

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 39**

[Docket No. FAA-2008-0298; Directorate Identifier 2007-NM-316-AD]

RIN 2120-AA64

Airworthiness Directives; Various Transport Category Airplanes Equipped with Auxiliary Fuel Tanks Installed in Accordance with Certain Supplemental Type Certificates

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for various transport category airplanes. This proposed AD would require deactivation of PATS Aircraft, LLC, auxiliary fuel tanks. This proposed AD results from fuel system reviews conducted by the manufacturer, which identified potential unsafe conditions for which the manufacturer has not provided corrective actions. We are proposing this AD to prevent the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

DATES: We must receive comments on this proposed AD by April 28, 2008.

ADDRESSES: You may send comments by any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- *Fax:* 202-493-2251.
- *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:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; 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 proposed AD, the regulatory evaluation, any comments

received, and other information. The street address for the Docket Office (telephone 800-647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT:

Mazdak Hobbi, Aerospace Engineer, Airframe and Propulsion Branch, ANE-171, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7330; fax (516) 794-5531.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA-2008-0298; Directorate Identifier 2007-NM-316-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

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

Discussion

The FAA has examined the underlying safety issues involved in fuel tank explosions on several large transport airplanes, including the adequacy of existing regulations, the service history of airplanes subject to those regulations, and existing maintenance practices for fuel tank systems. As a result of those findings, we issued a regulation titled "Transport Airplane Fuel Tank System Design Review, Flammability Reduction and Maintenance and Inspection Requirements" (66 FR 23086, May 7, 2001). In addition to new airworthiness standards for transport airplanes and new maintenance requirements, this rule included Special Federal Aviation Regulation No. 88 ("SFAR 88," Amendment 21-78, and subsequent Amendments 21-82 and 21-83).

Among other actions, SFAR 88 requires certain type design (i.e., type certificate (TC) and supplemental type certificate (STC) design approval) holders to substantiate that their fuel tank systems can prevent ignition

sources in the fuel tanks. This requirement applies to design approval holders for large turbine-powered transport airplanes and for subsequent modifications to those airplanes. It requires them to perform design reviews and to develop design changes and maintenance procedures if their designs do not meet the new fuel tank safety standards. As explained in the preamble to the rule, we intended to adopt airworthiness directives to mandate any changes found necessary to address unsafe conditions identified as a result of these reviews.

In evaluating these design reviews, we have established four criteria intended to define the unsafe conditions associated with fuel tank systems that require corrective actions. 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: single failures, single failures in combination with another latent condition(s), and in-service failure experience. For all four criteria, the evaluations included consideration of previous actions taken that may mitigate the need for further action.

We have determined that the actions identified in this proposed AD are necessary to reduce the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

Supplemental Type Certificates (STCs) for PATS Aircraft, LLC, Auxiliary Fuel Tanks

The auxiliary fuel tank STCs on affected airplanes are of two basic type designs: A box-and-bladder type, and a double-walled cylindrical type. The box-and-bladder tanks are emptied and vented into the airplane center wing tank using either pneumatic air pressure supplied from the airplane, or electrical power from the airplane to power fuel pumps installed in the tank external dry bay area. The double-walled cylindrical tanks use pneumatic air pressure to empty into the airplane center wing tank. All auxiliary tanks use some type of electrical fuel quantity indication system (FQIS), flight deck control and annunciation panels, float level switches, valves and venting systems, electrical wiring connections in the dry bay area, and electrical bonding methods. PATS Aircraft, LLC, the STC holder, has not complied with the requirements of SFAR 88, paragraph 2.

FAA's Findings

During the SFAR 88 safety assessment, it was determined that the PATS Aircraft, LLC, FQIS and float level switch did not meet intrinsically safe electrical energy levels as described in the guidelines of Advisory Circular (AC) 25.981-1B, "Fuel Tank Ignition Source Prevention Guidelines." PATS Aircraft, LLC, identified potential ignition sources resulting from a combination of single and latent failures for the PATS Aircraft, LLC, fuel tank subsystems. To prevent high electrical energy levels from the FQIS and float level switch from entering the auxiliary fuel tank, we have determined that the appropriate solution for continued use is a combination of actions. First, installing a transient suppression device (TSD) on FQIS and float level switches would be needed. In order to maximize wire separation, the TSD must be installed as close as possible to the points where the FQIS and float level switch wires exit the TSD and enter the auxiliary tank. Other actions might include replacing high-energy FQISs, and float level switches that are impractical for TSD application with intrinsically safe FQISs, providing wire separation,

conducting a one-time inspection and/or replacing aging float level switch conduit assemblies, periodically inspecting the external dry bay system components and wires, and testing the integrity of bonding resistances.

If operators do not wish to deactivate their auxiliary fuel tanks, we will consider requests for alternative methods of compliance (AMOCs). The most likely requests would be to allow continued use of the tanks by showing compliance with SFAR 88. This would involve obtaining STCs to modify the auxiliary fuel tank systems and developing maintenance procedures to address the safety issues identified above. PATS Aircraft, LLC, as the current STC holder, may be working on AMOCs. Operators may contact PATS or propose an AMOC on their own.

Once an operator has deactivated a tank as proposed by this NPRM, the operator might wish to remove the tank. This would require a separate design approval, if an approved tank removal procedure does not exist.

FAA's Determination and Requirements of the Proposed AD

We have evaluated all pertinent information and identified an unsafe

condition that is likely to exist or develop on other products of this same type design. For this reason, we are proposing this AD, which would require deactivation to prevent usage of auxiliary fuel tanks.

Explanation of Compliance Time

In most ADs, we adopt a compliance time allowing a specified amount of time after the AD's effective date. In this case, however, the FAA has already issued regulations that require operators to revise their maintenance/inspection programs to address fuel tank safety issues. The compliance date for these regulations is December 16, 2008. To provide for coordinated implementation of these regulations and this proposed AD, we are using this same compliance date in this proposed AD.

Costs of Compliance

The following table provides the estimated costs for the 59 U.S.-registered airplanes to comply with this proposed AD. Based on these figures, the estimated costs for U.S. operators could be as high as \$382,320 to prepare and report the deactivation procedures, and \$212,400 to deactivate tanks.

ESTIMATED COSTS

Action	Work hours	Average labor rate per hour	Parts	Individual cost
Report	1	\$80	None	\$80, per STC.
Preparation of tank deactivation procedure	80	\$80	None	\$6,400, per STC.
Physical tank deactivation	30	\$80	\$1,200	\$3,600, per airplane.

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

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 the proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the 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.

We prepared a regulatory evaluation of the estimated costs to comply with

this proposed AD and placed it in the AD docket. See the **ADDRESSES** section for a location to examine the regulatory evaluation.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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 Federal Aviation Administration (FAA) amends § 39.13

by adding the following new airworthiness directive (AD):

Various Transport Category Airplanes:

Docket No. FAA-2008-0298; Directorate Identifier 2007-NM-316-AD.

Comments Due Date

(a) The FAA must receive comments on this AD action by April 28, 2008.

Affected ADs

(b) None.

Applicability

(c) This AD applies to airplanes, certificated in any category and equipped with auxiliary fuel tanks installed in accordance with specified supplemental type certificates (STCs), as identified in Table 1 of this AD.

TABLE 1.—AFFECTED AIRPLANES

Airplanes	Auxiliary tank STC(s)
Boeing Model 727 series airplanes	SA62NE, SA392NE, SA530NE.
Boeing Model 727-100 series airplanes	SA62NE, SA387NE, SA392NE, SA530NE, ST00466NY.
Boeing Model 727-200 series airplanes	SA84NE, SA387NE, SA450NE, SA496NE.
Boeing Model 737-200 series airplanes	SA83NE, SA725NE, SA1078NE, SA1265EA.
Boeing Model 737-200C series airplanes	SA725NE.
Boeing Model 737-300 series airplanes	SA500NE, SA542NE, SA553NE, SA714NE, SA725NE, ST01552NY.
Boeing Model 737-400 series airplanes	SA553NE, SA725NE.
Boeing Model 737-500 series airplanes	SA725NE, ST00040NY, ST01337NY.
Boeing Model 737-700 series airplanes (increased gross weight)	ST00936NY, ST01650NY, ST01650NY-D, ST01716NY-D.
Boeing Model 737-800 series airplanes	ST01384NY, ST01384NY-D, ST01713NY-D.
Boeing Model 757-200 series airplanes (without overwing doors)	SA979NE.
Boeing Model 767-200 series airplanes	ST00840NY.
Bombardier Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes.	ST00365NY, ST00365NY-D.
McDonnell Douglas Model DC-8-62 airplanes	SA936NE.
McDonnell Douglas Model DC-9-33F airplanes	ST00605NY.
McDonnell Douglas Model DC-9-81 (MD-81) airplanes	ST00409NY.
McDonnell Douglas Model DC-9-82 (MD-82) airplanes	ST00409NY.
McDonnell Douglas Model DC-9-83 (MD-83) airplanes	ST00218AT, ST00409NY.
McDonnell Douglas Model DC-9-87 (MD-87) airplanes	ST00523NY.

Unsafe Condition

(d) This AD results from fuel system reviews conducted by the manufacturer, which identified potential unsafe conditions for which the manufacturer has not provided corrective actions. We are issuing this AD to prevent the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

Report

(f) Within 45 days after the effective date of this AD, submit a report to the Manager, New York Aircraft Certification Office (ACO), FAA. The report must include the information listed in paragraphs (f)(1) and (f)(2) of this AD. Under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), the Office of Management and Budget (OMB) has approved the information collection requirements contained in this AD, and assigned OMB Control Number 2120-0056.

(1) The airplane registration and auxiliary tank STC number installed.

(2) The usage frequency in terms of total number of flights per year and total number of flights per year for which the auxiliary tank is used.

Prevent Usage of Auxiliary Fuel Tanks

(g) Before December 16, 2008, deactivate the auxiliary fuel tanks, in accordance with

a deactivation procedure approved by the Manager of the New York ACO. Any auxiliary tank component that remains on the airplane must be secured and must have no effect on the continued operational safety and airworthiness of the airplane. Deactivation must not result in the need for additional instructions for continued airworthiness.

Note 1: Appendix A of this AD provides criteria that should be included in the deactivation procedure. The proposed deactivation procedures should be submitted to the Manager, New York ACO, as soon as possible to ensure timely review and approval.

Note 2: For technical information, contact Mazdak Hobbi, Aerospace Engineer, Airframe and Propulsion Branch, ANE-171, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7330; fax (516) 794-5531.

Alternative Methods of Compliance (AMOCs)

(h)(1) The Manager, New York ACO, FAA, has the authority to approve AMOCs for this AD, if requested in accordance with 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 appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Appendix A—Deactivation Criteria

The auxiliary fuel tank deactivation procedure required by paragraph (g) of this AD should address the following actions.

(1) Permanently drain auxiliary fuel tanks, and clear them of fuel vapors to eliminate the possibility of out-gassing of fuel vapors from the emptied auxiliary tank.

(2) Disconnect all electrical connections from the fuel quantity indication system (FQIS), fuel pumps if applicable, float switches, and all other electrical connections required for auxiliary tank operation, and stow them at the auxiliary tank interface.

(3) Disconnect all pneumatic connections if applicable, cap them at the pneumatic source, and secure them.

(4) Disconnect all fuel feed and fuel vent plumbing interfaces with airplane original equipment manufacturer (OEM) tanks, cap them at the airplane tank side, and secure them in accordance with a method approved by the FAA; one approved method is specified in AC 25-8 Fuel Tank Flammability Minimization. In order to eliminate the possibility of structural deformation during cabin decompression, leave open and secure the disconnected auxiliary fuel tank vent lines.

(5) Pull and collar all circuit breakers used to operate the auxiliary tank.

(6) Revise the weight and balance document, if required, and obtain FAA approval.

(7) Amend the applicable sections of the applicable airplane flight manual (AFM) to indicate that the auxiliary fuel tank is deactivated. Remove auxiliary fuel tank operating procedures to ensure that only the OEM fuel system operational procedures are contained in the AFM. Amend the

Limitations Section of the AFM to indicate that the AFM Supplement for the STC is not in effect. Place a placard in the flight deck indicating that the auxiliary tank is deactivated. The AFM revisions specified in this paragraph may be accomplished by inserting a copy of this AD into the AFM.

(8) Amend the applicable sections of the applicable airplane maintenance manual to remove auxiliary tank maintenance procedures.

(9) After the auxiliary fuel tank is deactivated, accomplish procedures such as leak checks and pressure checks deemed necessary before returning the airplane to service. These procedures must include verification that the airplane FQIS and fuel distribution systems have not been adversely affected.

(10) Revise the instructions for continued airworthiness, as required, after deactivation.

(11) Include with the operator's proposed procedures any relevant information or additional steps that are deemed necessary by the operator to comply with the deactivation and return the airplane to service.

Issued in Renton, Washington, on March 7, 2008.

Ali Bahrami,

*Manager, Transport Airplane Directorate,
Aircraft Certification Service.*

[FR Doc. E8-5148 Filed 3-13-08; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0313; Directorate Identifier 2007-CE-095-AD]

RIN 2120-AA64

Airworthiness Directives; M7 Aerospace LP SA226 and SA227 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain M7 Aerospace LP SA226 and SA227 series airplanes. This proposed AD would require you to inspect electrical wires/components, hydraulic and bleed

air tube assemblies at left-hand (LH) and right-hand (RH) inboard wing leading edge/battery box areas, LH/RH wing stations 51.167 to 81.174, and at all feed-through locations into the LH/RH inboard keelson. If chafing/arcng is found, this proposed AD would require you to reposition, repair, and/or replace all chafed electrical wires, components, and hydraulic and bleed air tube assemblies, as required. This proposed AD would also require you to reposition the battery lead cables, cover four-gauge wires leaving the battery box with firesleeving and secure with clamps, and protect the battery power cable. This proposed AD results from five reports of chafing between the bleed air tube and the electrical starter cables with one incident resulting in a fire. We are proposing this AD to detect and correct chafing/arcng of electrical wires, components, and bleed air lines. This condition could result in arcng of the exposed wires and burn a hole in the bleed air line or the nearby hydraulic line, and lead to a possible hydraulic fluid leak and fire in the engine nacelle compartment.

DATES: We must receive comments on this proposed AD by May 13, 2008.

ADDRESSES: Use one of the following addresses to comment on this proposed AD:

- *Federal eRulemaking Portal:* Go to <http://www.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:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact M7 Aerospace Repair Station, P.O. Box 790490, San Antonio, Texas 78279-0490; telephone: (210) 824-9421; fax: (210) 804-7789.

FOR FURTHER INFORMATION CONTACT: Werner Koch, Aerospace Engineer,

FAA, Airplane Certification Office, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone: (817) 222-5133; fax: (817) 222-5960.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments regarding this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include the docket number, "FAA-2008-0313; Directorate Identifier 2007-CE-095-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments received by the closing date and may amend the proposed AD in light of those comments.

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

Discussion

We have received five reports of chafing between the bleed air tube and the electrical starter cables on SA226 and SA227 series airplanes. One report also noted the chafing damage resulted in a fire on a Model SA226TC airplane. Subsequent review by the FAA of the service experience of SA226 and SA227 series airplanes indicates that inadequate clearance for electrical wires/components, hydraulic and bleed air tube assemblies at LH/RH inboard wing leading edge/battery box areas, LH/RH wing stations 51.167 to 81.174, and at all feed-through locations into the LH/RH inboard keelson caused the chafing/arcng.

This condition, if not corrected, could result in arcng of the exposed wires and burn a hole in the bleed air line or the nearby hydraulic line, and lead to a possible hydraulic fluid leak and fire in the engine nacelle compartment.

Relevant Service Information

We have reviewed the following service bulletins and procedures:

Service Bulletin	Applicable model(s) of airplane(s)	Procedures described
M7 Aerospace SA226 Series Service Bulletin No. 226-24-036, issued: September 19, 2007.	SA226-AT, SA226-T, and SA226-TC	Inspecting electrical wires/components, hydraulic and bleed air tube assemblies at LH/RH inboard wing leading edge/battery box areas, LH/RH wing stations 51.167 to 81.174, and at all feed-through locations into the LH/RH inboard keelson.