



U.S. Department
of Transportation
Federal Aviation
Administration

EMERGENCY AIRWORTHINESS DIRECTIVE

AVIATION STANDARDS NATIONAL FIELD OFFICE
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125

February 8, 1991

This Priority Letter Airworthiness Directive (AD) is prompted by in-service failures of the third stage turbine stator. Subsequent to issuing AD 90-21-01, failures of third stage turbine stators have occurred at cyclic times in-service lower than predicted by the initial failure analysis upon which the AD was based. The FAA has therefore determined, based on current service experience, that the stator replacement compliance schedule of AD 90-21-01 must be further reduced to prevent additional failures. Stator failure may result in third stage turbine rotor to stator contact and subsequent rotor fracture. This Priority Letter AD supersedes AD 90-21-01, Amendment 39-6749. This condition, if not corrected, could result in additional uncontained third stage turbine rotor failures.

Since this condition is likely to exist or develop on other engines of this same type design, this AD requires replacement of the third stage turbine stator assembly within certain schedules.

Pursuant to the authority of the Federal Aviation Act of 1958, delegated to me by the Administrator, the following Priority Letter AD 91-04-02, applicable to Garrett Engine Division, Allied-Signal Incorporated, Model TPE331 turboprop and TSE331-3U turboshaft engines, is issued and is effective immediately upon receipt.

91-04-02 GARRETT ENGINE DIVISION, ALLIED-SIGNAL, INC. (formerly Garrett Turbine Engine Co., GTEC, formerly Airesearch Manufacturing Company of Arizona): Priority letter AD issued on February 8, 1991.

Applicability: Model TPE331-1, -2, -2UA, -3U, -3UW, -5, -5A, -6, -6A turboprop and TSE331-3U turboshaft engines equipped with Part Number (P/N) 868379-5 third stage stator assemblies, certificated in any category.

Compliance: Required as indicated, unless already accomplished.

To prevent uncontained third stage turbine rotor failures, accomplish the following:

A. Replace the third stage turbine stator assembly, P/N 868379-5, in accordance with the following initial schedule:

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3rd Stage Stator Time in Service
Since New or Since Rework to
P/N 868379-5 Configuration

Replacement Schedule

Less than 1050 cycles.

Prior to accumulating
1100 cycles.

1050 or more cycles.

Within the next 50
cycles in service
after receipt of this
AD.

If cycles are unknown

Within the next 50
cycles in service
after receipt of this
AD.

B. Thereafter, replace at intervals not to exceed 1100 cycles in service since new or since rework to P/N 868379-5 configuration.

Note: Guidance and information regarding the replacement of the stator assembly can be obtained from Garrett Service Bulletin TPE331-A72-0699, Revision 3, dated February 4, 1991. Refer to Garrett Service Bulletin TPE/TSE331-72-0019, Revision 15, dated February 4, 1991, for definition of critical component service life limits, including the required life limit, cycle definitions, and stator serviceability.

C. Aircraft may be ferried in accordance with the provisions of FAR 21.197 and 21.199 to a base where the AD can be accomplished.

D. Upon submission of substantiating data by an owner or operator through an FAA Airworthiness Inspector, the Manager, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, Aircraft Certification Service, FAA, 3229 East Spring Street, Long Beach, California 90806-2425, may approve an equivalent means of compliance or an adjustment of the compliance schedule which provides an equivalent level of safety.

Priority Letter 91-04-02 supersedes AD 90-21-01, Amendment 39-6749.

This Priority Letter AD 91-04-02, issued on February 8, 1991, becomes effective immediately upon receipt.

FOR FURTHER INFORMATION CONTACT:

Mr. Joseph Costa, Aerospace Engineer, Propulsion Branch, ANM-140L, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, Aircraft Certification Service, FAA, 3229 East Spring Street, Long Beach, California 90806-2425; telephone (213) 988-5246.