

ATTCS reliability requirements as follows:

a. An ATTCS failure or a combination of failures in the ATTCS during the critical time interval (Figure 1):

(1) Must not prevent the insertion of the maximum approved go-around thrust or power, or must be shown to be a remote event.

(2) Must not result in a significant loss or reduction in thrust or power, or must be shown to be an extremely improbable event.

b. The concurrent existence of an ATTCS failure and an engine failure during the critical time interval must be shown to be extremely improbable.

c. All applicable performance requirements of part 25 must be met with an engine failure occurring at the most critical point during go-around with the ATTCS functioning.

d. The probability analysis must include consideration of ATTCS failure occurring after the time at which the flightcrew last verifies that the ATTCS is in a condition to operate until the beginning of the critical time interval.

e. The propulsive thrust obtained from the operating engine, after failure of the critical engine during a go-around used to show compliance with the one-engine-inoperative climb requirements of § 25.121(d), may not be greater than the lesser of:

(1) The actual propulsive thrust resulting from the initial setting of power or thrust controls with the ATTCS functioning, or

(2) 111 percent of the propulsive thrust resulting from the initial setting of power or thrust controls with the ATTCS failing to reset thrust or power, and without any action by the flightcrew to reset thrust or power.

#### 4. Thrust setting

a. The initial go-around thrust setting on each engine at the beginning of the go-around phase may not be less than any of the following:

(1) That required to permit normal operation of all safety-related systems and equipment dependent upon engine thrust or power lever position; or

(2) That are shown to be free of hazardous engine-response characteristics, and not to result in any unsafe airplane operating or handling characteristics when thrust or power is advanced from the initial go-around position to the maximum approved power setting.

b. For approval to use an ATTCS for go-arounds, the thrust-setting procedure must be the same for go-arounds initiated with all engines operating as for go-around initiated with one engine inoperative.

#### 5. Powerplant controls

a. In addition to the requirements of § 25.1141, no single failure or malfunction, or probable combination thereof, of the ATTCS, including associated systems, may cause the failure of any powerplant function necessary for safety.

b. The ATTCS must be designed to:

(1) Apply thrust or power to the operating engine(s), following any one-engine failure during a go-around, to achieve the maximum approved go-around thrust without exceeding the engine operating limits;

(2) Permit manual decrease or increase in thrust or power up to the maximum go-around thrust approved for the airplane, under the existing conditions, through the use of the power lever. For airplanes equipped with limiters that automatically prevent the engine operating limits from being exceeded under existing ambient conditions, other means may be used to increase the thrust in the event of an ATTCS failure, provided that the means:

(i) Is located on or forward of the power levers;

(ii) Is easily identified and operated under all operating conditions by a single action of either pilot with the hand that is normally used to actuate the power levers; and

(iii) Meets the requirements of § 25.777(a), (b), and (c).

(3) Provide a means to verify to the flightcrew, before beginning an approach for landing, that the ATTCS is in a condition to operate (unless it can be demonstrated that an ATTCS failure, combined with an engine failure during an entire flight, is extremely improbable).

6. Powerplant instruments: In addition to the requirements of § 25.1305:

a. A means must be provided to indicate when the ATTCS is in the armed or ready condition; and

b. If the inherent flight characteristics of the airplane do not provide adequate warning that an engine has failed, a warning system that is independent of the ATTCS must be provided to give the pilot a clear warning of any engine failure during a go-around.

Issued in Kansas City, Missouri, on March 17, 2021.

**Patrick R. Mullen,**

*Manager, Technical Innovation Policy Branch, Policy and Innovation Division, Aircraft Certification Service.*

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2020-0710; Project Identifier 2019-CE-037-AD; Amendment 39-21457; AD 2021-05-14]

RIN 2120-AA64

### Airworthiness Directives; Air Tractor, Inc., Airplanes

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

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all Air Tractor, Inc., (Air Tractor) Models AT-250, AT-300, AT-301, AT-302, AT-400, AT-400A, AT-401, AT-401A, AT-401B, AT-402, AT-402A, AT-402B, AT-501, AT-502, AT-502A, AT-502B, AT-503, AT-503A, AT-504, AT-602, AT-802, and AT-802A airplanes. This AD was prompted by reports of cracks in the flap torque tube actuator attachment brackets that may cause the flap actuator to detach from the flap torque tube. This AD requires repetitive visual and dye penetrant inspections of the flap actuator attachment bracket welds for cracks and replacement if cracks are identified. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective April 29, 2021.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of April 29, 2021.

**ADDRESSES:** For service information identified in this final rule, contact Air Tractor, P.O. Box 485, Olney, TX 76374; phone: (940) 564-5616; email: [info@airtractor.com](mailto:info@airtractor.com); website: <https://airtractor.com/>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call 816-329-4148. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0710.

#### Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0710; 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, 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:**

Kenneth A. Cook, Aviation Safety Engineer, Fort Worth ACO Branch, AIR-7F0, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; phone: (817) 222-5475; email: [kenneth.a.cook@faa.gov](mailto:kenneth.a.cook@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Air Tractor Models AT-250, AT-300, AT-301, AT-302, AT-400, AT-400A, AT-401, AT-401A, AT-401B, AT-402, AT-402A, AT-402B, AT-501, AT-502, AT-502A, AT-502B, AT-503, AT-503A, AT-504, AT-602, AT-802, and AT-802A airplanes. The NPRM published in the **Federal Register** on July 28, 2020 (85 FR 45347). The NPRM was prompted by multiple reports of cracks in the brackets attaching the flap actuator motor to the flap torque tube on several models of Air Tractor airplanes.

One of the reports was on a Model AT-802A airplane where the brackets separated from the torque tube at the welds. The flaps suddenly retracted while maneuvering, and the pilot temporarily lost control of the airplane. The pilot was able to regain control of the airplane before it impacted the ground. Since then, there have been 13 reported airplanes with cracks in the flap torque tube attachment brackets.

The design of the flap actuator motor brackets on the Model AT-802A airplane is the same as on Models AT-250, AT-300, AT-301, AT-302, AT-400, AT-400A, AT-401, AT-401A, AT-401B, AT-402, AT-402A, AT-402B, AT-501, AT-502, AT-502A, AT-503, AT-503A, AT-504, AT-602, and AT-802 airplanes.

In the NPRM, the FAA proposed to require repetitive dye penetrant and visual inspections with replacement of the flap torque tube if cracks are found. The FAA is issuing this AD to address the unsafe condition on these products.

**Discussion of Final Airworthiness Directive Comments**

The FAA received comments from two commenters. The commenters were Air Tractor and Field Air Sales and Maintenance Pty Ltd (Field Air). The following presents the comments received on the NPRM and the FAA's response to each comment.

**Requests Regarding the Compliance Times**

Air Tractor requested the FAA clarify whether the hours time-in-service (TIS) compliance times are based on aircraft time or flap torque tube component time. The commenter requested that the AD require compliance based on the hours TIS of the flap torque tube component to account for new torque tubes installed on an existing aircraft.

The FAA disagrees with this comment. The hours TIS compliance required by this AD refers to the hours TIS the airplane operates after the effective date of the AD and after each inspection. Air Tractor has not provided data analysis to identify the root cause of the failures of the torque tubes or to indicate whether the failures are related to the hours TIS of the torque tubes.

Air Tractor and Field Air requested the FAA remove the proposed requirement to perform a dye penetrant inspection within 300 hours TIS after the effective date of the AD. Air Tractor said the proposed requirement does not provide consideration for flap torque tubes that have accumulated less than 900 hours and requested the FAA instead require visual inspections every 300 hours until the flap torque tube accumulates 900 hours TIS. Field Air requested the FAA provide its justification for requiring a dye penetrant inspection within 300 hours TIS.

The FAA disagrees with this comment. The FAA has received no data to indicate that torque tubes with less than 900 hours TIS are unaffected by the unsafe condition. The initial dye penetrant inspection should reveal cracking that might be present on affected airplanes and ensure those cracks are addressed before the repetitive visual and dye penetrant inspections start.

Field Air requested the FAA explain why the proposed AD does not allow the +/- 15 percent tolerance for the visual inspections as specified in Air Tractor Service Letter #347, Revision A, dated December 9, 2019 (SL #347A).

The FAA acknowledges this comment and has changed the compliance time for the visual inspections from 300 hours TIS to 345 hours TIS.

**Request To Allow Replacement Parts With More Than Zero Hours TIS**

Air Tractor and Field Air disagreed with the proposal to replace a cracked torque tube with a new (zero hours time-in-service) torque tube. Field Air requested the FAA explain its justification for this proposal. Air Tractor stated there is no safety reason

to require replacement with a zero-time flap torque tube instead of a flap torque tube that has passed the inspection. Air Tractor noted that allowing replacement with an airworthy flap torque tube would minimize aircraft down time.

The FAA agrees with this comment and has changed the AD to allow the replacement with a used (more than zero hours TIS) torque tube provided the dye penetrant inspection was completed and the part passed the inspection.

**Request Regarding Reporting Requirement**

Air Tractor requested the FAA add a statement to the AD that the agency recommends that cracks be reported to the FAA or to Air Tractor for tracking. Air Tractor stated the language used in the proposed AD suggests that reporting is no longer recommended. Field Air requested the FAA explain its justification for not having a requirement in the AD to report to Air Tractor any cracked welds identified during the inspections.

The FAA acknowledges this comment. This AD is not an interim action. Mandating a report of the results of the inspection is not necessary to correct the unsafe condition. However, the FAA agrees that voluntarily reporting to Air Tractor when cracks are found could aid safety analysis of the fleet.

**Request To Expand Service Letter References**

Air Tractor requested that the requirement in the AD to perform a dye penetrant inspection include step 4B(1) from SL #347A, which specifies gaining access to the flap actuator area by removing skin panels and conducting a visual inspection of the flap control system.

The FAA disagrees with adding step 4B(1) since this step is not required to address the unsafe condition.

Air Tractor also requested the AD require step 4B(11) from SL #347A, which specifies recording in the aircraft records the results of the dye penetrant inspection and what type of dye penetrant was used. Air Tractor referenced the recommendations in FAA Special Airworthiness Bulletin CE-18-26, *Liquid Penetrant Inspection: Using Visible Dye Penetrant*, dated September 4, 2018, and noted that the type of dye penetrant is important information for future inspections.

The FAA disagrees that a change to the AD is necessary. Persons performing maintenance are required by 14 CFR part 43 to make an entry in the airplane maintenance records describing the

work performed. That description should identify the same information specified in step 4B(11).

The FAA did not change this AD based on this comment.

### Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

### Related Service Information Under 1 CFR Part 51

The FAA reviewed Air Tractor, Inc. Service Letter #347, Revision A, dated December 9, 2019. The service letter specifies procedures for repetitive visual inspections and dye penetrant inspections of the flap torque tube brackets for cracks and instructs operators to replace the torque tube as necessary. 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 ADDRESSES.

### Differences Between the AD and the Service Information

Air Tractor SL #347, Rev A specifies performing the dye penetrant inspection within 900 hours TIS, and this AD requires the initial dye penetrant inspection within 300 hours TIS. Air Tractor SL #347, Rev A specifies replacing a cracked torque tube, while this AD requires replacing a cracked torque tube with a torque tube that has zero hours TIS. Air Tractor SL #347, Rev A specifies reporting any cracked welds identified during the inspections.

### Costs of Compliance

The FAA estimates that this AD affects 1,662 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
Dye penetrant inspection .....	4 work-hours × \$85 per hour = \$340 per inspection cycle.	Not applicable	\$340 per inspection cycle .....	\$565,080 per inspection cycle
Visual inspection .....	.5 work-hour × \$85 per hour = \$42.50 per inspection cycle.	Not applicable	\$42.50 .....	\$70,635 per inspection cycle

The FAA estimates the following costs to do any necessary replacements that will be required based on the

results of the inspection. The FAA has no way of determining the number of

airplanes that might need this replacement.

### ON-CONDITION COSTS FOR MODEL AT-802 AND AT-802A

[Potential 485 Airplanes]

Action	Labor cost	Parts cost	Cost per product
Replacement of torque tube .....	3 work-hours × \$85 per hour = \$255 .....	\$1,292	\$1,547

### ON-CONDITION COSTS FOR MODEL AT-602

[Potential 236 Airplanes]

Action	Labor cost	Parts cost	Cost per product
Replacement of torque tube .....	3 work-hours × \$85 per hour = \$255 .....	\$1,140	\$1,395

### ON-CONDITION COSTS FOR MODELS AT-501, AT-502, AT-502A, AT-502B, AT-503, AT-503A, AND AT-504

[Potential 512 Airplanes]

Action	Labor cost	Parts cost	Cost per product
Replacement of torque tube .....	3 work-hours × \$85 per hour = \$255 .....	\$955	\$1,210

### ON-CONDITION COSTS FOR MODELS AT-250, AT-300, AT-301, AT-302, AT-400, AT-400A, AT-401, AT-401A, AT-401B, AT-402, AT-402A, AND AT-402B

[Potential 429 Airplanes]

Action	Labor cost	Parts cost	Cost per product
Replacement of torque tube .....	3 work-hours × \$85 per hour = \$255 .....	\$927	\$1,182

## 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.

## 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:

**2021-05-14 Air Tractor, Inc.:** Amendment 39-21457; Docket No. FAA-2020-0710; Project Identifier 2019-CE-037-AD.

### (a) Effective Date

This airworthiness directive (AD) is effective April 29, 2021.

### (b) Affected ADs

None.

### (c) Applicability

This AD applies to Air Tractor, Inc., (Air Tractor), Models AT-250, AT-300, AT-301, AT-302, AT-400, AT-400A, AT-401, AT-401A, AT-401B, AT-402, AT-402A, AT-402B, AT-501, AT-502, AT-502A, AT-502B, AT-503, AT-503A, AT-504, AT-602, AT-802, and AT-802A airplanes, all serial numbers, certificated in any category.

### (d) Subject

Joint Aircraft System Component (JASC) of America Code: 2750, TE flap control system

### (e) Unsafe Condition

This AD was prompted by reports from Air Tractor that the flap actuator attachment brackets can crack and detach from the torque tube. The FAA is issuing this AD to detect and correct cracks in the flap actuator attachment brackets. The unsafe condition, if not addressed, could lead to the brackets detaching from the torque tube, which could result in an uncommanded retraction of the flaps with consequent loss of airplane control.

### (f) Compliance

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

### (g) Actions

(1) Within 300 hours time-in-service (TIS) after the effective date of this AD and thereafter at intervals not to exceed 900 hours TIS, perform a dye penetrant inspection of each flap torque tube actuator attachment bracket for cracks in accordance with steps 4B(2) through (7) of Air Tractor, Inc., Service Letter #347, Revision A, dated December 9, 2019 (Air Tractor SL #347, Rev A).

(i) If there is a crack, before further flight, replace the flap torque tube with a flap torque tube that has zero hours TIS or a part that has been inspected in accordance with paragraph (g)(1) of this AD and passed the inspection.

(ii) If there are no cracks, before further flight, complete the actions in steps 4B(9) and (10) of Air Tractor SL #347, Rev A.

(2) Within 345 hours TIS after the inspection required by paragraph (g)(1) of this AD and thereafter at intervals not to exceed 345 hours TIS, visually inspect each flap torque tube actuator attachment bracket for cracks in accordance with steps 4A(1) through (3) of Air Tractor SL #347, Rev A. If there is a crack, before further flight, replace the flap torque tube with a flap torque tube that has zero hours TIS or with a flap torque tube that has been inspected in accordance with paragraph (g)(1) of this AD and passed the inspection.

(3) Replacing a flap torque tube does not terminate any of the inspections required by this AD.

## (h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Fort Worth ACO Branch, AIR-7F0, has the authority to approve AMOCs for this AD, if requested using the procedures found in 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 Fort Worth ACO Branch, send it to the attention of the person identified in Related Information.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of your local Flight Standards District Office.

## (i) Related Information

For more information about this AD, contact Kenneth A. Cook, Aviation Safety Engineer, Fort Worth ACO Branch, AIR-7F0, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; phone: (817) 222-5475; email: [kenneth.a.cook@faa.gov](mailto:kenneth.a.cook@faa.gov).

## (j) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference 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) Air Tractor, Inc., Service Letter #347, Revision A, dated December 9, 2019.

(ii) [Reserved]

(3) For Air Tractor, Inc., service information identified in this AD, contact Air Tractor, Inc., P.O. Box 485, Olney, TX 76374; phone: (940) 564-5616; email: [info@airtractor.com](mailto:info@airtractor.com); website: <https://airtractor.com/>.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust St, Kansas City, MO 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 February 24, 2021.

**Gaetano A. Sciortino,**

*Deputy Director for Strategic Initiatives, Compliance & Airworthiness Division, Aircraft Certification Service.*

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