

[Federal Register: September 26, 2002 (Volume 67, Number 187)]
[Rules and Regulations]
[Page 60558-60561]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr26se02-6]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NM-235-AD; Amendment 39-12894; AD 2002-19-14]

RIN 2120-AA64

Airworthiness Directives; Lockheed C-130A Airplanes, Type Certificated in the Restricted Category

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to all Lockheed C-130A airplanes, type certificated in the restricted category. This action requires repetitive inspections to detect cracks at fastener holes in the left- and right-side lower skin panels and stringers of the center wing between wing stations 41.0 and 71.0; and replacement of any cracked part with a new part, or repair and inspections at new intervals. This action is necessary to detect and correct fatigue cracking in the left- and right-side lower skin panels and stringers of the center wing, which could result in structural failure of the wings and consequent loss of control of the airplane. This action is intended to address the identified unsafe condition.

DATES: Effective September 26, 2002.

Comments for inclusion in the Rules Docket must be received on or before November 25, 2002.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2002-NM-235-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments may be inspected at this location between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays. Comments may be submitted via fax to (425) 227-1232. Comments may also be sent via the Internet using the following address: 9-anm-iarcomment@faa.gov. Comments sent via fax or the Internet must contain "Docket No. 2002-NM-235-AD" in the subject line and need not be submitted in triplicate. Comments sent via the Internet as attached electronic files must be formatted in Microsoft Word 97 for Windows or ASCII text.

Information pertaining to this AD may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia.

FOR FURTHER INFORMATION CONTACT: William Herderich, Aerospace Engineer, Airframe and Propulsion Branch, ACE-117A, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia 30349; telephone (770) 703-6082; fax (770) 703-6097.

SUPPLEMENTARY INFORMATION: On June 17, 2002, while dropping retardant on a fire near Walker, California, a United States Department of Agriculture (USDA) Forest Service Model C-130A airplane was involved in an accident, resulting from the structural failure of the center wing. Investigation revealed fatigue cracking in the lower skin panels and stringers of the center wing. The cause of such fatigue cracking has been attributed to the age, time-in-service, and flight cycles of the airplane. Such fatigue cracking, if not detected and corrected, could result in structural failure of the wings and consequent loss of control of the airplane.

FAA's Determination

We have determined that extensive cracking (multiple-site damage (MSD)) of the left- and right-side lower skin panels of the center wing between wing stations 41.0 and 71.0 and the front and rear spars, is likely to occur on Lockheed C-130A airplanes, type certificated in the restricted category. Repetitive inspections of these areas are necessary to ensure that cracks will be detected, and corrective action taken, to preclude crack growth to a size that would create an unacceptable risk of structural failure.

MSD is characterized by the simultaneous presence, at multiple locations, of relatively small fatigue cracks that have the same geometry and stress level. The presence of MSD is usually an indicator of normal fatigue wearout, as opposed to any kind of an anomaly (e.g., material or manufacturing defect). The length of critical MSD cracks is typically much smaller than that of a single, isolated critical crack.

Based on the reports of cracking, we have determined that the repetitive inspections required by this AD will focus on fastener holes penetrating the lower skin panels and stringers of the center wing in the affected areas. Due to the nature of MSD cracking, the cracks that will need to be detected are very small, perhaps less than 0.10 inch in length. While inspection methodologies exist that can be used to detect cracks of this size, we are currently unaware of any for Lockheed C-130A airplanes, type certificated in the restricted category. Therefore, owners and operators must submit inspection procedures and repetitive inspection intervals to the Manager, Atlanta Aircraft Certification Office (ACO), FAA. The inspection procedures must be sufficiently reliable to determine the location and orientation of cracks that are very small, perhaps less than 0.10 inch in length. A potential inspection method would be to develop an inspection procedure using a bolt hole eddy current technique, develop a reference standard to calibrate the test instruments, and then use the developed inspection procedures and calibrated instruments to detect cracks. Other potential inspection methods include eddy current, eddy current arrays, and ultrasonic techniques. Certain types of inspections, such as a radiographic, are inadequate to detect small crack lengths. Because of the potential catastrophic nature of this cracking, the initial inspection must be performed within 4 days after the effective date of this AD.

Repetitive inspections must be performed at intervals that prevent crack growth from exceeding the minimum residual strength required to support ultimate load on the affected structure. These repetitive inspection intervals must be based on a damage tolerance assessment of the skin panels and stringers. Guidance for damage tolerance procedures may be found in Advisory Circular (AC) 25.571-1C, dated April 29, 1998.

If any crack is detected during any inspection, operators must replace the cracked part with a new part; or repair and inspect at new intervals based on a damage-tolerance assessment of the wing panels and stringers, per a method approved by the Atlanta ACO. The repair must include a damage tolerance assessment as noted above, in addition to analysis showing static strength capability in

compliance with the certification basis of the airplane. In the case of the repair, determination of new inspection intervals based on a damage-tolerance assessment of the repaired wing panels and stringers is necessary, because the repair may alter the inspection intervals that are necessary in order to detect cracks before the structure fails. Conversely, in the case of a replacement with a new part, the inspection intervals that apply to the unrepaired structure continue to be applicable.

In addition, operators must report the results of inspections to the Atlanta ACO. As a minimum, the report must include the following information:

- Airplane manufacturer's serial number(s);
- Time-in-service of airplane;
- Applicable type certificate data sheet;
- Description of usage under which the restricted category was issued (see 14 CFR part 21.25(b));
- Part numbers and time-in-service of damaged and undamaged parts; and
- Diagram(s) showing the location and orientation of cracks, and if available, the length of cracks.

Explanation of the Requirements of the Rule

Since an unsafe condition has been identified that is likely to exist or develop on other Lockheed C-130A airplanes, type certificated in the restricted category, this AD is being issued to detect and correct fatigue cracking in the left- and right-side lower skin panels and stringers of the center wing, which could result in structural failure of the wings and consequent loss of control of the airplane. This AD requires repetitive inspections to detect cracks at fastener holes in the left- and right-side lower skin panels and stringers of the center wing between wing stations 41.0 and 71.0; and replacement of any cracked part with a new part, or repair and inspections at new intervals. This AD also requires operators to submit a report of the inspection findings to the FAA.

Interim Action

This is considered to be interim action until final action is identified, at which time we may consider further rulemaking.

Determination of Rule's Effective Date

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified under the caption ADDRESSES. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Submit comments using the following format:

- Organize comments issue-by-issue. For example, discuss a request to change the compliance time and a request to change the service bulletin reference as two separate issues.
- For each issue, state what specific change to the AD is being requested.
- Include justification (e.g., reasons or data) for each request.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2002-NM-235-AD." The postcard will be date stamped and returned to the commenter.

Regulatory Impact

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.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, 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 adding the following new airworthiness directive:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.airweb.faa.gov/rg1"

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).

2002-19-14 Lockheed C-130A Airplanes: Amendment 39-12894. Docket 2002-NM-235-AD.

Applicability: Including, but not limited to, all of the following Lockheed C-130A airplanes, type certificated in the restricted category:

Central Air Service, Inc., Model C-130A airplanes, Type Certificate Data Sheet (TCDS) No. A39CE, Revision 2;

Hawkins & Powers Aviation, Inc., Model HP-C-130A airplanes, TCDS No. A30NM, Revision 1;

Hemet Valley Flying Service Model C-130A airplanes, TCDS No. A31NM, Revision 0;

LeSEA Model C-130A airplanes, TCDS No. A34SO, Revision 0;

Snow Aviation International, Inc., Model C-130A airplanes, TCDS No. TQ3CH, Revision 1;

United States Department of Agriculture (USDA) Forest Service Model C-130A airplanes, TCDS No. A15NM, Revision 4;

Western International Aviation, Inc., Model C-130A airplanes, TCDS No. A33NM, Revision 0;
and

Any other surplus Military C-130A airplanes.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, 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 (d) 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 as indicated, unless accomplished previously.

To detect and correct fatigue cracking in the left- and right-side lower skin panels and stringers of the center wing, which could result in structural failure of the wings and consequent loss of control of the airplane, accomplish the following:

Inspection

(a) Within 4 days after the effective date of this AD, do the actions specified in paragraphs (a)(1) and (a)(2) of this AD per a method approved by the Manager, Atlanta Aircraft Certification Office (ACO), FAA.

(1) Do an inspection to detect cracks at fastener holes in the left- and right-side lower skin panels and stringers of the center wing between wing stations 41.0 and 71.0. The inspection procedures must be sufficiently reliable to determine the location and orientation of cracks that are very small, perhaps less than 0.10 inch in length.

(2) Develop repetitive inspection intervals that prevent crack growth from exceeding the minimum residual strength required to support ultimate load on the affected structure. The repetitive inspection intervals must be based on a damage-tolerance assessment of the wing panels and stringers and be approved by the Manager, Atlanta ACO. Guidance for damage tolerance procedures may be found in Advisory Circular (AC) 25.571-1C, dated April 29, 1998. Thereafter, do the inspection approved per paragraph (a)(1) of this AD at the intervals approved per this paragraph.

(b) If any crack is detected during any inspection required by this AD, before further flight, do the action(s) specified in paragraph (b)(1) or (b)(2) of this AD.

(1) Replace the cracked part with a new part and continue to inspect per paragraph (a) of this AD.

(2) Repair and inspect at new intervals based on a damage-tolerance assessment of the wing panels and stringers, per a method approved by the Manager, Atlanta ACO. The repair must include a damage-tolerance assessment as noted above, in addition to an analysis showing static strength capability in compliance with the certification basis of the airplane. Guidance for damage tolerance procedures may be found in Advisory Circular (AC) 25.571-1C, dated April 29, 1998.

Reporting Requirement

(c) Within 10 days after accomplishing the initial inspection required by paragraph (a)(1) of this AD, submit a report of the inspection results (both positive and negative) to the Manager, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia 30349; fax (770) 703-6097. Information collection requirements contained in this AD have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056. As a minimum, the report must include:

- (1) Airplane manufacturer's serial number(s);
- (2) Time-in-service of airplane;
- (3) Applicable TCDS;
- (4) Description of usage under which the restricted category was issued (see 14 CFR part 21.25(b));
- (5) Part numbers and time-in-service of damaged and undamaged parts; and

Note 2: Reports of "rehabed" wings indicate that wing panels and stringers may have been replaced.

(6) Diagram(s) showing the location and orientation of cracks, and if available, the length of cracks.

Alternative Methods of Compliance

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta ACO. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

Note 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Atlanta ACO.

Special Flight Permits

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Effective Date

(f) This amendment becomes effective on September 26, 2002.

Issued in Renton, Washington, on September 20, 2002.

Vi L. Lipski,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 02-24416 Filed 9-23-02; 12:24 pm]

BILLING CODE 4910-13-P