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: The FAA is adopting a new airworthiness directive (AD) for all The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER (Model 737 NG) series airplanes (although the scope of the AD requirements is limited to operation at specific runways in the U.S., Colombia, and Guyana). This AD requires revising the airplane flight manual (AFM) to prohibit selection of certain runways for airplanes equipped with certain software. This AD was prompted by reports of display electronic unit (DEU) software errors on airplanes with a selected instrument approach to a specific runway. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective December 27, 2019.

The FAA must receive comments on this AD by February 10, 2020.

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 https://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 https://www.regulations.gov by searching for and locating Docket No. FAA-2019-0992; 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 is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: David Sumner, Aerospace Engineer, Systems and
Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198;
phone and fax: 206-231-3538; email: David.Sumner@faa.gov.

SUPPLEMENTARY INFORMATION:
Discussion

The FAA received reports earlier this year of three incidents of display electronic unit (DEU)
software errors on Model 737 NG airplanes flying into runway PABR in Barrow, Alaska. All six
display units (DUs) blanked with a selected instrument approach to a runway with a 270-degree true
heading, and all six DUs stayed blank until a different runway was selected. The Integrated Standby
Flight Display (ISFD) and Heads-Up-Display (HUD) remained operational during this failure of
the primary flight displays. The investigation has traced the behavior to a combination of common
display system (CDS) block point (BP) 15 software in the DEUs and U12 or later software in the
flight management computer (FMC). The investigation revealed that the problem occurs when this
combination of software is installed and a susceptible runway with a 270-degree true heading is
selected for instrument approach. Not all runways with a 270-degree true heading are susceptible;
only seven runways worldwide, as identified in this AD, have latitude and longitude values that cause
the blanking behavior. If CDS BP15 software and FMC U12 or later software are installed, all six
DUs can blank when a susceptible runway with a 270-degree true heading is selected. The FAA has
confirmed that the faulty version of DEU software has already been removed from all airplanes
conducting scheduled airline service into the affected airports. This AD is intended to address
unscheduled diversions and Boeing Business Jet (BBJ) flights into the affected airports. This
condition, if not addressed, could prevent continued safe flight and landing.

FAA's Determination

The FAA is issuing this AD because the agency 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 the AFM to prohibit selection of certain runways for airplanes
equipped with certain software.

Although all Model 737 NG airplanes are affected, the scope of the AD requirements is limited
to operation at specific runways in the U.S., Colombia, and Guyana, as identified in this AD.

Interim Action

The FAA considers this AD interim action. The manufacturer is currently developing a software
update that will address the unsafe condition identified in this AD. Once this modification is
developed, approved, and available, the FAA might consider additional rulemaking.

FAA's Justification and Determination of the Effective Date

An unsafe condition exists that requires the immediate adoption of this AD without providing an
opportunity for public comments prior to adoption. The FAA has found that the risk to the flying
public justifies waiving notice and comment prior to adoption of this rule because the combination of CDS BP15 software and FMC U12 or later software installed can result in all six DUs blanking when a susceptible runway with 270 degree true heading is selected; this condition can prevent continued safe flight and landing. The compliance time for the required action is shorter than the time necessary for the public to comment and for publication of the final rule. Therefore, the FAA finds good cause that notice and opportunity for prior public comment are impracticable. In addition, for the reasons stated above, the FAA finds 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, the FAA invites 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-2019-0992 and Product Identifier 2019-NM-197-AD at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this final rule. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

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

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 1,739 airplanes of U.S. registry. The FAA estimates 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>AFM revision</td>
<td>1 work-hour × $85 per hour = $85</td>
<td>$0</td>
<td>$85</td>
<td>$147,815</td>
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</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.

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.

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
transport category airplanes and associated appliances to the Director of the System Oversight
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, and
(2) Will not affect intrastate aviation in Alaska.

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 14 CFR
part 39 as follows:

PART 39–AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13  [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

(a) Effective Date

This AD is effective December 27, 2019.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, certificated in any category.

Note 1 to paragraph (c): The scope of the AD requirements is limited to operation at the seven runways identified in figure 1 to paragraph (g) of this AD.

(d) Subject

Air Transport Association (ATA) of America Code 31, Indicating/recording system.

(e) Unsafe Condition

This AD was prompted by reports of display unit (DU) software errors on airplanes with a selected instrument approach to a specific runway. The FAA is issuing this AD to address the potential for all six DUs to blank, which can prevent continued safe flight and landing.

(f) Compliance

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

(g) AFM Revision

Within 14 days after the effective date of this AD, revise the Miscellaneous Limitations section of the existing airplane flight manual (AFM) to include the information in figure 1 to paragraph (g) of this AD. This may be done by inserting a copy of figure 1 to paragraph (g) of this AD into the Miscellaneous Limitations section of the existing AFM.
(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO 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) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@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) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(i) Related Information

For more information about this AD, contact David Sumner, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3538; email: David.Sumner@faa.gov.

(j) Material Incorporated by Reference

None.

Issued on December 20, 2019.
Michael Kaszycki,
Acting Director, System Oversight Division,
Aircraft Certification Service.