



適航指令發布單
Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2023-04-010	發布日期 Date issued	2023/4/20												
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	Boeing 747-400 and 747-8 series airplanes, certificated in any category, equipped with an activated horizontal stabilizer fuel tank with Crane Aerospace Hydro-Aire horizontal stabilizer fuel transfer pump housings and transfer pump motor impellers.														
主旨摘要 Subject	This AD continues to require inspecting for wear of the transfer pump housing inlet check valves and transfer pump motor impeller inlet adapters for the horizontal stabilizer fuel tank and doing corrective actions, if necessary, and also removes certain airplanes from the applicability, redefines the definition of an “activated” horizontal stabilizer fuel tank, and limits the installation of affected parts.														
民航局 CAA <input type="checkbox"/> 本國產品 Native product <input type="checkbox"/> 其他個案 Other	設計國民航主管機構 Original Authority <table border="0" style="width: 100%;"><tr><td><input checked="" type="checkbox"/> FAA</td><td><input type="checkbox"/> Germany LBA</td></tr><tr><td><input type="checkbox"/> EASA</td><td><input type="checkbox"/> CAA-NL</td></tr><tr><td><input type="checkbox"/> Brazil</td><td><input type="checkbox"/> UK CAA</td></tr><tr><td><input type="checkbox"/> Transport Canada Civil Aviation</td><td><input type="checkbox"/> Japan CAB</td></tr><tr><td><input type="checkbox"/> DGAC</td><td><input type="checkbox"/> CAA of Israel</td></tr><tr><td></td><td><input type="checkbox"/> Other _____</td></tr></table>			<input checked="" type="checkbox"/> FAA	<input type="checkbox"/> Germany LBA	<input type="checkbox"/> EASA	<input type="checkbox"/> CAA-NL	<input type="checkbox"/> Brazil	<input type="checkbox"/> UK CAA	<input type="checkbox"/> Transport Canada Civil Aviation	<input type="checkbox"/> Japan CAB	<input type="checkbox"/> DGAC	<input type="checkbox"/> CAA of Israel		<input type="checkbox"/> Other _____
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	<input type="checkbox"/> Other _____														
	設計國 AD 編號 Original AD number	2023-07-09													
	1. 直接採用原 AD 之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) _ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____ 2. 使用人是否需要將 AD 執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)														
備註 Note	This AD replaces AD 2022 - 27 - 07(CAA-2022-12-022)														
<p>註： 1. AD 內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6330 / 6332, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw</p> <p>Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6330 / 6332, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw</p>															

[Federal Register, Volume 88 Number 72 (Friday, April 14, 2023)]

[Rules and Regulations]

[Pages 22895-22900]

From the Federal Register Online via the Government Publishing Office [www.gpo.gov]

[FR Doc No: 2023-08027]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2023–0925; Project Identifier AD–2023–00255–T; Amendment 39–22411; AD 2023–07–09]

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 superseding Airworthiness Directive (AD) 2022–27–07, which applied to certain The Boeing Company Model 747–400 and 747–8 series airplanes. AD 2022–27–07 required inspecting for wear of the transfer pump housing inlet check valves and transfer pump motor impeller inlet adapters for the horizontal stabilizer fuel tank and doing corrective actions, if necessary. This AD was prompted by the discovery that certain airplanes were incorrectly included in the applicability of AD 2022–27–07. This AD continues to require inspecting for wear of the transfer pump housing inlet check valves and transfer pump motor impeller inlet adapters for the horizontal stabilizer fuel tank and doing corrective actions, if necessary. This AD also removes certain airplanes from the applicability, redefines the definition of an “activated” horizontal stabilizer fuel tank, and limits the installation of affected parts. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective May 1, 2023.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of January 13, 2023 ([87 FR 80028](#), December 29, 2022).

The FAA must receive comments on this AD by May 30, 2023.

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 *regulations.gov*. Follow the instructions for submitting comments.
- *Fax*: 202–493–2251.
- *Mail*: U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- *Hand Delivery*: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at *regulations.gov* by searching for and locating Docket No. FAA–2023–0925; 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, any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

- For service information incorporated by reference in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110–SK57, Seal Beach, CA 90740–5600; telephone 562–797–1717; website *myboeingfleet.com*.
- You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206–231–3195. It is also available at *regulations.gov* by searching for and locating Docket No. FAA–2023–0925.

FOR FURTHER INFORMATION CONTACT:

Samuel Dorsey, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone: 206–231–3415; email: Samuel.j.dorsey@faa.gov.

SUPPLEMENTARY INFORMATION:**Comments Invited**

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under **ADDRESSES**. Include “Docket No. FAA–2023–0925 and Project Identifier AD–2023–00255–T” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in [14 CFR 11.35](#), the FAA will post all comments received, without change, to *regulations.gov*, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) ([5 U.S.C. 552](#)), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Samuel Dorsey, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3415; email: Samuel.j.dorsey@faa.gov. Any commentary that the FAA receives that is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA issued AD 2022-27-07, Amendment 39-22292 ([87 FR 80028](#), December 29, 2022) (AD 2022-27-07), for certain The Boeing Company Model 747-400 and 747-8 series airplanes. AD 2022-27-07 required inspecting for wear of the transfer pump housing inlet check valves and transfer pump motor impeller inlet adapters for the horizontal stabilizer fuel tank and doing corrective actions, if necessary. AD 2022-27-07 also limited the installation of affected parts. AD 2022-27-07 was prompted by reports of wear-through of the transfer pump motor impeller inlet adapter of a transfer pump for the horizontal stabilizer fuel tank caused by contact between the transfer pump housing inlet check valve and the transfer pump motor impeller inlet adapter. The FAA issued AD 2022-27-07 to address the development of an ignition source within the horizontal stabilizer fuel tank resulting from wear to the transfer pump housing inlet check valves and transfer pump motor impeller inlet adapters of the horizontal stabilizer fuel tank. This condition, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

Actions Since AD 2022-27-07 Was Issued

Since the FAA issued AD 2022-27-07, the agency received comments from Boeing and Delta Air Lines (Delta) identifying errors affecting the applicability of AD 2022-27-02. These errors are discussed in detail along with additional issues in the following section.

Request To Clarify Component Descriptions in AD 2022-27-07

Boeing requested that the FAA clarify the component descriptions throughout AD 2022-27-07. Boeing explained that the inlet check valve is part of the transfer pump housing assembly, while the inlet adapter is part of the transfer pump motor impeller assembly. When referring to the inlet check valve, Boeing suggested consistent use of “transfer pump housing inlet check valve(s).” And, when referring to the inlet adapter, Boeing suggested consistent use of “transfer pump motor impeller inlet adapter.”

The FAA agrees and has updated this AD accordingly.

Request To Exclude Unaffected Parts From the Applicability of AD 2022-27-07

Boeing requested that AD 2022-27-07 be revised to exclude certain parts that are not affected by the unsafe condition addressed in that AD. Boeing pointed out that the standard Model 747-400 and -8 airplanes utilize Crane Aerospace Hydro-Aire transfer pump housings and transfer pump motor impellers having part numbers (P/Ns) 60-703200-x and 60-72101-x respectively, where x represents all dash numbers, and those are the parts that are subject to the unsafe condition. Clarifying, Boeing stated that it received FAA approval in 2003 to use alternate FR-HiTemp Limited fuel pumps and housings as an option on Model 747-400 airplanes. Boeing further explained that incorporation of the approved alternate FR-HiTemp Limited part numbers was approved by the FAA as an alternative method of compliance for AD 2001-21-07, Amendment 39-12478 ([66 FR 54652](#), October 30, 2001), against the Crane Aerospace Hydro-Aire transfer pump housings and transfer pump motor impellers. Boeing asserted that the associated certification system safety assessment and design data reviews for the alternate part numbers concluded that the unsafe condition cited in AD 2022-27-07 does not exist because the interface designs are significantly different from the Crane Aerospace Hydro-Aire design, such that the same unsafe wear condition cannot develop.

The FAA agrees for the reasons provided by Boeing. Therefore, the applicability of this AD has been revised to specify that this AD applies to airplanes equipped with an activated horizontal stabilizer fuel tank with Crane Aerospace Hydro-Aire horizontal stabilizer fuel transfer pump housings and transfer pump motor impellers. Therefore, airplanes without Crane Aerospace Hydro-Aire horizontal stabilizer fuel transfer pump housings and transfer pump motor impellers are not subject to this AD.

Request To Exclude Certain Airplanes From the Applicability of AD 2022-27-07

Boeing requested that airplanes delivered with no horizontal stabilizer fuel tank installed in production and airplanes with provisioned, but non-functional horizontal stabilizer fuel tanks be removed from the applicability of AD 2022-27-07. Boeing pointed out that the definition of an “activated” tank in paragraph (g)(3) of AD 2022-27-07 is one that is “. . . considered to be “activated” if it is not deactivated by an approved alteration,” which might inadvertently affect airplanes delivered with a horizontal stabilizer fuel tank in a permanent non-functional state, as well as airplanes provisioned for future activation to a fully functional state at the operator's discretion.

Boeing explained that Model 747 airplanes were delivered in three primary certified configurations: passenger configurations with no horizontal stabilizer fuel tank installed in production, passenger configurations with a fully functional horizontal stabilizer fuel tank installed in production by operator selection of this offered option, and all freighter configurations with no horizontal stabilizer fuel tank installed in production. Further, Boeing explained that some passenger airplanes were delivered with various configurations of exercised customer options for the horizontal stabilizer fuel tank, and all of these options were with non-functional horizontal stabilizer fuel tanks, but with provisions to support later activation to fully functional configurations via Boeing service bulletins at the operator's discretion. The various provisional configurations Boeing described ranged from partial installation of only horizontal stabilizer fuel tank fuel transfer line shrouds to isolation of the horizontal stabilizer fuel tank from its dedicated refuel/defuel/transfer lines at both the center wing fuel tank and the horizontal stabilizer fuel tank interfaces by disconnecting and capping of same, de-energizing of fuel pump power circuits, among other actions required for certification as a non-functional horizontal stabilizer fuel tank.

In all of the provisioned, non-functional configurations, Boeing asserted that the fuel and fuel vapor is prevented from entering the horizontal stabilizer fuel tank, as it is isolated from any fuel

supply or communication with non-horizontal stabilizer fuel tanks, nor was any fuel or fuel vapors introduced during production. Therefore, Boeing argued that airplanes in configurations with no horizontal stabilizer fuel tanks installed in production and those with provisioned, but non-functional horizontal stabilizer fuel tanks have effectively eliminated the unsafe condition addressed by AD 2022-27-07 due to the elimination of the potential for flammable fuel vapor with the horizontal stabilizer fuel tank. However, Boeing points out that these airplane configurations, by their nature, do not have associated instructions for an “approved alteration” to deactivate the horizontal stabilizer fuel tank, but are still subject to AD 2022-27-07, based on the applicability and definition of an “activated” horizontal stabilizer fuel tank.

The FAA agrees that airplanes without a horizontal stabilizer fuel tank installed in production are not affected by this AD for the reasons provided by Boeing. The applicability of this AD has been revised to specify that this AD does not apply to airplanes with horizontal stabilizer fuel tanks that cannot be fueled without further modification (*i.e.*, the tanks are sealed and disconnected from the airplane fuel system).

In addition, the definition of “activated” specified in paragraph (g)(3) of AD 2022-27-07 has been revised in this AD. For the purposes of this AD, a horizontal stabilizer tank is considered to be “activated” if it is not deactivated in production or deactivated by an approved alteration.

The FAA does not agree to specifically remove airplanes with provisioned, but non-functional horizontal stabilizer fuel tanks from the applicability of this AD. Since the horizontal stabilizer tank, unless deactivated as specified in paragraph (g)(3) of this AD, is provisioned to be activated at a future date, the FAA has determined that those airplanes should be subject to this AD. However, no action is required by this AD for those airplanes until the horizontal stabilizer tank is activated.

Request To Clarify Publication Date of Service Information Required by AD 2022-27-07

Delta requested that the FAA clarify the publication date of Boeing Multiple Operator Message MOM-MOM-22-0549-01B(R1). Delta pointed out that the message date is listed as both November 29, 2022 (U.S. Pacific Standard Time (PST)) and November 30, 2022 (Greenwich Mean Time (GMT)), while the message sent date is identified as November 29, 2022. Therefore, Delta suggested that the AD should either be clear that the date used is the date the message was sent or that the dates provided in the message date field of the message are in both PST and GMT.

The FAA agrees to clarify. The message was published at 1615 PST on November 29, 2022, which was 0015 GMT on November 30, 2022. The message was then sent to operators at 0017 GMT on November 30, 2022, which was 1617 PST on November 29, 2022 (not stated on the message). Boeing Multiple Operator Message MOM-MOM-22-0549-01B(R1), dated November 29, 2022, was published in the U.S. time zone using PST; therefore, that is the date the FAA AD referenced. No change to this AD has been made in this regard.

Request To Add Specific Part Numbers in Parts Installation Limitation of AD 2022-27-07

Delta requested that either the parts installation limitation in paragraph (k) of AD 2022-27-07 be revised to include specific part numbers for the affected parts or that it direct operators to the referenced service information for that information. Delta asserted that the lack of reference to specific affected part numbers may be interpreted to mean any and all transfer pump motor impeller inlet assemblies or transfer pump housing inlet check valves (or assembly containing

either), even though the referenced service information is limited to specific Crane Aerospace Hydro-Aire pumps and transfer pump housing inlet check valves.

The FAA partially agrees and has revised the parts installation limitation specified in paragraph (k) of this AD. Paragraph (k) of this AD limits the affected parts to Crane Aerospace Hydro-Aire horizontal stabilizer fuel transfer pump housings and transfer pump motor impellers. Furthermore, as previously described, in order to remove the airplanes not affected by the unsafe condition, the FAA has revised the applicability of this AD by specifying the AD applies to airplanes equipped with Crane Aerospace Hydro-Aire horizontal stabilizer fuel transfer pump housings and transfer pump motor impellers.

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.

Related Service Information Under [1 CFR Part 51](#)

This AD requires Boeing Multiple Operator Message MOM–MOM–22–0549–01B(R1), dated November 29, 2022, which the Director of the Federal Register approved for incorporation by reference as of January 13, 2023 ([87 FR 80028](#), December 29, 2022). 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.

AD Requirements

This AD requires accomplishing the actions specified in the service information already described. This AD also limits the installation of affected parts.

Interim Action

This AD is considered to be interim action. The inspection reports that are required by this AD will enable the manufacturer to obtain better insight into the nature, cause, and extent of the wear-through, and eventually to develop final action to address the unsafe condition. Further, the main and center wing tanks utilize the same pump design but are currently not subject to the same unsafe condition due to the shutoff logic of the transfer pumps. However, if that should change or once final action has been identified, the FAA might consider further rulemaking.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) ([5 U.S.C. 551 et seq.](#)) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

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 forgoing notice and comment prior to adoption of this rule because the FAA has previously provided notice and comment on this unsafe condition and has dispositioned those

comments herein. The FAA is redefining the applicable airplanes by revising the applicability in paragraph (c) and definition in paragraph (g)(3) of this AD. However, this change does not affect a new population of airplanes, but rather, this AD removes several airplanes from the applicability of this AD. Accordingly, notice and opportunity for prior public comment is unnecessary pursuant to [5 U.S.C. 553\(b\)\(3\)\(B\)](#).

In addition, the FAA finds that good cause exists pursuant to [5 U.S.C. 553\(d\)](#) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

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 28 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated Costs *

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspections of transfer pump motor impeller inlet adapter and transfer pump housing inlet check valves (left and right transfer pumps)	12 work-hours × \$85 per hour = \$1,020	\$0	\$1,020	\$28,560
Reporting	1 work-hour × \$85 per hour = \$85	0	85	2,380

** While this AD removes certain airplanes from the applicability, the cost estimates in the previous AD did not include airplanes delivered with provisions for but inoperable horizontal stabilizer fuel tanks. Therefore, the cost estimate in this AD has not changed in that regard.*

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the inspection. The FAA has no way of determining the number of aircraft that might need these replacements:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
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Action	Labor cost	Parts cost	Cost per product
Replace transfer pump motor impeller inlet adapter	4 work-hours × \$85 per hour = \$340	\$1,000	\$1,340
Replace transfer pump housing inlet check valve	17 work-hours × \$85 per hour = \$1,445	* 20,000	21,445

** Boeing has indicated that the transfer pump housing inlet check valve is not currently available as a standalone part; this cost is for the pump housing, which contains the transfer pump housing inlet check valve. Boeing has indicated that it is working with the part supplier to make the transfer pump housing inlet check valve available as a standalone part.*

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120–0056. Public reporting for this collection of information is estimated to be approximately 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177–1524.

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.

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

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:

a. Removing Airworthiness Directive (AD) 2022–27–07, Amendment 39–22292 ([87 FR 80028](#), December 29, 2022); and

b. Adding the following new AD:

2023–07–09 The Boeing Company: Amendment 39–22411; Docket No. FAA–2023–0925; Project Identifier AD–2023–00255–T.

(a) Effective Date

This airworthiness directive (AD) is effective May 1, 2023.

(b) Affected ADs

This AD replaces AD 2022–27–07, Amendment 39–22292 ([87 FR 80028](#), December 29, 2022) (AD 2022–27–07).

(c) Applicability

This AD applies to The Boeing Company Model 747–400 and 747–8 series airplanes, certificated in any category, equipped with an activated horizontal stabilizer fuel tank with Crane Aerospace Hydro-Aire horizontal stabilizer fuel transfer pump housings and transfer pump motor impellers.

(d) Subject

Air Transport Association (ATA) of America Code 28, Fuel.

(e) Unsafe Condition

This AD was prompted by reports of wear-through of the transfer pump motor impeller inlet adapter of the horizontal stabilizer fuel tank transfer pump caused by contact between the transfer pump housing inlet check valve and the inlet adapter. The FAA is issuing this AD to address the development of an ignition source within the horizontal stabilizer fuel tank resulting from wear to the transfer pump housing inlet check valves and transfer pump motor impeller inlet adapters of the horizontal stabilizer fuel tank. This condition, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

(f) Compliance

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

(g) Retained Definitions, With a Revised Definition

This paragraph restates the definitions specified in paragraphs (g)(1) and (2) of AD 2022-27-07, with a revised definition.

(1) A “serviceable” transfer pump motor impeller inlet adapter is an inlet adapter of the motor impeller assembly for which any missing material does not exceed 0.20 inch in the pump axial direction.

(2) A “serviceable” transfer pump housing inlet check valve is an inlet check valve for which the hinge pin protrudes past the flapper arm on both sides and there is no metal disk gouging, missing material, corrosion, burrs, or raised material. Minor surface scratches, defects, or appearances of surface wear are acceptable.

(3) A horizontal stabilizer tank is considered to be “activated” if it is not deactivated in production or deactivated by an approved alteration.

(h) Retained Inspection and Corrective Action: Transfer Pump Housing Inlet Check Valve, With No Changes

This paragraph restates the requirements of paragraph (h) of AD 2022-27-07, with no changes. Within 90 days after January 13, 2023 (the effective date of AD 2022-27-07): Do a detailed visual inspection of the transfer pump housing inlet check valve in the left and right transfer pump housing for hinge pin protrusion, gouging, missing material, corrosion, burrs, and raised material, in accordance with paragraph C., Work Instructions, Attachment A, Boeing Multiple Operator Message MOM-MOM-22-0549-01B(R1), dated November 29, 2022.

(1) *Condition 1:* If the hinge pin does not protrude past the flapper arm on one side, or if any gouging, missing material, corrosion, burrs, or raised material is found on the transfer pump housing inlet check valve, do the actions required by paragraphs (h)(1)(i) and (ii) of this AD.

(i) Report inspection findings in accordance with paragraph (j) of this AD.

(ii) Prior to further flight, replace the transfer pump housing inlet check valve or transfer pump housing with a serviceable transfer pump housing inlet check valve or transfer pump housing containing a serviceable transfer pump housing inlet check valve, in accordance with paragraph C., Work Instructions, Attachment A, Boeing Multiple Operator Message MOM-MOM-22-0549-01B(R1), dated November 29, 2022.

(2) *Condition 2*: If the hinge pin does protrude past the flapper arm on both sides, and no gouging, missing material, corrosion, burrs, or raised material is found, report inspection findings in accordance with paragraph (j) of this AD.

(i) Retained Inspection and Corrective Action: Transfer Pump Motor Impeller Inlet Adapter, With No Changes

This paragraph restates the requirements of paragraph (i) of AD 2022-27-07, with no changes. Within 90 days after January 13, 2023 (the effective date of AD 2022-27-07): Do a detailed visual inspection of the transfer pump motor impeller inlet adapter for wear (missing material), in accordance with paragraph D., Work Instructions, Attachment A, Boeing Multiple Operator Message MOM-MOM-22-0549-01B(R1), dated November 29, 2022.

(1) Condition 1: If any wear is found that is 0.20 inch or less, report inspection findings in accordance with paragraph (j) of this AD.

(2) Condition 2: If any wear is found that is greater than 0.20 inch, do the actions required by paragraphs (i)(2)(i) and (ii) of this AD.

(i) Report inspection findings in accordance with paragraph (j) of this AD.

(ii) Before further flight, replace the transfer pump motor impeller with a transfer pump motor impeller having a serviceable inlet adapter, in accordance with paragraph D., Work Instructions, Attachment A, Boeing Multiple Operator Message MOM-MOM-22-0549-01B(R1), dated November 29, 2022.

(j) Retained Reporting Inspection Results, With No Changes

This paragraph restates the requirements of paragraph (j) of AD 2022-27-07, with no changes. At the applicable time specified in paragraph (j)(1) or (2) of this AD, submit a report of all findings of the inspections required by paragraphs (h) and (i) of this AD, in accordance with paragraph G. and Appendix A, Attachment A, Boeing Multiple Operator Message MOM-MOM-22-0549-01B(R1), dated November 29, 2022.

(1) If the inspection was done on or after January 13, 2023 (the effective date of AD 2022-27-07): Submit the report within 30 days after the inspection.

(2) If the inspection was done before January 13, 2023 (the effective date of AD 2022-27-07): Submit the report within 30 days after January 13, 2023.

(k) Retained Parts Installation Limitation, With Revised Affected Parts

This paragraph restates the requirements of paragraph (k) of AD 2022-27-07, with revised affected parts. As of January 13, 2023 (the effective date of AD 2022-27-07), no person may install, on any airplane, a Crane Aerospace Hydro-Aire horizontal stabilizer fuel transfer pump housing or transfer pump motor impeller, unless the transfer pump motor impeller inlet adaptor and transfer pump housing inlet check valve have been inspected as specified in paragraph (h) or (i) of this AD, as applicable, and been determined to be a serviceable part as defined in paragraph (g)(1) or (2) of this AD.

(l) Retained Credit for Previous Actions, With No Changes

This paragraph restates the provisions of paragraph (l) of AD 2022-27-07, with no changes. This paragraph provides credit for actions required by paragraphs (h) and (i) of this AD, if those actions were performed before January 13, 2023 (the effective date of AD 2022-27-07) using Boeing Multiple Operator Message MOM-MOM-22-0549-01B, dated November 21, 2022.

(m) Special Flight Permit

Special flight permits may be issued in accordance with [14 CFR 21.197](#) and [21.199](#) to operate the airplane to a location where the actions required by this AD can be performed, provided the horizontal stabilizer fuel tank is defueled and both transfer pump circuit breakers are locked in the “open” position.

(n) 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 responsible Flight Standards 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 (o)(1) 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 responsible Flight Standards 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.

(o) Related Information

(1) For more information about this AD, contact Samuel Dorsey, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3415; email: Samuel.j.dorsey@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (p)(4) and (5) of this AD.

(p) 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 this AD specifies otherwise.

(3) The following service information was approved for IBR on January 13, 2023 ([87 FR 80028](#), December 29, 2022).

(i) Boeing Multiple Operator Message MOM–MOM–22–0549–01B(R1), dated November 29, 2022.

(ii) [Reserved]

(4) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110–SK57, Seal Beach, CA 90740–5600; telephone 562–797–1717; website *myboeingfleet.com*.

(5) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206–231–3195.

(6) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on April 8, 2023.

Christina Underwood,

Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.

[FR Doc. 2023–08027 Filed 4–12–23; 4:15 pm]

BILLING CODE 4910–13–P