



**DATE: May 21, 2021**  
**AD #: 2021-11-51**

Emergency Airworthiness Directive (AD) 2021-11-51 is sent to owners and operators of International Aero Engines AG (IAE) V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 model turbofan engines.

### **Background**

This emergency AD was prompted by a review of investigative findings from an event involving an uncontained failure of a high-pressure turbine (HPT) 1st-stage disk that resulted in high-energy debris penetrating the engine cowling. This condition, if not addressed, could result in uncontained HPT failure, release of high-energy debris, damage to the engine, damage to the airplane, and loss of the airplane.

### **Relevant Service Information**

The FAA reviewed IAE Non-Modification Service Bulletin (NMSB) V2500-ENG-72-0713, Revision 1, dated January 26, 2021, and IAE NMSB V2500-E5-72-0015, dated December 15, 2020. IAE NMSB V2500-ENG-72-0713 specifies procedures for performing an ultrasonic inspection of the HPT 1st-stage disk and the HPT 2nd-stage disk installed on IAE V2500-A5 and V2500-D5 series engines. IAE NMSB V2500-E5-72-0015 specifies procedures for performing an ultrasonic inspection of the HPT 1st-stage disk and the HPT 2nd-stage disk installed on V2500-E5 series engines.

### **FAA's Determination**

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **AD Requirements**

This AD requires an ultrasonic inspection (USI) of affected HPT 1st-stage disks and HPT 2nd-stage disks installed on IAE V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 model turbofan engines and, depending on the results of the USI, removal of the affected HPT disks from service.

### **Interim Action**

The FAA considers this AD interim action. The root cause of this event is still under investigation.

### **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.

The FAA is 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.

### **Presentation of the Actual AD**

The FAA is issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

**2021-11-51 International Aero Engines AG:** Project Identifier AD-2021-00608-E.

#### **(a) Effective Date**

This emergency AD is effective upon receipt.

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to International Aero Engines AG (IAE) V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 model turbofan engines with:

(1) A high-pressure turbine (HPT) 1st-stage disk, part number (P/N) 2A5001, with serial number, PKLBR34908, PKLBR59989, PKLBR83471, PKLBSC9996, PKLBSG0105, PKLBSG9043 or PKLBSH1829, installed; or

(2) An HPT 2nd-stage disk, P/N 2A4802, with S/N PKLBR87800, PKLBR88708, PKLBR89452, PKLBSA9907, PKLBSH9246, PKLBSC8066, PKLBSC8077, or PKLBSG2213, installed.

#### **(d) Subject**

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

#### **(e) Unsafe Condition**

This AD was prompted by a review of investigative findings from an event involving an uncontained failure of an HPT 1st-stage disk that resulted in high-energy debris penetrating the engine cowling. The FAA is issuing this AD to prevent failure of the HPT. The unsafe condition, if not addressed, could result in uncontained HPT failure, release of high-energy debris, damage to the engine, damage to the airplane, and loss of the airplane.

#### **(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

## **(g) Required Actions**

(1) For affected engines with an installed HPT 1st-stage disk listed in Table 1 to paragraph (g)(1) of this AD, within 10 flight cycles after the effective date of this AD, perform an ultrasonic inspection (USI) of the HPT 1st-stage disk using the Accomplishment Instructions, paragraph 6, of IAE Non-Modification Service Bulletin (NMSB) V2500-ENG-72-0713, Revision 1, dated January 26, 2021 (IAE NMSB V2500-ENG-72-0713).

**Table 1 to Paragraph (g)(1) of this AD – HPT 1st-Stage Disk with Known Engine Installations**

<b>Engine Serial Number</b>	<b>HPT 1st-Stage Disk Serial Number</b>
V11020	PKLBSC9996
V12788	PKLBR59989
V13037	PKLBSH1829
V15159	PKLBR34908
V16796	PKLB SG9043
V16799	PKLB SG0105
V16912	PKLBR83471

(2) For affected engines with an installed HPT 2nd-stage disk listed in Table 2 to paragraph (g)(2) of this AD, within 10 flight cycles after the effective date of this AD, perform a USI of the HPT 2nd-stage disk using the Accomplishment Instructions, paragraph 7, of IAE NMSB V2500-ENG-72-0713.

**Table 2 to Paragraph (g)(2) of this AD – HPT 2nd-Stage Disk with Known Engine Installations**

<b>Engine Serial Number</b>	<b>HPT 2nd-Stage Disk Serial Number</b>
V11901	PKLB SG2213
V12308	PKLB SH9246
V12644	PKLB SC8066
V13111	PKLBR89452
V15434	PKLBR88708
V15737	PKLB SC8077
V16085	PKLBSA9907
V17869	PKLBR87800

(3) If, during the USI required by paragraphs (g)(1) and (2) of this AD, an HPT 1st-stage disk or HPT 2nd-stage disk does not pass the USI as specified in the Accomplishment Instructions, paragraph 8., of IAE NMSB V2500-ENG-72-0713, Revision 1, before further flight, remove the HPT 1st-stage disk or 2nd-stage disk, as applicable, from service and replace with a part eligible for installation.

## **(h) Definition**

For the purpose for this AD, a “part eligible for installation” is:

(1) An HPT 1st-stage disk or HPT 2nd-stage disk listed in Appendix A, Tables 1 and 2, of IAE NMSB V2500-ENG-72-0713, Revision 1, or Appendix A, Tables 1 and 2, of IAE NMSB V2500-E5-72-0015, that has passed the USI as specified in the Accomplishment Instructions,

paragraph 8., of IAE NMSB V2500-ENG-72-0713, Revision 1, or IAE NMSB V2500-E5-72-0015, dated December 15, 2020 or

(2) An HPT 1st-stage disk or HPT 2nd-stage disk that is not listed in Appendix A, Tables 1 and 2, of IAE NMSB V2500-ENG-72-0713 or Appendix A, Tables 1 and 2, of IAE NMSB V2500-E5-72-0015.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. You may email your request to ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

(1) For further information about this AD, contact: Alberto Hernandez, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7329; fax: (781) 238-7999; email: Alberto.J.Hernandez@faa.gov.

(2) For service information identified in this AD, contact: International Aero Engines AG, 400 Main Street, East Hartford, CT 06118; phone: (860) 565-2391; email: help24@pw.utc.com; website: <http://fleetcare.pw.utc.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Issued on May 21, 2021.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.