

# Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 95-ANE-21]

#### **Airworthiness Directives; AlliedSignal Engines LTS101 Series Turboshift Engines Installed on Eurocopter France Model AS-350D and SA-366G1 Helicopters**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** This document proposes the adoption of a new airworthiness directive (AD), applicable to AlliedSignal Engines (formerly Textron Lycoming) LTS101 series turboshift engines installed on Eurocopter France (formerly Aerospatiale) Model AS-350D and SA-366G1 helicopters. This proposal would require incorporation of design modifications to the power turbine (PT) rotor. This proposal is prompted by reports of PT disk failures after No. 3 bearing failures. The actions specified by the proposed AD are intended to prevent an uncontained engine failure due to a PT disk failure.

**DATES:** Comments must be received by June 30, 1995.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 95-ANE-21, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may be inspected at this location between 8:00 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays.

The service information referenced in the proposed rule may be obtained from AlliedSignal Engines, 550 Main Street, Stratford, CT 06497. This information may be examined at the FAA, New England Region, Office of the Assistant

Chief Counsel, 12 New England Executive Park, Burlington, MA.

**FOR FURTHER INFORMATION CONTACT:** Eugene Triozzi, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (617) 238-7148, fax (617) 238-7199.

#### SUPPLEMENTARY INFORMATION:

##### Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed 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 summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 95-ANE-21." The postcard will be date stamped and returned to the commenter.

##### Availability of NPRMs

Any person may obtain a copy of this NPRM by submitting a request to the FAA, New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 95-ANE-21, 12 New England Executive Park, Burlington, MA 01803-5299.

##### Discussion

The Federal Aviation Administration (FAA) has received reports of three uncontained power turbine (PT) disk

failures on AlliedSignal Engines (formerly Textron Lycoming) LTS101 series turboshift engines. These PT disk failures were caused by No. 3 bearing failures, resulting in loss of rotor axial location, aft movement of the PT rotor, and PT shaft disengagement from the gear train drive, subsequently unloading the PT and causing rotor overspeed. The disengagement further rendered the gear train drive overspeed control inoperative; therefore, the PT overspeed progressed until disk failure. This condition, if not corrected, could result in an uncontained engine failure due to a PT disk failure.

On October 28, 1994, AlliedSignal Inc. purchased the turbine engine product line of Textron Lycoming.

The FAA has reviewed and approved the technical contents of Textron Lycoming Service Bulletin (SB) No. LTS101A-72-50-0134, Revision 1, dated June 17, 1991, and SB No. LTS101B-72-50-0128, Revision 1, dated June 17, 1991, that describe procedures for incorporation of design modifications to the PT to enhance rotor retention in the event of No. 3 bearing failure.

At the present time, this proposed airworthiness directive (AD) would require only the PT rotor retention modifications for AlliedSignal Engines Model LTS101-600A2, -600A3, and -750B2 engines. AlliedSignal Engines and several airframe manufacturers have developed electronic overspeed system (EOS) modifications for other models of the AlliedSignal Engines LTS101 series turboshift engines. These other modifications address additional disk failures precipitated by No. 4 bearing failure, which in two cases led to power pinion gear failure and PT shaft disengagement from the power train without loss of rotor axial location, overspeed, and loss of PT overspeed protection. In separate rulemaking, the FAA will require these EOS modifications for these other models. Airworthiness directive 88-14-01, applicable to all Textron Lycoming LTS101 engines, requires repetitive inspections and monitoring of the lubrication system to prevent PT rotor disk failures due to failure of either No. 3 or No. 4 bearings. Performing the PT rotor and EOS modifications on these other models would constitute terminating action for the inspections and monitoring required by AD 88-14-