



**DATE:** April 20, 2018  
**AD #:** 2018-09-51

Emergency Airworthiness Directive (AD) 2018-09-51 is sent to owners and operators of CFM International S.A. (CFM) Model CFM56-7B engines.

### **Background**

This emergency AD was prompted by a recent event in which a Boeing Model 737-700 airplane powered by CFM56-7B model engines experienced an engine failure due to a fractured fan blade, resulting in the engine inlet cowl disintegrating. Debris penetrated the fuselage causing a loss of pressurization and prompting an emergency descent. Although the airplane landed safely, there was one passenger fatality. Fan blade failure due to cracking, if not addressed, could result in an engine in-flight shutdown (IFSD), uncontained release of debris, damage to the engine, damage to the airplane, and possible airplane decompression.

### **Relevant Service Information**

We reviewed CFM Service Bulletin CFM56-7B S/B 72-1033, dated April 20, 2018. The service information describes procedures for performing an ultrasonic inspection for cracks of the fan blade dovetail, and removal of cracked fan blades from service.

### **FAA's Determination**

We are issuing this AD because we evaluated all the relevant information and 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 accomplishing the actions specified in the service information described previously, except as discussed under "Differences Between the AD and the Service Information."

### **Differences Between This AD and the Service Information**

CFM Service Bulletin CFM56-7B S/B 72-1033, dated April 20, 2018, provides actions for engines with fewer than 30,000 flight cycles, but this AD does not affect those engines. The service information also specifies repetitive inspections, but this AD does not require that the inspection be repeated. We are considering further rulemaking to address these differences.

### **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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

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

We are issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

**2018-09-51 CFM International S.A.:** Product Identifier 2018-NE-13-AD.

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

This Emergency AD is effective upon receipt.

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

None.

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

This AD applies to all CFM International S.A. (CFM) CFM56-7B20, -7B22, -7B24, -7B26, -7B27, -7B22/B1, -7B24/B1, -7B26/B1, -7B26/B2, -7B27/B1, -7B27/B3, -7B20/3, -7B22/3, -7B24/3, -7B26/3, -7B27/3, -7B22/3B1, -7B24/3B1, -7B26/3B1, -7B26/3B2, -7B26/3F, -7B26/3B2F, -7B27/3B1, -7B27/3B3, -7B27/3F, -7B27/3B1F, -7B20E, -7B22E, -7B24E, -7B26E, -7B27E, -7B22E/B1, -7B24E/B1, -7B26E/B1, -7B26E/B2, -7B26E/F, -7B26E/B2F, -7B27E/B1, -7B27E/B3, -7B27E/F, -7B27E/B1F, -7B20/2, -7B22/2, -7B24/2, -7B26/2, -7B27/2, -7B27A, -7B27AE, and -7B27A/3 engine models, with 30,000 or more total accumulated flight cycles since new, as of the date of receipt of this AD.

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

Joint Aircraft System Component (JASC) Code 7200, Engine.

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

This AD was prompted by a recent event involving an engine failure, resulting in the engine inlet cowl disintegrating, debris penetrating the fuselage causing a loss of pressurization and prompting an emergency descent. There was one passenger fatality as a result of the event. We are issuing this AD to address fan blade failure due to cracking, which could result in an engine in-flight shutdown (IFSD), uncontained release of debris, damage to the engine, damage to the airplane, and possible airplane decompression.

**(f) Compliance**

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

**(g) Inspection**

(1) Within 20 days after receipt of this AD, perform a one-time ultrasonic inspection (USI) of all 24 fan blade dovetail concave and convex sides to detect cracking.

(2) Use the Accomplishment Instructions, paragraphs 3.A.(3)(a) through (i), of CFM Service Bulletin CFM56-7B S/B 72-1033, dated April 20, 2018, to perform the inspection required by paragraph (g)(1) of this AD.

**(h) Corrective Action**

If any unserviceable indication, as specified in CFM Service Bulletin CFM56-7B S/B 72-1033, dated April 20, 2018, is found during any inspection required by this AD, remove the affected fan blade from service before further flight.

**(i) No Reporting Required**

Although CFM Service Bulletin CFM56-7B S/B 72-1033, dated April 20, 2018, specifies to report findings, this AD does not include that requirement.

**(j) Credit for Previous Actions**

This paragraph provides credit for the actions specified in paragraph (g)(1) of this AD, if those actions were performed before receipt of this AD using CFM Service Bulletin CFM56-7B S/B 72-1019, dated March 24, 2017; or Revision 1, dated June 13, 2017; or CFM Service Bulletin CFM56-7B S/B 72-1024, dated July 24, 2017.

**(k) 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 paragraph (l)(1) of this AD. 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.

(3) For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (k)(3)(i) and (k)(3)(ii) of this AD apply.

(i) The steps labeled as RC must be done to comply with the AD. An AMOC is required for any deviations to RC steps.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps can still be done as specified, and the airplane can be put back in an airworthy condition.

**(I) Related Information**

(1) For further information about this AD, contact Christopher McGuire, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7120; fax: 781-238-7199; E-mail: [chris.mcguire@faa.gov](mailto:chris.mcguire@faa.gov).

(2) For service information identified in this AD, contact CFM International Inc., Aviation Operations Center, 1 Neumann Way, M/D Room 285, Cincinnati, OH 45125; phone: 877-432-3272; fax: 877-432-3329; email: [aviation.fleetsupport@ge.com](mailto:aviation.fleetsupport@ge.com). You may view this referenced service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA.

Issued in Burlington, Massachusetts, on April 20, 2018.

Original signed by  
Karen M. Grant, Acting Manager  
Engine and Propeller Standards Branch,  
Aircraft Certification Service.