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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000-CE-36-AD; Amendment 39-12610, AD 2002-01-16]

RIN 2120-AA64

Airworthiness Directives; Fairchild Aircraft, Inc. SA26, SA226, and SA227 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes Airworthiness Directive (AD) 86-24-11 and AD 86-25-04, which require you to incorporate, into the Limitations Section of the pilot's operating handbook and airplane flight manual (POH/AFM) of Fairchild Aircraft, Inc. (Fairchild Aircraft) SA226 and SA227 series airplanes, procedures for preventing an engine flameout while in icing conditions. This AD retains the POH/AFM requirements from the above-referenced AD's and requires a modification to the torque sensing system to allow the igniters to automatically turn on when an engine senses low torque. This AD is the result of two instances of a dual engine flameout on the affected airplanes. When the torque sensing system modification is incorporated, the POH/AFM requirements are no longer necessary. The actions specified by this AD are intended to prevent a dual engine flameout on the affected airplanes by providing a system that automatically turns on the engine igniters when low torque is sensed. A dual engine flameout could result in failure of both engines with consequent loss of control of the airplane.

DATES: This AD becomes effective on March 11, 2002.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of March 11, 2002.

ADDRESSES: You may get the service information referenced in this AD from Fairchild Aircraft, Inc., P.O. Box 790490, San Antonio, Texas 78279-0490; telephone: (210) 824-9421; facsimile: (210) 820-8609. You may view this information at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel,Attention: Rules Docket No. 2000-CE-36-AD, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Ingrid Knox, Aerospace Engineer, FAA, Airplane Certification Office, 2601 Meacham Boulevard, Fort Worth, Texas 76193-0150; telephone: (817) 222-5139; facsimile: (817) 222-5960.

SUPPLEMENTARY INFORMATION:

Discussion

What Events Have Caused This AD?

Several occurrences of dual-engine flameout on aircraft caused FAA to examine the service history of certain type-certificated airplanes. Among those examined were the Fairchild Aircraft SA26, SA226, and SA227 series airplanes.

Our analysis reveals the following:

--Two incidents of dual-engine flameout on Fairchild Aircraft SA227 series airplanes; and
--The incidents are unique to the specific airplane configuration and not the generic engine installation.

What Are the Consequences if the Condition Is Not Corrected?

A dual engine flameout could result in failure of both engines with consequent loss of control of the airplane.

Has FAA Taken Any Action to This Point?

We issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to certain Fairchild Aircraft SA26, SA226, and SA227 series airplanes. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on May 30, 2001 (66 FR 29268). The NPRM proposed to require you to incorporate a kit that would modify the torque sensing system to allow the igniters to automatically turn on when an engine senses low torque.

Was the Public Invited To Comment?

The FAA encouraged interested persons to participate in the making of this amendment. We did not receive any comments on the proposed rule or the FAA's determination of the cost to the public.

During the comment period, we realized that the following AD's relate to this subject:

--AD 86-24-11, Amendment 39-5481, which applies to Fairchild Aircraft SA226 series airplanes; and
--AD 86-25-04, Amendment 39-5485, which applies to Fairchild SA227 series airplanes.

These AD's require you to incorporate, into the Limitations Section of the pilot's operating handbook and airplane flight manual (POH/AFM) of Fairchild Aircraft, Inc. (Fairchild Aircraft) SA226 and SA227 series airplanes, procedures for preventing an engine flameout while in icing conditions.

When the torque sensing system modification is incorporated, the POH/AFM requirements are no longer necessary. Therefore, we are superseding these AD's in this action.

FAA's Determination

What Is FAA's Final Determination on This Issue?

After careful review of all available information related to the subject presented above, we have determined that air safety and the public interest require the adoption of the rule as proposed except for the change described above and minor editorial corrections. We determined that these changes:

- Will not change the meaning of the AD; and
- Will not add any additional burden upon the public than was already proposed.

Cost Impact

How Many Airplanes Does This AD Impact?

We estimate that this AD affects 259 airplanes in the U.S. registry.

What Is the Cost Impact of This AD on Owners/Operators of the Affected Airplanes?

We estimate the following costs to accomplish the modification:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
16 workhours x $60 per hour =$960.	Ranges between $1,726 and $6,873 per airplane (we will use a figure of $4,000).	$4,960 per airplane.....	$1,284,640

Compliance Time of This AD

What is the Compliance Time of This AD?

The compliance time of the required modification is within the next 6 calendar months after the effective date of this AD.

Why Is the Compliance Time Presented in Calendar Time Instead of Hours Time-In-Service (TIS)?

Although a dual-engine flameout could only occur on the affected airplanes during airplane operation, the condition is not directly related to airplane usage. The condition exists on the airplanes regardless of whether the airplane has accumulated 50 hours time-in-service (TIS) or 5,000 hours TIS.

The FAA has determined that the 6-calendar-month compliance time:

- Gives all owners/operators of the affected airplanes adequate time to schedule and accomplish the actions in this AD; and
- Ensures that the unsafe condition referenced in this AD will be corrected within a reasonable time period without inadvertently grounding any of the affected airplanes.

Regulatory Impact

Does This AD Impact Various Entities?

The regulations adopted herein 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. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

Does This AD Involve a Significant Rule or Regulatory Action?

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under 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. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

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.

Sec. 39.13 [Amended]

2. FAA amends Sec. 39.13 by removing both Airworthiness Directive (AD) 86-24-11, Amendment 39-5481, and AD 86-25-04, Amendment 39-5485; and by adding a new AD to read as follows:

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
Federal Aviation Administration

We post ADs on the internet at "av-info.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2002-01-16 Fairchild Aircraft, Inc.: Amendment 39-12610, Docket No. 2000-CE-36-AD; Supersedes AD 86-24-11, Amendment 39-5481, and AD 86-25-04, Amendment 39-5485.

(a) *What airplanes are affected by this AD?* This AD affects the following airplane models and serial numbers that are certificated in any category:

Model	Serial numbers
SA26-AT.....	AT100 through AT180E.
SA226-AT.....	AT001 through AT074.
SA226-T.....	T201 through T275, and T277 through T291.
SA226-T(B).....	T276 and T292 through T417.
SA226-TC.....	TC201 through TC419.
SA227-AC.....	AC406, AC415, AC416, AC420 through AC633, AC637, AC638, AC641 through AC644, AC647, AC648, AC651, AC652, AC656, and AC657.
SA227-AT.....	AT423 through AT631.
SA227-TT.....	TT421 through TT547.

(b) *Who must comply with this AD?* Anyone who wishes to operate any of the airplanes identified in paragraph (a) of this AD must comply with this AD.

(c) *What problem does this AD address?* The actions specified by this AD are intended to prevent a dual engine flameout on the affected airplanes by providing a system that automatically turns on the engine igniters when low torque is sensed. A dual engine flameout could result in failure of both engines with consequent loss of control of the airplane.

(d) *What actions must I accomplish to address this problem?* To address this problem, you must accomplish the following:

Actions	Compliance	Procedures
(1) Incorporate, into the Limitations Section of the pilot's operating handbook and airplane flight manual(POH/AFM), the procedures included as Appendix 1 or Appendix 2 of this AD, as applicable. Following these procedures is intended to prevent an engine flameout while in icing conditions.	For all airplanes except for the Model SA26-AT airplanes: within the next 50 hours time-in-service(TIS) after December 15, 1986(the effective date of AD 86-24-11 and AD 86-25-04), unless already accomplished (compliance with either AD 86-24-11 or AD 86-25-04, as applicable). For the Model SA26-AT airplanes: within the next 50 hours TIS after March 11, 2002 (the effective date of this AD).	Procedures are included in Appendix 1 and Appendix 2 of the AD.

(2) Incorporate the kit specified in the applicable service bulletin. This kit modifies the torque sensing system to allow the igniters to automatically turn on when an engine senses low torque.	Within the next 6 calendar months after March 11, 2002 (the effective date of this AD).	Accomplish the modification in accordance with the instructions provided with the kit that is referenced in either Fairchild Aircraft Service Bulletin 26-74-30-048 (FA Kit Drawing26K82301), Revised: April 13, 2000; Fairchild Aircraft Service Bulletin No. 226-74-003 (FA Kit Drawing 27K82087), Issued: March 21, 2000; Fairchild Aircraft Service Bulletin 227-74-003 (FA Kit Drawing 27K82087), Issued: March 21, 2000; or Fairchild Aircraft Service Bulletin 227-74-001, Issued: July8, 1986, as applicable.
(3) You may remove the POH/ AFM procedures as required by paragraph (1) of this AD after accomplishing the modification required in paragraph (d)(2) of this AD.	You may remove the procedures at any time after accomplishing the modification. You can accomplish the modification at any time, but you must accomplish it within the next 6 calendar months after March 11, 2002 (the effective date of this AD).	Not applicable.

Note 1: The POH/AFM procedures that are included in Appendix 1 and Appendix 2 of this AD (required by paragraph (d)(1) of this AD) are retained from AD 86-24-11, Amendment 39-5481, and AD 86-25-04, Amendment 39-5485. No further action is required by paragraph (d)(1) of this AD if you are already in compliance with AD 86-24-11 or AD 86-25-04. As specified in paragraph (d)(3) of this AD, these POH/AFM procedures are no longer necessary after accomplishment of the modification in paragraph (d)(2) of this AD.

(e) *Can I comply with this AD in any other way?* You may use an alternative method of compliance or adjust the compliance time if:

(1) Your alternative method of compliance provides an equivalent level of safety; and

(2) The Manager, Fort Worth Airplane Certification Office (ACO), approves your alternative. Submit your request through an FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Fort Worth ACO.

Note 2: This AD applies to each airplane identified in paragraph (a) of this AD, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if you have not eliminated the unsafe condition, specific actions you propose to address it.

(f) *Where can I get information about any already-approved alternative methods of compliance?* Contact Ingrid Knox, Aerospace Engineer, FAA, Airplane Certification Office, 2601 Meacham Boulevard, Fort Worth, Texas 76193-0150; telephone: (817) 222-5139; facsimile: (817) 222-5960.

(g) *What if I need to fly the airplane to another location to comply with this AD?* The FAA can issue a special flight permit under sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate your airplane to a location where you can accomplish the requirements of this AD.

(h) *Are any service bulletins incorporated into this AD by reference?* The modification required by this AD must be done in accordance with instructions provided with the kit that is referenced in either Fairchild Aircraft Service Bulletin 26-74-30-048 (FA Kit Drawing 26K82301), Revised: April 13, 2000; Fairchild Aircraft Service Bulletin No. 226-74-003 (FA Kit Drawing 27K82087), Issued: March 21, 2000; Fairchild Aircraft Service Bulletin 227-74-003 (FA Kit Drawing 27K82087), Issued: March 21, 2000; or Fairchild Aircraft Service Bulletin 227-74-001, Issued: July 8, 1986, as applicable. The Director of the Federal Register approved this incorporation by reference under 5 U.S.C. 552(a) and 1 CFR part 51. You can get copies from Fairchild Aircraft, Inc., P.O. Box 790490, San Antonio, Texas 78279-0490. You can view this information at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Room 506, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(i) *When does this amendment become effective?* This amendment becomes effective on March 11, 2002.

Appendix 1--Supplement to the POH/AFM for Fairchild Aircraft Models SA26-AT, SA226-AT, SA226-T, SA226-T(B), and SA226-TC Airplanes

The IGNITION MODE switches shall be selected to AUTO/CONT during all operations in actual or potential icing conditions described herein:

(1) During takeoff and climb out in actual or potential icing conditions.

*(2) When ice is visible on, or shedding from propeller(s), spinner(s), or leading edge(s).

*(3) Before selecting ANTI-ICE, when ice has accumulated.

(4) Immediately, any time engine flameout occurs as possible result of ice ingestion.

(5) During approach and landing while in or shortly following flight in actual or potential icing conditions.

***Note:** If icing conditions are entered in flight without the engine anti-icing system having been selected, switch one ENGINE system to an ENGINE HEAT position. If the engine runs satisfactorily, switch the second ENGINE system to an ENGINE HEAT position and check that the second engine continues to run satisfactorily.

For the purpose of this POH/AFM supplement, the following definition applies:

"Potential icing conditions in precipitation or visible moisture meteorological conditions:

(1) Begin when the OAT is plus 5 degrees C (plus 41 degrees F) or colder, and

(2) End when the OAT is plus 10 degrees C (plus 50 degrees F) or warmer."

The procedures and conditions described in this appendix supersede any other POH/AFM procedures or conditions.

Appendix 2--Supplement to the POH/AFM for Fairchild Aircraft Models SA227-AC, SA227-AT, and SA226-TT Airplanes

The IGNITION MODE switches shall be selected to OVERRIDE or, for those aircraft which have the auto-relite system installed, CONTINUOUS OR AUTO during all operations in actual or potential icing conditions described herein:

(1) During takeoff and climb out in actual or potential icing conditions.

*(2) When ice is visible on, or shedding from propeller(s), spinner(s), or leading edge(s).

*(3) Before selecting ANTI-ICE, when ice has accumulated.

(4) Immediately, any time engine flameout occurs as possible result of ice ingestion.

(5) During approach and landing while in or shortly following flight in actual or potential icing conditions.

***Note:** If icing conditions are entered in flight without the engine anti-icing system having been selected, switch one ENGINE system to an ENGINE HEAT position. If the engine runs satisfactorily, switch the second ENGINE system to an ENGINE HEAT position and check that the second engine continues to run satisfactorily.

For the purpose of this POH/AFM supplement, the following definition applies:

"Potential icing conditions in precipitation or visible moisture meteorological conditions:

(1) Begin when the OAT is plus 5 degrees C (plus 41 degrees F) or colder, and

(2) End when the OAT is plus 10 degrees C (plus 50 degrees F) or warmer."

The procedures and conditions described in this appendix supersede any other POH/AFM procedures or conditions.

Issued in Kansas City, Missouri, on January 17, 2002.

James E. Jackson,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

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