DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39


RIN 2120–AA64

Airworthiness Directives; Rolls-Royce plc Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are superseding an airworthiness directive (AD) 2018–13–07 for all Rolls-Royce plc (RR) Trent 1000–A, Trent 1000–C, Trent 1000–D, Trent 1000–E, Trent 1000–G, and Trent 1000–H turbofan engine models. AD 2018–13–07 required initial inspections of the intermediate-pressure compressor (IPC) stage 1 rotor blades, IPC stage 2 rotor blades, and IPC shaft stage 2 dovetail posts, and removing any cracked parts from service. This AD requires initial inspections and adds repetitive inspections of the IPC stage 1 rotor blades, IPC stage 2 rotor blades, and IPC shaft stage 2 dovetail posts, and removing any cracked parts from service. This AD was prompted by the manufacturer determining the need for repetitive inspections of the IPC stage 1 rotor blades, IPC stage 2 rotor blades, and IPC shaft stage 2 dovetail posts. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective December 21, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 21, 2018.

We must receive any comments on this AD by January 22, 2019.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Hand Delivery: U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.


Examining the AD Docket

You may examine the AD docket on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA–2018–0871; or in person at Docket Operations, Federal Aviation Administration, 1200 New Jersey Avenue SE, West Building, 12th Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590; or by the means identified in the ADDRESSES section.

SUPPLEMENTARY INFORMATION:

Discussion

We issued AD 2018–13–07, Amendment 39–19319 (83 FR 34758, July 23, 2018), (“AD 2018–13–07”), for all RR Trent 1000–A, Trent 1000–C, Trent 1000–D, Trent 1000–E, Trent 1000–G, and Trent 1000–H turbofan engine models. AD 2018–13–07 required initial inspection of the IPC compressor drum during replacement of the IPC stage 1 rotor blades, IPC stage 2 rotor blades, and IPC shaft stage 2 dovetail posts, and lists engine serial numbers. RR Alert NMSB Trent 1000 72–K132, describes procedures for replacement of the IPC stage 1 rotor blades, IPC stage 2 rotor blades, and the IP compressor drum during refurbishment. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Related Service Information Under 1 CFR Part 51

We reviewed RR Alert Non-Modification Service Bulletin (NMSB) Trent 1000 72–AK130, Revision 2, dated July 26, 2018, and RR Alert NMSB Trent 1000 72–K132, dated June 29, 2018. RR Alert NMSB Trent 1000 72–AK130 describes procedures for performing initial and repetitive inspections of the IPC stage 1 rotor blades, IPC stage 2 rotor blades, and IPC shaft stage 2 dovetail posts, and lists engine serial numbers. RR Alert NMSB Trent 1000 72–K132, describes procedures for replacement of the IPC stage 1 rotor blades, IPC stage 2 rotor blades, and the IP compressor drum during refurbishment. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

We reviewed RR NMSB Trent 1000 72–K099, Initial Issue, dated July 11, 2018; RR NMSB Trent 1000 72–K099, Revision 1, dated July 3, 2018; RR NMSB Trent 1000 72–K100, Initial Issue, dated June 11, 2018; RR NMSB Trent 1000 72–K129, Initial Issue, dated June 11, 2018; and RR NMSB Trent 1000 72–K129, Revision 1, dated July 2, 2018. RR NMSB Trent 1000 72–K099, Initial Issue, and RR NMSB Trent 1000 72–K099, Revision 1, describe procedure for an ultrasonic inspection of the IPC stage 1 rotor blades. RR NMSB Trent 1000 72–K100 Initial Issue describes procedures for a visual borescope inspection of the IPC stage 2 rotor blades and IPC shaft stage 2 dovetail posts. RR NMSB Trent 1000 72–K129, Initial Issue, and RR NMSB Trent 1000 72–K129, Revision 1, describe procedure for an ultrasonic inspection of the IPC stage 2 rotor blades.
FAA’s Determination

This product has been approved by EASA and is approved for operation in the United States. Pursuant to our bilateral agreement with the European Community, EASA has notified us of the unsafe condition described in the MCAI and service information referenced above. 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 initial and repetitive inspections of the IPC stage 1 rotor blades, IPC stage 2 rotor blades, and IPC shaft stage 2 dovetail posts, and removing any cracked parts from service.

Differences Between This AD and the MCAI or Service Information

This AD allows inspections of any affected IPC part to be completed within 15 days of the effective date of this AD. EASA AD 2018–0167R2, dated October 16, 2018, and RR Alert NMSB Trent 1000 72–AK130, Revision 2, dated July 26, 2018, allow certain affected IPC parts to be completed within 45 days of the effective date of EASA AD 2018–0167R1. We expect most operators to have already complied with EASA AD and find that completing the inspections within 15 days of the effective date of this AD provides an appropriate level of safety.

Interim Action

We consider this AD interim action. The manufacturer is still reviewing this unsafe condition and may develop follow-on actions.

FAA’s Justification and Determination of the Effective Date

No domestic operators use this product. Therefore, we find that notice and opportunity for prior public comment are unnecessary and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments before it becomes effective. However, we invite you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under the ADDRESSES section. Include the docket number FAA–2018–0871 and product identifier 2018–NE–24–AD at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this final rule. We will consider all comments received by the closing date and may amend this final rule because of those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this final rule.

Costs of Compliance

We estimate that this AD affects 0 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

<table>
<thead>
<tr>
<th>Action</th>
<th>Labor cost</th>
<th>Parts cost</th>
<th>Cost per product</th>
<th>Cost on U.S. operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspect IPC blades and dovetail post</td>
<td>20 work-hours x $85 per hour = $1,700</td>
<td>$0</td>
<td>$1,700</td>
<td>$0</td>
</tr>
</tbody>
</table>

We estimate the following costs to do any necessary replacements that would be required based on the results of the inspection. We have no way of determining the number of aircraft that might need these replacements:

<table>
<thead>
<tr>
<th>Action</th>
<th>Labor cost</th>
<th>Parts cost</th>
<th>Cost per product</th>
<th>Cost on U.S. operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace IPC Stage 1 Rotor blade</td>
<td>0 work-hours x $85 per hour = $0</td>
<td>$1,528</td>
<td>$1,528</td>
<td></td>
</tr>
<tr>
<td>Replace IPC Stage 2 Rotor blade</td>
<td>0 work-hours x $85 per hour = $0</td>
<td>993</td>
<td>993</td>
<td></td>
</tr>
<tr>
<td>Replace IPC 1–8 drum</td>
<td>0 work-hours x $85 per hour = $0</td>
<td>1,365,219</td>
<td>1,365,219</td>
<td></td>
</tr>
</tbody>
</table>

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.

Regulatory Findings

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),
(3) Will not affect intrastate aviation in Alaska, and
(4) 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.

List of Subjects in 14 CFR Part 39
Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment
Accordingly, under the authority delegated to me by the Administrator, the FAA amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2018–13–07, Amendment 39–19319 (83 FR 34758, July 23, 2018), and adding the following new AD:


(a) Effective Date
This AD is effective December 21, 2018.

(b) Affected ADs

(c) Applicability
This AD applies to all Rolls-Royce plc (RR) Trent 1000–A, Trent 1000–C, Trent 1000–D, Trent 1000–E, Trent 1000–G, and Trent 1000–H turbofan engine models.

(d) Subject
Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition
This AD was prompted by reports of intermediate-pressure compressor (IPC) rotor blade cracks, which could lead to rotor blade separations resulting in engine failures. We are issuing this AD to prevent failure of the IPC. The unsafe condition, if not addressed, could result in failure of one or more engines, loss of thrust control, and loss of the airplane.

(f) Compliance
Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions
(1) Within 15 days of the effective date of this AD, or within the compliance times specified in Table 1 of RR Alert Non-Modification Service Bulletin (NMSB) Trent 1000 72–AK130, Revision 2, dated July 26, 2018, whichever occurs later, perform on-wing inspection of the IPC stage 1 rotor blades in accordance with paragraph 3.A.(1) of RR Alert NMSB Trent 1000 72–AK130.
(2) Repeat the on-wing inspection of the IPC stage 1 rotor blades in accordance with paragraph 3.A.(1) of RR Alert NMSB Trent 1000 72–AK130, Revision 2, dated July 26, 2018, whichever occurs later, perform on-wing inspection of the IPC stage 2 rotor blades and IPC shaft stage 2 dovetail posts in accordance with paragraph 3.B.(1) and 3.C.(1) of RR Alert NMSB Trent 1000 72–AK130.
(3) Within 15 days of the effective date of this AD, or within the compliance times specified in Table 1 of RR Alert NMSB Trent 1000 72–AK130, Revision 2, dated July 26, 2018, and within the compliance times specified in Table 1 of that NMSB.
(4) Within 15 days of the effective date of this AD, or within the compliance times specified in Table 1 of RR Alert NMSB Trent 1000 72–AK130, Revision 2, dated July 26, 2018, whichever occurs later, perform on-wing inspection of the IPC stage 2 rotor blades and IPC shaft stage 2 dovetail posts in accordance with paragraphs 3.B.(1) and 3.C.(1) of RR Alert NMSB Trent 1000 72–AK130.
(5) For the on-wing inspection required by paragraphs (g)(1) through (4) of this AD, provided the stated thresholds and intervals are not exceeded, you may substitute:
(i) An in-shop inspection of an engine or module performed in accordance with the instructions of paragraphs 3.A.2, 3.B.2, and 3.C.2 of the RR Alert NMSB Trent 1000 72–AK130, Revision 2, dated July 26, 2018, and within the compliance times specified in Table 1 of RR Alert NMSB Trent 1000 72–AK130.
(ii) The replacement of the IPC stage 1 rotor blades, IPC stage 2 rotor blade, or an IPC shaft stage 2 dovetail post being found cracked, may perform a one-time non-revenue ferry flight to a location where the engine can be removed from service. This ferry flight must be performed without passengers, involve non-extended operations (ETOPS), and consume no more than three flight cycles.
(iii) [Reserved]
(iv) [Reserved]

(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 (i)(1)(ii) 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.

(1) Related Information
(1) For more information about this AD, contact Kevin M. Clark, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781–238–7088; fax: 781–238–7199; email: kevin.m.clark@faa.gov.

(m) Material Incorporated by Reference
(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.
(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.
(ii) RR Alert NMSB Trent 1000 72–K132, dated June 29, 2018.


(4) You may view this service information at FAA, Engine & Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781–238–7759.

(5) You may view this service information 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/cfr/ibr-locations.html.

Issued in Burlington, Massachusetts, on November 28, 2018.

Robert J. Ganley,
Manager, Engine & Propeller Standards Branch, Aircraft Certification Service.

[FR Doc. 2018–26393 Filed 12–4–18; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration

14 CFR Part 39


RIN 2120–AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for all The Boeing Company Model 737–8 and –9 airplanes. This emergency AD was sent previously to all known U.S. owners and operators of these airplanes. This AD requires revising certificate limitations and operating procedures of the airplane flight manual (AFM) to provide the flight crew with runaway horizontal stabilizer trim procedures to follow under certain conditions. This AD was prompted by analysis performed by the manufacturer showing that if an erroneously high single angle of attack (AOA) sensor input is received by the flight control system, there is a potential for repeated nose-down trim commands of the horizontal stabilizer. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective December 21, 2018 to all persons except those persons to whom it was made immediately effective by Emergency AD 2018–23–51, issued on November 7, 2018, which contained the requirements of this amendment.

We must receive comments on this AD by January 22, 2019.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.

• Fax: 202–493–2251.


• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket
You may examine the AD docket on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA–2018–0960; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800–647–5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Douglas Tsuji, Senior Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206–231–3548; email: Douglas.Tsuji@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion
On November 7, 2018, we issued Emergency AD 2018–23–51, which requires revising certificate limitations and operating procedures of the AFM to provide the flight crew with runaway horizontal stabilizer trim procedures to follow under certain conditions. This emergency AD was sent previously to all known U.S. owners and operators of these airplanes. This action was prompted by analysis performed by the manufacturer showing that if an erroneously high single AOA sensor input is received by the flight control system, there is a potential for repeated nose-down trim commands of the horizontal stabilizer. This condition, if not addressed, could cause the flight crew to have difficulty controlling the airplane, and lead to excessive nose-down attitude, significant altitude loss, and possible impact with terrain.

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 revising certificate limitations and operating procedures of the AFM to provide the flight crew with runaway horizontal stabilizer trim procedures to follow under certain conditions.

Interim Action
We consider this AD interim action. If final action is later identified, we might consider further rulemaking then.

FAA’s Determination of the Effective Date
An unsafe condition exists that requires the immediate adoption of Emergency AD 2018–23–51, issued on November 7, 2018, to all known U.S. owners and operators of these airplanes. The FAA found that the risk to the flying public justified waiving notice and comment prior to adoption of this rule because an erroneously high single AOA sensor input received by the flight control system can result in a potential for repeated nose-down trim commands of the horizontal stabilizer, which could cause the flight crew to have difficulty controlling the airplane, and lead to excessive nose-down attitude, significant altitude loss, and possible impact with terrain. These conditions still exist and the AD is hereby published in the Federal Register as an amendment to section 39.13 of the Federal Aviation Regulations (14 CFR 39.13) to make it effective to all persons. Therefore, we find good cause that notice and opportunity for prior public comment are impracticable. In addition, for the reason(s) stated above, we find that good cause exists for making this amendment effective in less than 30 days.

Comments Invited
This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment. However, we invite you to send any written data, views, or arguments about