

Federal Register

Vol. 56, No. 42

Monday, March 4, 1991

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 91-NM-34-AD]

Airworthiness Directives; Boeing Models 707, 727, 737, 747, and 757 Series Airplanes; and McDonnell Douglas Models DC-8, DC-9 (Includes MD-80 Series), and DC-10 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This notice proposes to supersede an existing airworthiness directive (AD), applicable to certain Boeing and McDonnell Douglas airplanes, which currently requires certain operational and equipment changes and design modifications to be accomplished to maximize cargo fire detection and protection. The existing rule (AD 89-18-12 R1) was based on the FAA's determination that the existing Class B cargo compartment firefighting procedures and fire protection features did not provide adequate protection from a fire that could occur in main deck cargo areas, and could result in the loss of an airplane if an uncontrolled cargo fire occurred. This proposed action would revise certain portions of the existing rule and allow additional time to comply with certain other requirements. This proposal is prompted by additional information concerning firefighting concepts which has been received since issuance of the original AD, and by reports from operators concerning the severe economic impact caused by implementing the existing AD within the required compliance period.

DATES: Comments concerning the proposed changes to AD 89-18-12 R1, as stated in the proposed rule, must be received no later than March 25, 1991. Comments concerning the remainder of

the proposed rule must be received no later than May 25, 1991.

ADDRESSES: Send comments on the proposal in duplicate to Federal Aviation Administration, Northwest Mountain Region, Transport Airplane Directorate, ANM-103, Attention: Airworthiness Rules Docket No. 91-NM-34-AD, 1601 Lind Avenue SW., Renton, Washington 98055-4056. This information may be examined at the FAA, Northwest Mountain Region, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington.

FOR FURTHER INFORMATION CONTACT: Ms. Susan Letcher, Seattle Aircraft Certification Office, Systems and Equipment Branch, ANM-130S, Northwest Mountain Region, 1601 Lind Avenue SW., Renton, Washington 98055-4056; telephone (206) 227-2670; or Mr. Kevin Kuniyoshi, Los Angeles Aircraft Certification Office, Systems and Equipment Branch, ANM-130L, Northwest Mountain Region, 3229 E. Spring Street, Long Beach, California 90806-2425; telephone (213) 988-5337.

SUPPLEMENTARY INFORMATION: 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 should identify the Rules Docket number and be submitted in duplicate to the address specified above. All communications received on or before the closing dates for comments specified above will be considered by the Administrator before taking action on the proposed rule. The proposals contained in this Notice may be changed in light of the comments received.

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.

Two separate closing dates for comments have been established. The first closing date, which is 30 days after issuance of this Notice, covers only comments related to those changes to AD 89-18-12 R1 as stated in the proposed rule. This short comment

period has been established so that relief for affected operators may be possible from the May 3, 1991, compliance deadline of AD 89-18-12 R1. A longer comment period is being provided to allow commenters time to prepare the more extensive comments anticipated concerning the balance of the proposal.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this Notice must submit a self-addressed, stamped post card on which the following statement is made: "Comments to Docket Number 91-NM-34-AD." The post card will be date/time stamped and returned to the commenter.

Discussion

On August 10, 1989, the FAA issued AD 89-18-12, Amendment 39-6301 (54 FR 34762, August 21, 1989), applicable to certain Boeing and McDonnell Douglas airplanes, to require (1) modification of all Class B cargo compartments to Class C cargo compartments, or (2) the use of flame penetration-resistant cargo containers equipped with smoke detection and fire extinguishing systems, or (3) use of individuals trained to fight cargo fires and certain modifications to Class B cargo compartments and associated systems. That action was prompted by an FAA evaluation of the existing fire protection features of "Combi" airplanes following the loss of a Boeing Model 747-200 "Combi" that developed a major fire in the main deck cargo compartment. That AD was issued to prevent the occurrence of an uncontrolled cargo fire that could cause systems and structural damage, leading to loss of the airplane. The FAA later issued AD 89-18-12 R1, Amendment 39-6557 (55 FR 11163, March 27, 1990), to revise the effective date of the original AD in order to allow additional time necessary to develop the design changes and firefighter training programs required by the original AD.

Since issuance of AD 89-18-12 R1, the FAA has received additional information from manufacturers, airlines, and industry that indicates that paragraphs A. and B. of the AD should be re-evaluated. More importantly, preliminary information from testing performed at the FAA Technical Center indicates that in some cases, actively fighting a fire in a cargo container may be less effective than leaving it alone

until the airplane has landed. This information, which was not available prior to the issuance of AD 89-18-12 R1, has a significant impact on the definition of equipment, procedures, and training needed to effectively fight cargo fires. Training guidelines that take this new information into account could not be provided by the FAA in time for operators to meet the May 3, 1991, compliance deadline of AD 89-18-12 R1 for implementation of the requirement for dedicated firefighters. Certain major design modifications required by paragraph B. of AD 89-18-12 R1 may also be significantly impacted by a change in firefighting procedures.

In addition to the difficulties associated with defining equipment, procedures, and training for implementation of dedicated firefighters by May 3, 1991, recent information from operators indicates that the economic impact of certain portions of AD 89-18-12 R1 may be greater than originally estimated. In particular, the implementation of the requirement for 30-minute walk-through inspections on wide-body "Combis" prior to the availability of a thermal monitoring system could necessitate the hiring of additional personnel, who would no longer be required upon installation of a thermal monitoring system when it becomes available. Thermal monitoring systems for use on narrow-body "Combis" that undergo frequent passenger/cargo mix reconfigurations are expensive and difficult to design. For operators of these airplanes, authorization to use 30-minute walk-throughs in lieu of thermal monitoring systems is more feasible economically, but is not provided for in AD 89-18-12 R1.

In light of the uncertainty concerning firefighting procedures, the harsh economic impact of implementing certain portions of AD 89-18-12 R1 within the prescribed compliance period may not be justified. For this reason, more time is appropriate to allow for the re-evaluation of firefighting equipment, procedures, and training, and the possible re-evaluation of some of the modifications currently required by paragraph B. of AD 89-18-12 R1. In addition, this delay will allow for FAA coordination with the Joint Aviation Authorities, who are currently considering similar rulemaking.

In light of this new information and on-going re-evaluation, the FAA is proposing a new AD which would supersede AD 89-18-12 R1 with a new AD that would (1) delay the requirement for implementation of the "dedicated" firefighter and associated approved

firefighting procedures and training for two years; (2) delay the requirement for implementation of the 30-minute inspections for two years; and (3) allow relief from the requirement to install a thermal monitoring system, provided that 30-minute inspections are continued. This proposed rule essentially accomplishes these changes by moving the requirements for dedicated firefighters and 30-minute inspections to paragraph B., which must be complied with by May 3, 1993. These requirements were previously located in paragraph A. of AD 89-18-12 R1, and therefore had to be accomplished by May 3, 1991.

Comments are requested on all portions of the proposed rule. In addition, comments are requested on the requirements relating to firefighting equipment, procedures, and training. The request for comments is intended to encourage a broad scope of comments concerning the overall content of the proposed rule. Of particular interest are comments concerning cargo compartment liners, the use of fire resistant blankets or igloos in lieu of liners, remote compartment monitoring systems (thermal, video, improved smoke detection), fire knock-down systems, halon substitutes, extinguishant quantities, ventilation control in the cargo compartment, illumination requirements for firefighting, protective garments, firefighting equipment, and two-way communications between the firefighter and cockpit.

The FAA will also consider comments concerning the appropriateness of imposing different "levels" of requirements based on airplane size and other meaningful characteristics. In addition, comments concerning the cost and time required for research, development, and installation of systems required by the proposed rule or alternate proposals are invited. All comments should be specific, provide justification, and, where possible, offer alternatives.

Comments are requested in two phases. Comments concerning the proposed rule, as it differs from AD 89-18-12 R1, are required within a relatively short time frame to ensure issuance of a final rule for this action prior to the current May 3, 1991, compliance deadline of AD 89-18-12 R1. A longer period is allowed for comments concerning the remainder of the proposed rule, which is essentially unchanged from AD 89-18-12 R1, to allow the public adequate time to prepare comments, which are expected to be more extensive. Based on these

later comments, additional rulemaking may be considered.

By using this two-phase process, the FAA intends that safety be assured in the interim by the fact that certain of the requirements of AD 89-18-12 R1, which are scheduled to go into effect as of May 3, 1991, will be effective as of that date, without interruption; the FAA has determined that those requirements are adequate to assure safety in the interim period.

There are approximately 278 Boeing Model 707, 727, 737, 747, and 757 series airplanes and 124 McDonnell Douglas Model DC-8, DC-9, and DC-10 series airplanes of the affected design in the worldwide fleet. It is estimated that approximately 80 Boeing Model 707, 727, 737, 747, and 757 series airplanes, and 124 McDonnell Douglas Model DC-8, DC-9, and DC-10 series airplanes, of U.S. registry have been certified to operate with a Class B main deck cargo compartment. Many of these airplanes have been permanently operated in the all-passenger configuration and are, therefore, not affected by this rule. Approximately 40 of these airplanes, presently operated by U.S. operators in the mixed cargo/passenger configuration, would be affected by this proposal.

The design alternative selected by an operator will have a significant impact on the cost of complying with this proposed AD. The highest cost option is expected to be the conversion to a Class C compartment, as defined in paragraph B.1. of this proposal. A conservative cost estimate for such a modification, based upon costs of required materials, labor, and testing, is \$1,000,000 per airplane. Based on these figures, the total cost of the AD on U.S. operators is estimated to be \$40,000,000.

The regulations proposed herein would not have substantial direct effects 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, in accordance with Executive Order 12812, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this proposed regulation (1) is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under 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 evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket.

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 14 CFR part 39 of the Federal Aviation Regulations as follows:

PART 39—[AMENDED]

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [Amended]

2. Section 39.13 is amended by superseding Amendment 39-6557 (55 FR 11163, March 27, 1990), AD 89-18-12 R1, with the following new airworthiness directive:

Boeing and McDonnell Douglas: Applies to Boeing Models 707, 727, 737, 747, and 757 series airplanes and McDonnell Douglas Models DC-8, DC-9, (includes MD-80 series), and DC-10 series airplanes; equipped with a main deck Class B cargo compartment, as defined by FAR 25.857(b) or its predecessors, with a volume exceeding 200 cubic feet; certificated in any category. Compliance required as indicated, unless previously accomplished.

To minimize the hazard associated with a main deck Class B cargo compartment fire, accomplish the following:

A. Within one year after May 3, 1990 (the effective date of Amendment 39-6557, AD 89-18-12 R1), or prior to carrying cargo in a Class B cargo compartment, whichever occurs later, accomplish the following in accordance with the appropriate technical data approved by the Manager, Seattle Aircraft Certification Office (for Boeing series airplanes); or the Manager, Los Angeles Aircraft Certification Office (for McDonnell Douglas series airplanes):

1. Revise the Limitations Section of the FAA-approved Airplane Flight Manual (AFM) to include the following:
FOR EACH FLIGHT IN WHICH CARGO IS TRANSPORTED IN THE CLASS B CARGO COMPARTMENT:

Prior to flight, a flight deck crewmember must make a visual inspection throughout the Class B cargo compartment to verify access to cargo and the general fire security of the compartment after the cargo door is closed and secured.

2. Incorporate the following systems and equipment:

a. Provide appropriate protective garments stored adjacent to the cargo compartment entrance.

b. Provide a minimum of 30 minutes of protective breathing. This equipment must meet the requirements of Technical Standard Order (TSO) C-116, Action Notice 8150.2A, or equivalent, and be stored adjacent to the cargo compartment entrance.

c. Provide a minimum of 48 lbs. Halon 1211 fire extinguishant, or its equivalent, in portable fire extinguisher bottles readily available for use in the cargo compartment. At least two bottles must be a minimum of 16 lb. capacity.

d. Provide at least two Underwriters Laboratories (UL)2A (2-1/2 gallon) rated water portable fire extinguishers, or its equivalent, adjacent to the cargo compartment entrance for use in the compartment.

e. Provide a means for two-way communication between the flight deck and the interior of the cargo compartment.

f. Install placards in conspicuous place(s) within the cargo compartment clearly defining the cargo loading envelope and limitations that provide sufficient access of sufficient width for firefighting along the entire length of at least two sides of a loaded pallet or container. Amend the appropriate Weight and Balance and loading instructions by description and diagrams to include this information.

Note: In accordance with paragraph C., below, if the requirements of paragraph B.1. or B.2. of this AD are accomplished within one year after the effective date of AD 89-18-12 R1, compliance with paragraph A. of this AD is unnecessary.

B. Within three years after May 3, 1990 (the effective date of Amendment 39-6557, AD 89-18-12 R1), or prior to carrying cargo in a Class B cargo compartment, whichever occurs later, accomplish the requirements of paragraph B.1., B.2., or B.3., below:

1. Modify the Class B cargo compartment to comply with the requirements for a Class C cargo compartment, as defined in FAR 25.855 (Amdt. 25-60), 25.857(c) and 25.858 (Amdt. 25-54).

2. Modify all main deck Class B cargo compartments to require the following placard installed in conspicuous locations approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region (for Boeing airplanes), or the Manager, Los Angeles Aircraft Certification Office, FAA, Northwest Mountain Region (for McDonnell Douglas airplanes), throughout the compartment:

"Cargo carried in this compartment must be loaded in an approved flame penetration-resistant container meeting the requirements of FAR 25.857(c) with ceiling and sidewall liners and floor panels that meet the requirements of FAR 25, appendix F, part III, (Amdt. 25-60)."

3. In addition to the requirements of paragraph A.2., above, accomplish the following in accordance with technical data approved by the Manager, Seattle Aircraft Certification Office (for affected Boeing series airplanes), or the Manager, Los Angeles Aircraft Certification Office (for

affected McDonnell Douglas series airplanes), to include the following:

a. Revise the Limitations Section of the FAA-approved Airplane Flight Manual (AFM) to include the following:

FOR EACH FLIGHT IN WHICH CARGO IS TRANSPORTED IN THE CLASS B CARGO COMPARTMENT:

(1) For airplanes having compartments of 200 square feet or less of cargo/baggage floor area, a minimum of one individual trained to fight cargo fires must be provided. (This individual is in addition to the crew members required by the operational rules.)

(2) Prior to flight, a flight deck crewmember or the individual required by the previous paragraph B.3.a.(1) must make a visual inspection throughout the Class B cargo compartment to verify access to cargo and the general fire security of the compartment after the cargo door is closed and secured.

(3) For airplanes having compartments with more than 200 square feet of cargo/baggage floor area, provide an additional person trained to fight cargo fires to work with the individual required by the previous paragraph B.3.a.(1). (This individual may be a required flight attendant.)

b. Provide a cargo compartment fire "knock down" extinguishing system that provides an initial fire extinguishant concentration of at least 5 percent of the empty compartment volume of Halon 1301 or equivalent, and a fire suppression extinguishant concentration of at least 3 percent of the empty compartment volume of Halon 1301 or equivalent, for a period of time not less than 15 minutes.

c. Provide a smoke or fire detection system that meets the requirements of FAR 25.858 (Amdt. 25-54) and also provides an aural and visual warning to the station assigned to the individual trained to fight cargo fires. The designated station must be located adjacent to the inflight access door to the cargo compartment.

d. Provide a means from the flight deck to shut off ventilation system inflow to the cargo compartment.

e. Accomplish the requirements of paragraph B.3.e.(1) or B.3.e.(2):

(1) Provide a thermal monitoring system to the flight deck and station designated for the individual trained to fight cargo fire to advise of potentially hazardous conditions within the cargo compartment.

(2) At intervals not to exceed 30 minutes in flight and continuously after a fire has been detected and extinguished, the individual trained to fight cargo fires must conduct a visual inspection throughout the Class B cargo compartment to monitor for evidence of fire.

f. Provide a cargo compartment liner that meets the requirements of FAR 25.855, (Amdt. 25-60). The smoke/fire barrier between the occupants and cargo compartment must extend from the cargo compartment floor to the ceiling liner, or top skin of the airplane, and from the right side liner to the left side liner of the cargo compartment. The liner and barrier seals must also be constructed of materials that meet the Flame Penetration Resistance requirements of FAR 25, appendix F part III (Amdt. 25-60), except that currently-

installed glass fiber reinforced resin material is acceptable. In addition, provide protective covers for cockpit voice and flight data recorders, windows, wiring, and primary flight control systems (unless it can be shown that a fire could not cause jamming or loss of control), and other equipment within the compartment that is required for safe flight and landing; those covers must be constructed of materials that meet the Flame Penetration Resistance requirements of FAR 25, appendix F, part III (Amdt. 25-60).

g. Provide illumination of the cargo compartment as follows:

(1) General area illumination of the cargo with an average illumination of 0.1 foot-candle measured at 40-inch intervals both at one-half the pallet or container height, and at the full pallet or container height.

(2) Illumination of the access pathways required by paragraph A.2.f. of this AD under visibility conditions likely to be encountered after a fire and discharge of the fire extinguishant, and prior to the decay of extinguishant concentration below 3 percent, must provide an average of 0.1 foot-candle measured at each 40-inch interval, with not less than 0.05 foot-candle minimum along a line that is within 2 inches of and parallel to the floor centered on the pathway.

h. Provide a safe means to effectively discharge portable fire extinguishers into each container or into each pallet that is covered.

i. Establish FAA-approved firefighting procedures for controlling cargo compartment fires.

j. Establish an FAA-approved training program for firefighters required by paragraphs B.3.a.(1) and B.3.a.(3) of this AD.

k. Demonstrate the following features and functions during flight tests:

(1) Fire Extinguishant Concentration, required by paragraph B.3.b. of this AD.

(2) Smoke or Fire Detection System, required by paragraph B.3.c. of this AD.

(3) Prevention of Smoke Penetration into occupied compartments. [Refer to FAR 25.857(b)2 and 25.855 (e)2.]

(4) Compartment Temperature Indication System, if required by paragraph B.3.e. of this AD.

(5) Cargo accessibility, required by paragraph A.2.f. of this AD.

(6) Firefighting procedures, required by paragraph B.3.i. of this AD.

k. Items specified in paragraphs B.3.h(5) and B.3.h(6) of this AD must be evaluated under reduced visibility conditions representative of those likely to occur with cargo fires.

1. Provide a means of two-way communication between the flight deck and the station assigned to the individual trained to fight cargo fires.

C. Compliance with the paragraphs B.1. or B.2. of this AD constitutes terminating action for the requirements of paragraph A. of this AD.

An alternate means of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate (for Boeing series airplanes); or the Manager, Los

Angeles Aircraft Certification Office, FAA, Northwest Mountain Region (for McDonnell Douglas series airplanes).

Note: The request should be submitted directly to the Manager, Seattle ACO, and a copy sent to the cognizant FAA Principal Inspector (PI). The PI will then forward comments or concurrence to the Seattle ACO.

E. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base in order to comply with the requirements of this AD.

Issued in Renton, Washington, on February 21, 1991.

Leroy A. Keith,

Manager, Transport Airplane Directorate,
Aircraft Certification Service.

[FR Doc. 91-4985 Filed 3-1-91; 8:45 am]

BILLING CODE 4910-13-M