

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2008-0934; Directorate Identifier 2008-NM-113-AD; Amendment 39-16537; AD 2010-25-04]**

**RIN 2120-AA64**

**Airworthiness Directives; McDonnell Douglas Corporation Model DC-9-30, DC-9-40, and DC-9-50 Series Airplanes, Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), and DC-9-87 (MD-87) Airplanes, and Model MD-88 and MD-90-30 Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for the McDonnell Douglas Corporation airplanes listed above. This AD requires modifying the fuel boost pumps for the center wing, and forward or aft auxiliary fuel tanks. This AD results from fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent possible sources of ignition in a fuel tank caused by an electrical fault in the fuel boost pumps. An ignition source in the fuel tank could result in a fire or an explosion and consequent loss of the airplane.

**DATES:** This AD is effective January 11, 2011.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of January 11, 2011.

**ADDRESSES:** For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, California 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; e-mail dse.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. For Argo-Tech service information identified in this AD, contact Argo-Tech Corporation, 23555 Euclid Avenue, Cleveland, Ohio 44117; telephone 216-692-6000.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and

other information. The address for the Docket Office (telephone 800-647-5527) is the Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Serj Harutunian, Aerospace Engineer, Propulsion Branch, ANM-140L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712-4137; telephone (562) 627-5254; fax (562) 627-5210.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to certain McDonnell Douglas Model DC-9-30, DC-9-40, and DC-9-50 series airplanes, Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), and DC-9-87 (MD-87) airplanes, and Model MD-88 and MD-90-30 airplanes. That NPRM was published in the Federal Register on August 29, 2008 (73 FR 50894). That NPRM proposed to require modifying the fuel boost pumps for the center wing, and forward or aft auxiliary fuel tanks.

### **Relevant Service Information**

We have reviewed Boeing Service Bulletins DC9-28-212 (for Model DC-9-30, DC-9-40, and DC-9-50 series airplanes, and Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87), and MD-88 airplanes) and MD90-28-010 (for Model MD-90-30 airplanes), both Revision 1, both dated June 16, 2009. Revision 1 of the Boeing service information makes minor updates and specifies that no additional work is necessary on airplanes changed in accordance with Boeing Service Bulletin DC9-28-212 or MD90-28-010, both dated February 22, 2008 (referred to in the proposed AD as the appropriate sources of service information for accomplishing the modification).

Boeing Service Bulletins DC9-28-212 and MD90-28-010, both Revision 1, both dated June 16, 2009, recommend concurrent accomplishment of the modification specified in Argo-Tech Service Bulletin 398000-28-2, Revision 1, dated December 2, 2008. Argo-Tech Service Bulletin 398000-28-2, dated November 8, 2007, was referred to in the proposed AD as the appropriate source of service information for accomplishing a concurrent modification of the fuel boost pumps.

We have revised paragraphs (c), (g), and (h) of this AD to reference Revision 1 of the applicable Boeing and Argo-Tech service information. We have also added a new paragraph (i) to this AD (and reidentified subsequent paragraphs) to give credit for actions done in accordance with the original issues of the Boeing and Argo-Tech service information.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We considered the comments received.

### **Request for Alternative Method of Compliance (AMOC)**

American Airlines (AA) asks that we revise the modification requirements in the NPRM, and in lieu of the modification, a one-time inspection of each affected fuel boost pump be mandated to ensure that the stator lead wire is of proper length and positioned away from the pump rotor/shaft assembly. AA states that after operating the affected airplanes for over 24 years with over 75,000,000 flight hours in service, it has not found any chafing of the fuel pump lead wire during shop teardown.

We do not agree with the commenter's request. We have determined that a one-time inspection of the wiring leads would not be effective at preventing a single failure within the pump from creating an ignition source. Argo-Tech, the original equipment manufacturer (OEM), has reported two instances of lead wire contact with the rotor assembly, which could have resulted in chafing and energized rotor assembly. Therefore, the data provided by this commenter does not support the request to utilize one-time inspections in lieu of the modifications required by this AD. We have not changed the AD in this regard.

### **Request for Risk Assessment**

The Air Transport Association (ATA) on behalf of its member AA recommends that we update our risk assessment in view of service data provided in the AA comments, in addition to the current fleet size and remaining service lives of the affected airplanes. ATA also suggests correcting the deficiencies noted in the service instructions (specified under 'Request to Revise Argo-Tech Service Information') and publishing a supplemental NPRM after those discrepancies are corrected.

AA asks that prior to issuing the AD we accomplish a risk assessment regarding fuel tank system safety that takes into account the number of Model DC-9, MD-80 and MD-90 airplanes estimated to be operating within the compliance times required by the AD. AA also asks for the projected operational life of these airplanes after the AD compliance date and wants the results of this risk assessment reported to Boeing and affected operators. AA states that, when the FAA evaluated these design reviews, it established four criteria intended to define the unsafe conditions associated with fuel tank systems that require corrective actions. AA adds that the percentage of operating time during which fuel tanks are exposed to flammable conditions is one of these criteria; the other three criteria address the failure types under evaluation. AA notes that the evaluation apparently did not take into consideration the number of Model DC-9, MD-80 and MD-90 airplanes in operation.

We disagree with the commenters' request. Special Federal Aviation Regulation 88 (SFAR 88) resulted in design approval holder (DAH) evaluation of the fuel tank system design and identification of failures within the fuel tank system that could result in ignition sources. We evaluated the analyses provided by the DAH and determined that foreseeable single failures of the fuel pump could result in an ignition source. As a result, we determined that mandatory corrective action is needed to correct single failures that could result in an ignition source. SFAR 88—Mandatory Action Decision Criteria Memorandum, dated February 25, 2003, specifies SFAR 88 AD determination is based on unsafe condition evaluation criteria, including single failures that can result in a catastrophic failure. We have made no change to the AD in this regard.

### **Request To Change NPRM Requirements**

ATA, on behalf of its member AA, requests that we do not require a design change that is a reliability enhancement. AA requests that the NPRM requirement to replace the current pump connectors with gold-plated connector pins, as specified in the applicable service bulletins and NPRM, be changed. AA states that installation of gold-plated connector pins is not an SFAR 88-related design change intended for preventing an ignition source. AA adds that the installation of gold-plated pins is intended to improve the reliability of the connector interface. AA also notes that the cost to install gold-plated pins is \$1,352 per pump.

We acknowledge the commenter's concern and provide the following clarification. This AD does not require using gold-plated connector pins to install the pumps, although the Argo-Tech service information recommends installing the new pump assembly electrical connector using gold-plated connector pins; the accomplishment instructions do not specify that only gold-plated connector pins must be installed. Installation of gold-plated pins is a reliability improvement and is not identified as a design change solution to mitigate ignition source caused by an energized rotor assembly. Energized rotor assembly could result from chafing of fuel pump internal lead wires to the rotor

assembly; therefore, we are not mandating the installation of gold-plated connector pins. We have made no change to the AD in this regard.

### **Request To Identify Additional Guidance**

AA asks that the NPRM refer to FAA Advisory Circular (AC) 20-62D, dated May 24, 1996, as guidance for acceptable, equivalent consumable materials and parts for use during modification of the fuel boost pumps in accordance with 14 CFR 43.13(c). AA states that the procedures in Argo-Tech Service Bulletin 398000-28-2 do not allow operators to use such materials. AA notes that in some cases it does not stock certain adhesives, conversion coatings, sealants, etc., due to supplier delivery issues, the identification of improved products, standardization efforts, and health and/or environmental issues. AA adds that it has identified acceptable, equivalent materials that meet or exceed the performance of the original materials; operation of the fleet depends on identifying and utilizing acceptable, equivalent materials for airplane maintenance. AA concludes that AC 20-62D provides information and guidance for use in determining the quality, eligibility, and traceability of aeronautical parts and materials intended for installation on U.S. type-certificated products and to enable compliance with the applicable regulations. AA notes that this AC does not exclude ADs or other regulatory actions from its applicability, and contends that the guidance in this AC is applicable to the NPRM.

Although it is true that FAA AC 20-62D, dated May 24, 1996, in general applies to owner/operator maintenance and repair practices in use prior to issuance of SFAR 88, we do not agree that this AD should refer to AC 20-62D as guidance. During development of SFAR 88 we received reports of ignition sources being created by lack of control of past maintenance and overhaul practices. We included a requirement that critical design configuration control limitation be defined by the DAH so that doing maintenance or overhaul would not inadvertently bypass safety critical design features of the fuel tank system. We have determined that past maintenance practices for fuel systems using the guidelines of AC 20-62D are not applicable to the fuel system type design changes mandated by SFAR 88. The requirements of this AD take precedence over the guidelines of AC 20-62D. The commenter suggested it has identified "acceptable equivalent materials that that meet or exceed the performance of the original materials." The commenter must request AMOC approvals from the FAA for these materials. Therefore, we have made no change to the AD in this regard.

### **Request To Revise Argo-Tech Service Information**

AA asks that we direct Argo-Tech to revise Argo-Tech Service Bulletin 398000-28-2, dated November 8, 2007, to include the following specific tolerances to avoid potential AD enforcement issues for AA and other operators.

- Include an appropriate minimum radius for the noted dimension in Figure 1, "Machining Mask," of that Argo-Tech service bulletin. AA notes that it does not have a tolerance call-out on the 1.25 diameter drill or cut-through dimension.
- Include an appropriate minimum radius in Figure 2, "Housing Machine Details," of that Argo-Tech service bulletin. AA notes that it does not have a minimum dimension for the "R 0.010 Max" radius dimension. AA adds that some amount of radius (greater than R 0.000) is necessary at the locations shown; therefore the minimum radius should be specified.
- Include an appropriate maximum dimension in Step 3.D.16 of that Argo-Tech service bulletin which specifies "Etch wire insulation of 4 stator lead wires and ground lead wire ends a minimum of 0.75 inch (19 mm) using Teflon etchant (Tetra-Etch)." AA infers that there is a corresponding maximum dimension for this task.
- Correct and clarify Step 3.D.17 of that Argo-Tech service bulletin, which specifies "Strip 0.25 +/- 0.625 inch." AA notes that the tolerance for this dimension is greater than the nominal dimension. AA adds that it is not common practice to have .XXX tolerance on .XX dimension.

- Include appropriate dimension for Step 3.D.19 of that Argo-Tech service bulletin which specifies "1 inch (25 mm) maximum exposed lead wire length permissible at connector end after potting." AA infers that there is a corresponding minimum dimension to adhere to for this task.
- Include an appropriate tolerance for Step 3.D.21 of that Argo-Tech service bulletin which specifies "Lead wires must exit potting cup at 45 degree angle." AA requests the following additional changes:
- Allow "industry accepted" alternative methods of compliance for part reidentification (including vibro-etch, if acceptable) and permanent marker (Sharpie). AA notes that Step 3.D.31 of that Argo-Tech service bulletin specifies "Ink stamp new stator and housing assembly part number (219980-1) on stator and housing assembly." AA adds that many repair stations and operators (including AA) do not reidentify parts using ink stamps; an ink stamp identification process would typically be used by a type certificate holder (TCH) or OEM, but not by an operator. AA states that there are many acceptable "industry standard" methods for reidentification of parts, including vibro-etch (for "non-fatigue" critical parts) and permanent marker (Sharpie).
- Remove the type of material specified on page 5, paragraph C.(2) of that Argo-Tech service bulletin, "Parts and Material Supplied by the Operator" which references "Primer, Yellow, Zinc Chromate, P/N TT-P-1757." AA notes that the reference to this material should be removed because it is not called out in the Accomplishment Instructions of that Argo-Tech service bulletin. AA adds that this material is called out in the component maintenance manual (CMM 28-20-6), but only for protecting pins used in the Volute assembly, which is not affected by the NPRM. AA states that this product is a known carcinogen and many operators (including AA) and repair stations have removed it from inventory.

We acknowledge the inconsistencies in Argo-Tech Service Bulletin 398000-28-2, dated November 8, 2007, as noted above by the commenter. As specified under "Explanation of Relevant Service Information," above, Argo-Tech has revised the subject service bulletin to provide clarification and address all of the inconsistencies noted. We have revised this AD to refer to the revised Argo-Tech service bulletin.

AA also requests that there be a change in the language in Step 3.D.18 of Argo-Tech Service Bulletin 398000-28-2, dated November 8, 2007, which specifies "Solder leads to receptacle connector (50) per MIL-STD-2000 \* \* \*" to read "Solder leads to receptacle connector (50) per MIL-STD-2000 (or equivalent procedure)." AA notes that in some cases it utilizes internal process specifications to accomplish the equivalent of industry standard processes. AA adds that its Material and Process Specification P17-1 STD-2000 provides soldering processes equivalent to MIL-STD-2000.

We do not agree that the language in Step 3.D.18 of that Argo-Tech service bulletin should be changed. The process specified reflects the pump design standard as qualified by Boeing and Argo-Tech, and certified by the FAA in accordance with Boeing compliance data. In addition, the process is CDCCL controlled in the associated fuel pump component maintenance manual. Argo-Tech has revised Argo-Tech Service Bulletin 398000-28-2 to provide clarification for the language in Step 3.D.18 of that service bulletin.

In addition, AA points out that page 5, paragraph C.(2) of that Argo-Tech service bulletin specifies in "Parts and Material Supplied by the Operator" under "Curing Agent, Epoxy Resin, P/N Versamid 125" that "EPI-CURE-3125" is equivalent to "Versamid 125." AA notes that the specified curing agent is no longer procurable under the name "Versamid 125," and according to its purchasing department "EPI-CURE 3125" is the same product. AA asks that this clarification be included.

We do not agree that the requested clarification should be included in that Argo-Tech service bulletin. Argo-Tech continues to use and procure Versamid 125, which is also a CDCCL-controlled consumable in the associated fuel pump component maintenance manual. We have made no change to the AD in this regard.

## **Request To Revise Boeing Service Information**

AA asks that we direct Boeing to revise Boeing Service Bulletins DC9-28-212 and MD90-28-010, both dated February 22, 2008, to accurately depict the physical boundaries of the center wing tank. AA states that page 7 of Boeing Service Bulletin DC9-28-212 illustrates a typical "twinjet" airplane and shows the correct locations of the forward and aft auxiliary tanks for Model DC-9 and MD-80 airplanes. AA notes that the center wing tank is not illustrated properly because the drawing points to what appears to be a small access panel on the right wing. AA adds that past experience indicates that service bulletin illustrations can often be inconsistent with the configuration of the actual airplanes, engines, or components. AA indicates that this issue was found during an FAA audit of ADs on Model MD-80 fleet in April 2008; the findings indicated that some of the illustrations used to conduct the audit did not accurately reflect the production or post-production configuration of the airplane affected by the AD.

We do not agree with the commenter. As specified under "Explanation of Relevant Service Information," above, Boeing has revised the Boeing service bulletins referred to in the NPRM. However, per the Boeing type design and maintenance manual data, the center wing tank pumps and access door are located on the right wing, not the left, as inferred by the commenter. Therefore, we have made no change to the AD in this regard.

## **Request To Revise Certain Sections in the Argo-Tech Service Information**

AA asks that we direct Argo-Tech to revise the illustrations in the figures depicted in the stator and housing assembly modification procedure in Argo-Tech Service Bulletin 398000-28-2, dated November 8, 2007, to include the following note:

Note: The configuration illustrated in this figure is for reference only, and may vary from the operator's configuration. Any discrepancies between the illustration and the operator's configuration do not necessarily constitute non-compliance with the requirements of this SB.

AA adds that past experience indicates that service bulletin illustrations can often be inconsistent with the configuration of the actual airplane, engine, or components. AA notes that this issue was brought to light during an FAA audit of ADs on the Model MD-80 fleet in April 2008; the findings indicated that some of the illustrations used to conduct the audit did not accurately reflect the production or post-production configuration of the airplane affected by the AD. AA adds that the FAA claimed these discrepancies were findings of non-compliance.

We do not agree with the commenter. The figures included in that Argo-Tech service bulletin reflect the pump design standard qualified by Boeing and Argo-Tech and certified by the FAA in accordance with Boeing compliance data. A review of that Argo-Tech service bulletin shows that none of the figures contain "reference only" information; therefore, it would not be consistent to label some parts of the figures and not others. Including a "reference only" note may allow an obvious part discrepancy to escape further scrutiny. Therefore, we have made no change to the AD in this regard.

AA also asks that we direct Argo-Tech to revise Figure 2 ["Housing Machining Details"] of that Argo-Tech service bulletin, to include the following note regarding deviations:

Note: Deviations to the requirements of Argo-Tech SB 398000-28-2 that are reviewed and approved in writing by Argo-Tech are considered FAA-approved Alternative Means of Compliance (AMOCs) to the requirements of this AD.

AA states that, Figure 2 includes specific machining dimensions for the housing; during the process of machining and inspecting parts in its shops, it occasionally finds discrepancies between the dimensional specifications contained in the repair or modification procedures and the actual measured dimensions on the part. AA adds that in these cases, it contacts the TCH or the OEM, as

applicable, to request and obtain technical concurrence to deviate from dimensional specifications. AA notes that since that Argo-Tech service bulletin is a subject of the NPRM, it would also need to request and obtain an AMOC approval for this deviation. AA concludes that if the published AD has provisions to allow the OEM to review, disposition, and approve minor deviations to the dimensional specifications contained in that Argo-Tech service bulletin, it would alleviate the need for operators to request individual AMOC approvals from the FAA for these deviations.

We do not agree with the commenter. Dimensional tolerances, as provided by the OEM, must be maintained to make sure a part is within the design specification limits and is maintained and operated in accordance with the instructions for continued airworthiness (ICA) of the certificated product. Any deviations must be reviewed and approved; therefore, we can not pre-approve an AMOC procedure for addressing all future unforeseeable quality issues in any AD. We have made no change to the AD in this regard.

### **Request To Include Revisions to Component Maintenance Manual (CMM)**

AA asks that we direct Argo-Tech to revise any references to CMM 28-20-6 to include "Revision 6," which is the mandated revision level specified in related rulemaking (AD 2008-11-15). AA states that paragraphs 1.K.1 and L. of Argo-Tech Service Bulletin 398000-28-2, dated November 8, 2007, list "Component Maintenance Manual 28-20-6" with no revision level specified, and there are several references to "CMM" in paragraph 3., "Accomplishment Instructions," with no revision level specified. AA adds that, to ensure consistency and strict legal compliance in regard to work accomplished on the subject fuel boost pumps (and volutes), that Argo-Tech service bulletin should specify that all work be done in accordance with CMM 28-20-6, Revision 6.

We do not agree with the commenter. The CMM revision level is not specified in that Argo-Tech service bulletin since the special compliance item (SCI) is the controlling critical design configuration control limitation (CDCCL) definition document, so the need for AMOCs related to CMM revisions is not an issue. The compliance time in this AD is 5 years, and the CMM could be revised several times during that period. Specifying the CMM revision level in Argo-Tech Service Bulletin 398000-28-2 would necessitate revising both the Argo-Tech and Boeing service bulletins after every revision of the CMM, which would require operators to request an AMOC for each Boeing service bulletin revision. In light of these facts, we have made no change to the AD.

### **Request To Clarify Certain Actions in Paragraph (g)**

Northwest Airlines (NWA) agrees with the intent of the NPRM. NWA asks that we include a clarification in paragraph (f) of the NPRM that excludes post-production removal of an auxiliary fuel tank to release operators from doing actions in the Boeing service information that no longer apply. NWA states that this would prevent the need for an AMOC request.

We agree with the commenter. The actions required by paragraph (g) of this AD (referred to as paragraph (f) in the NPRM) do not apply to certain airplanes; therefore, we have clarified the language in paragraph (g) to specify that, for airplanes on which the auxiliary fuel tanks have been removed, the actions do not apply.

### **Request To Clarify Unsafe Condition**

Boeing asks that we clarify the description of the unsafe condition to note that the potential fuel tank ignition source, an energized fuel pump rotor assembly, is not caused by uncommanded or dry operation of the fuel boost pumps. Boeing states that uncommanded running of a fuel pump results from failures in its command and control electrical circuit and does not contribute to development of an energized rotor assembly condition. Boeing adds that a fuel pump inlet exposed to the ullage (dry operation of a fuel pump) is a necessary condition for propagation of an ignition source into the fuel tank, but does not contribute to development of an energized rotor assembly condition.

We agree with the commenter for the reasons provided. We have changed the description of the unsafe condition accordingly.

### **Request To Revise Costs of Compliance Section**

AA asks that we incorporate more accurate labor estimates. AA states that for Group 1, Configurations 1 and 2, the NPRM specifies 1 work hour for a total cost per product of between \$1,550 and \$16,118. AA notes that the cost impact estimates do not take into account the cost to accomplish the modification in the shop. AA adds that for those airplanes the estimate should be 9 work hours at an average rate of \$90 per work hour; for a total cost of \$2,385 and \$2,940 for parts per MD-82 airplane. Total labor and parts cost would be \$5,325 per MD-82 airplane. AA concludes that the total fleet cost would be \$1,262,025.

AA also states that for Group 3, Configurations 1 and 2, the NPRM specifies 3 work hours for a total cost per product of between \$1,710 and \$16,278. AA notes that the cost impact estimates do not take into account the cost to accomplish the modification in the shop. AA adds that for those airplanes the estimate should be 27 work hours at an average labor rate of \$90 per work hour, for a total cost of \$2,430 and \$8,820 for parts per MD-83 airplane. AA concludes that the total fleet cost would be \$1,035,000.

After considering the data presented by commenter, we agree that the number of work hours required is higher than our previous estimate, although not as high as provided by the commenter. Depending on operator's capabilities to change (modify and reinstall) a pump we have provided two estimates; a minimum and a maximum cost per airplane. The minimum cost represents the cost for operators who have repair shop resources and the capability to modify a pump and reinstall it. The maximum cost represents the cost for operators who choose to replace the pump with an OEM pump. The total labor hours to change (modify and reinstall) a pump by operators is approximately 7 hours. The total labor hours for replacing a pump with an OEM pump is approximately 3 hours. Depending on airplane grouping, there may be a minimum of 2 pumps or as many as 6 pumps per airplane. The cost impact information, below, has been revised to add a second table to indicate this higher amount.

### **Explanation of Change to Applicability**

We have changed the applicability in this AD to identify model designations as published in the most recent type certificate data sheet for the affected models.

### **Explanation of Additional Paragraph in the AD**

We have added a new paragraph (e) to this AD to provide the Air Transport Association (ATA) of America subject code 28; Fuel. This code is added to make this AD parallel with other new AD actions. We have reidentified subsequent paragraphs accordingly.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

### **Explanation of Change to Costs of Compliance**

Since issuance of the NPRM, we have increased the labor rate in the Costs of Compliance from \$80 per work hour to \$85 per work hour. The Costs of Compliance information, below, reflects this increase in the specified hourly labor rate.



## Costs of Compliance

We estimate that this AD affects 804 airplanes of U.S. registry. The following table provides the estimated costs for U.S. operators to comply with the modification specified in this AD.

Estimated costs					
Airplane Group - Number of Pumps	Configuration	Work hours	Average labor rate per hour	Parts	Cost per product
Group 1—2 pumps	1	7 per pump	\$85	Between \$1,470 and \$7,600	Between \$4,130 and \$16,390
Group 1—2 pumps	2	3 per pump	\$85	\$16,038 (per new pump)	\$32,586
Group 3—6 pumps	1	7 per pump	\$85	Between \$1,470 and \$7,600	Between \$12,390 and \$49,170
Group 3—6 pumps	2	3 per pump	\$85	\$16,038 (per new pump)	\$97,758

\* Note: For Group 2, 4, 5, 6, and 7 airplanes, the costs are calculated by the number of pumps per airplane; the range in the table above includes the fewest to the greatest number of pumps per airplane. Group 2, 4, 5, 6, and 7 airplanes are included in that range.

## 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.

## 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), and
- (3) 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.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

## **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 AD:



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**2010-25-04 McDonnell Douglas Corporation:** Amendment 39-16537. Docket No. FAA-2008-0934; Directorate Identifier 2008-NM-113-AD.

**Effective Date**

- (a) This airworthiness directive (AD) is effective January 11, 2011.

**Affected ADs**

- (b) None.

**Applicability**

(c) This AD applies to McDonnell Douglas Corporation Model DC-9-31, DC-9-32, DC-9-32 (VC-9C), DC-9-32F, DC-9-32F (C-9A, C-9B), DC-9-33F, DC-9-34, DC-9-34F, DC-9-41, DC-9-51, DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), and DC-9-87 (MD-87), MD-88, and MD-90-30 airplanes; certificated in any category; as identified in Boeing Service Bulletins DC9-28-212 and MD90-28-010, both Revision 1, both dated June 16, 2009.

**Unsafe Condition**

(d) This AD results from fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent possible sources of ignition in a fuel tank caused by an electrical fault in the fuel boost pumps. An ignition source in the fuel tank could result in a fire or an explosion and consequent loss of the airplane.

**Subject**

- (e) Air Transport Association (ATA) of America Code 28: Fuel.

**Compliance**

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

**Modification**

(g) Within 60 months after the effective date of this AD: Modify the fuel boost pumps for the center wing, and forward or aft auxiliary fuel tanks, as applicable, by doing all the applicable actions specified in the Accomplishment Instructions of Boeing Service Bulletins DC9-28-212 (for Model DC-9-30, DC-9-40, and DC-9-50 series airplanes); and Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87), and MD-88 airplanes) and MD90-28-010 (for Model MD-90-30 airplanes), both Revision 1, both dated June 16, 2009. For airplanes on which the auxiliary fuel tanks have been removed before the effective date of this AD, the actions for the auxiliary fuel tanks specified in this paragraph are not required.

## Prior or Concurrent Action

(h) Prior to or concurrently with accomplishing the modification required by paragraph (g) of this AD: Do the modification specified in Argo-Tech Service Bulletin 398000-28-2, Revision 1, dated December 2, 2008.

## Credit for Actions Done In Accordance With Previous Issue of the Service Information

(i) Actions done before the effective date of this AD in accordance with the service information identified in Table 1 of this AD are acceptable for compliance with the corresponding requirements of paragraphs (g) and (h) of this AD.

**Table 1 – Credit Service Information**

<b>Document</b>	<b>Date</b>
Argo-Tech Service Bulletin 398000-28-2	November 8, 2007
Boeing Service Bulletin DC9-28-212	February 22, 2008
Boeing Service Bulletin MD90-28-010	February 22, 2008

## Alternative Methods of Compliance (AMOCs)

(j)(1) The Manager, Los Angeles Aircraft Certification Office (ACO), FAA, ATTN: Serj Harutunian, Aerospace Engineer, Propulsion Branch, ANM-140L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712-4137; telephone (562) 627-5254; fax (562) 627-5210; has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office. The AMOC approval letter must specifically reference this AD.

## Material Incorporated by Reference

(k) You must use the applicable service information contained in Table 2 of this AD to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

**Table 2 – Material incorporated by reference**

<b>Document</b>	<b>Revision</b>	<b>Date</b>
Argo-Tech Service Bulletin 398000-28-2	1	December 2, 2008
Boeing Service Bulletin DC9-28-212	1	June 16, 2009
Boeing Service Bulletin MD90-28-010	1	June 16, 2009

(2) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, California 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; e-mail

dse.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. For Argo-Tech service information identified in this AD, contact Argo-Tech Corporation, 23555 Euclid Avenue, Cleveland, Ohio 44117; telephone 216-692-6000.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(4) You may also review copies of the 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, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on November 24, 2010.

Ali Bahrami,  
Manager, Transport Airplane Directorate,  
Aircraft Certification Service.