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14 CFR Part 39

Airworthiness Directives; McDonnell Douglas Model DC–8 Series Airplanes; Proposed Rules

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000–NM–280–AD]

RIN 2120–AA64

Airworthiness Directives; McDonnell Douglas Model DC–8 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the adoption of a new airworthiness directive (AD) that is applicable to certain McDonnell Douglas Model DC–8 series airplanes that have been converted from a passenger-to a cargo-carrying (''freighter'') configuration. This proposal would require, among other actions, modification of the main deck cargo door structure and fuselage structure; modification of a main deck cargo door hinge; modification of the main deck cargo floor; and installation of a main deck cargo 9g crash barrier; as applicable. These actions are necessary to prevent opening of the cargo door while the airplane is in flight or collapse of the main deck cargo floor, and consequent rapid decompression of the airplane including possible loss of flight control or severe structural damage. These actions are intended to address the identified unsafe condition.

DATES: Comments must be received by November 13, 2000.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–280–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056. Comments may be inspected at this location between 9:00 a.m. and 3:00 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–nprmcomment@faa.gov. Comments sent via fax or the Internet must contain ''Docket No. 2000–NM–280–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.

Information pertaining to this NPRM may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California.

FOR FURTHER INFORMATION CONTACT: Michael E. O'Neil, Aerospace Engineer, Airframe Branch, ANM–120L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712–4137; telephone (562) 627–5320; fax (562) 627–5210.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed 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 above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received.

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 proposed 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 proposed 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 summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket Number 2000–NM–280–AD.'' The postcard will be date stamped and returned to the commenter.

Availability of NPRMs

Any person may obtain a copy of this notice of proposed rulemaking (NPRM) by submitting a request to the FAA, Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–280–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

Discussion

Supplemental Type Certificate (STC) SA1063SO (originally issued to Aeronautical Engineers, Inc. (AEI)) specifies a design for installation of a main deck cargo door, associated door cutout in the fuselage, and door hydraulic and indication systems on McDonnell Douglas Model DC–8 series airplanes. STC SA1377SO (originally issued to AEI) specifies a design for installation of a Class E compartment with a 9g crash barrier and cargo handling system on McDonnell Douglas Model DC–8 series airplanes. The FAA has conducted a design review of Model DC–8 series airplanes modified in accordance with STC's SA1063SO and SA1377SO and has conducted discussions regarding the design with the STC holder. From the design review and these discussions, the FAA has identified several potential unsafe conditions. (Results of this design review are contained in ''DC–8 Cargo Modification Review Team Review of AEI Supplemental Type Certificates SA1063SO—Installation of a Cargo Door and SA1377SO—Installation of a Cargo Interior, Final Report, dated July 30, 1999,'' hereinafter referred to as ''the Design Review Report,'' which is included in the Rules Docket for this NPRM.)

On August 9, 2000, the FAA issued airworthiness directive (AD) 2000–13–03 R1, amendment 39–11865 (65 FR 49735, August 15, 2000), which identifies corrective action for the unsafe conditions that relate to the hydraulic and indication systems of the main deck cargo door and provides for a means to prevent pressurization to an unsafe level if the main deck cargo door is not closed, latched, and locked.

In the preamble of the NPRM for AD 2000–13–03 R1, the FAA indicated that further rulemaking action was being considered to address the potential unsafe conditions on Model DC–8 series airplanes modified in accordance with STC SA1063SO that relate to the main deck cargo door hinge and fuselage structure in the area modified by installation of a main deck cargo door. In addition, the FAA indicated that further rulemaking action was being considered to address the potential unsafe conditions on Model DC–8 series airplanes modified in accordance with STC SA1377SO that relate to the unreinforced main deck floor, 9g crash barrier, and fire/smoke detection system. The FAA now has determined that further rulemaking action is indeed necessary, and this NPRM follows from that determination.

Other Related Rulemaking

The FAA is considering further rulemaking to address the remaining potential unsafe condition on Model DC–8 series airplanes modified in accordance with STC SA1377SO that relates to the fire/smoke detection system.

Cargo Modification Concerns

In early 1989, two transport airplane accidents were attributed to cargo doors coming open during flight. The first accident involved a Boeing Model 747 series airplane in which the cargo door separated from the airplane, and damaged the fuselage structure, engines, and passenger cabin. The second accident involved a McDonnell Douglas Model DC–9 series airplane in which the cargo door opened but did not separate from its hinge. The open door disturbed the airflow over the empennage, which resulted in loss of flight control and consequent loss of the airplane. Although cargo doors have opened occasionally without mishap shortly after the airplane was in flight, these two accidents served to highlight the extreme potential dangers associated with the opening of a cargo door while the airplane is in flight.

As a result of these cargo door opening accidents, the Air Transport Association (ATA) of America formed a task force, including representatives of the FAA, to review the design, manufacture, maintenance, and operation of airplanes fitted with outward opening cargo doors, and to make recommendations to prevent inadvertent cargo door openings while the airplane is in flight. A design working group was tasked with reviewing 14 Code of Federal Regulations (CFR) part 25.783 (and its accompanying Advisory Circular (AC) 25.783–1, dated December 10, 1986) with the intent of clarifying its contents and recommending revisions to enhance future cargo door designs. This design group also was tasked with providing specific recommendations regarding design criteria to be applied to existing outward opening cargo doors to ensure that inadvertent openings would not occur in the current transport category fleet of airplanes.

The ATA task force made its recommendations in the ''ATA Cargo Door Task Force Final Report,'' dated May 15, 1991 (hereinafter referred to as ''the ATA Final Report''). On March 20, 1992, the FAA acknowledged the ATA's recommendations and issued an FAA memorandum (hereinafter referred to as ''the FAA Memorandum'') providing additional guidance for purposes of assessing the continuing airworthiness of existing designs of outward opening doors. The FAA Memorandum was not intended to upgrade the certification basis of the various airplanes, but rather to identify criteria to evaluate potential unsafe conditions identified on in-service airplanes.

Utilizing the applicable requirements of Civil Air Regulations (CAR) part 4b and the design criteria provided by the FAA Memorandum, the FAA has reviewed the original type design of major transport airplanes, including McDonnell Douglas Model DC–8 series airplanes equipped with outward opening doors, for any design deficiency or service difficulty. Based on that review, the FAA identified unsafe conditions and issued, among others, the following AD's:

- For certain McDonnell Douglas Model DC–9 series airplanes: AD 89–11–02, amendment 39–6216 (54 FR 21416, May 18, 1989);
- For all Boeing Model 747 series airplanes: AD 90–09–06, amendment 39–6581 (55 FR 15217, April 23, 1990);
- For certain McDonnell Douglas Model DC–8 series airplanes: AD 89–17–01 R1, amendment 39–6521 (55 FR 8446, March 8, 1990);
- For certain Boeing Model 747–100 and –200 series airplanes: AD 96–01–51, amendment 39–9492 (61 FR 1703, January 23, 1996);
- For certain Boeing Model 727–100 and –200 series airplanes: AD 96–16–08, amendment 39–9708 (61 FR 41733, August 12, 1996); and
- For certain McDonnell Douglas Model DC–8 series airplanes: AD 2000–13–03 R1, amendment 39–11865, (65 FR 49735, August 15, 2000).

FAA/Industry Collaborative Effort

In late 1997, the FAA informed the STC holders and operators of Model DC–8 series airplanes that it was embarking on a review of Model DC–8 series airplanes that have been converted from a passenger-to a cargo-carrying (''freighter'') configuration by STC. The FAA proposed at a subsequent industry sponsored meeting in early 1998, that DC–8 operators and STC holders work together to identify and address potential safety concerns. This suggestion to the affected industry resulted in the creation of the DC–8 Cargo Conversion Joint Task Force (JTF) (hereinafter referred to as ''the JTF'').

The current composition of the JTF includes holders of each of the six STC's that address the installation of a main deck cargo door in Model DC–8 series airplanes and operators and lessors of those modified airplanes. At the JTF's request, the FAA participates in its meetings to offer counsel and guidance with respect to the FAA's regulatory processes. The JTF is a clearinghouse for the gathering and sharing of information among the parties affected by the FAA review of STC cargo conversions of Model DC–8 series airplanes. The JTF also is a liaison between the FAA, operators, and STC holders.

The JTF has been working with the FAA to provide data relating to the number of STC-modified Model DC–8 series airplanes and operators of those airplanes, and identified which airplanes are modified by each STC. It also was instrumental in polling the operators and providing maintenance schedules and locations to the FAA, which helped the FAA arrange visits to operators of airplanes modified by each of the STC's. These visits allowed the FAA to review both the available data supporting each STC and modified airplanes and to identify potential safety concerns with each of the STC modifications. Additionally, the JTF has coordinated funding of the industry review of the data supporting the STC's and ongoing efforts to resolve safety issues identified by the FAA.

Identification of Unsafe Conditions

Using the certification basis of the airplane (i.e., CAR part 4b), the FAA, in collaboration with the JTF, conducted an engineering design review, inspected an airplane modified in accordance with STC's SA1063SO and SA1377SO, and identified a number of design features of these STC's that are unsafe.

For airplanes modified in accordance with STC SA1063SO, the FAA considers the following two specific design deficiencies to be unsafe:

1. Main Deck Cargo Door and Associated Fuselage Structure.

The FAA, in collaboration with structural engineering representatives of the JTF, has identified several areas of the main deck cargo door and door jamb structure of STC SA1063SO that require modification to meet type design requirements. These areas include the addition of structural elements to augment and, in some places, to add the structural capability necessary to safely support design loads. When taken individually, these areas do not necessarily represent an unsafe condition. However, the critical load condition for each of the elements is the same, so that all of the elements could fail at the same time. Therefore, the FAA has determined that the potential of concurrent failure of several structural elements presents an unsafe condition for the airplane, and that these elements require modification to

ensure the safety of the airplane. The modifications include:

- Reinforcement of the fuselage door jamb element at the main deck cargo door sill;
- Reinforcement of the inner cap of the frame at fuselage station (FS) 1700;
- Reinforcement of the lower frame inner cap below the strut;
- Replacement of the strut to frame fasteners in the door region;
- Reinforcement of the floor beam to frame attachment;
- Replacement of some of the latch mechanism bolts with increased strength bolts; and
- Replacement of the existing bolts that attach the latches to the door with increased strength bolts.

As part of its continuing work to maintain the structural integrity of older transport category airplanes, in the early 1980's, the FAA concluded that the incidence of fatigue cracking may increase as these airplanes continue in service. In light of this, and as a result of increased utilization, longer operational lives, and the levels of safety expected of the currently operated transport category airplanes, the FAA has determined that a damage tolerance assessment of the structural modifications associated with STC SA1063SO is necessary to ensure the structural integrity for all airplanes in the affected fleet. This damage tolerance assessment is to identify any principal structural elements (PSE), including the associated inspection threshold, inspection method, and repetitive inspection interval, to ensure continued operational safety of the airplane. The PSE information must be identified in any method of compliance presented to address the requirements of the proposed AD.

2. Main Deck Cargo Door Hinge.

In order to avoid catastrophic structural failure of outward opening cargo doors, a typical industry approach has been to design them and their attaching structure to be fail safe (*i.e.,* designed so that if a single structural element fails, other structural elements are able to carry the redistributed load).

Structural elements, such as the main deck cargo door hinge, are subject to severe in-service operating conditions that could result in corrosion, binding, or seizure of the hinge. These conditions, in addition to the normal operational loads, can lead to early and unpredictable fatigue cracking. If a main deck cargo door hinge is not a fail-safe design, a fatigue crack could initiate and propagate undetected longitudinally along the length of the hinge, which could lead to a complete hinge failure. A possible consequence of this undetected failure is the opening of the main deck cargo door while the airplane is in flight. Service experience indicates that the opening of a cargo door while the airplane is in flight can be extremely hazardous in a variety of ways including possible loss of flight control, severe structural damage, or rapid decompression, any of which could lead to loss of the airplane.

The design of the main deck cargo door hinge for STC SA1063SO must be in compliance with CAR part 4b, including CAR part 4b.270, which requires, in part, that catastrophic failure or excessive structural deformation, which could adversely affect the flight characteristics of the airplane, is not probable after fatigue failure or obvious partial failure of a single critical structural element. One common feature of a fail-safe hinge design is a division of the hinge into multiple segments such that, following failure of any one segment, the remaining segments would support the redistributed load.

The main deck cargo door installed in accordance with STC SA1063SO is supported by latches along the bottom of the door and a two-segment hinge along the top. This two-segment hinge is considered a critical structural element for this STC. A crack that initiates and propagates longitudinally along either segment of the hinge will eventually result in failure of the entire hinge, because the remaining segment of the hinge is unable to support the redistributed loads. Failure of the entire hinge can result in the opening of the main deck cargo door while the airplane is in flight.

Therefore, the FAA has determined that detailed visual inspections to detect cracks or other discrepancies of the exposed surfaces of the main deck cargo door hinge is necessary to ensure that the affected airplanes are not in immediate risk of hinge failure and to ensure the integrity of the door and fuselage structure to which the hinge is attached. Also, the end of the existing aluminum hinge elements of the main deck cargo door must be replaced with steel hinge elements on both the fuselage and door sides of the hinge, and the hinge must comply with the applicable requirements of CAR part 4b, including fail-safe requirements.

For airplanes modified in accordance with STC SA1377SO, the FAA considers the following two specific design deficiencies to be unsafe:

1. Capability of the Unmodified Floor

Based on the results of the FAA's and JTF's structural evaluation of the main deck cargo floor, the FAA has determined that the unmodified main deck cargo floor is not capable of safely supporting the main deck zone loading (cargo weight) currently allowed by STC SA1377SO. There are several methods to address the unsafe condition. The floor beams and their attachment to the fuselage frames and struts, which support the floor beams on either side of the fuselage, could be modified to support the currently acceptable main deck zone loading. It is also possible to limit the main deck zone loading to a level that the main deck cargo floor can be supported safely without modification. A further possibility is to modify the main deck cargo floor beams to a configuration compatible with the desired level of zone loading.

In assessing the load carrying capability of the main deck cargo floor for STC SA1377SO, the manner in which the load is applied to the floor, as well as the magnitude of that load, must be considered. For example, it is possible to directly place the cargo onto the floor and secure it to the floor in a safe manner. However, most operators utilize a cargo handling system installed in the airplane that allows the use of unit load devices (ULD), such as pallets and containers. Together, the cargo handling system and ULD's expedite loading and unloading of the airplanes. Technical Standard Order (TSO) TSO–C90c, dated April 3, 1992, identifies both the ultimate loads that the ULD's produced under the TSO must support, and the number and location of restraints necessary to carry those loads. The TSO requires identification of the type and size of the ULD's. Although this TSO is the most common method of approval for ULD's, it is not the only means of approving ULD's. ULD designs also may be approved as part of a type certificate or STC. Therefore, the total cargo weight, distribution of cargo weight in the airplane, and restraint requirements for ULD's must be identified in any method of compliance presented to address the requirements of the proposed AD.

During evaluations of Model 727 and DC–8 series airplanes converted to a freighter configuration by STC, the FAA found instances where the existing venting capability of certain airplanes had been compromised by installation of the Class E compartment. In some cases, the vent area was decreased or restricted during modification. The FAA also found that the available design data for the main deck cargo floor for STC SA1377SO do not demonstrate the adequacy of the venting system of the modified DC–8 airplanes. The FAA is concerned about the venting between

the main cabin floor and the baggage compartments below the main deck cargo floor in the event of a rapid decompression. If the vent area of the original type design has been decreased or restricted during modification, the loads on the main deck cargo floor may be increased to an unsafe level during a rapid decompression event. The increased loads on the main deck cargo floor could lead to collapse of the floor beams. Collapse of the main deck cargo floor could restrict the motion of the flight and engine control cables routed through the floor beams or could cause the failure of those cables, which could result in reduced controllability of the airplane or loss of control. Rapid decompression of the airplane could result from a sufficiently large failure in the fuselage pressure boundary either above or below the main deck cargo floor, such as inadvertent opening of the cargo door.

Therefore, the FAA has determined that an inspection and evaluation of the affected floor structure must be accomplished to ensure that the venting capability of the passenger configuration has not been compromised by installation of the Class E compartment. If the current venting capability of the affected floor is less than that of the passenger configuration, it must be modified to limit decompression loads to a level that can be supported successfully by the existing floor structure.

2. 9g Crash Barrier.

In order to ensure the safety of occupants during emergency landing conditions, the FAA first established in 1934 a set of inertia load factors used to design the structure for restraining items of mass in the fuselage. Because the airplane landing speeds have increased over the years as the fleet has transitioned from propeller to jet design, inertia load factors were changed as specified in CAR part 4b.260. Experience has shown that an airplane designed to this regulation has a reasonable probability of protecting its occupants from serious injury in an emergency landing. The DC–8 passenger airplane was designed to these criteria that specified an ultimate inertia load requirement of 9g in the forward direction. These criteria were applied to the seats and structure restraining the occupants, including the flight crew, as well as other items of mass in the fuselage.

When a Model DC–8 series airplane is converted from a passenger-to a cargo-carrying (''freighter'') configuration, a 9g crash barrier is required, since most cargo containers and container-to-floor attaching devices are not designed to withstand emergency landing loads. In fact, the FAA estimates that the container-to-floor attaching devices will only support approximately 1.5g's to 3g's in the forward direction. Without a 9g crash barrier, it is probable that the loads associated with an emergency landing would cause the cargo to become unrestrained and impact the occupants of the airplane, which could result in serious injury to the occupants.

The structural inadequacy of the 9g crash barrier was evident to the FAA during its review in October 1998 of a McDonnell Douglas Model DC–8 modified in accordance with STC SA1377SO. The observations revealed that the design of the crash barrier floor attachment and circumferential supporting structure neither provide adequate strength to withstand the 9g forward inertia load generated by the main deck cargo mass, nor provide a load path to effectively transfer the loads from the crash barrier to the fuselage structure of the airplane.

Therefore, the FAA has determined that installation of a 9g crash barrier that complies with the applicable requirements of CAR part 4b is necessary to prevent serious injury to occupants of the airplane.

Development of Engineering Data

The FAA is aware that the JTF is currently sponsoring an effort to develop engineering data to address the identified unsafe conditions of this NPRM. The FAA is anticipating that this effort will result in an STC that addresses the proposed requirements of this NPRM, and that this STC will be made available to all operators.

Explanation of Requirements of Proposed Rule

Since an unsafe condition has been identified that is likely to exist or develop on other products of this same type design, the proposed AD would require, for airplane modified by STC SA1063SO, the following five actions:

1. Incorporation of inspections into the operator's FAA-approved maintenance or inspection program that ensures the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any PSE associated with the STC modification and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

2. Modification of the main deck cargo door structure and fuselage structure immediately surrounding the main deck cargo door to comply with the applicable requirements of CAR part 4b.

3. A detailed visual inspection to detect cracks of the exposed surfaces of the main deck cargo door hinge (both fuselage and door side hinge elements); and repair or replacement of the hinge element with a new, like part, if necessary.

4. A detailed visual inspection to detect cracks or other discrepancies (*i.e.*, double or closely drilled holes, corrosion, chips, scratches, or gouges) of the mating surfaces of the main deck cargo door hinge, skin of the main deck cargo door, and external fuselage doubler underlying the hinge; and repair, if necessary.

5. Installation of a main deck cargo door hinge that complies with the applicable requirements of CAR part 4b, including fail-safe requirements.

For airplanes modified by STC SA1377SO, this proposed AD would require the following four actions:

1. An inspection and evaluation of the cargo handling system to determine if the side restraints provide the support required by the ULD; and modification of the vertical side restraint to provide the support appropriate to the ULD's compatible with the cargo handling system, if necessary.

2. Modification of the main deck cargo floor to safely carry the applicable FAA-approved payload limits for above and below the main deck cargo floor. The modification must comply with the applicable requirements of CAR part 4b for the FAA-approved payload distribution.

3. An inspection and evaluation of the venting system of the main deck cargo floor to determine if the system limits decompression loads to a level that can be carried by the floor structure without failure; and modification of the venting system, as necessary, to limit the decompression loads to a level that can be supported successfully by the existing floor structure, if necessary.

4. Installation of a main deck cargo 9g crash barrier that complies with the applicable requirements of CAR part 4b.

The actions described above would be required to be accomplished in accordance with a method approved by the FAA.

Differences Between 727 and DC–8 NPRM Format

The format and content of this NPRM differs from the following rulemaking actions that address similar concerns for Boeing Model 727 series airplanes that have been modified to freighters by STC:

• AD 98–26–18, amendment 39–10961 (64 FR 1994, January 12, 1999);

• AD 98–26–19, amendment 39–10962 (64 FR 2016, January 12, 1999);

• AD 98–26–20, amendment 39–10963 (64 FR 2038, January 12, 1999);

• AD 98–26–21, amendment 39–10964 (64 FR 2061, January 12, 1999); and

• NPRM Rules Dockets 97–NM–232–AD, 97–NM–233–AD, 97–NM–234–AD, and 97–NM–235–AD.

However, the FAA used the same criteria (i.e., CAR part 4b) for evaluation of the subject Model 727 series airplanes and Model DC–8 series airplanes affected by this NPRM. The differences in the subject rulemaking actions are accounted for by the variance in the design philosophies embraced by Douglas (now Boeing) and Boeing.

The original floor beams for the DC–8 passenger airplanes have a deeper cross section, which reduces internal stresses for the same applied bending moment, than those for Model 727 series airplanes. Additionally, DC–8 passenger airplanes utilize intermediate ''struts'' between the main deck cargo floor beams and fuselage frames below the floor to help support the floor beams, which decreases the unsupported span. A shorter unsupported span helps reduce the bending moment for a given applied load. The amount of design data available to the FAA for review of each of the DC–8 STC's (i.e., SA1063SO, SA10377SO, SA1802SO, SA1832SO, SA1862SO, and SA00309AT) was greater than that available when the FAA issued the subject Model 727 NPRM's and AD's. Additionally, the JTF has assisted the FAA in engineering review of this greater volume of data and in the creation of additional data necessary for substantiation of the existing designs. Based on the data available for review, the margins of safety of the DC–8 floor beams indicate a lower level of immediate concern than those margins indicated for the 727 floor beams when the 727 AD's and NPRM's were proposed. Therefore, the FAA has determined that the type of restrictions and interim floor loading and side vertical restraint that were applied to the 727 are not required for the subject DC–8 STC's.

To address the safety concerns of Boeing Model 727 series airplanes that have been modified to freighters by STC, the FAA issued AD's 98–26–19, 98–26–20, 98–26–21, and 98–26–22 to address the capability of the main deck cargo floor and then issued NPRM Rules Dockets 97–NM–232–AD, 97–NM–233–AD, 97–NM–234–AD, and 97–NM–235–AD to address the door indicating system and related systems issues; means to prevent pressurization to an unsafe level if the door is not closed, latched, and locked; door hinge; and 9g crash barrier. Because there have been events involving the cargo door opening in flight on the modified DC–8 series airplanes, the FAA has issued the following AD's to address the door indication system and other related systems issues for those airplanes:

• AD 2000–09–01 R1, amendment 39–11809 (65 FR 41869, July 7, 2000);

• AD 2000–09–02, amendment 39–11710 (65 FR 25437, May 2, 2000);

• AD 2000–13–03 R1, amendment 39–11865 (65 FR 49735, August 15, 2000); and

• AD 2000–15–11, amendment 39–11843 (65 FR 47660, August 3, 2000).

This DC–8 NPRM, and NPRM Rules Dockets 2000–NM–281–AD, 2000–NM–282–AD, and 2000–NM–283–AD would address the structures issues, including the main deck cargo floor, as discussed previously.

Cost Impact

There are approximately 15 Model DC–8 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 11 airplanes of U.S. registry would be affected by this proposed AD. The following table shows the estimated cost impact for airplanes affected by this AD. The average labor rate is $60 per work hour. The estimated maximum total cost for all airplanes affected by this proposed AD is $2,192,520, or $199,320 per airplane.

STC	Action	Work hours (estimated)	Parts cost (estimated)	Total cost (estimated)
SA1063SO	Incorporation of inspections into maintenance or inspection program.	8	N/A	$5,280 or $480 per airplane.
SA1063SO	Modification of main deck cargo door structure and fuselage structure.	205	700	$143,000, or $13,000 per airplane.
SA1063SO	Inspection of exposed surfaces of main deck cargo door hinge.	16	N/A	$10,560, or $960 per airplane.
SA1063SO	Inspection of mating surfaces of main deck cargo door hinge.	16	N/A	$10,560, or $960 per airplane.
SA1063SO	Installation of a main deck cargo door hinge.	60	$200	$41,800, or $3,800 per airplane.
SA1377SO	Inspection and evaluation of the cargo handling system.	16	N/A	$10,560, or $960 per airplane.
SA1377SO	Modification of main deck cargo floor	120	$1,000	$90,200, or $8,200 per airplane.
SA1377SO	Inspection and evaluation of the venting system.	16	N/A	$10,560, or $960 per airplane.
SA1377SO	Installation of main deck cargo 9g crash barrier.	2,000	$50,000	$1,870,000, or $170,000 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the proposed requirements of this AD action, and that no operator would accomplish those actions in the future if this proposed AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations proposed herein 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. Therefore, it is determined that this proposal

would not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this 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) if promulgated, 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. A copy of the draft regulatory evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption **ADDRESSES.**

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 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 the following new airworthiness directive:

McDonnell Douglas: Docket 2000–NM–280–AD.

Applicability: Model DC–8 series airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with Supplemental Type Certificates (STC) SA1063SO and SA1377SO; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been otherwise 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 (i) 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 opening of the cargo door while the airplane is in flight or collapse of the main deck cargo floor, and consequent rapid decompression of the airplane including possible loss of flight control or severe structural damage, accomplish the following:

Actions Addressing the Main Deck Cargo Door and Associated Fuselage Structure

(a) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC SA1063SO: Accomplish the actions specified in paragraphs (a)(1) and (a)(2) of this AD in accordance with a method approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA.

(1) Within 1 year or 1,200 flight cycles after the effective date of this AD, whichever occurs first, incorporate inspections into the operator's FAA-approved maintenance or inspection program that ensure the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any principal structural element (PSE) associated with the STC modification and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

(2) Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, accomplish the actions specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this AD.

(i) Modify the main deck cargo door structure and fuselage structure immediately surrounding the main deck cargo door to comply with the applicable requirements of Civil Air Regulations (CAR) part 4b.

(ii) Incorporate inspections into the operator's FAA-approved maintenance or inspection program that ensure the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any PSE associated with the STC modification required by paragraph (a)(2)(i) of this AD and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

Actions Addressing the Main Deck Cargo Floor

(b) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC SA1377SO: Within 2 years or 2,000 flight cycles after the effective date of this AD, whichever occurs first, perform an inspection and evaluation of the cargo handling system to determine if the side restraints provide the support required by the unit load device (ULD), in accordance with a method approved by the Manager, Los Angeles ACO. If any vertical side restraint does not provide the required support, within 2 years or 2,000 flight cycles after the effective date of this AD, whichever occurs first, modify the vertical side restraint to provide the support appropriate to the ULD's compatible with the cargo handling system, in accordance with a method approved by the Manager, Los Angeles ACO.

(c) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC SA1377SO: Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, modify the main deck cargo floor to safely carry the applicable FAA-approved payload limits for above and below the main deck cargo floor. The modification and payload distribution shall be accomplished in accordance with a method approved by the Manager, Los Angeles ACO. The modification must comply with the applicable requirements of CAR part 4b for the FAA-approved payload distribution.

(d) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC SA1377SO, except for those airplanes that have been modified in accordance with paragraph (c) of this AD: Within 1 year or 1,000 flight cycles after the effective date of this AD, whichever occurs first, perform an inspection and evaluation of the venting system of the main deck cargo floor to determine if the system limits decompression loads to a level that can be carried by the floor structure without failure, in accordance with a method approved by the Manager, Los Angeles ACO.

(e) If, based on the evaluation required by paragraph (d) of this AD, the venting system does not limit decompression loads to a level that can be carried by the floor structure without failure, within 2 years after the effective date of this AD, modify the venting system, as necessary, to limit the decompression loads to a level that can be supported successfully by the existing floor structure, in accordance with a method approved by the Manager, Los Angeles ACO.

Actions Addressing Main Deck Cargo Door Hinge

(f) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC SA1063SO: Within 250 flight cycles after the effective date of this AD, perform a detailed visual inspection to detect cracks of the exposed surfaces of the main deck cargo door hinge (both fuselage and door side hinge elements), in accordance with a method approved by the Manager, Los Angeles ACO. If any crack is detected, prior to further flight, repair in accordance with a method approved by the Manager, Los Angeles ACO, or replace the cracked hinge element with a new, like part.

Note 2: For the purposes of this AD, a detailed visual inspection is defined as: ''An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required.''

(g) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC SA1063SO: Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, accomplish the

actions specified in paragraphs (g)(1) and (g)(2) of this AD in accordance with a method approved by the Manager, Los Angeles ACO.

(1) Perform a detailed visual inspection to detect cracks or other discrepancies (*i.e.,* double or closely drilled holes, corrosion, chips, scratches, or gouges) of the mating surfaces of the main deck cargo door hinge, skin of the main deck cargo door, and external fuselage doubler underlying the hinge. If any discrepancy is detected, prior to further flight, repair the discrepant part.

(2) Install a main deck cargo door hinge that complies with the applicable requirements of CAR part 4b, including fail-safe requirements.

Actions Addressing Main Deck Cargo 9g Crash Barrier

(h) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC SA1377SO: Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, install a main deck cargo 9g crash barrier that complies with the applicable requirements of CAR part 4b, in accordance with a method approved by the Manager, Los Angeles ACO.

Alternative Methods of Compliance

(i) 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, Los Angeles ACO, FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

Note 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles ACO.

Special Flight Permit

(j) 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.

Issued in Renton, Washington, on September 21, 2000.

Donald L. Riggin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 00–24749 Filed 9–26–00; 8:45 am]

BILLING CODE 4910–13–U

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000–NM–281–AD]

RIN 2120–AA64

Airworthiness Directives; McDonnell Douglas Model DC–8 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the adoption of a new airworthiness directive (AD) that is applicable to certain McDonnell Douglas Model DC–8 series airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration. This proposal would require, among other actions, modification of the main deck cargo door structure and fuselage structure; modification of the main deck cargo floor; and installation of a main deck cargo 9g crash barrier; as applicable. These actions are necessary to prevent opening of the cargo door while the airplane is in flight or collapse of the main deck cargo floor, and consequent rapid decompression of the airplane including possible loss of flight control or severe structural damage. These actions are intended to address the identified unsafe condition.

DATES: Comments must be received by November 13, 2000.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–281–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056. Comments may be inspected at this location between 9:00 a.m. and 3:00 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-nprmcomment@faa.gov. Comments sent via fax or the Internet must contain ''Docket No. 2000–NM–281–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.

Information pertaining to this NPRM may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California.

FOR FURTHER INFORMATION CONTACT: Michael E. O'Neil, Aerospace Engineer, Airframe Branch, ANM–120L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712–4137; telephone (562) 627–5320; fax (562) 627–5210.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed 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 above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received.

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 proposed 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 proposed 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 summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket Number 2000–NM–281–AD.'' The postcard will be date stamped and returned to the commenter.

Availability of NPRMs

Any person may obtain a copy of this notice of proposed rulemaking (NPRM) by submitting a request to the FAA, Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–281–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

Discussion

Supplemental Type Certificate (STC) SA1862SO (originally issued to Agro Air Associates, Inc. (Agro)) specifies a design for installation of a main deck cargo door, associated door cutout in the fuselage, and door hydraulic and indication systems on McDonnell Douglas Model DC–8 series airplanes. STC ST00309AT (originally issued to Agro) specifies a design for installation of a Class E compartment with a 9g crash barrier and cargo handling system on McDonnell Douglas Model DC–8

series airplanes. The FAA has conducted a design review of Model DC–8 series airplanes modified in accordance with STC's SA1862SO and SA00309AT and has conducted discussions regarding the design with the STC holder. From the design review and these discussions, the FAA has identified several potential unsafe conditions. (Results of this design review are contained in ''DC–8 Cargo Modification Review Team, Review of Agro Air Supplemental Type Certificates SA1862SO—Installation of a Cargo Door and ST00309AT—Installation of a Cargo Interior, Final Report, dated August 2, 1999,'' hereinafter referred to as ''the Design Review Report,'' which is included in the Rules Docket for this NPRM.)

On July 28, 2000, the FAA issued airworthiness directive (AD) 2000–15–11, amendment 39–11843 (65 FR 47660, August 3, 2000), which identifies corrective action for the unsafe conditions that relate to the hydraulic and indication systems of the main deck cargo door and provides for a means to prevent pressurization to an unsafe level if the main deck cargo door is not closed, latched, and locked.

In the preamble of the NPRM for AD 2000–15–11, the FAA indicated that further rulemaking action was being considered to address the potential unsafe conditions on Model DC–8 series airplanes modified in accordance with STC SA1862SO that relate to the main deck cargo door fuselage structure in the area modified by installation of a main deck cargo door. In addition, the FAA indicated that further rulemaking action was being considered to address the potential unsafe conditions on Model DC–8 series airplanes modified in accordance with STC ST00309AT that relate to the unreinforced main deck floor, 9g crash barrier, and fire/smoke detection system. The FAA now has determined that further rulemaking action is indeed necessary, and this NPRM follows from that determination.

Other Related Rulemaking

The FAA is considering further rulemaking to address the remaining potential unsafe condition on Model DC–8 series airplanes modified in accordance with STC ST00309AT that relates to the fire/smoke detection system.

Cargo Modification Concerns

In early 1989, two transport airplane accidents were attributed to cargo doors coming open during flight. The first accident involved a Boeing Model 747 series airplane in which the cargo door separated from the airplane, and damaged the fuselage structure, engines, and passenger cabin. The second accident involved a McDonnell Douglas Model DC–9 series airplane in which the cargo door opened but did not separate from its hinge. The open door disturbed the airflow over the empennage, which resulted in loss of flight control and consequent loss of the airplane. Although cargo doors have opened occasionally without mishap shortly after the airplane was in flight, these two accidents served to highlight the extreme potential dangers associated with the opening of a cargo door while the airplane is in flight.

As a result of these cargo door opening accidents, the Air Transport Association (ATA) of America formed a task force, including representatives of the FAA, to review the design, manufacture, maintenance, and operation of airplanes fitted with outward opening cargo doors, and to make recommendations to prevent inadvertent cargo door openings while the airplane is in flight. A design working group was tasked with reviewing 14 Code of Federal Regulations (CFR) part 25.783 [and its accompanying Advisory Circular (AC) 25.783–1, dated December 10, 1986] with the intent of clarifying its contents and recommending revisions to enhance future cargo door designs. This design group also was tasked with providing specific recommendations regarding design criteria to be applied to existing outward opening cargo doors to ensure that inadvertent openings would not occur in the current transport category fleet of airplanes.

The ATA task force made its recommendations in the ''ATA Cargo Door Task Force Final Report,'' dated May 15, 1991 (hereinafter referred to as ''the ATA Final Report''). On March 20, 1992, the FAA acknowledged the ATA's recommendations and issued an FAA memorandum (hereinafter referred to as ''the FAA Memorandum'') providing additional guidance for purposes of assessing the continuing airworthiness of existing designs of outward opening doors. The FAA Memorandum was not intended to upgrade the certification basis of the various airplanes, but rather to identify criteria to evaluate potential unsafe conditions identified on in-service airplanes.

Utilizing the applicable requirements of Civil Air Regulations (CAR) part 4b and the design criteria provided by the FAA Memorandum, the FAA has reviewed the original type design of major transport airplanes, including McDonnell Douglas Model DC–8 series airplanes equipped with outward opening doors, for any design deficiency or service difficulty. Based on that review, the FAA identified unsafe conditions and issued, among others, the following AD's:

- For certain McDonnell Douglas Model DC–9 series airplanes: AD 89–11–02, amendment 39–6216 (54 FR 21416, May 18, 1989);
- For all Boeing Model 747 series airplanes: AD 90–09–06, amendment 39–6581 (55 FR 15217, April 23, 1990);
- For certain McDonnell Douglas Model DC–8 series airplanes: AD 89–17–01 R1, amendment 39–6521 (55 FR 8446, March 8, 1990;
- For certain Boeing Model 747–100 and –200 series airplanes: AD 96–01–51, amendment 39–9492 (61 FR 1703, January 23, 1996);
- For certain Boeing Model 727–100 and –200 series airplanes: AD 96–16–08, amendment 39–9708 (61 FR 41733, August 12, 1996);
- For certain McDonnell Douglas Model DC–8 series airplanes: AD 2000–09–02, amendment 39–11710 (65 FR 25437, May 2, 2000); and
- For certain McDonnell Douglas Model DC–8 series airplanes: AD 2000–15–11, amendment 39–11843 (65 FR 47660, August 3, 2000).

FAA/Industry Collaborative Effort

In late 1997, the FAA informed the STC holders and operators of Model DC–8 series airplanes that it was embarking on a review of Model DC–8 series airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration by STC. The FAA proposed at a subsequent industry sponsored meeting in early 1998, that DC–8 operators and STC holders work together to identify and address potential safety concerns. This suggestion to the affected industry resulted in the creation of the DC–8 Cargo Conversion Joint Task Force (JTF) (hereinafter referred to as ''the JTF'').

The current composition of the JTF includes holders of each of the six STC's that address the installation of a main deck cargo door in Model DC–8 series airplanes and operators and lessors of those modified airplanes. At the JTF's request, the FAA participates in its meetings to offer counsel and guidance with respect to the FAA's regulatory processes. The JTF is a clearinghouse for the gathering and sharing of information among the parties affected by the FAA review of STC cargo conversions of Model DC–8 series airplanes. The JTF also is a liaison between the FAA, operators, and STC holders.

The JTF has been working with the FAA to provide data relating to the number of STC-modified Model DC–8 series airplanes and operators of those

airplanes, and identified which airplanes are modified by each STC. It also was instrumental in polling the operators and providing maintenance schedules and locations to the FAA, which helped the FAA arrange visits to operators of airplanes modified by each of the STC's. These visits allowed the FAA to review both the available data supporting each STC and modified airplanes and to identify potential safety concerns with each of the STC modifications. Additionally, the JTF has coordinated funding of the industry review of the data supporting the STC's and ongoing efforts to resolve safety issues identified by the FAA.

Identification of Unsafe Conditions

Using the certification basis of the airplane (*i.e.*, CAR part 4b), the FAA, in collaboration with the JTF, conducted an engineering design review, inspected an airplane modified in accordance with STC's SA1862SO and ST00309AT, and identified a number of design features of these STC's that are unsafe.

For airplanes modified in accordance with STC SA1862SO, the FAA considers certain design deficiencies of the main deck cargo door and associated fuselage structure to be unsafe. The FAA, in collaboration with structural engineering representatives of the JTF, has identified several areas of the main deck cargo door and door jamb structure of STC SA1862SO that require modification to meet type design requirements. These areas include the addition of structural elements to augment, and in some places, to add the structural capability necessary to safely support design loads. When taken individually, these areas do not necessarily represent an unsafe condition. However, the critical load condition for each of the elements is the same so that all of the elements could fail at the same time. Therefore, the FAA has determined that the potential of concurrent failure of several structural elements presents an unsafe condition for the airplane, and that these elements require modification to ensure the safety of the airplane. The modifications include:

- Reinforcement of the inner cap of the frame at fuselage station (FS) 1700;
- Reinforcement of the lower frame inner cap below the strut;
- Replacement of the strut to frame fasteners in the door region;
- Reinforcement of the floor beam to frame attachment;
- Replacement of some of the latch mechanism bolts with increased strength bolts;
- Reinforcement of the main deck cargo door frames that support the two latches at either end of the main deck cargo door; and
- Replacement of the existing bolts that attach the latches to the door with increased strength bolts.

As part of its continuing work to maintain the structural integrity of older transport category airplanes, in the early 1980's, the FAA concluded that the incidence of fatigue cracking may increase as these airplanes continue in service. In light of this, and as a result of increased utilization, longer operational lives, and the levels of safety expected of the currently operated transport category airplanes, the FAA has determined that a damage tolerance assessment of the structural modifications associated with STC SA1862SO is necessary to ensure the structural integrity for all airplanes in the affected fleet. This damage tolerance assessment is to identify any principal structural elements (PSE), including the associated inspection threshold, inspection method, and repetitive inspection interval, to ensure continued operational safety of the airplane. The PSE information must be identified in any method of compliance presented to address the requirements of the proposed AD.

The design of STC SA1862SO divides the hinge elements that connect the main deck cargo door to the fuselage into several segments. This configuration of the hinge satisfies the applicable fail-safe requirements of CAR part 4b, including CAR part 4b.270. Additionally, this design includes steel-hinge segments at both ends of the main deck cargo door to account for higher loading and possible in-service damage. The FAA considers the hinge and supporting door and fuselage structure to be a PSE for this STC.

For airplanes modified in accordance with STC ST00309AT, the FAA considers the following two specific design deficiencies to be unsafe:

1. Capability of the Unmodified Floor

Based on the results of the FAA's and JTF's structural evaluation of the main deck cargo floor, the FAA has determined that the unmodified main deck cargo floor is not capable of safely supporting the main deck zone loading (cargo weight) currently allowed by STC ST00309AT. There are several methods to address the unsafe condition. The floor beams and their attachment to the fuselage frames and struts, which support the floor beams on either side of the fuselage, could be modified to support the currently acceptable main deck zone loading. It is also possible to limit the main deck zone loading to a level that the main deck cargo floor can be supported safely without modification. A further possibility is to modify the main deck cargo floor beams to a configuration compatible with the desired level of zone loading.

In assessing the load carrying capability of the main deck cargo floor for STC ST00309AT, the manner in which the load is applied to the floor, as well as the magnitude of that load, must be considered. For example, it is possible to directly place the cargo onto the floor and secure it to the floor in a safe manner. However, most operators utilize a cargo handling system installed in the airplane that allows the use of unit load devices (ULD), such as pallets and containers. Together, the cargo handling system and ULD's expedite loading and unloading of the airplanes. Technical Standard Order (TSO) TSO–C90c, dated April 3, 1992, identifies both the ultimate loads that the ULD's produced under the TSO must support, and the number and location of restraints necessary to carry those loads. The TSO requires identification of the type and size of the ULD's. Although this TSO is the most common method of approval for ULD's, it is not the only means of approving ULD's. ULD designs also may be approved as part of a type certificate or STC. Therefore, the total cargo weight, distribution of cargo weight in the airplane, and restraint requirements for ULD's must be identified in any method of compliance presented to address the requirements of the proposed AD.

During evaluations of Model 727 and DC–8 series airplanes converted to a freighter configuration by STC, the FAA found instances where the existing venting capability of certain airplanes had been compromised by installation of the Class E compartment. In some cases, the vent area was decreased or restricted during modification. The FAA also found that the available design data for the main deck cargo floor for STC ST00309AT do not demonstrate the adequacy of the venting system of the modified DC–8 airplanes. The FAA is concerned about the venting between the main cabin floor and the baggage compartments below the main deck cargo floor in the event of a rapid decompression. If the vent area of the original type design has been decreased or restricted during modification, the loads on the main deck cargo floor may be increased to an unsafe level during a rapid decompression event. The increased loads on the main deck cargo floor could lead to collapse of the floor beams. Collapse of the main deck cargo floor could restrict the motion of the flight and engine control cables routed through the floor beams or could cause

the failure of those cables, which could result in reduced controllability of the airplane or loss of control. Rapid decompression of the airplane could result from a sufficiently large failure in the fuselage pressure boundary either above or below the main deck cargo floor, such as inadvertent opening of the cargo door.

Therefore, the FAA has determined that an inspection and evaluation of the affected floor structure must be accomplished to ensure that the venting capability of the passenger configuration has not been compromised by installation of the Class E compartment. If the current venting capability of the affected floor is less than that of the passenger configuration, it must be modified to limit decompression loads to a level that can be supported successfully by the existing floor structure.

2. 9g Crash Barrier

In order to ensure the safety of occupants during emergency landing conditions, the FAA first established in 1934 a set of inertia load factors used to design the structure for restraining items of mass in the fuselage. Because the airplane landing speeds have increased over the years as the fleet has transitioned from propeller to jet design, inertia load factors were changed as specified in CAR part 4b.260. Experience has shown that an airplane designed to this regulation has a reasonable probability of protecting its occupants from serious injury in an emergency landing. The DC–8 passenger airplane was designed to these criteria that specified an ultimate inertia load requirement of 9g in the forward direction. These criteria were applied to the seats and structure restraining the occupants, including the flight crew, as well as other items of mass in the fuselage.

When a Model DC–8 series airplane is converted from a passenger to a cargo-carrying (''freighter'') configuration, a 9g crash barrier is required, since most cargo containers and container-to-floor attaching devices are not designed to withstand emergency landing loads. In fact, the FAA estimates that the container-to-floor attaching devices will only support approximately 1.5g's to 3g's in the forward direction. Without a 9g crash barrier, it is probable that the loads associated with an emergency landing would cause the cargo to become unrestrained and impact the occupants of the airplane, which could result in serious injury to the occupants.

The structural inadequacy of the 9g crash barrier was evident to the FAA during its review in January 1999 of a McDonnell Douglas Model DC–8 modified in accordance with STC ST00309AT. The observations revealed that the design of the crash barrier floor attachment and circumferential supporting structure neither provide adequate strength to withstand the 9g forward inertia load generated by the main deck cargo mass, nor provide a load path to effectively transfer the loads from the crash barrier to the fuselage structure of the airplane.

Therefore, the FAA has determined that installation of a 9g crash barrier that complies with the applicable requirements of CAR part 4b is necessary to prevent serious injury to occupants of the airplane.

Development of Engineering Data

The FAA is aware that the JTF is currently sponsoring an effort to develop engineering data to address the identified unsafe conditions of this NPRM. The FAA is anticipating that this effort will result in an STC that addresses the proposed requirements of this NPRM, and that this STC will be made available to all operators.

Explanation of Requirements of Proposed Rule

Since an unsafe condition has been identified that is likely to exist or develop on other products of this same type design, the proposed AD would require, for airplanes modified by STC SA1862SO, the following two actions:

1. Incorporation of inspections into the operator's FAA-approved maintenance or inspection program that ensures the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any PSE associated with the STC modification and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

2. Modification of the main deck cargo door structure and fuselage structure immediately surrounding the main deck cargo door to comply with the applicable requirements of CAR part 4b.

For airplane modified by STC ST00309AT, this proposed AD would require the following four actions:

1. An inspection and evaluation of the cargo handling system to determine if the side restraints provide the support required by the ULD; and modification of the vertical side restraint to provide the support appropriate to the ULD's compatible with the cargo handling system, if necessary.

2. Modification of the main deck cargo floor to safely carry the applicable FAA-approved payload limits for above and below the main deck cargo floor. The modification must comply with the applicable requirements of CAR part 4b for the FAA-approved payload distribution.

3. An inspection and evaluation of the venting system of the main deck cargo floor to determine if the system limits decompression loads to a level that can be carried by the floor structure without failure; and modification of the venting system, as necessary, to limit the decompression loads to a level that can be supported successfully by the existing floor structure, if necessary.

4. Installation of a main deck cargo 9g crash barrier that complies with the applicable requirements of CAR part 4b.

The actions described above would be required to be accomplished in accordance with a method approved by the FAA.

Differences Between 727 and DC–8 NPRM Format

The format and content of this NPRM differs from the following rulemaking actions that address similar concerns for Boeing Model 727 series airplanes that have been modified to freighters by STC:

- AD 98–26–18, amendment 39–10961 (64 FR 1994, January 12, 1999);
- AD 98–26–19, amendment 39–10962 (64 FR 2016, January 12, 1999);
- AD 98–26–20, amendment 39–10963 (64 FR 2038, January 12, 1999);
- AD 98–26–21, amendment 39–10964 (64 FR 2061, January 12, 1999); and
- NPRM Rules Dockets 97–NM–232–AD, 97–NM–233–AD, 97–NM–234–AD, and 97–NM–235–AD.

However, the FAA used the same criteria (i.e., CAR part 4b) for evaluation of the subject Model 727 series airplanes and Model DC–8 series airplanes affected by this NPRM. The differences in the subject rulemaking actions are accounted for by the variance in the design philosophies embraced by Douglas (now Boeing) and Boeing.

The original floor beams for the DC–8 passenger airplanes have a deeper cross section, which reduces internal stresses for the same applied bending moment, than those for Model 727 series airplanes. Additionally, DC–8 passenger airplanes utilize intermediate ''struts'' between the main deck cargo floor beams and fuselage frames below the floor to help support the floor beams, which decreases the unsupported span. A shorter unsupported span helps reduce the bending moment for a given applied load. The amount of design data available to the FAA for review of each

of the DC–8 STC's (i.e., SA1063SO, SA10377SO, SA1802SO, SA1832SO, ST00309AT, and SA1862SO) was greater than that available when the FAA issued the subject Model 727 NPRM's and AD's. Additionally, the JTF has assisted the FAA in engineering review of this greater volume of data and in the creation of additional data necessary for substantiation of the existing designs. Based on the data available for review, the margins of safety of the DC–8 floor beams indicate a lower level of immediate concern than those margins indicated for the 727 floor beams when the 727 AD's and NPRM's were proposed. Therefore, the FAA has determined that the type of restrictions and interim floor loading and side vertical restraint that were applied to the 727 are not required for the subject DC–8 STC's.

To address the safety concerns of Boeing Model 727 series airplanes that have been modified to freighters by STC, the FAA issued AD's 98–26–19, 98–26–20, 98–26–21, and 98–26–22 to address the capability of the main deck cargo floor and then issued NPRM Rules Dockets 97–NM–232–AD, 97–NM–233–AD, 97–NM–234–AD, and 97–NM–235–AD to address the door indicating system and related systems issues; means to prevent pressurization to an unsafe level if the door is not closed, latched, and locked; door hinge; and 9g crash barrier. Because there have been events involving the cargo door opening in flight on the modified DC–8 series airplanes, the FAA has issued the following AD's to address the door indication system and other related systems issues for those airplanes:

- AD 2000–09–01 R1, amendment 39–11809 (65 FR 41869, July 7, 2000);
- AD 2000–09–02, amendment 39–11710 (65 FR 25437, May 2, 2000);
- AD 2000–13–03 R1, amendment 39–11865 (65 FR 49735, August 15, 2000); and
- AD 2000–15–11, amendment 39–11843 (65 FR 47660, August 3, 2000).

This DC–8 NPRM, and NPRM Rules Dockets 2000–NM–280–AD, 2000–NM–282–AD, 2000–NM–283–AD would address the structures issues, including the main deck cargo floor, as discussed previously.

Cost Impact

There are approximately 5 Model DC–8 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 4 airplanes of U.S. registry would be affected by this proposed AD. The following table shows the estimated cost impact for airplanes affected by this AD. The average labor rate is $60 per work hour. The estimated maximum total cost for all airplanes affected by this proposed AD is $442,560, or $110,640 per airplane.

STC	Action	Work hours (estimated)	Parts cost (estimated)	Total cost (estimated)
SA1862SO	Incorporation of inspections into maintenance or inspection program.	8	N/A	$1,920 or $480 per airplane.
SA1862SO	Modification of main deck cargo door structure and fuselage structure.	225	700	$56,800, or $14,200 per airplane.
ST00309AT	Inspection and evaluation of the cargo handling system.	16	N/A	$3,840, or $960 per airplane.
ST00309AT	Modification of main deck cargo floor	60	$500	$16,400, or 4,100 per airplane.
ST00309AT	Inspection and evaluation of the venting system.	16	N/A	$3,840, or $960 per airplane.
ST00309AT	Installation of main deck cargo 9g crash barrier.	1,000	$30,000	$360,000, or $90,000 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the proposed requirements of this AD action, and that no operator would accomplish those actions in the future if this proposed AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations proposed herein 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. Therefore, it is determined that this proposal would not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this 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) if promulgated, 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. A copy of the draft regulatory evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption **ADDRESSES.**

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 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 the following new airworthiness directive:

McDonnell Douglas: Docket 2000–NM–281–AD.

Applicability: Model DC–8 series airplanes that have been converted from a passenger- to a cargo carrying (''freighter'') configuration in accordance with Supplemental Type

Certificates (STC) SA1862SO and ST00309AT; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been otherwise 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 (g) 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 opening of the cargo door while the airplane is in flight or collapse of the main deck cargo floor, and consequent rapid decompression of the airplane including possible loss of flight control or severe structural damage, accomplish the following:

Actions Addressing the Main Deck Cargo Door and Associated Fuselage Structure

(a) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC SA1862SO: Accomplish the actions specified in paragraphs (a)(1) and (a)(2) of this AD in accordance with a method approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA.

(1) Within 1 year or 1,200 flight cycles after the effective date of this AD, whichever occurs first, incorporate inspections into the operator's FAA-approved maintenance or inspection program that ensure the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any principal structural element (PSE) associated with the STC modification and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

(2) Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, accomplish the actions specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this AD.

(i) Modify the main deck cargo door structure and fuselage structure immediately surrounding the main deck cargo door to comply with the applicable requirements of Civil Air Regulations (CAR) part 4b.

(ii) Incorporate inspections into the operator's FAA-approved maintenance or inspection program that ensure the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any PSE associated with the STC modification required by paragraph (a)(2)(i) of this AD and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

Actions Addressing the Main Deck Cargo Floor

(b) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC ST00309AT: Within 2 years or 2,000 flight cycles after the effective date of this AD, whichever occurs first, perform an inspection and evaluation of the cargo handling system to determine if the side restraints provide the support required by the unit load device (ULD), in accordance with a method approved by the Manager, Los Angeles ACO. If any vertical side restraint does not provide the required support, within 2 years or 2,000 flight cycles after the effective date of this AD, whichever occurs first, modify the vertical side restraint to provide the support appropriate to the ULD's compatible with the cargo handling system, in accordance with a method approved by the Manager, Los Angeles ACO.

(c) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC ST00309AT: Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, modify the main deck cargo floor to safely carry the applicable FAA-approved payload limits for above and below the main deck cargo floor. The modification and payload distribution shall be accomplished in accordance with a method approved by the Manager, Los Angeles ACO. The modification must comply with the applicable requirements of CAR part 4b for the FAA-approved payload distribution.

(d) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC ST00309AT, except for those airplanes that have been modified in accordance with paragraph (c) of this AD: Within 1 year or 1,000 flight cycles after the effective date of this AD, whichever occurs first, perform an inspection and evaluation of the venting system of the main deck cargo floor to determine if the system limits decompression loads to a level that can be carried by the floor structure without failure, in accordance with a method approved by the Manager, Los Angeles ACO.

(e) If, based on the evaluation required by paragraph (d) of this AD, the venting system does not limit decompression loads to a level that can be carried by the floor structure without failure, within 2 years after the effective date of this AD, modify the venting system, as necessary, to limit the decompression loads to a level that can be supported successfully by the existing floor structure, in accordance with a method approved by the Manager, Los Angeles ACO.

Actions Addressing Main Deck Cargo 9g Crash Barrier

(f) For airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with STC ST00309AT: Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, install a main deck cargo 9g crash barrier that complies with the applicable requirements of CAR part 4b, in accordance with a method approved by the Manager, Los Angeles ACO.

Alternative Methods of Compliance

(g) 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, Los Angeles ACO, FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

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

Special Flight Permit

(h) 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.

Issued in Renton, Washington, on September 21, 2000.

Donald L. Riggin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 00–24748 Filed 9–26–00; 8:45 am]

BILLING CODE 4910–13–U

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000–NM–282–AD]

RIN 2120–AA64

Airworthiness Directives; McDonnell Douglas Model DC–8 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the adoption of a new airworthiness directive (AD) that is applicable to certain McDonnell Douglas Model DC–8 series airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration. This proposal would require, among other actions, modification of the main deck cargo door structure and fuselage structure; modification of a main deck cargo door hinge; modification of the main deck cargo floor; and installation of a main deck cargo 9g crash barrier. These actions are necessary to prevent opening of the cargo door while the airplane is in flight or collapse of the main deck cargo floor, and consequent rapid decompression of the airplane including possible loss of flight control or severe structural damage. These actions are intended to address the identified unsafe condition.

DATES: Comments must be received by November 13, 2000.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–282–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056. Comments may be inspected at this location between 9:00 a.m. and 3:00 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–nprmcomment@faa.gov. Comments sent via fax or the Internet must contain ''Docket No. 2000–NM–282–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.

Information pertaining to this NPRM may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California.

FOR FURTHER INFORMATION CONTACT: Michael E. O'Neil, Aerospace Engineer, Airframe Branch, ANM–120L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712–4137; telephone (562) 627–5320; fax (562) 627–5210.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed 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 above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received.

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 proposed 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 proposed 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 summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket Number 2000–NM–282–AD.'' The postcard will be date stamped and returned to the commenter.

Availability of NPRMs

Any person may obtain a copy of this notice of proposed rulemaking (NPRM) by submitting a request to the FAA, Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–282–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

Discussion

Supplemental Type Certificate (STC) SA1832SO (originally issued to Monarch, Inc. and currently held by National Aircraft Services, Inc. (NASI)) specifies a design for installation of a main deck cargo door, associated door cutout in the fuselage, door hydraulic and indication systems, Class E compartment with a 9g crash barrier, and cargo handling system on McDonnell Douglas Model DC–8 series airplanes. The FAA has conducted a design review of Model DC–8 series airplanes modified in accordance with STC SA1832SO and has conducted discussions regarding the design with the STC holder. From the design review and these discussions, the FAA has identified several potential unsafe conditions. (Results of this design review are contained in ''DC–8 Cargo Modification Review Team Review of Monarch (ATAZ) Supplemental Type Certificate SA1832SO—Installation of a Cargo Door and Interior, Final Report, dated August 3, 1999,'' hereinafter referred to as ''the Design Review Report,'' which is included in the Rules Docket for this NPRM.)

On April 24, 2000, the FAA issued airworthiness directive (AD) 2000–09–02, amendment 39–11710 (65 FR 25437, May 2, 2000), which identifies corrective action for the unsafe conditions that relate to the hydraulic and indication systems of the main deck cargo door and provides for a means to prevent pressurization to an unsafe level if the main deck cargo door is not closed, latched, and locked.

In the preamble of the NPRM for AD 2000–09–02, the FAA indicated that further rulemaking action was being considered to address the potential unsafe conditions on Model DC–8 series airplanes modified in accordance with STC SA1832SO that relate to the unreinforced main deck floor, main deck cargo door hinge, fuselage structure in the area modified by installation of a main deck cargo door, 9g crash barrier, and fire/smoke detection system. The FAA now has determined that further rulemaking action is indeed necessary, and this NPRM follows from that determination.

Other Related Rulemaking

The FAA is considering further rulemaking to address the remaining potential unsafe condition that relates to the fire/smoke detection system.

Cargo Modification Concerns

In early 1989, two transport airplane accidents were attributed to cargo doors coming open during flight. The first accident involved a Boeing Model 747 series airplane in which the cargo door separated from the airplane, and damaged the fuselage structure, engines, and passenger cabin. The second accident involved a McDonnell Douglas Model DC–9 series airplane in which the cargo door opened but did not separate from its hinge. The open door disturbed the airflow over the empennage, which resulted in loss of flight control and consequent loss of the airplane. Although cargo doors have opened occasionally without mishap shortly after the airplane was in flight, these two accidents served to highlight the extreme potential dangers associated with the opening of a cargo door while the airplane is in flight.

As a result of these cargo door opening accidents, the Air Transport Association (ATA) of America formed a task force, including representatives of the FAA, to review the design, manufacture, maintenance, and operation of airplanes fitted with outward opening cargo doors, and to make recommendations to prevent inadvertent cargo door openings while the airplane is in flight. A design working group was tasked with reviewing 14 Code of Federal Regulations (CFR) part 25.783 [and its accompanying Advisory Circular (AC) 25.783–1, dated December 10, 1986] with the intent of clarifying its contents and recommending revisions to enhance future cargo door designs. This design group also was tasked with providing specific recommendations regarding

design criteria to be applied to existing outward opening cargo doors to ensure that inadvertent openings would not occur in the current transport category fleet of airplanes.

The ATA task force made its recommendations in the ''ATA Cargo Door Task Force Final Report,'' dated May 15, 1991 (hereinafter referred to as ''the ATA Final Report''). On March 20, 1992, the FAA acknowledged the ATA's recommendations and issued an FAA memorandum (hereinafter referred to as ''the FAA Memorandum'') providing additional guidance for purposes of assessing the continuing airworthiness of existing designs of outward opening doors. The FAA Memorandum was not intended to upgrade the certification basis of the various airplanes, but rather to identify criteria to evaluate potential unsafe conditions identified on in-service airplanes.

Utilizing the applicable requirements of Civil Air Regulations (CAR) part 4b and the design criteria provided by the FAA Memorandum, the FAA has reviewed the original type design of major transport airplanes, including McDonnell Douglas Model DC–8 series airplanes equipped with outward opening doors, for any design deficiency or service difficulty. Based on that review, the FAA identified unsafe conditions and issued, among others, the following AD's:

- For certain McDonnell Douglas Model DC–9 series airplanes: AD 89–11–02, amendment 39–6216 (54 FR 21416, May 18, 1989);
- For all Boeing Model 747 series airplanes: AD 90–09–06, amendment 39–6581 (55 FR 15217, April 23, 1990);
- For certain McDonnell Douglas Model DC–8 series airplanes: AD 89–17–01 R1, amendment 39–6521 (55 FR 8446, March 8, 1990);
- For certain Boeing Model 747–100 and –200 series airplanes: AD 96–01–51, amendment 39–9492 (61 FR 1703, January 23, 1996);
- For certain Boeing Model 727–100 and –200 series airplanes: AD 96–16–08, amendment 39–9708 (61 FR 41733, August 12, 1996); and
- For certain McDonnell Douglas Model DC–8 series airplanes: AD 2000–09–02, amendment 39–11710 (65 FR 25437, May 2, 2000).

FAA/Industry Collaborative Effort

In late 1997, the FAA informed the STC holders and operators of Model DC–8 series airplanes that it was embarking on a review of Model DC–8 series airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration by STC. The FAA proposed at a subsequent industry sponsored meeting in early 1998, that DC–8 operators and STC holders work together to identify and address potential safety concerns. This suggestion to the affected industry resulted in the creation of the DC–8 Cargo Conversion Joint Task Force (JTF) (hereinafter referred to as ''the JTF'').

The current composition of the JTF includes holders of each of the six STC's that address the installation of a main deck cargo door in Model DC–8 series airplanes and operators and lessors of those modified airplanes. At the JTF's request, the FAA participates in its meetings to offer counsel and guidance with respect to the FAA's regulatory processes. The JTF is a clearinghouse for the gathering and sharing of information among the parties affected by the FAA review of STC cargo conversions of Model DC–8 series airplanes. The JTF also is a liaison between the FAA, operators, and STC holders.

The JTF has been working with the FAA to provide data relating to the number of STC-modified Model DC–8 series airplanes and operators of those airplanes, and identified which airplanes are modified by each STC. It also was instrumental in polling the operators and providing maintenance schedules and locations to the FAA, which helped the FAA arrange visits to operators of airplanes modified by each of the STC's. These visits allowed the FAA to review both the available data supporting each STC and modified airplanes and to identify potential safety concerns with each of the STC modifications. Additionally, the JTF has coordinated funding of the industry review of the data supporting the STC's and ongoing efforts to resolve safety issues identified by the FAA.

Identification of Unsafe Conditions

Using the certification basis of the airplane (i.e., CAR part 4b), the FAA, in collaboration with the JTF, conducted an engineering design review, inspected an airplane modified in accordance with STC SA1832SO, and identified a number of design features of this STC that are unsafe. The FAA considers the following four specific design deficiencies to be unsafe:

1. Main Deck Cargo Door and Associated Fuselage Structure

The FAA, in collaboration with structural engineering representatives of the JTF, has identified several areas of the main deck cargo door and door jamb structure of STC SA1832SO that require modification to meet type design requirements. These areas include the addition of structural elements to augment and, in some places, to add the structural capability necessary to safely support design loads. When taken individually, these areas do not necessarily represent an unsafe condition. However, the critical load condition for each of the elements is the same, so that all of the elements could fail at the same time. Therefore, the FAA has determined that the potential of concurrent failure of several structural elements presents an unsafe condition for the airplane, and that these elements require modification to ensure the safety of the airplane. The modifications include:

- Reinforcement of the fuselage door jamb element at the main deck cargo door sill;
- Reinforcement of the inner cap of the frame at fuselage station (FS) 1700;
- Reinforcement of the lower frame inner cap below the strut;
- Replacement of the strut to frame fasteners in the door region;
- Reinforcement of the floor beam to frame attachment;
- Replacement of some of the latch mechanism bolts with increased strength bolts;
- Replacement of the existing bolts that attach the latches to the door with increased strength bolts; and
- Reinforcement of the main deck cargo door frames that support the two latches at either end of the main deck cargo door.

As part of its continuing work to maintain the structural integrity of older transport category airplanes, in the early 1980's, the FAA concluded that the incidence of fatigue cracking may increase as these airplanes continue in service. In light of this, and as a result of increased utilization, longer operational lives, and the levels of safety expected of the currently operated transport category airplanes, the FAA has determined that a damage tolerance assessment of the structural modifications associated with STC SA1832SO is necessary to ensure the structural integrity for all airplanes in the affected fleet. This damage tolerance assessment is to identify any principal structural elements (PSE), including the associated inspection threshold, inspection method, and repetitive inspection interval, to ensure continued operational safety of the airplane. The PSE information must be identified in any method of compliance presented to address the requirements of the proposed AD.

2. Main Deck Cargo Door Hinge

In order to avoid catastrophic structural failure of outward opening cargo doors, a typical industry approach has been to design them and their

attaching structure to be fail safe (i.e., designed so that if a single structural element fails, other structural elements are able to carry the redistributed load).

Structural elements, such as the main deck cargo door hinge, are subject to severe in-service operating conditions that could result in corrosion, binding, or seizure of the hinge. These conditions, in addition to the normal operational loads, can lead to early and unpredictable fatigue cracking. If a main deck cargo door hinge is not a fail-safe design, a fatigue crack could initiate and propagate undetected longitudinally along the length of the hinge, which could lead to a complete hinge failure. A possible consequence of this undetected failure is the opening of the main deck cargo door while the airplane is in flight. Service experience indicates that the opening of a cargo door while the airplane is in flight can be extremely hazardous in a variety of ways including possible loss of flight control, severe structural damage, or rapid decompression, any of which could lead to loss of the airplane.

The design of the main deck cargo door hinge for STC SA1832SO must be in compliance with CAR part 4b, including CAR part 4b.270, which requires, in part, that catastrophic failure or excessive structural deformation, which could adversely affect the flight characteristics of the airplane, is not probable after fatigue failure or obvious partial failure of a single critical structural element. One common feature of a fail-safe hinge design is a division of the hinge into multiple segments such that, following failure of any one segment, the remaining segments would support the redistributed load.

The main deck cargo door installed in accordance with STC SA1832SO is supported by latches along the bottom of the door and a two-segment hinge along the top. This two-segment hinge is considered a critical structural element for this STC. A crack that initiates and propagates longitudinally along either segment of the hinge will eventually result in failure of the entire hinge, because the remaining segment of the hinge is unable to support the redistributed loads. Failure of the entire hinge can result in the opening of the main deck cargo door while the airplane is in flight.

Therefore, the FAA has determined that detailed visual inspections to detect cracks or other discrepancies of the exposed surfaces of the main deck cargo door hinge is necessary to ensure that the affected airplanes are not in immediate risk of hinge failure and to ensure the integrity of the door and fuselage structure to which the hinge is attached. Also, the end of the existing aluminum hinge elements of the main deck cargo door must be replaced with steel hinge elements on both the fuselage and door sides of the hinge, and the hinge must comply with the applicable requirements of CAR part 4b, including fail-safe requirements.

3. Capability of the Unmodified Floor

Based on the results of the FAA's and JTF's structural evaluation of the main deck cargo floor, the FAA has determined that the unmodified main deck cargo floor is not capable of safely supporting the main deck zone loading (cargo weight) currently allowed by STC SA1832SO. There are several methods to address the unsafe condition. The floor beams and their attachment to the fuselage frames and struts, which support the floor beams on either side of the fuselage, could be modified to support the currently acceptable main deck zone loading. It is also possible to limit the main deck zone loading to a level that the main deck cargo floor can be supported safely without modification. A further possibility is to modify the main deck cargo floor beams to a configuration compatible with the desired level of zone loading.

In assessing the load carrying capability of the main deck cargo floor for STC SA1832SO, the manner in which the load is applied to the floor, as well as the magnitude of that load, must be considered. For example, it is possible to directly place the cargo onto the floor and secure it to the floor in a safe manner. However, most operators utilize a cargo handling system installed in the airplane that allows the use of unit load devices (ULD), such as pallets and containers. Together, the cargo handling system and ULD's expedite loading and unloading of the airplanes. Technical Standard Order (TSO) TSO–C90c, dated April 3, 1992, identifies both the ultimate loads that the ULD's produced under the TSO must support, and the number and location of restraints necessary to carry those loads. The TSO requires identification of the type and size of the ULD's. Although this TSO is the most common method of approval for ULD's, it is not the only means of approving ULD's. ULD designs also may be approved as part of a type certificate or STC. Therefore, the total cargo weight, distribution of cargo weight in the airplane, and restraint requirements for ULD's must be identified in any method of compliance presented to address the requirements of the proposed AD.

During evaluations of Model 727 and DC–8 series airplanes converted to a freighter configuration by STC, the FAA found instances where the existing venting capability of certain airplanes had been compromised by installation of the Class E compartment. In some cases, the vent area was decreased or restricted during modification. The FAA also found that the available design data for the main deck cargo floor for STC SA1832SO do not demonstrate the adequacy of the venting system of the modified DC–8 airplanes. The FAA is concerned about the venting between the main cabin floor and the baggage compartments below the main deck cargo floor in the event of a rapid decompression. If the vent area of the original type design has been decreased or restricted during modification, the loads on the main deck cargo floor may be increased to an unsafe level during a rapid decompression event. The increased loads on the main deck cargo floor could lead to collapse of the floor beams. Collapse of the main deck cargo floor could restrict the motion of the flight and engine control cables routed through the floor beams or could cause the failure of those cables, which could result in reduced controllability of the airplane or loss of control. Rapid decompression of the airplane could result from a sufficiently large failure in the fuselage pressure boundary either above or below the main deck cargo floor, such as inadvertent opening of the cargo door.

Therefore, the FAA has determined that an inspection and evaluation of the affected floor structure must be accomplished to ensure that the venting capability of the passenger configuration has not been compromised by installation of the Class E compartment. If the current venting capability of the affected floor is less than that of the passenger configuration, it must be modified to limit decompression loads to a level that can be supported successfully by the existing floor structure.

4. 9g Crash Barrier

In order to ensure the safety of occupants during emergency landing conditions, the FAA first established in 1934 a set of inertia load factors used to design the structure for restraining items of mass in the fuselage. Because the airplane landing speeds have increased over the years as the fleet has transitioned from propeller to jet design, inertia load factors were changed as specified in CAR part 4b.260. Experience has shown that an airplane designed to this regulation has a reasonable probability of protecting its occupants from serious injury in an emergency landing. The DC–8 passenger

airplane was designed to these criteria that specified an ultimate inertia load requirement of 9g in the forward direction. These criteria were applied to the seats and structure restraining the occupants, including the flight crew, as well as other items of mass in the fuselage.

When a Model DC–8 series airplane is converted from a passenger- to a cargo-carrying (''freighter'') configuration, a 9g crash barrier is required, since most cargo containers and container-to-floor attaching devices are not designed to withstand emergency landing loads. In fact, the FAA estimates that the container-to-floor attaching devices will only support approximately 1.5g's to 3g's in the forward direction. Without a 9g crash barrier, it is probable that the loads associated with an emergency landing would cause the cargo to become unrestrained and impact the occupants of the airplane, which could result in serious injury to the occupants.

The structural inadequacy of the 9g crash barrier was evident to the FAA during its review in October 1998 of a McDonnell Douglas Model DC–8 modified in accordance with STC SA1832SO. The observations revealed that the design of the crash barrier floor attachment and circumferential supporting structure neither provide adequate strength to withstand the 9g forward inertia load generated by the main deck cargo mass, nor provide a load path to effectively transfer the loads from the crash barrier to the fuselage structure of the airplane.

Therefore, the FAA has determined that installation of a 9g crash barrier that complies with the applicable requirements of CAR part 4b is necessary to prevent serious injury to occupants of the airplane.

Development of Engineering Data

The FAA is aware that the JTF is currently sponsoring an effort to develop engineering data to address the identified unsafe conditions of this NPRM. The FAA is anticipating that this effort will result in an STC that addresses the proposed requirements of this NPRM, and that this STC will be made available to all operators.

Explanation of Requirements of Proposed Rule

Since an unsafe condition has been identified that is likely to exist or develop on other products of this same type design, the proposed AD would require the following nine actions:

1. Incorporation of inspections into the operator's FAA-approved maintenance or inspection program that ensures the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any PSE associated with the STC modification and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

2. Modification of the main deck cargo door structure and fuselage structure immediately surrounding the main deck cargo door to comply with the applicable requirements of CAR part 4b.

3. A detailed visual inspection to detect cracks of the exposed surfaces of the main deck cargo door hinge (both fuselage and door side hinge elements); and repair or replacement of the hinge element with a new, like part, if necessary.

4. A detailed visual inspection to detect cracks or other discrepancies (i.e., double or closely drilled holes, corrosion, chips, scratches, or gouges) of the mating surfaces of the main deck cargo door hinge, skin of the main deck cargo door, and external fuselage doubler underlying the hinge; and repair, if necessary.

5. Installation of a main deck cargo door hinge that complies with the applicable requirements of CAR part 4b, including fail-safe requirements.

6. An inspection and evaluation of the cargo handling system to determine if the side restraints provide the support required by the ULD; and modification of the vertical side restraint to provide the support appropriate to the ULD's compatible with the cargo handling system, if necessary.

7. Modification of the main deck cargo floor to safely carry the applicable FAA-approved payload limits for above and below the main deck cargo floor. The modification must comply with the applicable requirements of CAR part 4b for the FAA-approved payload distribution.

8. An inspection and evaluation of the venting system of the main deck cargo floor to determine if the system limits decompression loads to a level that can be carried by the floor structure without failure; and modification of the venting system, as necessary, to limit the decompression loads to a level that can be supported successfully by the existing floor structure, if necessary.

9. Installation of a main deck cargo 9g crash barrier that complies with the applicable requirements of CAR part 4b.

The actions described above would be required to be accomplished in accordance with a method approved by the FAA.

Differences Between 727 and DC–8 NPRM Format

The format and content of this NPRM differs from the following rulemaking actions that address similar concerns for Boeing Model 727 series airplanes that have been modified to freighters by STC:

- AD 98–26–18, amendment 39–10961 (64 FR 1994, January 12, 1999);
- AD 98–26–19, amendment 39–10962 (64 FR 2016, January 12, 1999);
- AD 98–26–20, amendment 39–10963 (64 FR 2038, January 12, 1999);
- AD 98–26–21, amendment 39–10964 (64 FR 2061, January 12, 1999); and
- NPRM Rules Dockets 97–NM–232–AD, 97–NM–233-AD, 97-NM–234–AD, and 97–NM–235–AD.

However, the FAA used the same criteria (i.e., CAR part 4b) for evaluation of the subject Model 727 series airplanes and Model DC–8 series airplanes affected by this NPRM. The differences in the subject rulemaking actions are accounted for by the variance in the design philosophies embraced by Douglas (now Boeing) and Boeing.

The original floor beams for the DC–8 passenger airplanes have a deeper cross section, which reduces internal stresses for the same applied bending moment, than those for Model 727 series airplanes. Additionally, DC–8 passenger airplanes utilize intermediate ''struts'' between the main deck cargo floor beams and fuselage frames below the floor to help support the floor beams, which decreases the unsupported span. A shorter unsupported span helps reduce the bending moment for a given applied load. The amount of design data available to the FAA for review of each of the DC–8 STC's (i.e., SA1063SO, SA10377SO, SA1802SO, SA1832SO, SA1862SO, and SA00309AT) was greater than that available when the FAA issued the subject Model 727 NPRM's and AD's. Additionally, the JTF has assisted the FAA in engineering review of this greater volume of data and in the creation of additional data necessary for substantiation of the existing designs. Based on the data available for review, the margins of safety of the DC–8 floor beams indicate a lower level of immediate concern than those margins indicated for the 727 floor beams when the 727 AD's and NPRM's were proposed. Therefore, the FAA has determined that the type of restrictions and interim floor loading and side vertical restraint that were applied to the 727 are not required for the subject DC–8 STC.

To address the safety concerns of Boeing Model 727 series airplanes that

have been modified to freighters by STC, the FAA issued AD's 98–26–19, 98–26–20, 98–26–21, and 98–26–22 to address the capability of the main deck cargo floor and then issued NPRM Rules Dockets 97–NM–232–AD, 97–NM–233–AD, 97–NM–234–AD, and 97–NM–235–AD to address the door indicating system and related systems issues; means to prevent pressurization to an unsafe level if the door is not closed, latched, and locked; door hinge; and 9g crash barrier. Because there have been events involving the cargo door opening in flight on the modified DC–8 series airplanes, the FAA has issued the following AD's to address the door indication system and other related systems issues for those airplanes:

- AD 2000–09–01 R1, amendment 39–11809 (65 FR 41869, July 7, 2000);
- AD 2000–09–02, amendment 39–11710 (65 FR 25437, May 2, 2000);
- AD 2000–13–03 R1, amendment 39–11865 (65 FR 49735, August 15, 2000); and
- AD 2000–15–11, amendment 39–11843 (65 FR 47660, August 3, 2000).

This DC–8 NPRM, and NPRM Rules Dockets 2000–NM–280–AD, 2000–NM–281–AD, and 2000–NM–283–AD would address the structures issues, including the main deck cargo floor, as discussed previously.

Cost Impact

There are approximately 6 Model DC–8 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 6 airplanes of U.S. registry would be affected by this proposed AD. The following table shows the estimated cost impact for airplanes affected by this AD. The average labor rate is $60 per work hour. The estimated maximum total cost for all airplanes affected by this proposed AD is $1,175,820, or $196,420 per airplane.

Action	Work hours (estimated)	Parts cost (estimated)	Total cost (estimated)
Incorporation of inspections into maintenance or inspection program	8	N/A	$2,880 or $480 per airplane.
Modification of main deck cargo door structure and fuselage structure	225	700	$85,200, or $14,200 per airplane.
Inspection of exposed surfaces of main deck cargo door hinge	16	N/A	$5,760, or $960 per airplane.
Inspection of mating surfaces of main deck cargo door hinge	16	N/A	$5,760, or $960 per airplane.
Installation of a main deck cargo door hinge	60	$200	$22,800, or $3,800 per airplane.
Inspection and evaluation of the cargo handling system	16	N/A	$5,760, or $960 per airplane.
Modification of main deck cargo floor	60	$500	$24,600 or $4,100 per airplane.
Inspection and evaluation of the venting system	16	N/A	$5,760, or $960 per airplane.
Installation of main deck cargo 9g crash barrier	2,000	$50,000	$1,020,000, or $170,000 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the proposed requirements of this AD action, and that no operator would accomplish those actions in the future if this proposed AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations proposed herein 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. Therefore, it is determined that this proposal would not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this 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) if promulgated, 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. A copy of the draft regulatory evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption **ADDRESSES.**

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 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 the following new airworthiness directive:

McDonnell Douglas: Docket 2000–NM–282–AD.

Applicability: Model DC–8 series airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with Supplemental Type Certificate (STC) SA1832SO; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been otherwise 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 (i) 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 opening of the cargo door while the airplane is in flight or collapse of the main deck cargo floor, and consequent rapid decompression of the airplane including possible loss of flight control or severe structural damage, accomplish the following:

Actions Addressing the Main Deck Cargo Door and Associated Fuselage Structure

(a) Accomplish the actions specified in paragraphs (a)(1) and (a)(2) of this AD in accordance with a method approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA.

(1) Within 1 year or 1,200 flight cycles after the effective date of this AD, whichever occurs first, incorporate inspections into the operator's FAA-approved maintenance or inspection program that ensure the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any principal structural element (PSE) associated with the STC modification and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

(2) Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, accomplish the actions specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this AD.

(i) Modify the main deck cargo door structure and fuselage structure immediately surrounding the main deck cargo door to comply with the applicable requirements of Civil Air Regulations (CAR) part 4b.

(ii) Incorporate inspections into the operator's FAA-approved maintenance or inspection program that ensure the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any PSE associated with the STC modification required by paragraph (a)(2)(i) of this AD and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

Actions Addressing the Main Deck Cargo Floor

(b) Within 2 years or 2,000 flight cycles after the effective date of this AD, whichever occurs first, perform an inspection and evaluation of the cargo handling system to determine if the side restraints provide the support required by the unit load device (ULD), in accordance with a method approved by the Manager, Los Angeles ACO. If any vertical side restraint does not provide the required support, within 2 years or 2,000 flight cycles after the effective date of this AD, whichever occurs first, modify the vertical side restraint to provide the support appropriate to the ULD's compatible with the cargo handling system, in accordance with a method approved by the Manager, Los Angeles ACO.

(c) Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, modify the main deck cargo floor to safely carry the applicable FAA-approved payload limits for above and below the main deck cargo floor. The modification and payload distribution shall be accomplished in accordance with a method approved by the Manager, Los Angeles ACO. The modification must comply with the applicable requirements of CAR part 4b for the FAA-approved payload distribution.

(d) Except for those airplanes that have been modified in accordance with paragraph (c) of this AD, within 1 year or 1,000 flight cycles after the effective date of this AD, whichever occurs first, perform an inspection and evaluation of the venting system of the main deck cargo floor to determine if the system limits decompression loads to a level that can be carried by the floor structure without failure, in accordance with a method approved by the Manager, Los Angeles ACO.

(e) If, based on the evaluation required by paragraph (d) of this AD, the venting system does not limit decompression loads to a level that can be carried by the floor structure without failure, within 2 years after the effective date of this AD, modify the venting system, as necessary, to limit the decompression loads to a level that can be supported successfully by the existing floor structure, in accordance with a method approved by the Manager, Los Angeles ACO.

Actions Addressing Main Deck Cargo Door Hinge

(f) Within 250 flight cycles after the effective date of this AD, perform a detailed visual inspection to detect cracks of the exposed surfaces of the main deck cargo door hinge (both fuselage and door side hinge elements), in accordance with a method approved by the Manager, Los Angeles ACO. If any crack is detected, prior to further flight, repair in accordance with a method approved by the Manager, Los Angeles ACO, or replace the cracked hinge element with a new, like part.

Note 2: For the purposes of this AD, a detailed visual inspection is defined as: ''An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required.''

(g) Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, accomplish the actions specified in paragraphs (g)(1) and (g)(2) of this AD in accordance with a method approved by the Manager, Los Angeles ACO.

(1) Perform a detailed visual inspection to detect cracks or other discrepancies (i.e., double or closely drilled holes, corrosion, chips, scratches, or gouges) of the mating surfaces of the main deck cargo door hinge, skin of the main deck cargo door, and external fuselage doubler underlying the hinge. If any discrepancy is detected, prior to further flight, repair the discrepant part.

(2) Install a main deck cargo door hinge that complies with the applicable requirements of CAR part 4b, including fail-safe requirements.

Actions Addressing Main Deck Cargo 9g Crash Barrier

(h) Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, install a main deck cargo 9g crash barrier that complies with the applicable requirements of CAR part 4b, in accordance with a method approved by the Manager, Los Angeles ACO.

Alternative Methods of Compliance

(i) 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, Los Angeles ACO, FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

Note 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles ACO.

Special Flight Permit

(j) 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.

Issued in Renton, Washington, on September 21, 2000.

Donald L. Riggin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 00–24747 Filed 9–26–00; 8:45 am]

BILLING CODE 4910–13–U

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000–NM–283–AD]

RIN 2120–AA64

Airworthiness Directives; McDonnell Douglas Model DC–8 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the adoption of a new airworthiness directive (AD) that is applicable to certain McDonnell Douglas Model DC–8 series airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration. This proposal would require, among

other actions, modification of the main deck cargo door structure and fuselage structure; replacement of fasteners in the two door-side hinge elements; modification of the main deck cargo floor; and installation of a main deck cargo 9g crash barrier. These actions are necessary to prevent opening of the cargo door while the airplane is in flight, and consequent rapid decompression of the airplane including possible loss of flight control or severe structural damage. These actions are intended to address the identified unsafe condition.

DATES: Comments must be received by November 13, 2000.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–283–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

Comments may be inspected at this location between 9:00 a.m. and 3:00 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-nprmcomment@faa.gov. Comments sent via fax or the Internet must contain ''Docket No. 2000–NM–283–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.

Information pertaining to this NPRM may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California.

FOR FURTHER INFORMATION CONTACT: Michael E. O'Neil, Aerospace Engineer, Airframe Branch, ANM–120L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712–4137; telephone (562) 627–5320; fax (562) 627–5210.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed 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 above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received.

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 proposed 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 proposed 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 summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket Number 2000–NM–283–AD.'' The postcard will be date stamped and returned to the commenter.

Availability of NPRMs

Any person may obtain a copy of this NPRM by submitting a request to the FAA, Transport Airplane Directorate, ANM–114, Attention: Rules Docket No. 2000–NM–283–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

Discussion

The FAA has conducted a design review of McDonnell Douglas Model DC–8 series airplanes modified in accordance with STC SA1802SO (originally issued to Rosembalm and currently held by National Aircraft Services, Inc. (NASI)) and has identified several potential unsafe conditions. [Results of this design review are contained in ''DC–8 Cargo Modification Review Team Review of Rosenbalm Supplemental Type Certificate SA1802SO—Installation of a Cargo Door and Interior, Final Report, Revision A, dated November 29, 1999,'' hereinafter referred to as ''the Design Review Report,'' which is included in the Rules Docket for this notice of proposed rulemaking (NPRM).) The modification defined by STC SA421NW (also held by NASI) is nearly identical to that defined by STC SA1802SO; therefore, STC SA421NW has the same potential unsafe conditions. STC's SA1802SO and SA421NW specify a design for installation of a main deck cargo door, associated door cutout in the fuselage, door system hydraulics, door indication system, Class E compartment with a 9g crash barrier, and cargo handling system on McDonnell Douglas Model DC–8 series airplanes.

On June 28, 2000, the FAA issued airworthiness directive (AD) 2000–09–01 R1, amendment 39–11809 (65 FR 41869, June 7, 2000), which identifies corrective action for the unsafe conditions that relate to the hydraulic and indication systems of the main deck cargo door and provides for a means to prevent pressurization to an unsafe level if the main deck cargo door is not closed, latched, and locked.

In the preamble of the NPRM for AD 2000–09–01 R1, the FAA indicated that further rulemaking action was being considered to address the potential unsafe conditions on Model DC–8 series airplanes modified in accordance with STC's SA1802SO and SA421NW that relate to the unreinforced main deck floor, main deck cargo door hinge, fuselage structure in the area modified by installation of a main deck cargo door, 9g crash barrier, and fire/smoke detection system. The FAA now has determined that further rulemaking action is indeed necessary, and this NPRM follows from that determination.

Other Related Rulemaking

The FAA is considering further rulemaking to address the remaining potential unsafe condition that relates to the fire/smoke detection system.

Cargo Modification Concerns

In early 1989, two transport airplane accidents were attributed to cargo doors coming open during flight. The first accident involved a Boeing Model 747 series airplane in which the cargo door separated from the airplane, and damaged the fuselage structure, engines, and passenger cabin. The second accident involved a McDonnell Douglas Model DC–9 series airplane in which the cargo door opened but did not separate from its hinge. The open door disturbed the airflow over the empennage, which resulted in loss of flight control and consequent loss of the airplane. Although cargo doors have opened occasionally without mishap shortly after the airplane was in flight, these two accidents served to highlight the extreme potential dangers associated with the opening of a cargo door while the airplane is in flight.

As a result of these cargo door opening accidents, the Air Transport Association (ATA) of America formed a task force, including representatives of

the FAA, to review the design, manufacture, maintenance, and operation of airplanes fitted with outward opening cargo doors, and to make recommendations to prevent inadvertent cargo door openings while the airplane is in flight. A design working group was tasked with reviewing 14 Code of Federal Regulations (CFR) part 25.783 [and its accompanying Advisory Circular (AC) 25.783–1, dated December 10, 1986] with the intent of clarifying its contents and recommending revisions to enhance future cargo door designs. This design group also was tasked with providing specific recommendations regarding design criteria to be applied to existing outward opening cargo doors to ensure that inadvertent openings would not occur in the current transport category fleet of airplanes.

The ATA task force made its recommendations in the ''ATA Cargo Door Task Force Final Report,'' dated May 15, 1991 (hereinafter referred to as ''the ATA Final Report''). On March 20, 1992, the FAA acknowledged the ATA's recommendations and issued an FAA memorandum (hereinafter referred to as ''the FAA Memorandum'') providing additional guidance for purposes of assessing the continuing airworthiness of existing designs of outward opening doors. The FAA Memorandum was not intended to upgrade the certification basis of the various airplanes, but rather to identify criteria to evaluate potential unsafe conditions identified on in-service airplanes.

Utilizing the applicable requirements of Civil Air Regulations (CAR) part 4b and the design criteria provided by the FAA Memorandum, the FAA has reviewed the original type design of major transport airplanes, including McDonnell Douglas Model DC–8 series airplanes equipped with outward opening doors, for any design deficiency or service difficulty. Based on that review, the FAA identified unsafe conditions and issued, among others, the following AD's:

- For certain McDonnell Douglas Model DC–9 series airplanes: AD 89–11–02, amendment 39–6216 (54 FR 21416, May 18, 1989);
- For all Boeing Model 747 series airplanes: AD 90–09–06, amendment 39–6581 (55 FR 15217, April 23, 1990);
- For certain McDonnell Douglas Model DC–8 series airplanes: AD 89–17–01 R1, amendment 39–6521 (55 FR 8446, March 8, 1990);
- For certain Boeing Model 747–100 and –200 series airplanes: AD 96–01–51, amendment 39–9492 (61 FR 1703, January 23, 1996);
- For certain Boeing Model 727–100 and –200 series airplanes: AD 96–16–08, amendment 39–9708 (61 FR 41733, August 12, 1996); and
- For certain McDonnell Douglas Model DC–8 series airplanes: AD 2000–09–01 R1, amendment 39–11809 (65 FR 41869, June 7, 2000).

FAA/Industry Collaborative Effort

In late 1997, the FAA informed the STC holders and operators of Model DC–8 series airplanes that it was embarking on a review of Model DC–8 series airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration by STC. The FAA proposed at a subsequent industry sponsored meeting in early 1998, that DC–8 operators and STC holders work together to identify and address potential safety concerns. This suggestion to the affected industry resulted in the creation of the DC–8 Cargo Conversion Joint Task Force (JTF) (hereinafter referred to as ''the JTF'').

The current composition of the JTF includes holders of each of the six STC's that address the installation of a main deck cargo door in Model DC–8 series airplanes and operators and lessors of those modified airplanes. At the JTF's request, the FAA participates in its meetings to offer counsel and guidance with respect to the FAA's regulatory processes. The JTF is a clearinghouse for the gathering and sharing of information among the parties affected by the FAA review of STC cargo conversions of Model DC–8 series airplanes. The JTF also is a liaison between the FAA, operators, and STC holders.

The JTF has been working with the FAA to provide data relating to the number of STC-modified Model DC–8 series airplanes and operators of those airplanes, and identified which airplanes are modified by each STC. It also was instrumental in polling the operators and providing maintenance schedules and locations to the FAA, which helped the FAA arrange visits to operators of airplanes modified by each of the STC's. These visits allowed the FAA to review both the available data supporting each STC and modified airplanes and to identify potential safety concerns with each of the STC modifications. Additionally, the JTF has coordinated funding of the industry review of the data supporting the STC's and ongoing efforts to resolve safety issues identified by the FAA.

Identification of Unsafe Conditions

Using the certification basis of the airplane (i.e., CAR part 4b), the FAA, in collaboration with the JTF, conducted an engineering design review, inspected an airplane modified in accordance with STC SA1802SO, and identified a number of design features of this STC that are unsafe, which are applicable to STC SA421NW, as well. The FAA considers the following four specific design deficiencies to be unsafe:

1. Main Deck Cargo Door and Associated Fuselage Structure

The FAA, in collaboration with structural engineering representatives of the JTF, has identified several areas of the main deck cargo door and door jamb structure of STC's SA1802SO and SA421NW that require modification to meet type design requirements. These areas include the addition of structural elements to augment and, in some places, to add the structural capability necessary to safely support design loads. When taken individually, these areas do not necessarily represent an unsafe condition. However, the critical load condition for each of the elements is the same, so that all of the elements could fail at the same time. Therefore, the FAA has determined that the potential of concurrent failure of several structural elements presents an unsafe condition for the airplane, and that these elements require modification to ensure the safety of the airplane.

The modifications include:

- Reinforcement of the fuselage door jamb elements across the main deck cargo door sill;
- Reinforcement of the shear transfer capability between the door jamb frames and the fuselage skin and doubler;
- Reinforcement of the inner cap of the frame at fuselage station (FS) 1700;
- Replacement of existing fasteners in the door side end segments of the hinge with increased strength bolts;
- Reinforcement of the existing shear transfer capability of the frames below the main deck cargo door, as well as in the door itself; and
- Reinforcement of the frames that support the two latches at both ends of the main deck cargo door.

As part of its continuing work to maintain the structural integrity of older transport category airplanes, in the early 1980's, the FAA concluded that the incidence of fatigue cracking may increase as these airplanes continue in service. In light of this, and as a result of increased utilization, longer operational lives, and the levels of safety expected of the currently operated transport category airplanes, the FAA has determined that a damage tolerance assessment of the structural modifications associated with STC SA1802SO is necessary to ensure the structural integrity for all airplanes in the affected fleet. This damage tolerance

assessment is to identify any principal structural elements (PSE), including the associated inspection threshold, inspection method, and repetitive inspection interval, to ensure continued operational safety of the airplane. The PSE information must be identified in any method of compliance presented to address the requirements of the proposed AD.

2. Main Deck Cargo Door Hinge

In order to avoid catastrophic structural failure of outward opening cargo doors, a typical industry approach has been to design them and their attaching structure to be fail safe (i.e., designed so that if a single structural element fails, other structural elements are able to carry the redistributed load). The hinge installed by STC's SA1802SO and SA421NW is no exception. However, based on the results of the FAA's and JTF's structural evaluation of the hinge of the subject STC's, the FAA has determined that the existing fasteners attaching the two hinge elements to the cargo door at both the forward and aft ends of the hinge are inadequate to carry the design loads. Therefore, these fasteners must be replaced with fasteners of sufficient strength.

Structural elements, such as the main deck cargo door hinge, are subject to severe in-service operating conditions that could result in corrosion, binding, or seizure of the hinge. These conditions, in addition to the normal operational loads, can lead to early and unpredictable fatigue cracking. A possible consequence of the undetected failure of hinge elements is the opening of the main deck cargo door while the airplane is in flight. Service experience indicates that the opening of a cargo door while the airplane is in flight can be extremely hazardous in a variety of ways including possible loss of flight control, severe structural damage, or rapid decompression, any of which could lead to loss of the airplane. Therefore, a detailed visual inspection to detect cracks of the exposed surfaces of the main deck cargo door hinge (both fuselage and door side hinge elements) is also necessary to ensure that the affected airplanes are not in immediate risk of hinge failure.

3. Capability of the Unmodified Floor

Based on the results of the FAA's and JTF's structural evaluation of the main deck cargo floor, the FAA has determined that the unmodified main deck cargo floor is not capable of safely supporting the main deck zone loading (cargo weight) currently allowed by STC's SA1802SO and SA421NW. There are several methods to address the unsafe condition. The floor beams and their attachment to the fuselage frames and struts, which support the floor beams on either side of the fuselage, could be modified to support the currently acceptable main deck zone loading. It is also possible to limit the main deck zone loading to a level that the main deck cargo floor can be supported safely without modification. A further possibility is to modify the main deck cargo floor beams to a configuration compatible with the desired level of zone loading.

In assessing the load carrying capability of the main deck cargo floor for STC's SA1802SO and SA421NW, the manner in which the load is applied to the floor, as well as the magnitude of that load, must be considered. For example, it is possible to directly place the cargo onto the floor and secure it to the floor in a safe manner. However, most operators utilize a cargo handling system installed in the airplane that allows the use of unit load devices (ULD), such as pallets and containers. Together, the cargo handling system and ULD's expedite loading and unloading of the airplanes. Technical Standard Order (TSO) TSO–C90c, dated April 3, 1992, identifies both the ultimate loads that the ULD's produced under the TSO must support, and the number and location of restraints necessary to carry those loads. The TSO requires identification of the type and size of the ULD's. Although this TSO is the most common method of approval for ULD's, it is not the only means of approving ULD's. ULD designs also may be approved as part of a type certificate or STC. Therefore, the total cargo weight, distribution of cargo weight in the airplane, and restraint requirements for ULD's must be identified in any method of compliance presented to address the requirements of the proposed AD.

During evaluations of Model 727 and DC–8 series airplanes converted to a freighter configuration by STC, the FAA found instances where the existing venting capability of certain airplanes had been compromised by installation of the Class E compartment. In some cases, the vent area was decreased or restricted during modification. The FAA also found that the available design data for the main deck cargo floor for STC's SA1802SO and SA421NW do not demonstrate the adequacy of the venting system of the modified DC–8 airplanes. The FAA is concerned about the venting between the main cabin floor and the baggage compartments below the main deck cargo floor in the event of a rapid decompression. If the vent area of the original type design has been decreased or restricted during modification, the loads on the main deck cargo floor may be increased to an unsafe level during a rapid decompression event. The increased loads on the main deck cargo floor could lead to collapse of the floor beams. Collapse of the main deck cargo floor could restrict the motion of the flight and engine control cables routed through the floor beams or could cause the failure of those cables, which could result in reduced controllability of the airplane or loss of control. Rapid decompression of the airplane could result from a sufficiently large failure in the fuselage pressure boundary either above or below the main deck cargo floor, such as inadvertent opening of the cargo door.

Therefore, the FAA has determined that an inspection and evaluation of the affected floor structure must be accomplished to ensure that the venting capability of the passenger configuration has not been compromised by installation of the Class E compartment. If the current venting capability of the affected floor is less than that of the passenger configuration, it must be modified to limit decompression loads to a level that can be supported successfully by the existing floor structure.

4. 9g Crash Barrier

In order to ensure the safety of occupants during emergency landing conditions, the FAA first established in 1934 a set of inertia load factors used to design the structure for restraining items of mass in the fuselage. Because the airplane landing speeds have increased over the years as the fleet has transitioned from propeller to jet design, inertia load factors were changed as specified in CAR part 4b.260. Experience has shown that an airplane designed to this regulation has a reasonable probability of protecting its occupants from serious injury in an emergency landing. The DC–8 passenger airplane was designed to these criteria that specified an ultimate inertia load requirement of 9g in the forward direction. These criteria were applied to the seats and structure restraining the occupants, including the flight crew, as well as other items of mass in the fuselage.

When a Model DC–8 series airplane is converted from a passenger to a cargo-carrying (''freighter'') configuration, a 9g crash barrier is required, since most cargo containers and container-to-floor attaching devices are not designed to withstand emergency landing loads. In fact, the FAA estimates that the container-to-floor attaching devices will only support approximately 1.5g's to

3g's in the forward direction. Without a 9g crash barrier, it is probable that the loads associated with an emergency landing would cause the cargo to become unrestrained and impact the occupants of the airplane, which could result in serious injury to the occupants.

The structural inadequacy of the 9g crash barrier was evident to the FAA during its review in January 1999 of a McDonnell Douglas Model DC–8 modified in accordance with STC SA1802SO. The observations revealed that the design of the crash barrier floor attachment and circumferential supporting structure neither provide adequate strength to withstand the 9g forward inertia load generated by the main deck cargo mass, nor provide a load path to effectively transfer the loads from the crash barrier to the fuselage structure of the airplane.

Therefore, the FAA has determined that installation of a 9g crash barrier that complies with the applicable requirements of CAR part 4b is necessary to prevent serious injury to occupants of the airplane.

Development of Engineering Data

The FAA is aware that the JTF is currently sponsoring an effort to develop engineering data to address the identified unsafe conditions of this NPRM. The FAA is anticipating that this effort will result in an STC that addresses the proposed requirements of this NPRM, and that this STC will be made available to all operators.

Explanation of Requirements of Proposed Rule

Since an unsafe condition has been identified that is likely to exist or develop on other products of this same type design, the proposed AD would require the following eight actions:

1. Incorporation of inspections into the operator's FAA-approved maintenance or inspection program that ensures the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any PSE associated with the STC modification and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

2. Modification of the main deck cargo door structure and fuselage structure immediately surrounding the main deck cargo door to comply with the applicable requirements of CAR part 4b.

3. A detailed visual inspection to detect cracks of the exposed surfaces of the main deck cargo door hinge (both fuselage and door side hinge elements); and repair or replacement of the hinge element with a new, like part, if necessary.

4. Replacement of the existing fasteners in the two door-side hinge elements at the forward and aft ends of the hinge with fasteners of acceptable strength.

5. An inspection and evaluation of the cargo handling system to determine if the side restraints provide the support required by the ULD; and modification of the vertical side restraint to provide the support appropriate to the ULD's compatible with the cargo handling system, if necessary.

6. Modification of the main deck cargo floor to safely carry the applicable FAA-approved payload limits for above and below the main deck cargo floor. The modification must comply with the applicable requirements of CAR part 4b for the FAA-approved payload distribution.

7. An inspection and evaluation of the venting system of the main deck cargo floor to determine if the system limits decompression loads to a level that can be carried by the floor structure without failure; and modification of the venting system, as necessary, to limit the decompression loads to a level that can be supported successfully by the existing floor structure, if necessary.

8. Installation of a main deck cargo 9g crash barrier that complies with the applicable requirements of CAR part 4b.

The actions described above would be required to be accomplished in accordance with a method approved by the FAA.

Differences Between 727 and DC–8 NPRM Format

The format and content of this NPRM differs from the following rulemaking actions that address similar concerns for Boeing Model 727 series airplanes that have been modified to freighters by STC:

- AD 98–26–18, amendment 39–10961 (64 FR 1994, January 12, 1999);
- AD 98–26–19, amendment 39–10962 (64 FR 2016, January 12, 1999);
- AD 98–26–20, amendment 39–10963 (64 FR 2038, January 12, 1999);
- AD 98–26–21, amendment 39–10964 (64 FR 2061, January 12, 1999); and
- NPRM Rules Dockets 97–NM–232–AD, 97–NM–233–AD, 97–NM–234–AD, and 97–NM–235–AD.

However, the FAA used the same criteria (i.e., CAR part 4b) for evaluation of the subject Model 727 series airplanes and Model DC–8 series airplanes affected by this NPRM. The differences in the subject rulemaking actions are accounted for by the variance in the design philosophies embraced by Douglas (now Boeing) and Boeing.

The original floor beams for the DC–8 passenger airplanes have a deeper cross section, which reduces internal stresses for the same applied bending moment, than those for Model 727 series airplanes. Additionally, DC–8 passenger airplanes utilize intermediate ''struts'' between the main deck cargo floor beams and fuselage frames below the floor to help support the floor beams, which decreases the unsupported span. A shorter unsupported span helps reduce the bending moment for a given applied load. The amount of design data available to the FAA for review of each of the DC–8 STC's (i.e., SA1063SO, SA10377SO, SA1802SO, SA1832SO, SA1862SO, and SA00309AT) was greater than that available when the FAA issued the subject Model 727 NPRM's and AD's. Additionally, the JTF has assisted the FAA in engineering review of this greater volume of data and in the creation of additional data necessary for substantiation of the existing designs. Based on the data available for review, the margins of safety of the DC–8 floor beams indicate a lower level of immediate concern than those margins indicated for the 727 floor beams when the 727 AD's and NPRM's were proposed. Therefore, the FAA has determined that the type of restrictions and interim floor loading and side vertical restraint that were applied to the 727 are not required for the subject DC–8 STC's.

To address the safety concerns of Boeing Model 727 series airplanes that have been modified to freighters by STC, the FAA issued AD's 98–26–19, 98–26–20, 98–26–21, and 98–26–22 to address the capability of the main deck cargo floor and then issued NPRM Rules Dockets 97–NM–232–AD, 97–NM–233–AD, 97–NM–234–AD, and 97–NM–235–AD to address the door indicating system and related systems issues; means to prevent pressurization to an unsafe level if the door is not closed, latched, and locked; door hinge; and 9g crash barrier. Because there have been events involving the cargo door opening in flight on the modified DC–8 series airplanes, the FAA has issued the following AD's to address the door indication system and other related systems issues for those airplanes:

- AD 2000–09–01 R1, amendment 39–11809 (65 FR 41869, July 7, 2000);
- AD 2000–09–02, amendment 39–11710 (65 FR 25437, May 2, 2000);
- AD 2000–13–03 R1, amendment 39–11865 (65 FR 49735, August 15, 2000); and

• AD 2000–15–11, amendment 39–11843 (65 FR 47660, August 3, 2000).

This DC–8 NPRM, and NPRM Rules Dockets 2000–NM–280–AD, 2000–NM–281–AD, and 2000–NM–282–AD would address the structures issues, including the main deck cargo floor, as discussed previously.

Cost Impact

There are approximately 32 Model DC–8 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 29 airplanes of U.S. registry would be affected by this proposed AD. The following table shows the estimated cost impact for airplanes affected by this AD. The average labor rate is $60 per work hour. The estimated maximum total cost for all airplanes affected by this proposed AD is $6,718,140, or $231,660 per airplane.

Action	Work hours (estimated)	Parts cost (estimated)	Total cost (estimated)
Incorporation of inspections into maintenance or inspection program	8	N/A	$13,920, or $480 per airplane.
Modification of main deck cargo door structure and fuselage structure	1,420	$6,500	$2,659,300, or $91,700 per airplane.
Inspection of exposed surfaces of main deck cargo door hinge	16	N/A	$27,840, or $960 per airplane.
Replacement of the existing fasteners in the two door-side hinge elements	60	100	$107,300, or $3,700 per airplane
Inspection and evaluation of the cargo handling system	16	N/A	$27,840, or $960 per airplane.
Modification of main deck cargo floor	40	$500	$84,100, or $2,900 per airplane.
Inspection and evaluation of the venting system	16	N/A	$27,840, or $960 per airplane.
Installation of main deck cargo 9g crash barrier	1,500	40,000	$3,770,000, or $130,000 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the proposed requirements of this AD action, and that no operator would accomplish those actions in the future if this proposed AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations proposed herein 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. Therefore, it is determined that this proposal would not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this 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) if promulgated, 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. A copy of the draft regulatory evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption **ADDRESSES.**

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 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 the following new airworthiness directive:

McDonnell Doublas: Docket 2000–NM–283–AD.

Applicability: Model DC–8 series airplanes that have been converted from a passenger- to a cargo-carrying (''freighter'') configuration in accordance with Supplemental Type Certificate (STC) SA1802SO or SA421NW; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been otherwise 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 (h) 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 opening of the cargo door while the airplane is in flight or collapse of the main deck cargo floor, and consequent rapid decompression of the airplane including possible loss of flight control or severe structural damage, accomplish the following:

Actions Addressing the Main Deck Cargo Door and Associated Fuselage Structure

(a) Accomplish the actions specified in paragraphs (a)(1) and (a)(2) of this AD in accordance with a method approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA.

(1) Within 1 year or 1,200 flight cycles after the effective date of this AD, whichever occurs first, incorporate inspections into the operator's FAA-approved maintenance or inspection program that ensure the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any principal structural element (PSE) associated with the STC modification and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

(2) Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever

occurs first, accomplish the actions specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this AD.

(i) Modify the main deck cargo door structure and fuselage structure immediately surrounding the main deck cargo door to comply with the applicable requirements of Civil Air Regulations (CAR) part 4b.

(ii) Incorporate inspections into the operator's FAA-approved maintenance or inspection program that ensure the continued operational safety of the airplane. These inspections should be based on a damage tolerance assessment that identifies any PSE associated with the STC modification required by paragraph (a)(2)(i) of this AD and should include associated inspection thresholds, inspection methods, and repetitive inspection intervals.

Actions Addressing the Main Deck Cargo Floor

(b) Within 2 years or 2,000 flight cycles after the effective date of this AD, whichever occurs first, perform an inspection and evaluation of the cargo handling system to determine if the side restraints provide the support required by the unit load device (ULD), in accordance with a method approved by the Manager, Los Angeles ACO. If any vertical side restraint does not provide the required support, within 2 years or 2,000 flight cycles after the effective date of this AD, whichever occurs first, modify the vertical side restraint to provide the support appropriate to the ULD's compatible with the cargo handling system, in accordance with a method approved by the Manager, Los Angeles ACO.

(c) Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, modify the main deck cargo floor to safely carry the applicable FAA-approved payload limits for above and below the main deck cargo floor. The modification and payload distribution shall be accomplished in accordance with a method approved by the Manager, Los Angeles ACO. The modification must comply with the applicable requirements of CAR part 4b for the FAA-approved payload distribution.

(d) Except for those airplanes that have been modified in accordance with paragraph (c) of this AD, within 1 year or 1,000 flight cycles after the effective date of this AD, whichever occurs first, perform an inspection and evaluation of the venting system of the main deck cargo floor to determine if the system limits decompression loads to a level that can be carried by the floor structure without failure, in accordance with a method approved by the Manager, Los Angeles ACO.

(e) If, based on the evaluation required by paragraph (d) of this AD, the venting system does not limit decompression loads to a level that can be carried by the floor structure without failure, within 2 years after the effective date of this AD, modify the venting system, as necessary, to limit the decompression loads to a level that can be supported successfully by the existing floor structure, in accordance with a method approved by the Manager, Los Angeles ACO.

Actions Addressing Main Deck Cargo Door Hinge

(f) Accomplish the actions specified in paragraphs (f)(1) and (f)(2) of this AD in accordance with a method approved by the Manager, Los Angeles ACO.

(1) Within 250 flight hours after the effective date of this AD, perform a detailed visual inspection to detect cracks of the exposed surfaces of the main deck cargo door hinge (both fuselage and door side hinge elements). If any crack is detected, prior to further flight, repair in accordance with a method approved by the Manager, Los Angeles ACO, or replace the cracked hinge element with a new, like part.

Note 2: For the purposes of this AD, a detailed visual inspection is defined as: ''An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required.''

(2) Within 2 years or 2,000 flight hours after the effective date of this AD, whichever occurs first, replace the existing fasteners in the two door-side hinge elements at the forward and aft ends of the hinge with fasteners of acceptable strength.

Actions Addressing Main Deck Cargo 9g Crash Barrier

(g) Within 3 years or 4,000 flight cycles after the effective date of this AD, whichever occurs first, install a main deck cargo 9g crash barrier that complies with the applicable requirements of CAR part 4b, in accordance with a method approved by the Manager, Los Angeles ACO.

Alternative Methods of Compliance

(h) 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, Los Angeles ACO, FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

Note 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles ACO.

Special Flight Permit

(i) 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.

Issued in Renton, Washington, on September 21, 2000.

Donald L. Riggin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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