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[Page 8504-8507]
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2003-NE-59-AD; Amendment 39-13982; AD 2005-04-10]

RIN 2120-AA64

Airworthiness Directives; General Electric Company CT58 Series and Surplus Military T58 Series Turboshift Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for General Electric Company (GE) CT58-140-1, CT58-140-2, and surplus military T58-GE-5, -10, -100, and -402 turboshaft engines with certain serial numbers (SNs) of stage 1 compressor disks, part number (P/N) 5001T20P01, installed. This AD requires removing certain stage 1 compressor disks from service before reaching a reduced low-cycle-fatigue (LCF) life limit for those affected disks of 2,100 hours time-since-new (TSN) or by December 31, 2008, whichever occurs first. This AD results from two reports of low blade tip clearances in the compressor. We are issuing this AD to prevent LCF cracking and failure of the stage 1 compressor disk, an uncontained engine failure, and damage to the helicopter.

DATES: This AD becomes effective March 29, 2005.

ADDRESSES: Contact GE Aircraft Engines Customer Support Center, M/D 285, 1 Neumann Way, Evendale, OH 45215, telephone (513) 552-3272; fax (513) 552-3329, e-mail GEAE.csc@ae.ge.com, for the service information identified in this AD.

You may examine the AD docket at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA. You may examine the service information, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

FOR FURTHER INFORMATION CONTACT: Norman Brown, Senior Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone 781-238-7181; fax 781-238-7199.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with a proposed AD. The proposed AD applies to GE CT58-140-1, CT58-140-2, and surplus military T58-GE-5, -10, -100, and -402 series turboshaft engines with certain SNs of stage 1 compressor disks, P/N 5001T20P01, installed. We published the proposed AD in the Federal Register on February 26, 2004 (69 FR 8875). That action proposed to require removing certain stage 1 compressor disks from service before reaching a reduced LCF life limit for those affected disks of 2,100 hours TSN or by December 31, 2008, whichever occurs first.

Examining the AD Docket

You may examine the AD Docket (including any comments and service information), by appointment, between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. See ADDRESSES for the location.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received, which are all from GE.

Request To Change the Number of U.S. Engines Affected

One commenter, GE, requests that we change the estimated number of affected engines installed on helicopters of U.S. registry from 45 to 30. The commenter states that this number is a more accurate estimate of engines in the U.S. and affects the total cost of disk replacement by one third. GE bases this quantity change on their engine tracking system.

We agree, and have changed that number in the final rule based on GE's estimate of the number of affected engines.

Request To Add "Surplus Military" Before References to T58

GE requests that we add "surplus military" before all references to "T58-GE-5", to differentiate those engines from the commercially-designated CT58 engines.

We agree, and have made these changes in the final rule, which includes surplus military models T58-GE-5, T58-GE-10, -100, and -402.

Request To Change the Unsafe Condition Description

GE requests that we change the unsafe condition description of "We are issuing this AD to prevent low cycle fatigue (LCF) cracking and failure of the stage 1 compressor disk, an uncontained engine failure, and damage to the helicopter" to "We are issuing this AD to prevent low-cycle-fatigue (LCF) cracking of the stage 1 compressor disk." GE states that they do not consider the condition to be unsafe based on their investigation and analysis of this condition.

We do not agree. We reviewed GE's investigation and engineering analysis data with GE, and concluded there is an unsafe condition that requires an AD. The basis for the unsafe condition description in the proposed AD completes the potential scenario leading to the unsafe condition, should the disk cracking continue to an uncontained disk failure, resulting in damage to the helicopter. Further, our statement of the unsafe condition does not change the compliance requirements of GE Alert Service Bulletin No. 72-A0196. We have made no changes to the AD based on this comment.

Request To Change Wording in the Discussion of the Proposed AD

GE requests that we change some wording in the discussion of the proposed AD from "An investigation by GE revealed that the tangential positioning of the blade dovetail slot resulted in the high-peak stresses." to "An investigation conducted by GE determined that a defined population of stage 1 compressor disks had non-conforming tangential positioning of the blade dovetail slots, which resulted in high-peak stresses at the disk dovetail slot aft acute corner". GE did not indicate any justification or reason for the proposed change.

We evaluated the change and determined it does offer a more detailed description and points out a nonconformance. However, this discussion information only appears in the proposed AD and not in the final rule, so we have made no change to the AD based on this comment.

Request To Change Requirements Statement

GE requests that we change the requirements statement from "We are proposing this AD which would require removing certain stage 1 compressor disks from service at or before reaching a reduced LCF life limit of 2,100 hours TSN or by December 31, 2008, whichever occurs first" to "We are proposing this AD which would require removing certain stage 1 compressor disks from service at or before reaching 2,100 hours TSN or by December 31, 2008, whichever occurs first". GE states that they recommend compliance with GE Alert Service Bulletin No. 72-A0196. GE also reminds the FAA that the published FAA-approved life limit for P/N 5001T20P01 is 4,000 hours or 9,900 cycles.

We partially agree. GE points out that the published FAA-approved life limit for compressor disks, P/N 5001T20P01, is 4,000 hours or 9,900 cycles, for most of the SN disks with this P/N, while the affected SN population of disks has a reduced life limit of 2,100 hours or December 31, 2008, whichever occurs first. The intent of this AD is to require removing the affected disks that need the reduced life limit because of the nonconformity of those disks. We have changed the requirements statement of this AD to state "This AD requires removing certain stage 1 compressor disks from service at or before reaching a reduced LCF life limit for those affected disks of 2,100 hours TSN or by December 31, 2008, whichever occurs first".

Conclusion

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

There are about 320 GE CT58-140-1, CT58-140-2, and surplus military T58-GE-5, -10, -100, and -402 series turboshaft engines of the affected design in the worldwide fleet. We estimate that 30 engines installed on helicopters of U.S. registry will be affected by this AD. The action does not impose any additional labor costs. A new disk would cost about \$7,965 per engine. We estimate that the prorated cost of the life reduction will be about \$4,181 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$125,430.

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.

We are 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

We have determined that 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) 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.

We prepared a summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under ADDRESSES. Include "AD Docket No. 2003-NE-59-AD" in your request.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration 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:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

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

We post ADs on the internet at "www.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).

2005-04-10 General Electric Company: Amendment 39-13982. Docket No. 2003-NE-59-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective March 29, 2005.

Affected ADs

(b) None.

Applicability

(c) This AD applies to General Electric Company (GE) CT58-140-1, CT58-140-2, and surplus military T58-GE-5, -10, -100, and "402 turboshaft engines with stage 1 compressor disks, part number (P/N) 5001T20P01, that have a serial number (SN) listed in the following Table 1:

Table 1-Stage 1 Compressor Disk SNs Affected By This AD

GATD0PD2	GATH5T76	GATH6CE5	GATH6T01	GATH7KH0
GATD0PD3	GATH5T77	GATH6CE6	GATH6T02	GATH7KH1
GATD0PD5	GATH5T78	GATH6CE7	GATH6T03	GATH7KH2
GATD0PD6	GATH5T79	GATH6CE8	GATH6T04	GATH7LAL
GATD0PD7	GATH5T7A	GATH6CE9	GATH6T05	GATH7LAM
GATD0PD8	GATH5T7C	GATH6CEA	GATH7K4K	GATH7LAN
GATD0PD9	GATH5T7D	GATH6CEC	GATH7K4L	GATH7LAP
GATD0PDA	GATH5T7E	GATH6CED	GATH7K4M	GATH7LAR
GATD0PDC	GATH5T7F	GATH6CEE	GATH7K4N	GATH7LAT
GATH53GC	GATH5T7G	GATH6CEF	GATH7K4P	GATH7LAW
GATH53GD	GATH5T7H	GATH6RH8	GATH7K4R	GATH7LC0
GATH53GE	GATH6CDL	GATH6RH9	GATH7K4T	GATH7LC1
GATH53GF	GATH6CDM	GATH6RHC	GATH7K5G	GATH7LC2
GATH53GH	GATH6CDN	GATH6RHD	GATH7KGH	GATH7LC3
GATH53GJ	GATH6CDP	GATH6RHE	GATH7K GK	GATH7LC4
GATH53GK	GATH6CDR	GATH6RHF	GATH7KGL	GATH7LC5
GATH5T70	GATH6CDT	GATH6RHG	GATH7KGM	GATH7LC6
GATH5T71	GATH6CE0	GATH6RHH	GATH7KGN	GATH7LC7
GATH5T72	GATH6CE1	GATH6RHJ	GATH7KGP	GATH7LC8
GATH5T73	GATH6CE2	GATH6RWT	GATH7KGR	GATH7M8G
GATH5T74	GATH6CE3	GATH6RWW	GATH7KGT	GATH7M8H
GATH5T75	GATH6CE4	GATH6T00	GATH7KGW	GATH7M8J

GATH7M8K	GATH7PRT	GATH86K4	GATH8HGM	GATH8WD6
GATH7M8L	GATH7PRW	GATH86K5	GATH8HGN	GATH8WD7
GATH7M8M	GATH7PT0	GATH8A5G	GATH8HGP	GATH8WD8
GATH7M8N	GATH7RTP	GATH8A5H	GATH8HGR	GATH8WD9
GATH7MLK	GATH7RTR	GATH8A5J	GATH8HGT	GATH8WDA
GATH7MLL	GATH7RTT	GATH8A5K	GATH8HGW	GATH8WDC
GATH7MLM	GATH82R8	GATH8A5L	GATH8HH0	GATH8WDD
GATH7MLN	GATH82R9	GATH8A5M	GATH8HH1	GATH8WDE
GATH7MLP	GATH82RA	GATH8A5N	GATH8HH2	GATH8WDF
GATH7MLR	GATH82RD	GATH8A5P	GATH8HH3	GATH8WDG
GATH7MLT	GATH82RE	GATH8A5T	GATH8HH4	GATH8WDH
GATH7MLW	GATH82RF	GATH8A5W	GATH8HH5	GATH8WDJ
GATH7MM0	GATH82RG	GATH8A60	GATH8HH6	GATH8WDK
GATH7MM1	GATH82RH	GATH8A61	GATH8HH7	GATH8WDL
GATH7MM2	GATH82RJ	GATH8A62	GATH8K0H	GATH94R3
GATH7MM3	GATH82RK	GATH8A63	GATH8K0J	GATH94R4
GATH7PPT	GATH82RL	GATH8A64	GATH8K0K	GATH94R6
GATH7PPW	GATH82RM	GATH8A66	GATH8K0L	GATH94R7
GATH7PR0	GATH82RN	GATH8A67	GATH8K0M	GATH94R8
GATH7PR1	GATH82RP	GATH8A68	GATH8K0N	GATH94R9
GATH7PR2	GATH82RR	GATH8GRG	GATH8K0P	GATH94RA
GATH7PR3	GATH82RT	GATH8GRH	GATH8K0R	GATH94RC
GATH7PR4	GATH82RW	GATH8GRK	GATH8K0T	GATH94RD
GATH7PR5	GATH82T0	GATH8GRL	GATH8K0W	GATH94RE
GATH7PR6	GATH82T1	GATH8GRM	GATH8K12	GATH94RF
GATH7PR7	GATH86JD	GATH8GRN	GATH8K13	GATH94RG
GATH7PR8	GATH86JE	GATH8GRP	GATH8K14	GATH94RJ
GATH7PR9	GATH86JF	GATH8GRR	GATH8K15	GATH94RK
GATH7PRA	GATH86JG	GATH8GRT	GATH8K16	GATH94RN
GATH7PRC	GATH86JH	GATH8GRW	GATH8K17	GATH94RP
GATH7PRD	GATH86JJ	GATH8GT0	GATH8K18	GATH94RR
GATH7PRE	GATH86JK	GATH8GT1	GATH8K19	GATH94RT
GATH7PRF	GATH86JL	GATH8GT3	GATH8W7H	GATH96HF
GATH7PRG	GATH86JM	GATH8GT5	GATH8W7J	GATH96HG
GATH7PRH	GATH86JN	GATH8GT7	GATH8W7L	GATH96HK
GATH7PRJ	GATH86JP	GATH8GT8	GATH8W7M	GATH96HL
GATH7PRK	GATH86JR	GATH8HGF	GATH8W7N	GATH96HM
GATH7PRL	GATH86JT	GATH8HGG	GATH8W7P	GATH96HN
GATH7PRM	GATH86JW	GATH8HGH	GATH8W7R	GATH96HR
GATH7PRN	GATH86K0	GATH8HGG	GATH8W7T	GATH96HT
GATH7PRP	GATH86K2	GATH8HGG	GATH8WD4	GATH96HW
GATH7PRR	GATH86K3	GATH8HGL	GATH8WD5	GATH96J0

These engines are installed on, but not limited to, Agusta S.p.A AS-61N, AS-61N1, Sikorsky S-61L, S-61N, S-61R, and S-61NM helicopters, and the following surplus military helicopters that have been certified in accordance with sections 21.25 or 21.27 of the Federal Aviation Regulations (14 CFR 21.25 or 21.27): Sikorsky S-61D and S-61V, Glacier CH-3E, Siller CH-3E and SH-3A, and Robinson Crane CH-3C, CH-3E, HH-3C, HH-3E, and Carson S-61L helicopters.

Unsafe Condition

(d) This AD results from two reports of low blade tip clearances in the compressor. We are issuing this AD to prevent low-cycle-fatigue (LCF) cracking and failure of the stage 1 compressor disk, an uncontained engine failure, and damage to the helicopter.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

Replacement of Stage 1 Compressor Disks

(f) If you have a stage 1 compressor disk, P/N 5001T20P01, with a SN listed in Table 1 of this AD, replace that stage 1 compressor disk at or before reaching a reduced LCF life limit for those affected disks of 2,100 hours time-since-new (TSN) or by December 31, 2008, whichever occurs first. GE Alert Service Bulletin (ASB) No. CT58 S/B 72-A0196, dated July 24, 2003, contains information on replacing the stage 1 compressor disk.

(g) After the effective date of this AD, do not install any stage 1 compressor disk, P/N 5001T20P01, that has a SN listed in Table 1 of this AD and has 2,100 hours TSN or more, into any engine.

Alternative Methods of Compliance

(h) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

Material Incorporated by Reference

(i) None.

Related Information

(j) GE Alert Service Bulletin No. CT58 S/B 72-A0196, dated July 24, 2003, pertains to the subject of this AD.

Issued in Burlington, Massachusetts, on February 10, 2005.

Francis A. Favara,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

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