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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NM-249-AD; Amendment 39-12900; AD 2002-19-52]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 737-600, -700, -700C, -800, and -900 Series Airplanes; Model 747 Series Airplanes; and Model 757 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to all Boeing Model 737-600, -700, -700C, -800, and -900 series airplanes; Model 747 series airplanes; and Model 757 series airplanes, that currently requires revision of the FAA-approved airplane flight manual (AFM) to advise the flight crew of certain operating restrictions for maintaining minimum fuel levels; prohibits use of the horizontal stabilizer tank on certain airplanes, and prohibits the installation of certain fuel pumps. This amendment requires concurrent removal of the currently required AFM revisions and insertion of new AFM revisions; requires installation of placards to alert the flightcrew to the operating restrictions; and prohibits installation of any uninspected pumps. This amendment permits the AFM revision and placard to be removed under certain conditions. The actions specified in this AD are intended to prevent fuel vapors from coming into contact with an ignition source in the center wing fuel tank, horizontal stabilizer fuel tank, center auxiliary fuel tank (body tank), or auxiliary fuel tanks 1 and 4, which could result in fire/explosion.

DATES: Effective September 30, 2002.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of September 30, 2002.

Comments for inclusion in the Rules Docket must be received on or before November 29, 2002.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2002-NM-249-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments may be inspected at this location between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays. Comments may be submitted via fax to (425) 227-1232. Comments may also be sent via the Internet using the following address: 9-anm-iarcomment@faa.gov. Comments sent via fax or the Internet must contain "Docket

No. 2002-NM-249-AD" in the subject line and need not be submitted in triplicate. Comments sent via the Internet as attached electronic files must be formatted in Microsoft Word 97 for Windows or ASCII text.

The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Doug Pegors, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-1446; fax (425) 227-1181.

SUPPLEMENTARY INFORMATION: On August 30, 2002, the FAA issued emergency AD 2002-18-52, applicable to all Boeing Model 737-600, -700, -700C, -800, and -900 series airplanes; Model 747 series airplanes; and Model 757 series airplanes. That AD requires revision of the FAA-approved airplane flight manual (AFM) to advise the flight crew of certain minimum fuel levels that must be maintained in the center fuel tanks, and to prohibit use of the horizontal stabilizer tank, if installed, on Model 747-400 series airplanes. That AD also prohibits the installation of certain spare fuel pumps (those having part numbers with the suffix "-4"). That AD permits the AFM revision and placard to be removed if all fuel pumps have been inspected to ensure that the wire bundle is properly routed in the pump.

That action was prompted by reports indicating that fuel pumps on certain Boeing Model 737, 747, and 757 series airplanes have failed as a result of chafing of the stator lead wire bundle, which occurred when the stator lead wire bundle came into contact with the rotor in the pump motor. The pumps eventually failed when the pump power was short-circuited to the rotor and the circuit protection device tripped. Examination of failed pumps showed that arcing had occurred in the pump bearings both inside and outside of the explosion-proof cavity of the pump. Such arcing could result in an ignition source in the fuel tank. It is not known how long the pumps operated with arcing occurring before the circuit-protection device tripped. The fuel pump failures have been attributed to the manufacturing assembly process during which the stator lead wire bundle was improperly installed and positioned in the motor-impeller housing. The actions required by that AD are intended to ensure that the center wing tank pump inlets will be covered with fuel during pump operation, which will prevent fuel vapors from coming into contact with any ignition source resulting from arcing to the pump rotor. The other main wing tank fuel pump inlets are not normally uncovered during operation. The actions of that AD are intended to prevent fire/explosion in the center fuel tank.

Actions Since Issuance of Previous Rule

Since the issuance of AD 2002-18-52, the FAA has learned of additional cases of lead wire chafing in Hydro-Aire pumps of designs other than those identified in that AD. A review of records revealed additional cases of lead wire chafing and improper lead wire bundle installation. One of those pumps had lead wire chafing after only a 45-minute period of acceptance test running. In addition, one pump failed in recent Model 747 flight testing due to stator lead wire chafing. Examination of the pump from that airplane revealed arcing to the rotor. In addition, the manufacturer reported that pumps had been inspected at the vendor's overhaul facility; of 16 pumps inspected, 25% were found improperly assembled. All of the above failures were found on pumps that were not identified in AD 2002-18-52 (which identified only those part numbers having the suffix "-4"). Evidence of stator lead wire splicing discovered on pumps overhauled by repair facilities suggests there may have been similar chafing damage.

The reported failures on all the pumps have been determined to be caused by improper assembly of the pumps at Hydro-Aire or repair facilities, and by a design that allows improper assembly to occur. Improper assembly allows the wires to be pinched or trapped where they are worn by the pump rotor when it operates. The combination of pinched/trapped wires in a fuel pump with arcing/shorting when the pump inlet is not covered by tank fuel may result in ignited tank vapors.

Explanation of Relevant Service Information

The FAA has reviewed and approved the following Boeing alert service bulletins, all dated September 23, 2002:

Boeing alert service bulletin	Affected airplanes
737–28A1197	Model 737 series airplanes.
747–28A2248	Model 747 series airplanes.
757–28A0070	Model 757–200, –200PF, –200CB series airplanes
757–28A0071	Model 757–300 series airplanes.

The service bulletins describe procedures for inspecting the fuel pumps of the center wing tank, horizontal stabilizer tank, center auxiliary tank (or body tank, located in the aft end of the forward cargo compartment), and auxiliary fuel tanks 1 and 4, using X-ray methods to determine whether the wire bundle is properly routed in the pump.

The FAA also approved Crane Hydro-Aire Service Bulletin Crane Hydro-Aire Motor-Impeller-28-01, dated September 17, 2002, which describes detailed procedures for the X-ray inspection.

Explanation of Requirements of Rule

Since an unsafe condition has been identified that is likely to exist or develop on other airplanes of this same type design, this airworthiness directive supersedes AD 2002-18-52 to concurrently require removal of the currently required AFM revisions (advising the flightcrew of certain minimum fuel levels that must be maintained in the center fuel tanks) and insertion of revised versions of the corresponding AFM sections. This AD also requires installation of placard(s) to alert the flightcrew to the operating restrictions; and prohibits installation of fuel pumps unless they have been inspected using X-ray methods to ensure that the wire bundle is properly routed in the pump. In addition, if all fuel pumps for the center wing, horizontal stabilizer, center auxiliary tanks, and auxiliary fuel tanks 1 and 4 on an airplane have been inspected to ensure that the wire bundle is properly routed in the pump since the most recent assembly of the end cap and motor-impeller housing–whether in manufacturing, after maintenance or inspection, or after overhaul–the applicable AFM revision and placard may be removed. The AD also includes a provision for separate relief from the prohibition against operation of the horizontal stabilizer tank.

Explanation of Changes to Existing AD

This AD identifies the unsafe condition as fuel vapors potentially coming into contact with an ignition source in the center wing fuel tank, horizontal stabilizer fuel tank, center auxiliary fuel tank, or auxiliary fuel tanks 1 and 4, which could result in fire/explosion. AD 2002-18-52 did not identify the center auxiliary fuel tank or auxiliary fuel tanks 1 and 4, because no "-4" pump is installed in any of those tanks.

The AFM language required by AD 2002-18-52 has been revised to remove certain wording as a means to provide clarification regarding the requirement to shut off the fuel pumps and to add procedures to address fuel pump failures.

Explanation of Compliance Time

The compliance time for revising the AFM to include the operational restrictions is 14 days, whereas the compliance time for the corresponding action of AD 2002-18-52 was 4 days. The unsafe condition is the same as that for AD 2002-18-52, and is considered by the FAA to require urgent action. However, because of the significant amount of service experience on the affected fuel pumps in this case, and because of the relatively small number of known events of chafing, the FAA has determined that the 14-day compliance time will allow operators sufficient time to perform X-ray inspections on airplanes used on routes that require maximum fuel capacity, without compromising safety.

Differences Between This AD and the Service Bulletins

The service bulletins recommend inspecting all fuel pumps; however, this AD requires that the pumps be inspected only prior to pump installation or to provide relief from the required operating restrictions regarding fuel pump operation.

The effectivity of the Boeing service bulletins includes only certain line numbers for each airplane model. However, the applicability of this AD includes all airplanes of the affected models. Although the manufacturer has addressed the unsafe condition for airplanes in production, the FAA has determined that it is possible that an airworthy airplane may later have a suspect part installed, rendering the airplane no longer airworthy; therefore, this AD is applicable to all airplanes.

Whereas the service bulletins refer to the "body tank," this AD identifies that part as the "center auxiliary fuel tank."

Interim Action

This is considered to be interim action until final action is identified, at which time the FAA may consider further rulemaking.

Determination of Rule's Effective Date

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified under the caption ADDRESSES. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Submit comments using the following format:

- Organize comments issue-by-issue. For example, discuss a request to change the compliance time and a request to change the service bulletin reference as two separate issues.
- For each issue, state what specific change to the AD is being requested.
- Include justification (e.g., reasons or data) for each request.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2002-NM-249-AD." The postcard will be date stamped and returned to the commenter.

Regulatory Impact

The regulations adopted herein 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. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by adding a new airworthiness directive (AD), amendment 39-12900, to read as follows:

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.airweb.faa.gov/rgl"

2002-19-52 Boeing: Amendment 39-12900. Docket 2002-NM-249-AD. Supersedes Emergency AD 2002-18-52.

Applicability: All Model 737-600, -700, -700C, "800, and -900; 747; and 757 series airplanes; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (l)(1) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent fuel vapors from coming into contact with an ignition source in the center wing fuel tank, horizontal stabilizer fuel tank, center auxiliary fuel tank, or auxiliary fuel tanks 1 and 4, which could result in fire/explosion, accomplish the following:

Revision of Airplane Flight Manual (AFM): Model 737-600, -700, -700C, ''800, and -900

(a) For Model 737-600, -700, -700C, "800, and -900 series airplanes: Within 14 days after the effective date of this AD, concurrently perform the actions required by paragraphs (a)(1) and (a)(2) of this AD:

(1) Remove the AFM revision required by paragraph (a) of emergency AD 2002-18-52; and

(2) Revise the Limitations section of the FAA-approved AFM to include the following (this may be accomplished by inserting a copy of this AD into the AFM):

"Certificate Limitations

The center tank fuel pumps must be OFF for takeoff if center tank fuel is less than 5,000 pounds (2,300 kilograms) with the airplane readied for initial taxi.

Both center tank fuel pump switches must be selected OFF when center tank fuel quantity reaches approximately 1,000 pounds (500 kilograms) during climb and cruise or 3,000 pounds (1,400 kilograms) during descent and landing. The fuel pumps must be positioned OFF at the first indication of fuel pump low pressure.

The CWT fuel quantity indication system must be operative to dispatch with CWT mission fuel.

Note

The CONFIG indicator will annunciate when center tank fuel exceeds 1,600 pounds (800 kilograms) and the center tank fuel pump switches are OFF. Do not accomplish the CONFIG non-normal procedure prior to or during takeoff with less than 5,000 pounds (2,300 kilograms) of center tank fuel or during descent and landing with less than 3,000 pounds (1,400 kilograms) of center tank fuel.

Note

In a low fuel situation, both center tank pumps may be selected ON and all center tank fuel may be used.

If the main tanks are not full, the zero fuel gross weight of the airplane plus the weight of center tank fuel may exceed the maximum zero fuel gross weight by up to 5,000 pounds (2,300 kilograms) for takeoff, climb and cruise and up to 3,000 pounds (1,400 kilograms) for descent and landing, provided that the effects of balance (CG) have been considered.

If a center tank fuel pump fails with fuel in the center tank, accomplish the FUEL PUMP LOW PRESSURE non-normal procedure.

When defueling center or main wing tanks, the Fuel Pump Low Pressure indication lights must be monitored and the fuel pumps positioned to OFF at the first indication of fuel pump low pressure. Defueling with passengers on board is prohibited.

The limitations contained in this AD supersede any conflicting basic airplane flight manual limitations."

AFM Revision: Model 747-100, -200B, -200F, -200C, -100B, -300, -100B SUD, 747SR, and 747SP

(b) For Model 747-100, -200B, -200F, -200C, -100B, -300, -100B SUD, 747SR, and 747SP series airplanes: Within 14 days after the effective date of this AD, concurrently perform the actions required by paragraphs (b)(1) and (b)(2) of this AD:

(1) Remove the AFM revision required by paragraph (b) of emergency AD 2002-18-52; and

(2) Revise the Limitations section of the FAA-approved AFM to include the following (this may be accomplished by inserting a copy of the AD into this AFM):

"Certificate Limitations

Fueling and use of the center auxiliary fuel tank and auxiliary fuel tanks 1 and 4 (if installed) is prohibited.

The center wing tank (CWT) must contain a minimum of 17,000 pounds (7,700 kilograms) of fuel prior to engine start, if the CWT override/jettison pumps are to be selected ON during flight.

The CWT fuel quantity indication system must be operative to dispatch with CWT mission fuel.

Both CWT override/jettison pump switches must be selected OFF at or before the CWT fuel quantity reaches 7,000 pounds (3,200 kilograms), if the CWT fuel quantity is less than 50,000 pounds (22,700 kilograms) prior to engine start. The CWT override pumps may be selected ON during stabilized cruise conditions. Both CWT override/jettison pump switches must be selected OFF at or before the CWT fuel quantity reaches 3,000 pounds (1,400 kilograms).

Both CWT override/jettison pump switches must be selected OFF at or before the CWT fuel quantity reaches 3,000 pounds (1,400 kilograms), if the CWT fuel quantity is greater than or equal to 50,000 pounds (22,700 kilograms) prior to engine start.

Both CWT override/jettison pumps must be selected OFF when either CWT override/jettison fuel pump low pressure light illuminates.

Warning

Do not reset a tripped fuel pump circuit breaker.

Warning

Do not cycle the CWT pump switches from ON to OFF to ON with any continuous low pressure indication present.

Note

The CWT may be emptied normally in an emergency fuel jettison.

Note

In a low fuel situation, both CWT override/jettison pumps may be selected ON and all CWT fuel may be used.

If a center wing tank pump fails with fuel in the center tank, shut off the affected fuel pump.

If the main tanks are not full, the zero fuel gross weight of the airplane plus the weight of CWT tank fuel may exceed the maximum zero fuel gross weight by up to 7,000 pounds (3,200 kilograms) for takeoff, climb, cruise, descent, and landing, provided that the effects of balance (CG) have been considered.

When defueling center or main wing tanks, the Fuel Pump Low Pressure indication lights must be monitored and the fuel pumps positioned to OFF at the first indication of fuel pump low pressure. Defueling with passengers on board is prohibited.

The limitations contained in this AD supersede any conflicting basic airplane flight manual limitations."

AFM Revision: Model 747-400, -400D, and -400F

(c) For Model 747-400, -400D, and -400F series airplanes: Within 14 days after the effective date of this AD, concurrently perform the actions required by paragraphs (c)(1) and (c)(2) of this AD:

(1) Remove the AFM revision required by paragraph (c) of emergency AD 2002-18-52; and

(2) Revise the Limitations section of the FAA-approved AFM to include the following (this may be accomplished by inserting a copy of the AD into this AFM):

"Certificate Limitations

Fueling and use of the horizontal stabilizer tank (if installed) is prohibited if a placard prohibiting its use is installed.

The center wing tank (CWT) must contain a minimum of 17,000 pounds (7,700 kilograms) prior to engine start, if the CWT override/
jettison pumps are to be selected ON during flight.

The CWT fuel quantity indication system must be operative to dispatch with CWT mission fuel.

Both CWT override/jettison pump switches must be selected OFF at or before CWT fuel quantity reaches 7,000 pounds (3,200 kilograms), if CWT fuel quantity is less than 50,000 pounds (22,700 kilograms) prior to engine start. The CWT override pumps may be selected ON during stabilized cruise conditions. Both CWT override/jettison pump switches must be selected OFF at or before the CWT fuel quantity reaches 3,000 pounds (1,400 kilograms).

Note

With CWT override/jettison pumps selected OFF and CWT fuel quantity greater than 6,000 pounds (2,800 kilograms), the FUEL OVRD CTR L & R EICAS messages will be displayed. Do not accomplish the associated non-normal procedure.

Both CWT override/jettison pump switches must be selected OFF at or before CWT fuel quantity reaches 3,000 pounds (1,400 kilograms), if CWT fuel quantity is greater than or equal to 50,000 pounds (22,700 kilograms) prior to engine start.

Both CWT override/jettison pumps must be selected OFF when either CWT override/jettison fuel pump low pressure light illuminates.

Warning

Do not reset a tripped fuel pump circuit breaker.

Warning

Do not cycle CWT override/jettison pump switches from ON to OFF to ON with any continuous low pressure indication present.

Note

The center wing tank may be emptied normally during an emergency fuel jettison.

Note

In a low fuel situation, both CWT override/jettison pumps may be selected ON and all CWT fuel may be used.

If a center wing tank pump fails with fuel in the center tank, accomplish the FUEL OVRD CTR L, R non-normal procedure.

If the main tanks are not full, the zero fuel gross weight of the airplane plus the weight of CWT tank fuel may exceed the maximum zero fuel gross weight by up to 7,000 pounds (3,200 kilograms) for takeoff, climb, cruise, descent, and landing, provided that the effects of balance (CG) have been considered.

When defueling any fuel tanks, the Fuel Pump Low Pressure indication lights must be monitored and the fuel pumps positioned to OFF at the first indication of fuel pump low pressure. Defueling with passengers on board is prohibited.

The limitations contained in this AD supersede any conflicting basic airplane flight manual limitations."

AFM Revision: Model 757

(d) For Model 757 series airplanes: Within 14 days after the effective date of this AD, concurrently perform the actions required by paragraphs (d)(1) and (d)(2) of this AD:

(1) Remove the AFM revision required by paragraph (d) of emergency AD 2002-18-52; and

(2) Revise the Limitations section of the FAA-approved AFM to include the following (this may be accomplished by inserting a copy of the AD into this AFM):

"Certificate Limitations

The center tank fuel pumps must be OFF for takeoff if center tank fuel is less than 5,000 pounds (2,300 kilograms) with the airplane readied for initial taxi.

Both center tank fuel pump switches must be selected OFF when center tank fuel quantity reaches approximately 1,000 pounds (500 kilograms) during climb, cruise, or descent. The center tank fuel pumps must be positioned OFF at the first indication of fuel pump low pressure.

The CWT fuel quantity indication system must be operative to dispatch with CWT mission fuel.

Warning

Do not reset a tripped fuel pump circuit breaker.

Note

The FUEL CONFIG light will illuminate when there is fuel in the center tank that exceeds 1,200 pounds (600 kilograms) and the center tank fuel pump switches are OFF. Do not accomplish the associated non-normal procedure prior to or during takeoff with less than 5,000 pounds (2,300 kilograms) of center tank fuel, unless there is an imbalance between main tanks or fuel is low in either main tank. After canceling the FUEL CONFIG light, monitor fuel quantity indications and accomplish the appropriate non-normal procedure if a main tank imbalance or main tank low fuel quantity occurs.

Note

In a low fuel situation, both center tank pumps may be selected ON and all center tank fuel may be used.

If the main tanks are not full, the zero fuel gross weight of the airplane plus the weight of center tank fuel may exceed the maximum zero fuel gross weight by up to 5,000 pounds (2,300 kilograms) for takeoff, climb, cruise, descent, and landing, provided that the effects of balance (CG) have been considered.

If a center tank fuel pump fails or indicates low pressure with fuel in the center tank, accomplish the FUEL PUMP non-normal procedure.

When defueling center or main wing tanks, the Fuel Pump Low Pressure indication lights must be monitored and the fuel pumps positioned to OFF at the first indication of fuel pump low pressure. Defueling with passengers on board is prohibited.

The limitations contained in this AD supersede any conflicting basic airplane flight manual limitations."

Placard Installation

(e) For all airplanes: Within 14 days after the effective date of this AD, install a placard that reads as follows (alternative placard wording may be used if approved by an appropriate FAA Principal Operations Inspector):

"AD 2002-19-52 fuel usage restrictions required."

(1) For Model 747-100, -200B, -200F, -200C, -100B, -300, -100B SUD, 747SR, and 747SP series airplanes: Install the placard on or adjacent to the flight engineer's fuel control panel.

(2) For all other airplanes: Install the placard adjacent to each pilot's primary flight display.

(f) For Model 747-400, -400D, and -400F series airplanes on which a horizontal stabilizer tank is installed: Within 14 days after the effective date of this AD, install a placard adjacent to each pilot's primary flight display that reads as follows (alternative placard wording may be used if approved by an appropriate FAA Principal Operations Inspector):

"Use of horizontal stabilizer tank is prohibited."

Terminating Actions

(g) For all airplanes: If all fuel pumps for the center wing tank, horizontal stabilizer tank, center auxiliary tanks, and auxiliary fuel tanks 1 and 4 on an airplane have been inspected using X-ray methods, and the wire bundle is properly routed in the pump since the most recent assembly of the end cap and motor-impeller housing–whether in manufacturing, after maintenance or inspection, or after overhaul–in accordance with the applicable service bulletin identified in Table 1 of this AD, the applicable AFM revision and placard required by paragraphs (a), (b), (c), (d), and (e) of this AD may be removed. Table 1 follows:

TABLE 1.—SERVICE BULLETINS

For—	Use the following service bulletin—
Model 737 series airplanes	Boeing Alert Service Bulletin 737–28A1197, dated September 23, 2002.
Model 747 series airplanes	Boeing Alert Service Bulletin 747–28A2248, dated September 23, 2002.
Model 757–200, –200PF, –200CB series airplanes.	Boeing Alert Service Bulletin 757–28A0070, dated September 23, 2002.
Model 757–300 series airplanes	Boeing Alert Service Bulletin 757–28A0071, dated September 23, 2002.
All airplanes	Crane Hydro-Aire Service Bulletin Crane Hydro-Aire Motor-Impeller-28–01, including Appendix A, dated September 17, 2002.

(h) For Model 747-400, -400D, -400F series airplanes: If both horizontal stabilizer tank pumps have been inspected using X-ray methods to ensure that the wire bundle is properly routed in the pump since the most recent assembly of the end cap and motor-impeller housing–whether in manufacturing, after maintenance or inspection, or after overhaul–in accordance with Boeing Alert Service Bulletin 747-28A2248, dated September 23, 2002, and Crane Hydro-Aire Service Bulletin Crane Hydro-Aire Motor-Impeller-28-01, including Appendix A, dated September 17, 2002, the placard required by paragraph (f) of this AD is not required.

Part Installation

(i) Within 4 days after receipt of emergency AD 2002-18-52, no person may install on any airplane a fuel pump having a part number contained in Table 2 of this AD, unless the pump has been inspected to ensure that the wire bundle is properly routed in the pump since the most recent assembly of the end cap and motor-impeller housing–
whether in manufacturing, after maintenance or inspection, or after overhaul–in accordance with the applicable service bulletin identified in Table 1 of this AD. Table 2 follows:

TABLE 2.—FLEETS AND PART NUMBERS FOR DISCREPANT FUEL PUMPS

Airplane	Hydro-Aire Part No.	Boeing Part No.
Model 737–600, –700, –700C, –800, and –900 series airplanes	60–989100–4 60–755100–4	60B89004–14 60B92404–8
Model 747–100, –200B, –200F, –200C, SR, SP, –100B, –300, –100B SUD, 747SR, and 747SP series airplanes.	60–72301–4 60–75501–4 60–75503–4 60–755100–4 60–72101–4 60–98976–4	60B92603–418 60B92404–403 60B92404–404 60B92404–8 60B92603–26 60B89004–15

Model 747–400, –400D, and –400F series airplanes	60–98976–4	60B89004–15
	60–72101–4	60B92603–26
Model 757 series airplanes	60–989100–4	60B89004–14
	60–755100–4	60B92404–8

(j) As of 14 days after the effective date of this AD, no person may install on any airplane, in any pump position, a fuel pump motor-impeller assembly having any part number unless the assembly has been inspected since the most recent assembly of the end cap motor-impeller housing–whether in manufacturing, after maintenance or inspection, or after overhaul–using X-ray methods to ensure that the wire bundle is properly routed in the pump in accordance with the applicable service bulletin listed in Table 1 of this AD.

(k) Inspection of a pump by Crane Hydro-Aire before the effective date of this AD is considered equivalent to an inspection performed in accordance with Crane Hydro-Aire Service Bulletin Crane Hydro-Aire Motor-Impeller-28-01, including Appendix A, dated September 17, 2002.

Alternative Methods of Compliance

(l)(1) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance and/or Operations Inspector, who may add comments and then send it to the Manager, Seattle ACO.

(2) Alternative methods of compliance, approved previously in accordance with AD 2002-18-52 are approved as alternative methods of compliance with paragraphs (a), (b), (c), and (d) of this AD.

Note 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

Special Flight Permits

(m) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(n) Unless otherwise provided by this AD, the actions shall be done per Boeing Alert Service Bulletin 737-28A1197, dated September 23, 2002; Boeing Alert Service Bulletin 747-28A2248, dated September 23, 2002; Boeing Alert Service Bulletin 757-28A0070, dated September 23, 2002; Boeing Alert Service Bulletin 757-28A0071, dated September 23, 2002; and Crane Hydro-Aire Service Bulletin Crane Hydro-Aire Motor-Impeller-28-01, including Appendix A, dated September 17, 2002; as applicable. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(o) This amendment becomes effective on September 30, 2002.

Issued in Renton, Washington, on September 24, 2002.
Ali Bahrami,
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.
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