DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0493; Product Identifier 2019-CE-046-AD]

RIN 2120-AA64

Airworthiness Directives; Textron Aviation, Inc. Airplanes

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

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2019-08-13 for Textron Aviation, Inc. (type certificate previously held by Cessna Aircraft Company) Models 525, 525A, and 525B airplanes with Tamarack active load alleviation system (ATLAS) winglets installed in accordance with Supplemental Type Certificate (STC) SA03842NY. AD 2019-08-13 resulted 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 malfunction of the ATLAS. This AD results from the identification of corrective actions that, if implemented, allow operators to reactivate the ATLAS and restore operations to normal procedures. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to https://www.regulations.gov. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For Cranfield Aerospace Solutions Limited and Tamarack Aerospace Group service information identified in this AD, contact Cranfield Aerospace Solutions Ltd., Cranfield, Bedford MK43 0AL, United Kingdom; telephone: +44 1234 754 166; FAX: +44 1234 752 375; email: g.mitchell@cranfieldaerospace.com; Internet: https://www.cranfieldaerospace.com/service/aircraft-modification-products/et. You may review copies of the referenced 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.

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-2020-0493; or in person at Docket Operations Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Steven Dzierzynski, Avionics Engineer, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone: (516) 287-7367; fax: (516) 794-5531; email: steven.dzierzynski@faa.gov.

SUPPLEMENTARY INFORMATION:
Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2020-0493; Product Identifier 2019-CE-046-AD” at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. The FAA will consider all comments received by the closing date and may amend this proposed AD because of those comments.

The FAA will post all comments received, without change, to https://regulations.gov, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about this proposed AD.

Discussion

The FAA issued AD 2019-08-13, Amendment 39-19634 (84 FR 24007; May 24, 2019) (“AD 2019-08-13”) for Textron Aviation, Inc. Models 525, 525A, and 525B airplanes with Tamarack ATLAS winglets installed in accordance with STC SA03842NY. AD 2019-08-13 prohibits all flight by revising the operating limitations in the airplane flight manual (AFM) and fabricating and installing a placard, until a modification has been incorporated in accordance with an FAA-approved method. AD 2019-080-13 was based on MCAI originated by the European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community. EASA issued AD No. 2019-0086-E, dated April 19, 2019, to address an unsafe condition related to reports of the ATLAS malfunctioning, which could lead to loss of control of the airplane.
**Actions Since AD 2019-08-13 was Issued**

Since the FAA issued AD 2019-08-13, Cranfield Aerospace Solutions Limited (Cranfield), the holder of STC SA03842NY, determined that failure of the Tamarack Active Camber Surface (TACS) control units (TCUs) was caused by a printed circuit board attachment screw coming loose, which caused a short circuit in the TCU. EASA revised the MCAI and issued EASA AD No. 2019-0086R1, dated August 9, 2019, to require modifications previously developed by Cranfield to restore the safety of the ATLAS design. Cranfield modified the TCUs with a self-locking screw, an additional flat washer, and linear variable differential transformer potting to prevent detachment from vibration during flight. Cranfield also developed centering strips to modify the trailing edge of the TACS that will return the TACS to faired when TCU power is removed or when the TACS are “blown” out of position if ATLAS power is removed.

Installation of the modified TCU will prevent a short circuit of the ATLAS TCU, and installation of the centering strips to the TACS will ensure the TACS remains in a faired position in case of inadvertent power loss to the ATLAS.

Cranfield also revised the Tamarack maintenance manual supplement for airplanes with the Tamarack ATLAS winglets installed to include instructions for continued airworthiness related to the centering strips.

**Comments**

The FAA gave the public the opportunity to comment on AD 2019-08-13 and received 34 comments. The majority of the commenters were operators and maintenance personnel. The remaining commenters included Tamarack Aerospace Group (Tamarack) and the General Aviation Manufacturers Association (GAMA). The following presents the relevant comments received on AD 2019-08-13 and the FAA’s response to each comment.

**A. Supportive Comments**
Erin Saunders, Victor Ochoa, and an anonymous comment者 support the AD action.

B. Comments Regarding the FAA’s Justification of an Unsafe Condition

Requests for a Thorough Investigation of the Issues

Many commenters questioned or requested clarification of the FAA’s determination that there is an unsafe condition. Seven commenters stated the FAA should have completed a more thorough investigation and analysis of the issues. Tamarack, Advanced Jets, LLC (Advanced Jets), and Kenneth Adelman requested the FAA consider that the data extracted from the incident aircraft does not agree with the pilot’s description of an aggressive roll rate. John Harris, Andrew Vann, Douglas Sayre, and five other commenters stated that the malfunction of the European aircraft that prompted EASA’s emergency AD was caused by the failure of the operator to comply with the manufacturer’s mandatory service bulletin. These commenters noted that there have been no failures experienced by aircraft with winglets that have complied with the manufacturer’s mandatory service bulletin. Fourteen commenters stated they have been operating for a considerable time with the ATLAS winglets and have not experienced any issues. These commenters further stated that installation of the winglets increases performance, safety, and economy and expressed support for Tamarack as a company.

The FAA has considered the comments pertaining to the pilot’s incident report on the European airplane. At the time AD 2019-08-13 was issued, the airplane data from the incident that prompted the EASA AD was not available. However, the FAA analyzed the information from the pilot’s incident report and additional information received from EASA to make the decision to issue AD 2019-08-13. Since AD 2019-08-13 was issued, Cranfield provided data to identify the root cause of the unsafe condition and to provide corrective action, which prompted this superseding NPRM.

The FAA agrees with the comments regarding the operator’s failure to comply with the manufacturer’s service bulletin. However, operators are not required to comply
with manufacturer service bulletins unless mandated by the FAA or other civil aviation authority. EASA AD No. 2019-0086-E, dated April 19, 2019, which prompted AD 2019-08-13, did not require incorporation of the service bulletins for TCU modification and installation of the centering strips. This NPRM proposes to require TCU modification and installation of the centering strips using Cranfield Aerospace Solutions Limited Service Bulletin CAS/SB1480, Issue A, dated July 2019 (Cranfield CAS/SB1480, Issue A), which incorporates two earlier service bulletins for those actions.

The fact that commenters’ personal experience with ATLAS winglets has been positive does not negate the existence of an unsafe condition. Despite any benefit to individual owners when the system operates without failure, the FAA determined that an unsafe condition with the ATLAS exists and requires corrective action.

**Requests to Clarify the Hazard Caused by a Malfunction**

Four commenters disputed the FAA’s determination that a malfunction of the ATLAS may reduce the pilot’s ability to control the airplane. Tamarack noted that this determination conflicts with the certification basis and system safety analysis of the design and compliance data during certification testing. Advanced Jets stated that the ATLAS has been shown to be safe at speeds under 140 knots even if it malfunctions. Kenneth Adelman stated that any reduction of pilot control when the ATLAS malfunctions is minor and was demonstrated as safe during the original certification of the system.

The FAA disagrees with these comments. The ATLAS complied with the certification basis during certification testing. EASA performed the certification flight tests, and those tests included the “worst case” condition where the TACS were deployed in a fully asymmetric failure position that induces the greatest roll input. EASA determined that case to be “recoverable.” However, the incident exposed a failure mode that was not anticipated during certification, which is the basis of this NPRM.

**Requests to Clarify the FAA’s Position on the Use of Speed Tape**
Kenneth Adelman, Advanced Jets, and two anonymous commenters questioned the FAA’s rejection of the use speed tape to hold the winglets flush. These commenters noted that speed tape is a product that is widely accepted and has been used for decades.

The FAA disagrees. The statement in the AD regarding the use of “speed tape” as a corrective action to prevent movement of the TACS during flight is based on discussions between the FAA and EASA. Speed tape is non-structural; therefore, it cannot be relied upon to immobilize the TACS. The corrective action in the EASA AD required disabling the TACS. Furthermore, any modifications mandated through AD action become changes to the type design. As explained in AD 2019-08-13, the speed tape did not have sufficient testing and analysis to support the type design.

The FAA did not change this NPRM as a result of these comments.

C. Comments Regarding the NTSB Investigation

Tamarack, Advanced Jets, GAMA, and six other commenters noted that AD 2019-08-13 contained an incorrect statement regarding the National Transportation Safety Board (NTSB) investigation of a fatal accident and the role the ATLAS may have played in the accident. Most of these commenters stated that the preliminary report released by the NTSB did not reference the ATLAS. These commenters requested the FAA correct or remove the statement if it is not accurate.

The FAA agrees. The preamble language of AD 2019-08-13 contained a statement pertaining to an NTSB investigation into a fatal airplane accident. Although the airplane involved in the accident had the ATLAS STC installed, since the NTSB has not released its factual report, that statement should not have been in the preamble of AD 2019-08-13.

D. Comments Requesting the FAA Rescind the AD

Vincent Phillips, Stanley Jobe, and CJ Holdings requested that the AD be rescinded and the airplanes returned to service. Two of these commenters noted that EASA has revised its emergency AD and urged the FAA to do the same.
The FAA partially agrees. The FAA has determined that an unsafe condition exists on the ATLAS and that action to address the condition is required; therefore, the FAA disagrees with rescinding the AD. However, since AD 2019-08-13 was issued, the root cause of the failure of the ATLAS winglets has been identified. For the reasons explained in more detail in response to other comments, this NPRM proposes to supersede AD 2019-08-13 to allow operation of the airplane after modifying the ATLAS.

E. Comments Requesting Modifications to the AD

Twelve commenters noted that Cranfield’s TCU upgrade and centering strips modification eliminate the unsafe condition. These commenters requested the FAA allow the modifications as an alternative to the operational prohibition of AD 2019-08-13. Richard Helms and several other commenters stated that no aircraft with these modifications have experienced upsets. Jerome Simon requested the FAA define an alternative method of compliance (AMOC) so the airplanes could return to flight.

The FAA agrees. This NPRM proposes to supersede AD 2019-08-13. Instead of the operational prohibition of AD 2019-08-13, this NPRM proposes to require modification of the TCU and installation of the centering strips on the TACS using Cranfield CAS/SB1480, Issue A, which incorporates two earlier service bulletins for those actions. This NPRM also proposes revising the Tamarack maintenance manual supplement to add inspections for the centering strips.
F. Comments Regarding the Costs of Compliance

Several commenters requested the FAA modify the cost of compliance to include costs associated with loss of revenue from the inability to fly the airplanes. These commenters stated that AD 2019-08-13 is costing operators anywhere from thousands of dollars per month to millions of dollars in total.

The FAA disagrees. The FAA acknowledges the economic hardship for those who depend on their airplanes for income. However, the cost analysis in AD rulemaking actions typically includes only the actual maintenance costs to comply with the AD and not indirect costs such as down-time and loss of revenue.

G. Comments Requesting Clarification on Type Design Change

GAMA requested clarification on the language in AD 2019-08-13 regarding speed tape as a type design change. GAMA questioned whether a temporary repair while waiting for a permanent design solution should be characterized as a type design change.

The FAA agrees to provide clarification. The language in AD 2019-08-13 is based on the FAA’s Airworthiness Directives Legal Interpretation, which explained that AD-mandated modifications to an aircraft become part of the FAA-approved type design that must be maintained as required by §§ 39.7 and 39.9 (81 FR 24695, April 27, 2016). Regardless of whether a repair mandated by an AD is intended to be permanent or temporary, the repair becomes a required change to the type design unless and until the AD is superseded or rescinded or the operator obtains an approved AMOC.

H. Comment Requesting Pilot Training

Three commenters requested or suggested the FAA require pilot training and familiarity with emergency procedures in the event of an uncommanded deflection of the ATLAS in flight.

The FAA acknowledges the commenters’ request for pilot training related to the uncommanded deflection of the ATLAS in flight. Since AD 2019-08-13 was issued, the root cause of the failure of the ATLAS winglets has been identified. This NPRM
proposes to supersede AD 2019-08-13 to allow operation of the airplane after modifying the ATLAS. The ATLAS modification and associated manual revisions proposed in this NPRM are expected to mitigate the unsafe condition without the need for additional pilot training.

I. Comment Requesting Procedure to Pull ATLAS Circuit Breaker

Kenneth Adelman requested the FAA require adding a line item to the abnormal/emergency section in the Tamarack Winglet AFM Supplement to indicate that, in the event of a TCAS runaway, the circuit breaker should be pulled.

The FAA acknowledges the commenter’s request to revise the Tamarack Winglet AFM Supplement. As stated earlier, since AD 2019-08-13 was issued, the root cause of the failure of the ATLAS winglets has been identified. This NPRM proposes to supersede AD 2019-08-13 to allow operation of the airplane after modifying the ATLAS. The ATLAS modification and associated manual revisions proposed in this NPRM are expected to mitigate the unsafe condition, precluding the need for the requested AFM revision.

J. Comments Regarding the FAA’s Rulemaking Process

Two commenters questioned the FAA’s decision to issue AD 2019-08-13 as an immediately effective rule without prior notice and comment. Richard Helms stated that this decision was neither justified nor reasonable. Advanced Jets noted that the FAA’s action is not an emergency because of the amount of time (35 days) between issuance of EASA’s emergency AD and the FAA’s issuance of AD 2019-08-13.

The FAA acknowledges the commenters’ concerns that it took 35 days to issue AD 2019-08-13 without notice and comment. The FAA worked through the unique difficulties associated with this unsafe condition and considered all options. The FAA coordinated with EASA and the design approval holder before determining the best course of action to mitigate the unsafe condition. The risk to the flying public associated with this unsafe condition required immediate action. Allowing notice and comment
would have delayed mitigating the unsafe condition significantly longer than 35 days. The FAA also notes that it is proposing to supersede AD 2019-08-13 based on comments received.

**Related Service Information under 1 CFR part 51**

The FAA reviewed the following service documents proposed for compliance with this NPRM:

- Cranfield Aerospace Solutions Limited Service Bulletin CAS/SB1480, Issue A, dated July 2019, which contains instructions to ensure installation of a modified TCU and the TACS centering strips;
- Cranfield Aerospace Solutions Limited Service Bulletin CAS/SB1475, Issue A, dated February 2019, which contains the instructions for installing the centering strips to the TACS; and

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 of this NPRM.

**Other Related Service Information**

The FAA also reviewed the following documents related to this NPRM:

- Tamarack Aerospace Group ATLAS Service Bulletin SBATLAS-57-03, dated July 27, 2018, which contains instructions to remove the ATLAS TCU and return it to the ATLAS repair facility for modification;
- Tamarack Aerospace Group ATLAS Service Bulletin SBATLAS-57-05, dated February 20, 2019, which contains instructions to install centering strips on the TACS;
and

- Cranfield Aerospace Solutions Limited Service Bulletin CAS/SB1467, Issue B, dated July 2018, which contains instructions to remove the ATLAS TCU assembly and modify it as specified in CAS/SB1480, Issue A.

**FAA’s Determination and Requirements of the Proposed AD**

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI and service information referenced above. The FAA is proposing this AD because it evaluated all information and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

**Costs of Compliance**

The FAA estimates that this proposed AD will affect 76 products of U.S. registry. The FAA also estimates that it would take 16 work-hours with a parts cost of $4,314 per product to modify the TCU, 24 work-hours with a parts cost of $199 per product to install the centering strips, and 1 work-hour per product to revise the limitations section as proposed by this AD. The average labor rate is $85 per work-hour.

Based on these figures, the FAA estimates the cost of the proposed AD on U.S. operators to be $607,848, or $7,998 per product.

According to the manufacturer, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all costs in our cost estimate.

**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
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

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 proposed regulation:

(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.
The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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 removing Airworthiness Directive (AD) 2019-08-13, Amendment 39-19634 (84 FR 24007, May 24, 2019) and adding the following new AD:

   Textron Aviation, Inc. (Type certificate previously held by Cessna Aircraft Company): Docket No. FAA-2020-0493; Product Identifier 2019-CE-046-AD.

(a) Comments Due Date

   The FAA must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

   This AD replaces AD 2019-08-13, Amendment 39-19634 (84 FR 24007, May 24, 2019) (“AD 2019-08-13”).

(c) Applicability

   This AD applies to Textron Aviation, Inc. (type certificate previously held by Cessna Aircraft Company) Models 525, 525A, and 525B airplanes, certificated in any category, with Tamarack active load alleviation system (ATLAS) winglets installed in accordance with Supplemental Type Certificate SA03842NY.

(d) Subject

(e) Reason

This AD was prompted by mandatory continuing airworthiness information (MCAI) issued by the aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as malfunction of the ATLAS, which could cause difficulty for the pilot to recover the airplane to safe light. The FAA is issuing this AD to prevent malfunction of the ATLAS and to ensure the Tamarack Active Camber Surface (TACS) remains in a faired position in the case of inadvertent power loss to the ATLAS, which could lead to loss of control of the airplane.

(f) Compliance

Unless already done, do the following actions in paragraphs (g) and (h) of this AD.

(g) Modifications

Before further flight after the effective date of this AD, do the following corrective actions:

1. Determine whether the serial number of the TACS control unit (TCU) assembly is listed in table 7.8. of Cranfield Aerospace Solutions Limited (Cranfield) Service Bulletin CAS/SB1480, Issue A, dated July 2019 (Cranfield CAS/SB1480, Issue A). If the serial number of the TCU assembly is not listed in table 7.8., replace the TCU assembly with a TCU assembly that has a part number listed in section 5 and a serial number listed in table 7.8 of Cranfield CAS/SB1480, Issue A.

2. Determine whether centering strips have been installed on the trailing edge of the TACS by following step 7.4. of Cranfield CAS/SB1480, Issue A. If the trailing edge of the TCAS does not have centering strips, install Cranfield modification CAeM/Cessna/1475.
(h) Revision to the Maintenance Manual Supplement


(2) Thereafter, except as provided in paragraph (i) of this AD, no alternative inspection intervals may be approved for the centering strips. Inserting a later issue of the ALS with language identical to that contained in Issue G for the centering strips is acceptable for compliance with the requirements of this paragraph.

(3) The AFM revision and placard required by AD 2019-08-13, if installed, may be removed after completing the modifications required by paragraph (g) of this AD.

(i) Alternative Methods of Compliance (AMOCs)

The Manager, New York ACO 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: Program Manager, Continued Operational Safety FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone: (516) 287-7321; fax: (516) 794-5531; email: 9-avs-nyaco-cos@faa.gov. 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.

(j) Related Information

Refer to European Union Aviation Safety Agency (EASA) AD No. 2019-0086R1, dated August 9, 2019, for related information. You may examine the MCAI on the Internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2020-0493. For Cranfield Aerospace Solutions Limited and Tamarack Aerospace
Group service information identified in this AD, contact Cranfield Aerospace Solutions Ltd., Cranfield, Bedford MK43 0AL, United Kingdom; telephone: +44 1234 754 166; FAX: +44 1234 752 375; email: g.mitchell@cranfieldaerospace.com; Internet: https://www.cranfieldaerospace.com/service/aircraft-modification-products/et. You may review copies of the referenced 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.

Issued on May 14, 2020.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.
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