

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 25**

RIN 2120-AD38

[Docket No. 26129; Notice No. 90-3]

Design Standards for Airplane Jacking and Tie-Down Provisions**AGENCY:** Federal Aviation Administration (FAA), DOT.**ACTION:** Notice of proposed rulemaking.

SUMMARY: This notice proposes new design standards for airplane jacking and tie-down provisions for transport category airplanes. This proposal is needed to provide manufacturers of transport category airplanes with design standards for jacking conditions, and is intended to provide protection of the airplane primary structure during wind gust conditions during jacking operations and while tied down.

DATES: Comments must be received on or before August 8, 1990.

ADDRESSES: Comments on this proposal may be mailed in triplicate to: Federal Aviation Administration, Office of the Chief Counsel, Attention: Rules Docket (AGC-10), Docket No. 26129, 800 Independence Avenue SW., Washington, DC 20591, or delivered in triplicate to: Room 915G, 800 Independence Avenue SW., Washington, DC 20591. Comments delivered must be marked: Docket No. 26129. Comments may be inspected in Room 915G weekdays, except Federal holidays, between 8:30 a.m. and 5 p.m. In addition, the FAA is maintaining an information docket of comments in the Office of the Assistant Chief Counsel (ANM-7), FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168. Comments in the information docket may be inspected in the Office of the Assistant Chief Counsel weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT: Iven Connally, Airframe and Propulsion Branch (ANM-112), Transport Airplane Directorate, Aircraft Certification Service, FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168; telephone (206) 431-2120.

SUPPLEMENTARY INFORMATION:**Comments Invited**

Interested persons are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire.

Comments relating to the environmental, energy, or economic impact that might result from adopting the proposals contained in this notice are invited. Substantive comments should be accompanied by cost estimates. Commenters should identify the regulatory docket or notice number and submit comments, in triplicate, to the Rules Docket address specified above. All comments received on or before the closing date for comments will be considered by the Administrator before taking action on this proposed rulemaking. The proposals contained in this notice may be changed in light of comments received. All comments will be available in the Rules Docket, both before and after the closing date for comments, for examination by interested persons. A report summarizing each substantive public contact with FAA personnel concerning this rulemaking will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments must submit with those comments a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. 26129." The postcard will be date/time stamped and returned to the commenter.

Availability of NPRM

Any person may obtain a copy of this Notice of Proposed Rulemaking (NPRM) by submitting a request to the Federal Aviation Administration, Office of Public Affairs, Attention: Public Inquiry Center, APA-430, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-3484. Communications must identify the notice number of this NPRM. Persons interested in being placed on a mailing list for future rulemaking documents should also request a copy of Advisory Circular No. 11-2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedures.

Background

Damage to the primary structure of transport category airplanes has occurred during, or as a result of, jacking operations. Airplane jacking is achieved by either lifting on the airframe or on the landing gear. This is a normal and frequent maintenance operation. In some instances, the airplane has either slipped off the jacks or been blown off during gusty wind conditions. One transport category airplane was damaged beyond economical repair when it was blown off the jacks in 1971. A military counterpart of a transport category airplane was completely destroyed by fire after it slipped off a wing jack. There have also been a

number of landing gear failures that have been attributed to scratches or gouges incurred during jacking.

Transport category airplanes, particularly the larger airplanes, seldom need to be tied down for protection from high winds. Nevertheless, the use of inadequately designed tie-down provisions could damage primary structure.

Essentially all manufacturers of transport category airplanes do provide information and instructions concerning jacking operations in addition to providing for appropriate jacking points on the airplane. However, currently there is no requirement in the airworthiness standards for transport category airplanes for consideration of jacking or tie-down loads. In the absence of specific standards, some manufacturers of transport category airplanes have used the jacking and tie-down criteria of military specifications MIL-A-8862 (ASG), MIL-A-008862A (USAF), and MIL-A-008865A (USAF) for designing the airframe and landing gear of commercial transport category airplanes. Others, primarily the manufacturers of smaller transport category airplanes, have requested design criteria for jacking and tie-down loads.

While the FAA is not aware of any existing airplanes that are improperly designed with respect to jacking and tie-down provisions, it is conceivable that an improperly designed airplane may be certificated in the absence of specific regulatory requirements. Structural damage at the jacking or tie-down points could pose an immediate hazard while the airplane is on the ground, as evidenced by the military airplane that was destroyed by fire. Even if an airplane does not fall off the jacks, there is the possibility that damage to primary structure could occur from the static loads applied at improperly designed jacking points. In addition, there is a much greater hazard in that the damage could remain undetected and lead to a catastrophic structural failure during a subsequent flight. Undetected damage from improperly designed tie-down provisions poses a similar hazard.

Part 25 would therefore be amended to require transport category airplanes to have suitable provisions for jacking. In essence, the current military standards would be adopted to provide protection of the airplane primary structure from loads imposed during probable jacking conditions. This proposed regulation would be consistent with current industry practice.

Although there is no proposal to require tie-down provisions, part 25

would be amended, in essence, to adopt the current military standards to provide protection of the airplane primary structure in the event such provisions are provided. This, too, would be consistent with current industry practice.

Regulatory Evaluation

Benefits

Although several instances of damage to the primary structure of transport category airplanes are known to have occurred in jacking incidents, the FAA was unable to document the specific causes of these high-cost mishaps. Nevertheless, the agency believes that the risk of jacking and tie-down accidents will be reduced by implementing the consistent standards contained in this proposal. The proposed requirements would not only reduce possible damage to primary structure, but would reduce personal injuries as well. Therefore, the agency believes that substantial but unquantifiable benefits will result from reducing the risk of such incidents.

Costs

In the absence of regulatory standards for jacking and tie-down provisions on transport category airplanes, the FAA is not aware of any manufacturers who have not used military specifications or other comparable criteria for designing the airframe and landing gear. It is not unusual for a manufacturer of a commercial transport category airplane to use military standards to ensure safety and reliability where there are no FAA regulatory requirements. Since all large airplanes must be jacked occasionally, reasonable and prudent manufacturers have had little choice but to allow this course. Because this proposal merely adopts the same standards the industry has largely followed in the absence of a rule, it results in no significant compliance costs and would afford an unquantifiable amount of savings from reductions in damage to primary structures resulting from jacking or tie-down, as well as in personal injuries. Therefore, the FAA considers that the benefits exceed the cost.

Regulatory Flexibility Determination

Under the criteria of the Regulatory Flexibility Act of 1980 (RFA), the FAA has determined that the proposed rule would not have a substantial economic impact on a substantial number of small entities.

Since the act applies to U.S. entities, only U.S. manufacturers of transport category airplanes would be affected. In

the United States, there are two manufacturers that specialize in commercial transport category airplanes, The Boeing Company, and the McDonnell Douglas Corporation. In addition, there are a number of others that specialize in the manufacture of other transport category airplanes, such as those designed for executive transportation. These are Cessna Aircraft Corporation, Gates Lear Jet Corporation, Beech Aircraft Corporation, and Gulfstream American Corporation.

The FAA size threshold for a determination of a small entity for U.S. airplane manufacturers is 75 employees; any U.S. airplane manufacturer with more than 75 employees is considered not to be a small entity. Because none of the transport category airplane manufacturers is a small entity, there would be no impact on any small entity as the result of the implementation of this proposal.

International Trade Impact Assessment

The proposed rule is not expected to have an adverse impact either on the trade opportunities of U.S. manufacturers of transport category airplanes doing business abroad or on foreign airplane manufacturers doing business in the United States. Since the certification rules are applicable to both foreign and domestic manufacturers selling airplanes in the United States, there would be no competitive trade advantage to either.

Federalism Implications

The regulation 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 12612, it is determined that this proposal would not have sufficient implications to warrant the preparation of a Federalism Assessment.

Conclusion

Because the proposed airplane jacking and tie-down provisions are not expected to result in a substantial economic cost, the FAA has determined that this proposed regulation is not considered to be major under Executive Order 12291. Additionally, as this document involves an issue that has not prompted a great deal of public concern, it is not considered significant under Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). Since there are no small entities affected by this

rulemaking, it is certified under the criteria of the Regulatory Flexibility Act that this proposed rule, if promulgated, would not have a significant economic impact, positive or negative, on a substantial number of small entities. A copy of the initial regulatory evaluation prepared for this project may be examined in the public docket or obtained from the person identified under the caption, "FOR FURTHER INFORMATION CONTACT."

List of Subjects in 14 CFR Part 25

Aircraft, Air transportation, Aviation safety, Jacking, Safety, Tie-downs, Tires.

The Proposed Amendment

Accordingly, the Federal Aviation Administration (FAA) proposes to amend part 25 of the Federal Aviation Regulations (FAR), 14 CFR part 25, as follows:

PART 25—AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY AIRPLANES

1. The authority citation for part 25 continues to read as follows:

Authority: 49 U.S.C. 1344, 1354(a), 1355, 1421, 1423, 1424, 1425, 1428, 1429, 1430; 49 U.S.C. 106(g) (Revised Pub. L. 97-449; January 12, 1983); and 49 CFR 1.47(a).

2. By adding a new § 25.513 to read as follows:

§ 25.513 Jacking and tie-down provisions.

(a) *General.* The airplane must be designed to withstand the limit load conditions resulting from the static ground load conditions of paragraphs (b) and (c) of this section at the most critical combinations of airplane weight and center of gravity.

(b) *Jacking.* The airplane structure must have provisions for jacking and must withstand the following limit loads when the airplane is supported on jacks:

(1) For jacking by the landing gear at maximum design weight, a vertical load of 1.35 times the vertical static reaction at each jacking point acting singly and in combination with a horizontal load of 0.40 times the vertical static reaction applied in any direction.

(2) For jacking by other airplane structure of maximum approved jacking weight, a vertical load of 2.0 times the vertical static reaction at each jacking point acting singly and in combination with a horizontal load of 0.50 times the vertical static reaction applied in any direction.

(c) *Tie-down.* If tie-down points are provided, the main tie-down points and surrounding structure must withstand the limit loads resulting from a 70-knot

horizontal wind applied in the most critical direction.

Issued in Washington, DC, on January 25, 1990.

Thomas E. McSweeney,
Acting Director, Aircraft Certification Service.

[FR Doc. 90-3032 Filed 2-8-90; 8:45 am]

BILLING CODE 4910-13-M

PART 25—AIRWORTHINESS

STANDARD TAKEOFF

CATEGORY AIRLINES

§ 25.1175 [Amended]

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