

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 39**

[Docket No. 97-CE-07-AD; Amendment 39-11064; AD 97-05-03 R1]

RIN 2120-AA64

Airworthiness Directives; AlliedSignal Avionics, Inc. Models GNS-XLS and GNS-XI Flight Management Systems

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment revises Airworthiness Directive (AD) 97-05-03, which currently requires inserting a limitation into the Operations Limitation Section of the Airplane Flight Manual (AFM) or Flight Manual Supplement for all owners/operators of aircraft equipped with an AlliedSignal Avionics, Inc. (AlliedSignal) Models GNS-XLS or GNS-XI global positioning systems (GPS) flight management system. The limitation specifies prohibiting the use of these AlliedSignal GPS units on previously published non-precision approaches. This AD is the result of AlliedSignal issuing service information that specifies procedures for accomplishing hardware and software modifications to the affected flight management systems. The Federal Aviation Administration (FAA) determined that accomplishment of the actions of the service bulletins should be considered as an alternative method of compliance to the actions of AD 97-05-03. This AD retains the actions of AD 97-05-03, and incorporates the service bulletins into the AD, as an alternative method of compliance to the existing AD. The actions specified by this AD are intended to continue to prevent deviation from an intended flight path during a non-precision approach to an airport caused by inaccurate information from the GPS flight management system.

DATES: Effective April 20, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of April 20, 1999.

ADDRESSES: Service information that applies to this AD may be obtained from AlliedSignal Aerospace, Commercial Avionics Systems, 400 N. Rogers Road, Olathe, Kansas 66062. This information may also be examined at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 97-CE-07-

AD, Room 1558, 601 E. 12th Street, 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: Mr. Jose Flores, Aerospace Engineer, FAA, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; telephone: (316) 946-4133; facsimile: (316) 946-4407.

SUPPLEMENTARY INFORMATION:**Events Leading to the Issuance of This AD**

A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to aircraft equipped with an AlliedSignal Models GNS-XLS or GNS-XI global positioning systems (GPS) flight management system was published in the **Federal Register** as a notice of proposed rulemaking (NPRM) on October 29, 1998 (63 FR 57955). The NPRM proposed to revise AD 97-05-03, Amendment 39-9947 (62 FR 8617, February 26, 1997), which currently requires inserting the following limitation into the Operations Limitations Section of the AFM or Flight Manual Supplement for all owners/operators of aircraft equipped with an AlliedSignal Models GNS-XLS or GNS-XI GPS flight management system:

Operating Limitations

The GNS-XI (or GNS-XLS) is not approved for non-precision approaches.

NOTE

The GNS-XI (or GNS-XLS) may generate misleading information during non-precision GPS or Overlay approaches due to software limitations.

The NPRM proposed to retain the AFM requirements of AD 97-05-03, and would incorporate the hardware and software modifications specified in GlobalWulfberg Software Bulletin No: GNS-XI-SW1, dated February 1997, and BENDIX/KING Software Bulletin No: GNS-XLS-SW2, dated February 1997, into the AD, as an alternative method of compliance to the AFM requirements.

The NPRM was the result of AlliedSignal issuing service information that specifies procedures for accomplishing hardware and software modifications to the affected flight management systems. The Federal Aviation Administration (FAA) determined that accomplishment of the actions of the service bulletins should be considered as an alternative method

of compliance to the actions of AD 97-05-03.

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were received on the proposed rule or the FAA's determination of the cost to the public.

The FAA's Determination

After careful review of all available information related to the subject presented above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed except for minor editorial corrections. The FAA has determined that these minor corrections will not change the meaning of the AD and will not add any additional burden upon the public than was already proposed.

Compliance Time of This AD

The condition specified by this AD is not caused by actual hours time-in-service (TIS) of the aircraft where the affected flight management systems are installed. The need for the AFM requirement or hardware and software modifications has no correlation to the number of times the equipment is utilized or the age of the equipment. For this reason, the compliance time of this AD (as was AD 97-05-03) is presented in calendar time instead of hours TIS.

Cost Impact

The FAA estimates that 110 of the affected flight management systems are installed on aircraft of U.S. registry. This AD will require the same actions as AD 97-05-03, except it allows for accomplishing hardware and software modifications to the affected flight management systems, as an alternative method of compliance.

It will take approximately 1 workhour per aircraft with the affected flight management system installed to accomplish the hardware and software modifications. No parts are required to incorporate the modifications. Based on these figures, the total cost impact of this AD on the U.S. operators of the affected aircraft who choose to incorporate the software and hardware modifications (instead of the AFM limitation) is estimated to be \$6,600, or \$60 per airplane.

For U.S. operators who choose to incorporate the AFM limitations, an owner/operator of the affected airplanes holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7) can accomplish this action provided an entry is made in the aircraft records showing compliance with this

AD in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9). Therefore, the only cost impact of incorporating the AFM limitation is the time it will take each owner/operator of the affected aircraft to accomplish the action.

Regulatory Impact

The regulations adopted herein will not have substantial direct effects 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, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the

Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13, is amended by removing Airworthiness Directive (AD) 97-05-03, Amendment 39-9947 (62 FR 8617, February 26, 1997), and adding a new AD to read as follows:

97-05-03 R1 AlliedSignal Avionics Inc.:
Amendment 39-11064; Docket No. 97-CE-07-AD; Revises AD 97-05-03, Amendment 39-9947.

Applicability: Models GNS-XIs and GNS-XI global positioning systems (GPS), part numbers (P/N) 17960-0102-XXXX and P/N 18355-0101-XXXX, respectively, installed on, but not limited to the following aircraft, certificated in any category:

Manufacturer	Models
British Aerospace, Ltd. (BAe)	146-100A and 146-200A
Cessna Aircraft Corporation	525, 550, and 560
Dausault Aviation	Mystere-Falcon 20 and 50
Avions Marcel Dassault	Falcon 10
Gulfstream Aerospace	G-1159 (G-II) and G-1159A (G-III)
Raytheon Corporate Jets	Hawker 800
Israel Aircraft Industries, Ltd.	1124
Sabreliner Corporation	NA-65
Learjet Inc.	35
Jetstream Aircraft Ltd.	4101

Note 1: This AD applies to each aircraft that has one of the GPS flight management systems installed that is identified in the preceding applicability provision, regardless of whether the aircraft has been modified, altered, or repaired in the area subject to the requirements of this AD. For aircraft 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 the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required within 5 days after March 18, 1997 (the effective date of AD 97-05-03), unless already accomplished (compliance with AD 97-05-03).

To prevent deviation from an intended flight path during a non-precision approach to an airport caused by inaccurate information from the GPS flight management system, accomplish the following:

(a) Insert the following limitation into the Operations Limitations Section of the Airplane Flight Manual (AFM) or Flight Manual Supplement:

"Operating Limitations

The GNS-XI (or GNS-XIs) is not approved for non-precision approaches.

NOTE

The GNS-XI (or GNS-XIs) may generate misleading information during non-precision GPS or Overlay approaches due to software limitations."

(b) Inserting a copy of this AD into the Limitations section as described in paragraph (a) of this AD is considered compliance with the requirements of paragraph (a) of this AD.

(c) Incorporating the AFM revisions, as required by paragraph (a) or (b) of this AD, may be performed by the owner/operator holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7), and must be entered into the aircraft records showing compliance with this AD in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).

(d) As an alternative method of compliance to the actions required by paragraph (a) or (b) of this AD, accomplish hardware and software modifications in accordance with both GlobalWulfsberg Software Bulletin No: GNS-XI-SW1, dated February 1997, and BENDIX/KING Software Bulletin No: GNS-XIs-SW2, dated February 1997, as applicable.

(e) An alternative method of compliance or adjustment of the compliance time that provides an equivalent level of safety may be approved by the Manager, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Wichita Aircraft Certification Office.

Note 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from Wichita Aircraft Certification Office.

(f) The hardware and software modifications required by this AD (as an alternative method of compliance) shall be done in accordance with GlobalWulfsberg Software Bulletin No: GNS-XI-SW1, dated February 1997, and BENDIX/KING Software Bulletin No: GNS-XIs-SW2, dated February 1997. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from AlliedSignal Aerospace, Commercial Avionics Systems, 400 N. Rogers Road, Olathe, Kansas 66062. Copies may be inspected at the FAA, Central Region, Office of the Regional Counsel, Room 1558, 601 E.

12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(g) This amendment revises AD 97-05-03, Amendment 39-9947.

(h) This amendment becomes effective on April 20, 1999.

Issued in Kansas City, Missouri, on February 26, 1999.

Michael Gallagher,

Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 99-5728 Filed 3-9-99; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 98-CE-65-AD; Amendment 39-11066; AD 99-06-02]

RIN 2120-AA64

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

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that applies to certain Fairchild Aircraft, Inc. (Fairchild) SA226 and SA227 series airplanes. This AD requires repetitively inspecting the wing spar center web cutout on both wings for cracks between Wing Station (WS) 8 and WS 17.5, and immediately repairing any area found cracked. This repair will eliminate the need for the repetitive inspections on that particular wing spar. This AD is the result of reports of cracks in the wing spar center web cutout caused by fatigue due to airplane maneuvering and wind gusts. The actions specified by this AD are intended to detect and correct fatigue cracking of the wing spar center web cutout area, which could result in structural failure of the wing spar to the point of failure with consequent loss of control of the airplane.

DATES: Effective April 16, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of April 16, 1999.

ADDRESSES: Service information that applies to this AD may be obtained from Field Support Engineering, Fairchild Aircraft, Inc., P.O. Box 790490, San Antonio, Texas 78279-0490; telephone:

(210) 824-9421; facsimile: (210) 820-8609. This information may also be examined at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 98-CE-65-AD, Room 1558, 601 E. 12th Street, 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: Mr. Hung Viet Nguyen, FAA, Airplane Certification Office, 2601 Meacham Boulevard, Fort Worth, Texas 76193-0150; telephone: (817) 222-5155; facsimile: (817) 222-5960.

SUPPLEMENTARY INFORMATION:

Events Leading to the Issuance of This AD

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 SA226 and SA227 series airplanes was published in the **Federal Register** as a notice of proposed rulemaking (NPRM) on July 31, 1998 (63 FR 40846). The NPRM proposed to require repetitively inspecting the wing spar center web cutout on both wings for cracks between WS 8 and WS 17.5, and immediately repairing any area found cracked. This repair would eliminate the need for the repetitive inspections on that particular wing spar. Accomplishment of the proposed action as specified in the NPRM would be required in accordance with the following documents:

- Fairchild Airframe Airworthiness Limitations Manual ST-UN-M001, Rev. No. C-6, dated April 7, 1998;
- Fairchild Airframe Inspection Manual ST-UN-M002, Rev. No. A-6, dated December 8, 1997;
- Fairchild Airframe Airworthiness Limitations Manual ST-UN-M003, Rev. No. 5, dated April 7, 1998;
- SA226/227 Series Structural Repair Manual, part number (P/N) 27-10054-079, pages 57 through 90; Initial Issue: March 1, 1983; Revision 28, dated June 24, 1998; and
- SA227 Series Structural Repair Manual, P/N 27-10054-127, pages 47 through 60; Initial Issue: December 1, 1991; Revision 7, dated June 24, 1998.

The NPRM was the result of reports of cracks in the wing spar center web cutout caused by fatigue due to airplane maneuvering and wind gusts.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the following comments.

Comment Issue No. 1: Allow Flight When Cracks in the Wing Spar Center Web Do Not Exceed a Certain Length

Five commenters request that the FAA structure the proposed AD in a way that would allow continued flight if cracks were found in the wing spar center web cutout provided the cracks did not exceed a certain limit. One of these commenters states that, although requiring replacement of the wing spar center web if any crack is found is a good idea, many airplanes would be grounded while waiting for parts and that flight with a small crack is not necessarily unsafe.

The FAA does not concur that flight should be allowed with cracks in the wing spar center web cutout regardless of the size of the cracks. Extensive analysis of the consequences of flying with known cracks in primary structure prompted the FAA to establish a policy that disallows airplane operation when these cracks exist. In certain circumstances, the FAA would allow flight with minor cracks provided an acceptable inspection and replacement schedule was submitted. Among the criteria for allowing flight with minor cracks are as follows:

- Substantiation that the cracks are not in primary structure;
- Substantiation that the cracks are in fail-safe structure. Various combinations of analysis and test, including that provided at the time of original certification, may be considered as ample substantiation. This must include the ability to sustain ultimate load with the maximum permissible crack. Other valid substantiations that may be considered include various combinations of fracture mechanics analysis, flight test, ground test. Temporary repairs such as "stop drilling" should be specified; or
- Substantiation to verify that the single load path structure with the known cracks has the ability to carry ultimate loads. Various combinations of fracture mechanics analysis, flight test, ground test, or proof test may be considered as ample substantiation. Only when unusual circumstances exist, such as the difficulty of an operator in obtaining replacement parts, will this be allowed.

Under no circumstances can any of these exceptions be considered as more than a temporary condition.

The FAA has not received information and documentation that meet any of the above criteria. Therefore, no changes are necessary to the final rule as a result of these comments.