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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2020-0472; Project Identifier 2018-CE-060-AD; Amendment 39-21295; AD 2020-21-22]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Textron Aviation Inc. Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all Textron Aviation Inc. (Textron) Models 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K, 182, 182A, 182B, 182C, 182D, 185, 185A, 185B, 185C, 185D, 185E, A185E, and A185F airplanes. This AD was prompted by a report of cracks found in the tailcone and horizontal stabilizer attachment structure. This AD requires inspecting the tailcone and horizontal stabilizer for corrosion and cracks and repairing or replacing damaged parts as necessary. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective December 7, 2020.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 7, 2020.

**ADDRESSES:** For service information identified in this final rule, contact Textron Aviation Customer Service, P.O. Box 7706, Wichita, Kansas 67277, (316) 517-5800; [customercare@txtav.com](mailto:customercare@txtav.com); internet: <https://txtav.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148. It is also available on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0472.

#### **Examining the AD Docket**

You may examine the AD docket on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0472; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the

regulatory evaluation, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Tara Shawn, Aerospace Engineer, Wichita ACO Branch, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4141; fax: (316) 946-4107; email: tara.shawn@faa.gov or Wichita-COS@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Textron Aviation Inc. (Textron) (type certificate previously held by Cessna Aircraft Company) Models 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K, 182, 182A, 182B, 182C, 182D, 185, 185A, 185B, 185C, 185D, 185E, A185E, and A185F airplanes. The NPRM published in the Federal Register on May 14, 2020 (85 FR 28890). The NPRM was prompted by a report of cracks found in the tailcone and horizontal stabilizer attachment structure on a Textron Model 185 airplane. The FAA discovered similar conditions on 29 additional Textron 180 and 185 series airplanes and determined that the combination of the attachment structure design and high loads during landing contribute to the development of cracks in the tailcone and horizontal stabilizer attachment structure. The NPRM proposed to require inspecting the tailcone and horizontal stabilizer for corrosion, cracks, and loose or sheared rivets and repairing or replacing damaged parts as necessary. The FAA is issuing this AD to prevent failure of the horizontal stabilizer to tailcone attachment, which could lead to tail separation with consequent loss of control of the airplane.

### **Comments**

The FAA gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Support for the NPRM**

Two individual commenters supported the NPRM.

### **Request To Clarify Why the AD Is Necessary**

Three individual commenters requested the FAA clarify why an AD is necessary. The commenters stated the proposed inspection is already performed at every annual inspection. One of these commenters stated the current service bulletin is also sufficient to address this issue, and unlike the seat rail AD, which was necessary to remove subjective interpretation from the inspection measurements, this issue is more objective. The FAA infers that the commenter is referring to AD 2011-10-09, Amendment 39-16690 (76 FR 27865, May 13, 2011).

The FAA disagrees. Although 14 CFR 43.15 and Appendix D to Part 43 do require that 100-hour and annual inspections include an inspection of the tailcone and horizontal stabilizer attachment structure, this AD requires an inspection directed towards specific areas with a history of cracking. Data obtained during evaluation of this unsafe condition indicated that the current routine maintenance and inspection procedures alone are not adequate to address it. Also, while an operator may incorporate into its maintenance program the inspections in the service bulletin referenced by the commenters, not all operators are required to do so. In order for these inspections to become mandatory, and to correct the unsafe conditions identified in the NPRM, the FAA must issue an AD.

The compliance times as proposed should allow the inspections to be completed during the annual/100 hour inspection, thereby minimizing the costs on operators.

The FAA did not make any changes to the proposed AD based on these comments.

### **Request To Address Cause of the Cracking**

An individual commenter requested the AD address the cause of the cracking instead of changing the affected parts so that the cycle time between inspections could be increased. As examples, the commenter stated that if the cause is vibration, then propeller balance should be required to correct the vibration; if the cause is corrosion, then corrosion prevention should be required.

The FAA disagrees. The FAA determined that a combination of the attachment structure design and the high design loads during landing contribute to the development of cracks in the tailcone and horizontal stabilizer attachment structure. The FAA evaluated the failures and determined that the appropriate corrective action was to replace the parts if corrosion or cracks are detected during the inspection. The FAA did not make any changes to the proposed AD based on this comment.

### **Request Change to Applicability**

The Aircraft Owners and Pilots Association (AOPA) requested the FAA clarify why the proposed AD applies to Model 182-series airplanes, because the airplanes found with cracking and corrosion damage were Textron Model 180- and 185-series airplanes that have a different landing gear configuration with higher loads during landing. Citing the same or similar reasons, three individual commenters requested that the proposed AD not apply to Model 182-series airplanes.

The FAA agrees to provide additional information explaining why the proposed AD would apply to Model 182-series airplanes. While the landing stresses for the Model 182-series are not equal to that of the Model 180- and 185-series, the FAA determined that the development of cracks in the tailcone and horizontal stabilizer attachment structure is a combination of landing stresses and the attachment structure design. Models 182 through 182D airplanes have the same tailcone design as Model 185-series airplanes. After the FAA issued an Airworthiness Concern Sheet about this issue on February 8, 2017, requesting information on Model 180- and 185-series airplanes, Textron released Single Engine Mandatory Service Letter SEL-55-01, dated December 7, 2017 (SEL-55-01), which included Models 182 through 182D. Inspection results from SEL-55-01 have included multiple reports of cracking on Models 182 through 182D.

The FAA did not make any changes to the proposed AD based on these comments.

Another individual commenter requested the proposed AD require inspections for Model 182-series airplanes that have been converted to tail wheel airplanes and not require inspections for Model 180- and 185-series airplanes on floats, if the cause is vibration from landings.

The FAA disagrees. The FAA has determined that the development of cracks in the tailcone and horizontal stabilizer attachment structure is a combination of the attachment structure design and high landing loads. The high loads encountered during landing are not specifically the result of vibration. Data obtained during evaluation of the unsafe condition identified cracking on aircraft with and without floats.

The FAA did not make any changes to the proposed AD based on this comment.

The same individual commenter also requested the proposed AD not apply to lower time airplanes, such as those with 3,000 hours or less. The commenter did not provide justification for this request.

The FAA disagrees. This AD was proposed to address corrosion and cracks in the tailcone and horizontal stabilizer attachment structure. As corrosion may develop over time, regardless of how many flight hours the airplane accumulates, the commenter's suggestion, if adopted, would not adequately address the unsafe condition.

The FAA did not make any changes to the proposed AD based on this comment.

## **Request for Credit for Previous Actions**

AOPA and two individual commenters requested the FAA revise paragraph (h) of the AD to allow credit for previous actions performed by using SEL-55-01 if the airplane was also inspected for loose or sheared rivets. The commenters suggested there are no significant differences between SEL-55-01 and the proposed AD. AOPA also requested credit for actions performed during the prior annual inspection.

The FAA agrees that operators may take credit for previous compliance with SEL-55-01; however, a change to the AD is unnecessary. Paragraph (f) of this AD requires compliance unless already done. Thus, the AD already allows credit for the initial inspection specified in SEL-55-01 if completed before the effective date of the AD. Similarly, operators may take credit for actions performed during the prior annual inspection if those actions are identical to the procedures specified in SEL-55-01.

The FAA did not make any changes to the proposed AD based on these comments.

## **Request To Delay Issuance of AD**

An anonymous commenter requested the FAA delay issuing the AD to allow more research into the problem and solutions. The commenter stated that the AD is too invasive and that removing and replacing the tail every 500 hours could be far more dangerous to the airplane than the cracks.

The FAA disagrees. The AD does not require removing the tail in order to complete the visual inspection. SEL-55-01 provides instructions to gain access to the inspection area without removal of the tail. The FAA has received feedback from operators that this inspection has been completed during annual maintenance. No delay in the effective date of the AD is warranted.

The FAA did not make any changes to the proposed AD based on this comment.

## **Comment Concerning Potential Causes of Damage**

AOPA requested the FAA clarify whether all causes of potential damage have been scrutinized. AOPA suggested that other sources of damage to the tailcone and horizontal stabilizer area attachment structure, such as wear from ground personnel moving the aircraft by the horizontal stabilizer, may have resulted in the cracking and corrosion discovered.

The FAA agrees to provide additional information. Damage to the tailcone and horizontal stabilizer could be a result of ground personnel moving the aircraft by the horizontal stabilizer. In addition, high loads due to a number of potential causes in combination with the attachment structure design could result in damage to the tailcone and horizontal stabilizer. However, even if the FAA could identify the exact sources of high loads, it would not likely alter the actions required by the AD to correct the identified unsafe condition.

The FAA did not make any changes to the proposed AD based on this comment.

## **Comment Concerning Parts**

An anonymous commenter stated that parts to repair are not available. The commenter did not provide supporting data with this comment.

The FAA is not aware of the unavailability of replacement parts. To the extent operators may have difficulty obtaining replacement parts, the FAA cannot base its AD action on whether spare parts are available or can be produced. While every effort is made to avoid grounding aircraft, the FAA must address the identified unsafe condition.

The FAA did not make any changes to the proposed AD based on this comment.

## **Request Regarding Costs**

One individual commenter requested the FAA require that Textron provide a service kit that addresses the design flaw and assists with the costs mandated by the AD. The commenter stated that this AD focuses on a known vulnerable area in all tail wheeled Cessna aircraft, caused by a systemic design flaw that is a major safety of flight condition.

The FAA, as a federal agency, is responsible for all directives, policies, and mandates issued under its authority. The FAA does not have the authority to require a manufacturer to bear AD costs incurred in modifying or repairing privately-owned aircraft. The general obligation of the operator to maintain its aircraft in an airworthy condition is vital, but sometimes expensive. If the manufacturer determines it will cover the cost of implementing a particular action, then the manufacturer does so voluntarily. The FAA did not make any changes to the proposed AD based on this comment.

## **Comment Regarding the Service Information**

An individual commenter stated the proposed AD does not reference or coincide with Cessna Supplemental Inspection Document 53-10-01, which covers the tailcone inspection.

The commenter's statement does not include a suggestion specific to the AD or a request the FAA can act on. The FAA did not make any changes to the proposed AD based on this comment.

## **Conclusion**

The FAA reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule as proposed.

## **Related Service Information Under 1 CFR Part 51**

The FAA reviewed Textron Aviation Single Engine Mandatory Service Letter SEL-55-01, dated December 7, 2017. The service information contains procedures for inspecting the stabilizer hinge brackets, tailcone reinforcement angles, corner reinforcements, stabilizer hinge reinforcement channel, stabilizer hinge assemblies, stabilizer aft spar reinforcement, and the lower half of the stabilizer aft spar from station (STA) 16 on the left side of the stabilizer aft spar to STA 16 on the right side for cracks and corrosion. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

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

The service information applies to airplanes with more than 3,000 total hours time-in-service or 10 years in service, while this AD applies regardless of the airplane's time-in-service. This AD requires inspecting for and replacing loose or sheared rivets, which is not specified in the service information.

## **Costs of Compliance**

The FAA estimates that this AD affects 6,586 airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

### Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	2 work-hours × \$85 per hour = \$170	Not applicable	\$170	\$1,119,620

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the inspection. The FAA has no way of determining the number of aircraft that might need these actions:

### On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replace left-hand (LH) stabilizer hinge bracket	4 work-hours × \$85 per workhour = \$340	\$551	\$891
Replace right-hand (RH) stabilizer hinge bracket	4 work-hours × \$85 per workhour = \$340	\$530	\$870
Replace LH tailcone reinforcement angle	12 work-hours × \$85 per workhour = \$1,020	\$2,291	\$3,311
Replace RH tailcone reinforcement angle	12 work-hours × \$85 per workhour = \$1,020	\$3,006	\$4,026
Replace LH corner reinforcement	6 work-hours × \$85 per workhour = \$510	\$169	\$679
Replace RH corner reinforcement	6 work-hours × \$85 per workhour = \$510	\$390	\$900
Replace LH stabilizer hinge reinforcement channel	6 work-hours × \$85 per workhour = \$510	\$99	\$609
Replace RH stabilizer hinge reinforcement channel	6 work-hours × \$85 per workhour = \$510	\$99	\$609
Replace LH stabilizer hinge assembly	1 work-hours × \$85 per workhour = \$85	\$570	\$655
Replace RH stabilizer hinge assembly	1 work-hours × \$85 per workhour = \$85	\$694	\$779
Replace LH stabilizer aft spar reinforcement	(*)	\$825	\$825
Replace RH stabilizer aft spar reinforcement	(*)	\$466	\$466
Replace stabilizer aft spar (* includes work-hour cost for replacing stabilizer aft spar reinforcement parts)	28* work-hours × \$85 per workhour = \$2,380	\$563	\$2,943
Remove and replace horizontal and vertical stabilizers and rig flight controls	8 work-hours × \$85 per workhour = \$680	Not applicable	\$680

Since corrosion may affect any or all of the parts subject to the inspection in this AD differently and the severity of the corrosion on each part would affect the time necessary to correct the condition,

the FAA has no way to determine an overall cost per product for removing the corrosion. Similarly, loose or sheared rivets may also affect any or all of the parts subject to the inspection in this AD differently, and the time necessary to correct the condition on each product would be different. Therefore, the FAA has no way to determine an overall cost per product for replacing loose or sheared rivets.

### **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.

The FAA is 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**

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) Will not affect intrastate aviation in Alaska, 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.

### **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 airworthiness directive:



**2020-21-22 Textron Aviation Inc.:** Amendment 39-21295; Docket No. FAA-2020-0472; Project Identifier 2018-CE-060-AD.

**(a) Effective Date**

This airworthiness directive (AD) is effective December 7, 2020.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company) Models 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K, 182, 182A, 182B, 182C, 182D, 185, 185A, 185B, 185C, 185D, 185E, A185E, and A185F airplanes, all serial numbers, certificated in any category.

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 53, Fuselage; 55, Stabilizers.

**(e) Unsafe Condition**

This AD was prompted by a report of cracks found in the tailcone and horizontal stabilizer attachment structure. The FAA is issuing this AD to detect and correct corrosion and cracks in the tailcone and horizontal stabilizer attachment structure. The unsafe condition, if not addressed, could result in failure of the horizontal stabilizer to tailcone attachment, which could lead to tail separation with consequent loss of control of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Inspect, Repair, and Replace**

Within the next 100 hours time-in-service (TIS) after the effective date of this AD or within the next 12 months after the effective date of this AD, whichever occurs later, and thereafter every 500 hours TIS or 5 years, whichever occurs first, visually inspect each stabilizer hinge bracket, tailcone reinforcement angle, corner reinforcement, stabilizer hinge reinforcement channel, stabilizer hinge assembly, stabilizer aft spar reinforcement, and the lower half of the stabilizer aft spar from station (STA) 16 on the left side to STA 16 on the right side for corrosion and cracks; remove any corrosion; and replace any part with a crack by following the Accomplishment Instructions, paragraphs 9



through 11 and 13, of Textron Aviation Single Engine Mandatory Service Letter SEL-55-01, dated December 7, 2017. Also inspect for loose rivets and sheared rivets. If there is a loose or sheared rivet, before further flight, replace the rivet.

#### **(h) Credit for Previous Actions**

Actions accomplished before the effective date of this AD within the previous 5 years or 500 hours TIS, whichever was the most recent, in accordance with the procedures specified in the documents listed in paragraphs (h)(i) through (viii) of this AD as applicable to your airplane are considered acceptable for compliance with the corresponding actions in paragraph (g) of this AD. The time between any inspection for which credit is allowed by this paragraph and the next inspection accomplished in accordance with paragraph (g) of this AD must not exceed 500 hours TIS or 5 years, whichever occurs first.

(i) Cessna Aircraft Company Model 100 Series (1953-1962) Service Manual, Supplemental Inspection Number: 53-10-01, D138-1-13 Temporary Revision Number 8, dated May 18, 2015.

(ii) Cessna Aircraft Company Model 100 Series (1963-1968) Service Manual, Supplemental Inspection Number: 53-10-01, D637-1-13 Temporary Revision Number 10, dated May 18, 2015;

(iii) Cessna Aircraft Company Model 180/185 Series (1969-1980) Service Manual, Supplemental Inspection Number: 53-10-01, D2000-9-13 Temporary Revision Number 9, dated May 18, 2015.

(iv) Cessna Aircraft Company Model 180/185 Series (1981-1985) Service Manual, Supplemental Inspection Number: 53-10-01, D2067-1-13 Temporary Revision Number 9, dated May 1, 2016.

(v) Cessna Aircraft Company Model 100 Series (1953-1962) Service Manual, Supplemental Inspection Number: 55-10-01, D138-1-13 Temporary Revision Number 7, dated December 1, 2011.

(vi) Cessna Aircraft Company Model 100 Series (1963-1968) Service Manual, Supplemental Inspection Number: 55-10-01, D637-1-13 Temporary Revision Number 9, dated December 1, 2011.

(vii) Cessna Aircraft Company Model 180/185 Series (1969-1980) Service Manual, Supplemental Inspection Number: 55-10-01, D2000-9-13 Temporary Revision Number 7, dated December 1, 2011.

(viii) Cessna Aircraft Company Model 180/185 Series (1981-1985) Service Manual, Supplemental Inspection Number: 55-10-01, D2067-1-13 Temporary Revision Number 7, dated December 1, 2011.

#### **(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Wichita ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

#### **(j) Related Information**

For more information about this AD, contact Tara Shawn, Aerospace Engineer, Wichita ACO Branch, 1801 Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4141; fax: (316) 946-4107; email: tara.shawn@faa.gov or Wichita-COS@faa.gov.

**(k) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Textron Aviation Single Engine Mandatory Service Letter SEL-55-01, dated December 7, 2017.

(ii) [Reserved]

(3) For Textron Aviation service information identified in this AD, contact Textron Aviation Customer Service, P.O. Box 7706, Wichita, Kansas 67277, (316) 517-5800; [customercare@txtav.com](mailto:customercare@txtav.com); internet: <https://txtav.com>.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

(5) You may view this 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, email: [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on October 8, 2020.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

[FR Doc. 2020-24046 Filed 10-30-20; 8:45 am]