must do either the actions in option 1 or option 2 of this AD, unless already done:

Action	Compliance	Procedures
<p>(1) Option 1: For all airplanes that do not have modification kits part number (P/N) SK152-25A or P/N SK152-24A installed, do the following:</p> <p>(i) Insert the following text into the Limitations section of the FAA-approved airplane flight manual (AFM), and pilots operating handbook (POH): “INTENTIONAL SPINS AND OTHER ACROBATIC/AEROBATIC MANEUVERS PROHIBITED PER AD 2009-10-09.” NOTE: THIS AD DOES NOT PROHIBIT PERFORMING INTENTIONAL STALLS.”</p> <p>(ii) Fabricate a placard (using at least 1/8-inch letters) with the following words and install the placard on the instrument panel within the pilot’s clear view: “INTENTIONAL SPINS AND OTHER ACROBATIC/AEROBATIC MANEUVERS PROHIBITED PER AD 2009-10-09.”</p> <p>(iii) The AFM and POH limitations in paragraph (e)(1)(i) of the AD and the placard in paragraph (e)(1)(ii) of this AD may be removed after either paragraph (e)(2)(i) or paragraph (e)(2)(ii) of this AD is done.</p>	<p>Within the next 100 hours time-in-service (TIS) after June 17, 2009 (the effective date of this AD), or within the next 12 months after June 17, 2009 (the effective date of this AD), whichever occurs first.</p>	<p>A person authorized to perform maintenance as specified in 14 CFR section 43.3 of the Federal Aviation Administration Regulations (14 CFR 43.3) is required to make the AFM and POH changes, fabricate the placard required in paragraph (e)(1)(i) of this AD, and make an entry into the aircraft logbook showing compliance with the portion of the AD per compliance with 14 CFR 43.9.</p>

(2) <u>Option 2</u> : Install a rudder stop modification kit:	Within the next 100 hours TIS June 17, 2009 (the effective date of this AD), or within the next 12 months after June 17, 2009 (the effective date of this AD), whichever occurs first.	Follow Cessna Aircraft Company Service Bulletin SEB01-1, dated January 22, 2001; and, as applicable, either Cessna Aircraft Company Service Kit SK152-25A, Revision A, dated February 9, 2001, or Cessna Aircraft Company Service Kit SK152-24A, Revision A, dated March 9, 2001.
(i) For airplanes with a forged bulkhead:		
(A) Replace the rudder stops, rudder stop bumpers, and attachment hardware with the new rudder stop modification kit P/N SK152-25A; and		
(B) Replace safety wire with jamnuts.		
(ii) For airplanes with a sheet metal bulkhead:		
(A) Replace the rudder stops, rudder stop bumpers, and attachment hardware with the new rudder stop modification kit P/N SK152-24A; and		
(B) Replace safety wire with jamnuts.		

(f) Kit P/Ns SK152-24 and SK152-25, which are listed in SEB01-1, were superseded by kit P/Ns SK152-24A and SK152-25A. Cessna has not revised the service bulletin to reflect the new P/Ns. The kit P/Ns SK 152-24 and SK152-25 would automatically be filled with P/Ns SK152-24A and SK152-25A, respectively.

(1) The P/N SK 152-24 kit does not address the unsafe condition because the nutplate in the kit can not be used due to rivet spacing on the aft bulkhead. In addition, a note was added to kit P/N SK152-24A stating "some airplanes in this serial range may have a forged bulkhead installed after leaving the factory. Service Kit SK152-25A or later revision must be used to modify these airplanes." The kit P/N SK152-25 does not address the unsafe condition because there was an error in a washer P/N. This error was corrected in the kit P/N SK152-25A kit. Therefore, kit P/Ns SK152-24 and SK152-25 are not allowed for installation for this AD.

(2) If you previously had a kit P/N SK152-24 or SK152-25 installed and you choose to use the kit installation option, the kit P/N SK152-24A or SK152-25A, as applicable, must be installed.

Alternative Methods of Compliance (AMOCs)

(g) The Manager, FAA, ATTN: Ann Johnson, Aerospace Engineer, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4105; fax: (316) 946-4107, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Material Incorporated by Reference

(h) If you choose to comply with this AD using paragraph (e)(2) of this AD, you must use Cessna Aircraft Company Service Bulletin SEB01-1, dated January 22, 2001; and, as applicable, either Cessna Aircraft Company Service Kit SK152-25A, Revision A, dated February 9, 2001; or Cessna Aircraft Company Service Kit SK152-24A, Revision A, dated March 9, 2001, to do the actions required by this AD, 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 service information identified in this AD, contact Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, KS 67277; telephone: (316) 517-5800; fax: (316) 517-7271; Internet: <http://www.cessna.com>.

(3) You may review copies at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Kansas City, Missouri 64106; or 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.

Issued in Kansas City, Missouri, on May 5, 2009.

Kim Smith,
Manager, Small Airplane Directorate,
Aircraft Certification Service.