

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 1, 25, 91, 121, and 135

[Docket No. 25471; Notice No. 93-8]

RIN 2120-AB17

Improved Standards for Determining Rejected Takeoff and Landing Performance

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice, applicable to transport category airplanes, proposes revised standards for determining the runway length that must be available for takeoff and landing. The current standards would be amended to: (1) Revise the method of accounting for pilot reaction time used in determining the runway length that must be available in the event of a rejected takeoff; (2) account for the effect of wet runways on takeoff performance; and (3) account for the reduced capability of worn brakes on takeoff and landing performance. This action is being taken to improve the current standards, reduce the impact of the standards on the competitiveness of new versus derivative airplanes without adversely affecting safety, and harmonize with proposed standards for the European Joint Aviation Requirements (JAR). The revised standards would not be applied retroactively to either airplanes currently in use or airplanes of existing approved designs that will be manufactured in the future.

DATES: Comments must be received on or before November 5, 1993.

ADDRESSES: Comments on this notice may be mailed in triplicate to: Federal Aviation Administration (FAA), Office of the Chief Counsel, Attention: Rules Docket (AGC-10) Docket No. 25471, 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. 25471. Comments may be examined 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, 1601 Lind Avenue SW., Renton, Washington 98055-4056. Comments in the information docket may be examined 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: Don Stimson, FAA, Flight Test and Systems Branch (ANM-111), Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington 98055-4056; telephone (206) 227-1129.

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 any 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. Commenter should identify the regulatory docket or notice number and submit comments in triplicate to the Rules Docket address 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 received will be available in the Rules Docket for examination by interested persons both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerning this rulemaking will be filed in the docket. Persons 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. 25471." The postcard will be date stamped and returned to commenter.

Availability of NPRM

Any person may obtain a copy of this notice by submitting a request to the Federal Aviation Administration, Office of Public Affairs, Attention: Public Information Center, APA-230, 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 procedure.

Background

Before a takeoff may be started with a turbine-powered transport category airplane, the operator must determine

that the length of the runway to be used, plus any "stopway" and "clearway" that may be available, is adequate to either safely continue the takeoff from a defined go/no-go decision point in the takeoff roll, or reject the takeoff from that point and bring the airplane to a complete stop. The go/no-go decision point occurs during the takeoff roll when the airplane reaches a speed known as the "takeoff decision speed," or "V₁ speed."

To assure that there is adequate runway to continue the takeoff from the go/no-go decision point, the runway plus any clearway at the end must be long enough for the airplane to first accelerate to the V₁ speed and then to continue the takeoff to a height of 35 feet, even if a total loss of power from the most critical engine occurs just before reaching the V₁ speed. This distance for the airplane to reach a height of 35 feet following a total loss of power from the most critical engine is defined as the "takeoff distance."

To provide for a possible need to reject the takeoff, the runway plus any stopway area must also be long enough to accelerate the airplane to the V₁ speed and then bring the airplane to a complete stop. This distance to reject a takeoff is called the "accelerate-stop" distance. A "balanced field length" exists when V₁ is selected such that the accelerate-stop distance is equal to the takeoff distance. In general, the balanced field length is the minimum runway length required for takeoff.

The V₁ speed selected for any takeoff depends on several variables, including the airplane's takeoff weight and configuration (flap setting), the runway length, the air temperature, and the runway surface elevation (airport altitude), etc. The takeoff performance and limitation charts in the Airplane Flight Manual (AFM) are developed in accordance with the FAA airworthiness standards in subpart B of the Federal Aviation Regulations (FAR), part 25—"Airworthiness Standards: Transport Category Airplanes," using data gathered during comprehensive flight tests completed as a part of the FAA's approval of the airplane's type design.

Part 25 of the FAR, subpart B, also prescribes the FAA airworthiness standards for determining the length of runway required for safe landing under various airplane and atmospheric conditions. Landing performance charts are also published in the AFM, to be used by the operator to determine whether a particular runway is long enough for landing.

The general operating rules contained in parts 91, 121, and 135 of the FAR require operators to plan takeoffs and

landings using the appropriate performance and limitation charts published in the AFM.

Part 1 of the FAR defines terms and explains abbreviations used in parts 25, 91, 121, and 135.

This notice proposes amendments to several sections of parts 25, 91, 121, and 135 of the FAR that provide the methods for determining and applying the takeoff and landing performance standards for turbine-powered transport category airplanes. Also, this notice proposes to amend Part 1 to add a definition of the term "takeoff decision speed" and an explanation for the abbreviation " V_{EF} ." This nomenclature is currently used in FAA airworthiness standards and operating rules, and is also commonly used in the aviation industry.

It is fundamental to operational safety that the pilot should be able to either safely complete the takeoff or bring the airplane to a complete stop if a decision is made to reject the takeoff no later than the V_1 speed, even if power is lost from the most critical engine just before V_1 . This principle has been used as the basis for the takeoff performance standards required for the type certification of turbine-powered transport category airplanes since the issuance of Special Civil Air Regulation No. SR-422, effective August 27, 1957. The amendments proposed in this notice would not change that principle. Proposals are made, however, to change some aspects of implementing that principle by amending the current part 25 airworthiness standards. These proposed amendments would provide a more rational (i.e., explicitly address the specific elements affecting the takeoff distance rather than applying more restrictive standards to all takeoffs) method of accounting for various operational aspects of takeoff and landing, and would affect the takeoff and landing runway lengths required by the Part 91, 121, and 135 operating rules.

The takeoff performance standards of part 25 define how the takeoff performance and limitation contained in the AFM must be determined. The information provided in the AFM accounts for various operational factors affecting how long the runway must be for airplanes to be operated in accordance with the principle stated in the above paragraph. The operator is not permitted to take off from a runway that is shorter than the airplane requires for the given conditions. Since actual runway lengths are fixed, the operator, using the performance information contained in the AFM, may have to reduce the airplane's takeoff weight in

order to take off from a given runway. Reducing the takeoff weight shortens the distance required for takeoff. The more restrictive the airworthiness standards for takeoff runway length are, the more the takeoff weight may have to be reduced to be able to take off from a given runway.

To reduce the airplane's takeoff weight, the operator must either reduce the amount of fuel to be carried, or reduce the number of passengers or amount of cargo to be transported. Since the amount of fuel to be carried is dictated primarily by the route being flown, sometimes the operator's only option is to reduce the number of passengers or amount of cargo to be transported. When the number of passengers or amount of cargo must be reduced for a given flight, the airplane operator can suffer a loss of revenue.

Amendment 25-42, which became effective on March 1, 1978, revised the takeoff performance standards to make them more restrictive. Prior to Amendment 25-42, the accelerate-stop distance shown in the AFM accounted for variations in pilot reaction time by generally adding two seconds to the time required for pilots to take the actions necessary to stop the airplane during flight tests (e.g., reduce power, apply the brakes, and raise the spoilers). During this two second time delay, the airplane is assumed to be travelling at a constant speed.

The revised standards of Amendment 25-42 require the accelerate-stop distance to include two seconds of continued acceleration beyond V_1 speed before the pilot takes action to begin stopping the airplane. This revision results in longer accelerate-stop distances being required for airplanes whose application for a type certificate was made after Amendment 25-42 became effective. Consequently, turbine-powered transport category airplanes that are currently being manufactured under a type certificate that was applied for prior to March 1, 1978, have a significant operational economic advantage over airplanes whose type certificate was applied for after that date. This competitive disparity resulting from applying different performance standards has created a compelling need to amend the takeoff performance standards of part 25 without adversely affecting safety.

Amendment 25-42 was a broad brush approach, applying to all takeoffs, to increase the required accelerate-stop distance. This broad brush approach was taken because the takeoff performance standards do not explicitly account for many of the important operational factors that may affect

takeoff performance. For example, the standards do not currently distinguish between dry and wet runways, nor are the effects of worn brakes taken into account. Wet runways and worn brakes would result in an airplane requiring a longer accelerate-stop distance than with new brakes on a dry runway. By proposing to account for wet runways and to base stopping performance on brakes that are completely worn, these amendments would provide additional accelerate-stop distance for the conditions where it is specifically needed in operational service.

Because wet runways and worn brakes would be accounted for in the proposed new standards, the FAA also proposes to replace the two seconds of continued acceleration beyond V_1 with a distance equal to two seconds at constant V_1 . The distance equal to two seconds at constant V_1 , while shorter than that resulting from the continued acceleration beyond V_1 required by Amendment 25-42, is a distance margin that must be added to the accelerate-stop distance demonstrated during flight testing for type certification. This distance margin, based on the V_1 speed and a time "delay" of two seconds, accounts for variability in the time it takes for pilots, in actual operations, to accomplish the procedures for stopping the airplane.

Amendment 25-42 required the two seconds of time delay to be applied prior to the pilot taking any action to stop the airplane. This more restrictive approach causes the airplane to reach a higher speed during the accelerate-stop maneuver and results in a longer distance than the distance equal to two seconds at constant V_1 speed. Inserting the time delay before the pilot takes any action to stop the airplane, however, does not accurately reflect the procedures that pilots are trained to use in operational service. Also, V_1 is intended to be the speed by which the pilot has made the decision to reject the takeoff and has begun taking action to stop the airplane. The time it takes for the pilot to recognize the need for a rejected takeoff, which no longer exists once V_1 is reached, is considered separately within the airworthiness standards. Therefore, the proposed amendments more accurately reflect rejected takeoff procedures and the intended use of V_1 speed, and account for variability in the time it takes for pilots, in actual operations, to accomplish the procedures for stopping the airplane.

The purpose of the proposed amendments to the takeoff performance standards of parts 25, 91, 121, and 135 is to more rationally reflect the

operational factors involved and thus reduce the impact of the standards on the competitiveness of new versus derivative airplanes. The amendments proposed would require more restrictive standards to be met for takeoffs from wet runways than for takeoffs from dry runways. In addition, the accelerate-stop distance, which must be provided as an AFM takeoff limitation, would be based on worn brakes rather than new brakes. Lastly, the airplane would be assumed to maintain a constant velocity for the two second time delay after reaching V_1 speed (instead of accelerating). Overall, the amended standards would be more rational and less restrictive than the existing standards, even though they would remain slightly more restrictive than the standards that existed before Amendment 25-42 became effective.

This notice also proposes to amend the landing distance determination standards of part 25 to account for the diminished stopping capability of having brakes that are worn within the brake wear limits allowed without overhauling the brakes. This proposal is made to be consistent with the proposed requirements that worn brakes be taken into account when determining the accelerate-stop distance for establishing takeoff performance limitations. Because airplanes generally require more distance to take off than to land, and a landing will be followed by a subsequent takeoff, this proposed landing distance rule change is not expected to cause the allowable landing weight to limit the number of passengers or amount of cargo that can be carried.

International Harmonization of Airworthiness Standards

For more than ten years, the FAA has been cooperating with the Joint Aviation Authorities (JAA) of Europe to promote harmonization between the FAR, particularly the airworthiness standards, and the European Joint Aviation Requirements (JAR). The aircraft certification authorities of 19 European countries are members of JAA. An annual meeting is held between FAA senior management officials and senior management officials of the JAA member authorities to identify technical subject areas where cooperation is needed to promote greater harmonization between the FAR of the United States and the European JAR. A large portion of these meetings have been open to the public. A comprehensive study of this activity was completed by Professor George A. Bermann, Columbia University School of Law, in May 1991 as a Conference

Consultant to the Administrative Conference of the United States (ACUS). A copy of Professor Bermann's final report to ACUS, titled: "Regulatory Cooperation with Counterpart Agencies Abroad: The FAA's Aircraft Certification Experience," dated May 1991, is included in the docket. Based on Professor Bermann's report, ACUS has confirmed the administrative appropriateness of this effort and has indicated strong support for this activity in their Recommendation 91-1, titled "Federal Agency Cooperation with Foreign Government Regulators," adopted June 13, 1991.

At the annual FAA/JAA meeting in June 1989, the FAA and JAA discussed the competitive disparity caused by the differences between the takeoff performance standards applied to airplanes that met the later standards of Amendment 25-42, as compared with airplanes that were only required to meet the takeoff performance standards that preceded Amendment 25-42. Even though the airplane types were originally type certificated at different times, thus allowing the use of different amendments, both groups of airplanes are continuing in production and both are competing for sales and for use over some common routes. Airplanes whose designs were type certificated to the standards introduced by Amendment 25-42 could be penalized in terms of the number of passengers or amount of cargo they can carry over a common route, even though the airplane's takeoff performance might be better from a safety perspective than a competing airplane design that was not required to meet the later standards. Currently, the only transport category airplane types that have been required to meet the later standards of Amendment 25-42 were designed and manufactured outside the U.S. (mostly in Europe). These airplanes are competing for sales against airplanes that were designed and manufactured in the U.S. that were not required to meet the standards of Amendment 25-42. This situation has led to claims by a major European manufacturer of transport category airplanes that this disparity in the airworthiness standards has created an unfair international trade situation affecting the competitiveness of their airplane types of a later design.

At the June 1990 annual meeting, the FAA and JAA agreed to jointly review the current takeoff performance standards and their applicability with respect to airplanes currently in use and airplanes produced in the future under existing approved designs. The goal was to reduce the inequities described above without adversely affecting safety. The study consisted of two parts: first, the

current takeoff performance standards were reviewed to determine if they were too restrictive; and second, the merits of making the resulting standards apply retroactively were considered for both airplanes currently in use and airplanes produced in the future under existing approved designs. The FAA and JAA also agreed to initiate substantively the same rulemaking within their respective systems to harmonize the takeoff performance standards of the FAR and the JAR.

The FAA has concluded that the takeoff performance standards of part 25 can be made more rational, and thus less restrictive overall, without adversely affecting safety and proposes to amend the standards accordingly by this notice. However, with the safety benefits and economic impact information available at this time, the FAA cannot support a recommendation to make the standards proposed by this notice retroactive to either airplanes currently in use or future production airplanes of designs that have already been type certificated. If additional information to support making these proposed standards retroactive becomes available at a later date, the FAA will review such information and determine if further rulemaking is appropriate.

In March 1992, the JAA issued its Notice of Proposed Amendment (NPA) 25 B, D, G-244: "Accelerate-Stop Distances and Related Performance Matters" to change the takeoff performance standards of JAR 25. The amendments proposed in this notice are substantively the same as the amendments proposed by the JAA NPA for the JAR. The JAA NPA is included in the docket for this rulemaking.

On November 30, 1987, the FAA published NPRM 87-13 (52 FR 45578) proposing to amend parts 25, 121, and 135 of the FAR by adding new standards for transport category airplanes to increase the safety of takeoffs from wet and contaminated runways. After further study of rejected takeoff safety, the FAA began drafting a supplemental notice of proposed rulemaking (SNPRM 87-13A), revising NPRM 87-13.

During internal coordination, a draft copy of SNPRM 87-13A was obtained by persons outside the Federal government. Based on that copy, Delta Air Lines and the Air Transport Association of America (ATA) claimed, in letters dated December 27, 1991, and December 10, 1991, respectively, that the FAA underestimated the cost of compliance with the proposed rulemaking. This claim was repeated in a similar letter dated June 5, 1992 from the law firm of Galland, Kharasch, Morse & Garfinkle, P.C., on behalf of

American Trans Air, Inc., American International Airways, Air Canada, and Cathay Pacific Airway. The assertions made in the three letters reiterated cost estimates include in a cost study presented to the FAA by the ATA in May, 1991. The earlier estimates were reviewed at that time and determined by the FAA to contain significant flaws. Nevertheless, the FAA again reviewed the regulatory analysis in light of President Bush's January 28, 1992, memorandum on "Reducing the Burden of Government Regulation" and the three letters mentioned above. As a result of this review and due to the increasing emphasis placed on harmonizing certification standards with the JAA, the FAA has determined that this revised NPRM is necessary. By a separate notice to be published simultaneously with this NPRM, the FAA is withdrawing the original NPRM 87-13. The three letters referenced above have been added to the docket for this rulemaking. This NPRM also will give the public a chance to comment on the subject of those ex parte communications.

Discussion of the Proposals

The FAA proposes the following rule changes:

1. Replace the two-seconds of continued acceleration beyond V_1 (mandated by Amendment 25-42) with a distance margin equal to two seconds at V_1 speed;
2. Require that the runway surface condition (dry or wet) be taken into account when determining the runway length that must be available for takeoff; and
3. Require that worn brakes be taken into account when determining the capability of the brakes to absorb energy and provide a stopping force for takeoff and landing.

Proposal 1. The FAA proposes to amend the method of determining the accelerate-stop distance prescribed in § 25.109 by replacing the two seconds of continued acceleration after reaching V_1 with a distance equal to two seconds at V_1 speed. This proposal would reduce the accelerate-stop distance that must be available for a rejected takeoff because the airplane would be assumed to begin stopping from a lower speed (V_1 , rather than the speed reached after two seconds of acceleration beyond V_1).

This proposal replaces the most costly and controversial aspect of Amendment 25-42 with a requirement that closely represents the pre-Amendment 25-42 criteria of § 25.109, as applied to the certification of recent U.S.-manufactured airplanes.

Proposal 2. The FAA proposes to amend § 25.105 to require that airplane takeoff performance data be based on wet, in addition to dry, runways. Section 25.1587(b) would be amended to require that performance information for wet runways be included in the Airplane Flight Manual (AFM). (The AFM contains, along with other information, all of the performance information computed under the provisions of part 25.) Sections 91.605, 121.189, and 135.379 of the operating rules would be amended to require that wet runways be taken into account when determining the runway length that must be available for takeoff, if wet runway performance information exists in the AFM. Thus, this rule would apply only to airplanes whose application for type certification occurs after the rule becomes effective.

Section 25.109 would be revised to provide the details of how the accelerate-stop distance would be calculated for a wet runway. This proposal contains a rational approach that includes consideration of the major variables affecting the stopping performance on a wet runway. This approach to determining the wet runway rejected takeoff performance would include: (1) Taking into account the reduced braking force due to the wet surface; (2) permitting performance credit for using available reverse thrust as an additional stopping force; and (3) permitting a lower minimum airplane height over the end of the runway after takeoff. This approach would reduce the risk of overruns during rejected takeoffs on wet runways while retaining safety margins for continued takeoffs similar to those required for dry runways.

The reduced braking force available is the most significant variable affecting the stopping performance on a wet runway. Section 25.109 would be revised to specify that the wet runway braking force is proposed to be one-half the dry runway braking force, unless the applicant demonstrates a higher wet runway braking force. This braking force level would apply regardless of whether the dry runway braking force is limited by the torque capability of the brake, which is the friction force generated within the brake, or the friction capability of the runway surface. Although it can be argued that the torque capability of a brake is independent of the runway surface condition, the proposed use of this simple relationship between wet and dry runway braking capability depends on using the same relationship throughout the braking phase.

Data published in Engineering Science Data Unit (ESDU) 71026,

entitled "Frictional and Retarding Forces on Aircraft Types—Part II: Estimation of Braking Force," shows that the relationship between wet and dry braking coefficient varies significantly with speed. At high speeds, the wet runway braking coefficient is typically less than one-half the dry runway braking coefficient. At low speeds, the wet runway braking coefficient is typically more than one-half the dry runway braking coefficient. Used over the entire speed range for the stopping portion of a rejected takeoff, however, the wet runway braking coefficient can justifiably be approximated as one-half the dry braking coefficient. The ESDU report is included in the docket.

Section 25.109 would also be revised to permit the use of available reverse thrust when determining the accelerate-stop distance for a wet runway. "Available" reverse thrust is interpreted as meaning the thrust from engines with thrust reversers that are operating during the stopping portion of the rejected takeoff. Allowance for reverse thrust has been included in this proposal because the most significant variable that affects the stopping performance on a wet runway, reduced braking friction, has been accounted for as part of the rational approach to wet runway rejected takeoff.

On dry runways, the current practice of not permitting credit for reverse thrust when calculating the accelerate-stop distance would be made explicit. Permitting accelerate-stop performance calculations for dry runways to be based on the use of reverse thrust would reduce the level of safety that currently exists by allowing operations at increased takeoff weights. Service experience, as indicated by the rejected takeoff accident record, does not support such a reduction in the level of safety. Although reverse thrust should and probably would be used during most rejected takeoffs, the FAA believes that the additional safety provided by not accounting for reverse thrust in calculating the accelerate-stop distance on a dry runway is necessary to offset other variables that can significantly affect the dry runway accelerate-stop performance determined under the current standards. For wet runways, credit for reverse thrust would be permitted because taking into account the reduced braking force available on the wet surface, as proposed in this notice, greatly outweighs and more than adequately addresses the effects of these other variables. Examples of variables that can significantly affect the dry runway accelerate-stop performance include: runway surfaces that provide

poorer friction characteristics than the runway used during flight tests to determine stopping performance, worn tires, dragging brakes, brakes whose stopping capability is reduced because of heat retained from previous braking, etc.

Section 25.113 would be revised to allow the distance required for a continued takeoff from a wet runway to include taking off and climbing to a height of 15 feet, rather than the 35 feet required on a dry runway. This lower "screen height" (which is the height of an imaginary screen that the airplane would just clear with the wings in a level attitude when taking off or landing) would reduce the balanced field length V_1 speed, thereby reducing the number of high-speed rejected takeoffs on wet runways. The FAA considers lowering the screen height to be an acceptable method of reducing the risk of overruns on wet runways because of the similarity to current rules when operating from dry runways that have a clearway. The minimum height permitted over the end of the runway for current dry runway takeoffs may be 13 to 17 feet, depending on the airplane, when a clearway is present. In addition, a 15-foot minimum screen height and vertical obstacle clearance distance has been allowed for many years by the British Civil Aviation Authority for wet runway operations without any problems being reported.

The combination of a clearway with the proposed 15-foot screen height for wet runways could result in a minimum height over the end of the runway of near zero (i.e., liftoff very near the end of the runway), if clearway credit were to be permitted for wet runways in the same manner that it is currently permitted for dry runways. The FAA considers this situation to be unacceptable. The possible presence of standing water or other types of precipitation (e.g., slush or snow) and numerous operational factors (e.g., late or slow rotation to liftoff attitude) emphasize the need to provide more of a safety margin than would be present if liftoff were permitted so near the end of the runway. Therefore, § 25.113 would not permit the combination of clearway credit and a 15-foot screen height. Section 25.113 would be clarified, however, to ensure that for wet runways the presence of a clearway does not result in the anomaly of requiring longer runway lengths than if there were no clearway.

In addition to the reduced screen height for wet runways, the minimum vertical distance required between the takeoff flight path defined in § 25.115 and obstacles (e.g., trees, hills,

buildings, etc.) would be reduced by a corresponding amount. To accomplish this, § 25.115 would be revised to state that the takeoff flight path shall be considered to begin at a height of 35 feet at the end of the takeoff distance.

This revised definition of the takeoff flight path would apply equally to dry and wet runways, even through the height at the end of the takeoff distance (i.e., screen height) for wet runways is proposed to be only 15 feet. The effect of this proposal is to permit the flight path information currently contained in the AFM for dry runways to also be used for wet runways. Because of the reduced screen height, at a given point in the flight path the height of an airplane taking off from a wet runway will be approximately 20 feet lower than the height of that airplane taking off from a dry runway. Therefore, using the flight path information currently in the AFM will reduce the airplane's actual height over obstacles by approximately 20 feet when that airplane takes off from a wet runway.

Under the current regulations, the airplane's flight path must be higher than any obstacles by a combination of an increment of height and an increment of gradient (i.e., the slope of the flight path). This proposal reduces the height increment by approximately 20 feet, but the gradient increment is not changed. As the distance from the end of the takeoff distance increases, the gradient increment provides an increasingly greater portion of the total height difference between the airplane and the obstacle. Therefore, the effect of reducing the height increment over obstacles by 20 feet diminishes as the distance from the end of the takeoff distance increases.

Proposal 3 The FAA proposes to amend § 25.101(i) to require that accelerate-stop and landing distances must be determined with all the airplane brakes at the fully worn limit of their allowable wear range. Section 25.735 would be revised to require that the brake energy capacity rating must be determined with each brake at the fully worn limit of the allowable wear range. In addition, § 25.735 would be amended to add a requirement for a flight test demonstration of the maximum kinetic energy rejected takeoff with not more than 10 percent of the allowable brake wear range remaining.

Manufacturers or operators of previously certificated airplanes may elect to comply with these proposed later amendments by a change to the type design, and thus the benefits of the revision to the time delay criteria of § 25.109 would be available to relieve the economic burden imposed by

Amendment 25-42. The more rational accounting for reduced stopping capability on wet runways during rejected takeoff and for the reduced capability of worn brakes would also be included in such a recertification. It is expected that, for airplanes whose certification basis includes Amendment 25-42, applicants will elect to comply with this proposal because it will be economically beneficial for them to do so.

Miscellaneous. Additionally, it is proposed that one new definition and one new abbreviation be added to Part 1 of the FAR, Definitions and Abbreviations.

As a result of their special investigation of rejected takeoff accidents, the National Transportation Safety Board (NTSB) recommended that the FAA clearly define the term "takeoff decision speed" (V_1) in part 1. This recommendation is contained in the Special Investigative Report, "Runway Overruns Following High Speed Rejected Takeoffs," published on February 27, 1990. A copy of this report is included in the docket.

The FAA concurs with the NTSB recommendation and proposes adding a definition of takeoff decision speed to § 1.1 in order to remove apparent confusion over the meaning of this term. The proposed definition would make it clear that the decision to reject the takeoff, indicated by the pilot activating the first deceleration device, must be made by V_1 for the airplane to be stopped within the accelerate-stop distance.

The abbreviation V_{EF} is used in several places within part 25. The FAA proposes to amend § 1.2 to define V_{EF} as the speed at which the critical engine is assumed to fail during takeoff.

Regulatory Evaluation Summary

This section summarizes the full regulatory evaluation prepared by the FAA that provides more detailed estimates of the economic consequences of this regulatory action. This summary and the full evaluation quantify, to the extent practicable, estimated costs to the private sector, consumers, Federal, State and local governments, as well as anticipated benefits.

Executive Order 12291, dated February 17, 1981, directs Federal agencies to promulgate new regulations or modify existing regulations only if potential benefits to society for each regulatory change outweigh potential costs. The order also requires the preparation of a Regulatory Impact Analysis of all "major" rules, except those responding to emergency situations or other narrowly defined

exigencies. A "major" rule is one that is likely to result in an annual effect on the economy of \$100 million or more, a major increase in consumer costs, or a significant adverse effect on competition.

The FAA has determined that this proposed rule is not "major" as defined in the executive order; therefore, a full regulatory analysis, which includes the identification and evaluation of cost-reducing alternatives to this rule, has not been prepared. Instead, the agency has prepared a more concise document termed a regulatory evaluation that analyzes only this rule without identifying alternatives. In addition to a summary of the draft regulatory evaluation, this section also contains the initial regulatory flexibility determination required by the Regulatory Flexibility Act and an International Trade Impact Assessment. If more detailed economic information is desired, the reader may refer to the full regulatory evaluation contained in the docket.

Economic Evaluation

The FAA has determined that the potential benefit of these proposals would exceed the expected costs. The proposal would change the conditions that must be considered in the calculation of accelerate-stop distances

by replacing the provision for two seconds of continued acceleration beyond V_1 with a provision for two seconds at constant V_1 . Certification substantiation, manual revisions, and airport analysis revision costs would only be incurred by those manufacturers who choose to recertify their airplanes and by the operators who choose to take advantage of the reduced requirement. These costs are estimated to total \$185,235 per airplane model, but it is unlikely that a manufacturer or operator would elect to incur those costs unless it resulted in a net reduction when reduced operating costs are considered.

The immediate potential benefit of this provision would be gained by the operators of the existing airplane models that were certificated under the Amendment 25-42 standards, assuming that the manufacturers of these airplanes would voluntarily elect to recertificate under the proposed rule. The two large airplane models (above 75,000 lbs. maximum takeoff weight) that were subject to Amendment 25-42 in 1991 performed an estimated 114,300 takeoffs during the year. Using this basis, an average of 57,150 takeoffs per model per year can be expected. It is estimated that the additional 150 foot field length requirement that would be removed under this proposal would affect 0.69 percent or 394 departures per

model. The weight reductions that would be averted by avoiding these field length limited incidents are valued at \$495 per occurrence. Accordingly, the potential annual benefit of this provision for an existing airplane model that was certificated under Amendment 25-42 standards is valued at \$195,030 at current operation levels (394 affected departures times \$495 per departure).

The potential benefit for future airplane models that would otherwise be certificated to the existing standards cannot be predicted. To the extent that such models would be affected in the absence of this proposed provision, it is estimated that a benefit rate of \$341,550 per 100,000 departures would be realized (100,000 departures, times 0.69% of departures affected, times \$495 per affected departure). No incremental certification costs would be attributed to this provision for newly certificated airplane models.

The proposal also includes provisions for newly certificated airplane models that would require accountability for: (1) Worn brake assemblies in the determination of stopping performance, and (2) wet runway conditions in the calculation of necessary takeoff distance.

The expected costs of these provisions are summarized below.

Provision	Percent of departures affected	Cost per affected departure	Cost per 100,000 departures	Average cost per departure
Worn brakes39	\$495	\$193,050	\$1.93
Wet runways05	726	36,300	.36

It should be noted that this evaluation only quantifies the proposal's impact on takeoffs. It is possible that the proposed rule could induce a field-length-limited landing situation, but such an occurrence would be so infrequent that the relative costs and benefits would be negligible. It should also be emphasized that the above cost and incidence rates for the worn brake provision would generally be limited to airplanes with steel brakes that are certificated in the future. Wear is considered to have a negligible effect on the braking force of carbon brakes, and the trend in brake design for future transport category airplanes is toward carbon brakes.

The potential benefit of the worn brake and wet runway provisions is a reduction in the risk of accidents that might otherwise occur by not considering the reduced braking performance of worn brakes and the reduced braking that exists on wet

runways in determining the field length necessary for a safe takeoff.

The average economic valuation of recent rejected takeoff accidents incurred by U.S. operators is \$17.8 million per accident. The expected incremental cost of the worn brake provision would be recovered if the added field length afforded by the provision averted one such accident over an exposure period of 9.2 million departures. The wet runway proposal would prove to be cost beneficial by itself if one accident were prevented during an exposure of 49 million departures. The FAA has determined that the potential benefit of these proposals would exceed the expected costs.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not

unnecessarily or disproportionately burdened by Government regulations. The RFA requires a Regulatory Flexibility Analysis if a rule has a significant economic impact, either detrimental or beneficial, on a substantial number of small entities. FAA Order 2100.14A, Regulatory Flexibility Criteria and Guidance, establishes threshold cost values and small entity size standards for complying with RFA review requirements in FAA rulemaking actions.

The economic costs of any weight reductions that would be necessitated by this proposal would be incurred by the operators of transport category airplanes. The FAA size threshold for this category is the ownership of nine airplanes. The annualized cost threshold for the determination of what constitutes a significant impact on small

entity airplane operators varies by category:

(1) \$112,600 for scheduled carriers whose airplanes have seating capacities greater than sixty, and (2) \$63,000 for all other scheduled operators. FAA calculations project that the annualized economic impact of this proposed rule would be less than the threshold values. Accordingly, it is determined that this proposed rule would not have a significant economic impact on a substantial number of small entities.

Trade Impact Assessment

The proposed changes would collectively place U.S. and foreign transport airplanes on a more equitable basis regarding their marketability. The standardization of certification criteria between the FAA and the Joint Aviation Authorities of Europe, and the equalization of safety levels for pre- and post-Amendment 25-42 airplanes would eliminate the slight comparative disadvantage experienced by certain foreign airplanes. The proposal regarding the two-second margin would allow European-produced airplanes certificated under Amendment 25-42 to become slightly more competitive against current production U.S. airplanes that were not certificated under Amendment 25-42 (all current production aircraft) by marginally expanding their takeoff envelope.

Federalism Implications

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

Conclusion

Because this proposal is intended to enhance the net safety of transport airplane operations and is not expected to result in a substantial economic cost, the FAA has determined that this is not a major regulation as defined in Executive Order 12291. Because this is an issue on which there is substantial public interest both in the United States and Europe, the FAA has determined that this proposal is significant as defined in Department of Transportation Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). Additionally, based on the economic assumptions discussed previously, the FAA certifies, under the criteria of the

Regulatory Flexibility Act, that this proposed rule, if adopted, will not have a significant economic impact, positive or negative, on a substantial number of small entities. An initial regulatory evaluation of the proposal, including a Regulatory Flexibility Determination and Trade Impact Analysis, has been placed in the docket. A copy may be obtained by contacting the person identified under **FOR FURTHER INFORMATION CONTACT**.

List of Subjects

14 CFR Part 1

Air carriers, Air transportation, Aircraft, Aircraft pilots, Airplanes, Aviation safety, Flights, Pilots, Safety, Transportation.

14 CFR Part 25

Air transportation, Aircraft, Aviation safety, Safety.

14 CFR Part 91

Air carriers, Air transportation, Aircraft, Aircraft pilots, Aviation safety, Safety.

14 CFR Part 121

Air carriers, Air transportation, Aircraft, Aircraft pilots, Airplanes, Airworthiness directives and standards, Aviation safety, Common carriers, Pilots, Safety, Transportation.

14 CFR Part 135

Air carriers, Air taxi, Air transportation, Aircraft, Airplanes, Airports, Airworthiness, Aviation safety, Pilots, Safety, Transportation.

The Proposed Amendments

Accordingly, the Federal Aviation Administration (FAA) proposes to amend 14 CFR parts 1, 25, 91, 121, and 135 of the Federal Aviation Regulations (FAR) as follows:

PART 1—DEFINITIONS AND ABBREVIATIONS

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

Authority: 49 U.S.C. app. 1347, 1348, 1354(a), 1357(d)(2), 1372, 1421 through 1430, 1432, 1442, 1443, 1472, 1510, 1522, 1652(e), 1655(c), 1657(f), and 49 U.S.C. 106(g).

2. By amending § 1.1 by adding a new definition to read as follows:

§ 1.1. General definitions.

* * * * *

Takeoff decision speed means a speed in the takeoff at which, if the pilot activates the first deceleration device at this speed, the airplane can be stopped within the accelerate-stop distance, and alternatively, if the takeoff is continued

beyond this speed with the critical engine failed at V_{EF} , the airplane can achieve the required height above the takeoff surface within the takeoff distance.

* * * * *

3. By amending § 1.2 by adding a new abbreviation to read as follows:

§ 1.2 Abbreviations and symbols.

* * * * *

V_{EF} means the speed at which the critical engine is assumed to fail during takeoff.

* * * * *

PART 25—AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY AIRPLANES

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

Authority: 49 U.S.C. app. 1344, 1354(a), 1355, 1421, 1423, 1424, 1425, 1428, 1429, 1430; 49 U.S.C. 106(g); and 49 CFR 1.47(a).

5. By amending § 25.101 by adding a new paragraph (i) to read as follows:

§ 25.101 General.

* * * * *

(i) The accelerate-stop and landing distances prescribed in §§ 25.109 and 25.125, respectively, must be determined with all the aircraft brake assemblies at the fully worn limit of their allowable wear range.

6. By amending § 25.105 by revising paragraph (c)(1) to read as follows:

§ 25.105 Takeoff.

* * * * *

(c) * * *

(1) Smooth, dry and wet, hard-surfaced runways, in the case of land planes and amphibians;

* * * * *

7. By amending § 25.109 by revising paragraph (a), redesignating paragraphs (c) and (d) as paragraphs (e) and (f), redesignating paragraph (b) as paragraph (c) and revising the introductory text, and adding new paragraphs (b) and (d) to read as follows:

§ 25.109 Accelerate-stop distance.

(a) The accelerate-stop distance on a dry runway is the greater of the following distances:

(1) The sum of the distances necessary to—

(i) Accelerate the airplane from a standing start with all engines operating to V_{EF} for takeoff from a dry runway;

(ii) Accelerate the airplane from V_{EF} to V_1 , assuming the critical engine fails at V_{EF} ; and

(iii) Come to a full stop on a dry runway from the point reached at the end of the acceleration period

prescribed in paragraph (a)(1)(ii) of this section, assuming that the pilot does not apply any means to retard the airplane until that point is reached; plus

(iv) A distance equivalent to 2 seconds at V_1 for takeoff from a dry runway.

(2) The sum of the distances necessary to—

(i) Accelerate the airplane from a standing start with all engines operating to V_1 for takeoff from a dry runway; and

(ii) Come to a full stop on a dry runway from the point reached at the end of the acceleration period prescribed in paragraph (a)(2)(i) of this section, assuming that the pilot does not apply any means to retard the airplane until that point is reached and that all engines are still operating; plus

(iii) A distance equivalent to 2 seconds at V_1 for takeoff from a dry runway.

(b) The accelerate-stop distance on a wet runway is the greater of the following distances:

(1) The accelerate-stop distance on a dry runway determined in accordance with paragraph (a) of this section; or

(2) The accelerate-stop distance determined in accordance with paragraph (a) of this section, except that the runway is wet and the corresponding values of V_{EF} and V_1 are used. Unless a higher wet runway braking coefficient of friction or wheel braking force has been demonstrated, the wet-runway stopping requirements of this paragraph must be determined assuming—

(i) When the wheel braking force determined in meeting the requirements of § 25.101(i) and paragraph (a) of this section does not correspond to the maximum torque limit, a braking coefficient of friction equal to one-half the demonstrated braking coefficient determined in meeting the requirements of § 25.101(i) and paragraph (a) of this section; and

(ii) When the wheel braking force determined in meeting the requirements of § 25.101(i) and paragraph (a) of this section corresponds to the maximum torque limit, the wet runway wheel braking force shall not exceed one-half the dry runway torque-limited value.

(c) Except as provided in paragraph (d)(1) of this section, means other than wheel brakes may be used to determine the accelerate-stop distance if that means—

(d) The effects of available reverse thrust—

(1) Shall not be included as an additional means of deceleration when determining the accelerate-stop distance on a dry runway, and

(2) May be included as an additional means of deceleration using recommended reverse thrust procedures when determining the accelerate-stop distance on a wet runway, provided the requirements of paragraph (c) of this section are met.

8. By amending § 25.113 by revising the introductory text of paragraph (a) and paragraph (a)(1), redesignating paragraph (b) as paragraph (c) and revising newly designated paragraph (c)(1), and adding a new paragraph (b) to read as follows:

§ 25.113 Takeoff distance and takeoff run.

(a) Takeoff distance on a dry runway is the greater of—

(1) The horizontal distance along the takeoff path from the start of the takeoff to the point at which the airplane is 35 feet above the takeoff surface, determined under § 25.111 for a dry runway; or

(b) Takeoff distance on a wet runway is the greater of—

(1) The takeoff distance on a dry runway determined in accordance with paragraph (a) of this section; or

(2) The horizontal distance along the takeoff path from the start of the takeoff to the point at which the airplane is 15 feet above the takeoff surface, but not beyond the end of the runway, achieved in a manner consistent with the achievement of V_2 before reaching 35 feet above the takeoff surface, determined under § 25.111 for a wet runway.

(c) * * *

(1) The horizontal distance along the takeoff path from the start of the takeoff to a point equidistant between the point at which V_{LOF} is reached and the point at which the airplane is 35 feet above the takeoff surface, as determined under § 25.111, except that, in the case of takeoff on a wet runway, this distance need not be greater than the horizontal distance determined in accordance with paragraphs (b)(1) and (b)(2) of this section; or

9. By amending § 25.115 by revising paragraph (a) to read as follows:

§ 25.115 Takeoff Flight Path.

(a) The takeoff flight path shall be considered to begin 35 feet above the takeoff surface at the end of the takeoff distance determined in accordance with § 25.113 (a) or (b), as appropriate for the runway surface condition.

10. By amending § 25.735 by revising paragraph (f) introductory text,

redesignating paragraph (g) as (h), and adding a new paragraph (g) to read as follows:

§ 25.735 Brakes.

(f) The brake kinetic energy capacity rating of each main wheel-brake assembly that is at the fully worn limit of its allowable brake wear range may not be less than the kinetic energy absorption requirements determined under either of the following methods:

(g) In addition, a flight test demonstration of the maximum kinetic energy rejected takeoff shall be conducted with not more than 10 percent of the allowable brake wear range remaining.

11. By amending § 25.1587 by revising paragraph (b) introductory text to read as follows:

§ 25.1587 Performance Information.

(b) Each Airplane Flight Manual must contain the performance information computed under the applicable provisions of this part for the weights, altitudes, temperatures, wind components, runway gradients, and runway surface conditions (dry and wet), as applicable, within the operational limits of the airplane, and must contain the following:

PART 91—GENERAL OPERATING AND FLIGHT RULES

12. The authority citation for part 91 continues to read as follows:

Authority: 49 U.S.C. app. 1301(7), 1303, 1344, 1348, 1352 through 1355, 1401, 1421 through 1431, 1471, 1472, 1502, 1510, 1522, and 2121 through 2125; Articles 12, 29, 31, and 32(a) of the Convention on International Civil Aviation (61 Stat. 1180); 42 U.S.C. 4321 *et seq.*; E.O. 11514; and 49 U.S.C. 106(g).

13. By amending § 91.605 by revising paragraph (b)(3) to read as follows:

§ 91.605 Transport category civil airplane weight limitations.

(b) * * *

(3) The takeoff weight does not exceed the weight shown in the airplane Flight Manual to correspond with the minimum distances required for takeoff considering the elevation of the airport, the runway to be used, the effective runway gradient, the ambient temperature and wind component at the time of takeoff, and, if the Airplane Flight Manual contains wet runway

performance information, the runway surface condition (dry or wet); and
* * * * *

PART 121—CERTIFICATION AND OPERATIONS: DOMESTIC, FLAG, AND SUPPLEMENTAL AIR CARRIERS AND COMMERCIAL OPERATORS OF LARGE AIRCRAFT

14. The authority citation for part 121 continues to read as follows:

Authority: 49 U.S.C. app. 1354(a), 1355, 1356, 1357, 1401, 1421 through 1430, 1472, 1485, and 1502; 49 U.S.C. 106(g); and 49 CFR 1.47(a).

15. By amending § 121.189 by revising paragraph (e) to read as follows:

§ 121.189 Transport category airplanes: Turbine engine powered; takeoff limitations.
* * * * *

(e) In determining maximum weights, minimum distances, and flight paths

under paragraphs (a) through (d) of this section, correction must be made for the runway to be used, the elevation of the airport, the effective runway gradient, the ambient temperature and wind component at the time of takeoff, and, if the Airplane Flight Manual contains wet runway takeoff performance information, the runway surface condition (dry or wet).
* * * * *

PART 135—AIR TAXI OPERATORS AND COMMERCIAL OPERATORS

16. The authority citation for part 135 continues to read as follows:

Authority: 49 U.S.C. app. 1354(a), 1421 through 1431, and 1502; 49 U.S.C. 106(g); and 49 CFR 1.47(a).

17. By amending § 135.379 by revising paragraph (e) to read as follows:

§ 135.379 Transport category airplanes: Turbine engine powered; Takeoff limitations.
* * * * *

(e) In determining maximum weights, minimum distances, and flight paths under paragraphs (a) through (d) of this section, correction must be made for the runway to be used, the elevation of the airport, the effective runway gradient, the ambient temperature and wind component at the time of takeoff, and, if the Airplane Flight Manual contains wet runway takeoff performance information, the runway surface condition (dry or wet).
* * * * *

Issued in Washington, DC, on June 25, 1993.

Thomas E. McSweeney,
Acting Director, Aircraft Certification Service.
[FR Doc. 93-15854 Filed 7-7-93; 8:45 am]
BILLING CODE 4010-13-M

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 108**

[Docket No. 25953; Amdt. No. 108-6]

RIN 2120-AD14

Security Directives and Information Circulars**AGENCY:** Federal Aviation Administration, DOT.**ACTION:** Disposition of comments to final rule.

SUMMARY: On July 6, 1989, the Federal Administration (FAA) issued a final rule providing for the issuance of Security Directives and Information Circulars as means of disseminating information concerning threats against civil aviation (54 FR 28982; July 10, 1989). The final rule was effective on July 10, 1989; however, the FAA invited public comments on the final rule until August 9, 1989. Although the FAA has determined that there is no need for any amendment to the final rule as originally issued, this document responds to the comments submitted by the public.

ADDRESSES: The complete docket for the final rule on Security Directives and Information Circulars may be examined at the Federal Aviation Administration, Office of the Chief Counsel (AGC-10), Rules Docket, room 915-G, 800 Independence Avenue SW., Washington, DC 20591, weekdays (except Federal holidays) between 8:30 a.m. and 5 p.m.

FOR FURTHER INFORMATION CONTACT: Craig Stier, Office of Civil Aviation Security Policy and Planning (ACP-110), Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone (202) 267-3413.

SUPPLEMENTARY INFORMATION:**Background**

On April 3, 1989, the Department of Transportation announced civil aviation security initiatives designed to protect passengers and crewmembers traveling on U.S. air carriers. Among these initiatives was a commitment to establish a mandatory Security Directive system. The initiatives were necessary because of the dramatic increase in international terrorism since 1971, the year the FAA's Civil Aviation Security Program was established. In December of 1988, Pan American World Airways (Pan Am) Flight 103 was destroyed by a terrorist bomb over Lockerbie,

Scotland, illustrating the vulnerability of civil aviation to terrorist acts.

When the FAA learns, through its analysis of classified and unclassified information, of critical threats against civil aviation, it is crucial that the information and any appropriate countermeasures be disseminated as soon as possible to air carrier security personnel. For this reason, the FAA decided that a system that would significantly improve the capability to disseminate critical threat information quickly and, when necessary, establish mandatory security countermeasures, was needed.

On July 6, 1989, the FAA issued a final rule that established a system for the issuance of Security Directives and Information Circulars (54 FR 28982; July 10, 1989). Prior to the issuance of this rule, notification of threats against civil aviation was made through Security Bulletins that discussed both general security concerns and specific threats. Air carriers were not required to acknowledge receipt of Security Bulletins or to comply with the countermeasures recommended in them. The rule provides that Security Directives will be used to notify U.S. air carriers of specific credible threats against civil aviation and will set forth mandatory countermeasures to be implemented by the carriers. The rule requires air carriers to acknowledge receipt of Security Directives and to notify the FAA of how they have implemented the FAA-prescribed countermeasures. It is the FAA's policy to ensure that all specific, credible threats against any aircraft are completely resolved before that aircraft is permitted to take off. The rule provides that Information Circulars will be used to notify air carriers of general security concerns for which the FAA will not prescribe mandatory countermeasures. In addition, the rule prohibits the release of information contained in both Security Directives and Information Circulars without the prior written authorization of the Assistant Administrator for Civil Aviation Security.

(Since promulgation of the final rule, the Aviation Security Improvement Act of 1990, Public Law 101-604, November 16, 1990, (the Act) created the new position of Assistant Administrator for Civil Aviation Security reporting directly to the Administrator with responsibilities for all security functions within the FAA including implementation and enforcement of the Rule on Security Directives and Information Circulars. In a separate rulemaking action, the FAA intends to revise the nomenclature throughout 14

CFR part 108 to reflect this change. For the sake of clarity, this notice uses the title Assistant Administrator for Civil Aviation Security.)

In order to protect immediately passengers and crewmembers traveling in air transportation from a possible rapid increase in criminal acts against civil aviation, the FAA determined that good cause existed to adopt the final rule without prior notice and opportunity for public comment and to make the rule effective upon publication in the *Federal Register*. In accordance with the Regulatory Policies and Procedures of the Department of Transportation (44 FR 11034; February 26, 1979), the FAA invited the public to comment on the final rule after it was published in the *Federal Register*. Eight comments were received. No comments were received objecting to the concept of disseminating threat information; one comment approves of the rule as written and seven suggest modifications.

On August 4, 1989, shortly after the final rule was issued, the President's Commission on Aviation Security and Terrorism (the Commission) was established to "review and evaluate policy operations in connection with aviation security, with particular reference to the destruction * * * of Pan American World Airways Flight 103" (Executive Order 12686). The Commission released its report on May 15, 1990, and made recommendations pertaining to the gathering and dissemination of threat information. The recommendations are as follows:

- The intelligence and law enforcement communities, and those that receive information collected or analyzed by those communities, should review their procedures to reduce to the minimum the number of persons with access to information on civil aviation threats.

- The U.S. Government should, as a matter of course and policy, consciously consider the question of notification and carefully review the factors outlined. The Department of State, and Department of Justice, in close cooperation with the Department of Transportation, should establish a process and a mechanism by which clearly identifiable officials will consider when and how to provide notification to the traveling public.

With respect to the Commission's first recommendation, the FAA concludes that its final rule is consistent with the Commission's statement. The rule limits distribution of Security Directives and Information Circulars to prescribed personnel and those with an operational need to know. The rule also prohibits disclosure of any information contained

in Security Directives and Information Circulars without prior written authorization of the Assistant Administrator for Civil Aviation Security. The FAA supports the need to review procedures for disseminating threat information and to work closely with other entities who collect, receive, or analyze that information, to establish clear and consistent distribution policies that will further reduce the number of persons with access to it.

Regarding the Commission's second recommendation, the FAA's position remains that there should be no routine public notification of threats, and that threat information should be handled by aviation security professionals who have the ability to analyze the threat and either counter it or order the cancellation of the flight. Moreover, the Act establishes criteria, authority, and responsibility for notification of threats to civil aviation. The Department of Transportation and FAA will work closely with the Departments of State and Justice and the entire intelligence community to consider the advisability of public notification in specific circumstances. The issue of public notification, as raised by the public comments, is also addressed below under "Discussion of Comments."

In October 1989, after the issuance of the final rule and the close of the comment period, the FAA chartered the Aviation Security Advisory Committee (ASAC), to be chaired by the FAA's Assistant Administrator for Aviation Security and to serve as an advisory body and develop recommendations on methods, equipment, and procedures to improve civil aviation security. The FAA will consider any recommendations involving threat analysis and dissemination that may result from the work of the ASAC and will consider further rulemaking action if appropriate. The FAA has already received for consideration the ASAC's recommendations addressing the security response to bomb threats. The recommendations addressed standardized criteria for evaluating threats, dissemination and analysis of information, air carrier and airport security training programs, and demarcating areas of responsibilities and authority.

Discussion of Comments

Airport Operators, Ground Security Coordinators, and In-Flight Security Coordinators Should Be Given Copies of Security Directives and Information Circulars

Two commenters believe that it is essential that Security Directives and

Information Circulars be distributed to airport operators as well as air carriers. The Airports Commission for the City and County of San Francisco (Airports Commission) states that, pursuant to FAR Part 107—Airport Security, airport operators are responsible for overall airport security and, therefore, must receive timely, accurate security warnings to ensure effective, coordinated responses to threats against civil aviation. The City of Houston's Aviation Department says that there are three primary parties involved with the safety of the flying public—airlines, airport operators, and the FAA—and that as a part of that triumvirate, airport operators must be included in the information link.

Security Directives and Information Circulars should be disseminated on a need-to-know basis, and the FAA agrees that it is important to include airport operators in the dissemination of threat information when threats are made that affect airport operations. It is the FAA's policy to ensure that Security Directives and Information Circulars are distributed to airport operators when appropriate for effective, coordinated responses. The final rule, however, was directed at U.S. air carriers because the threat to domestic airports is relatively low, and in most instances, the threats addressed by Security Directives or Information Circulars will not affect U.S. airports. The FAA is currently reviewing and updating FAR Part 107—Airport Security, and will evaluate further the need for a special system for security alerts to airports in the context of that rulemaking.

The Air Line Pilots Association (ALPA) states that, at a minimum, the ground security coordinator and the in-flight security coordinator (pilot-in-command) should be notified of every Security Directive and Information Circular. ALPA states that this would help pilots and crewmembers to be especially vigilant for the duration of the threat. Flight Engineers' International Association (FEIA) expresses a similar opinion by stating that the flightcrew has a definite operational need to know and must be advised as soon as possible of the issuance of a Security Directive.

Again, as noted in the response to airport operators, the FAA concludes that all persons with an operational need to know (including crewmembers) should be notified in circumstances in which they are directly and immediately affected by a particular threat. The final rule requires that each Security Directive be distributed to personnel specified in the Security Directive and to other personnel that an

air carrier determines have an operational need to know. This is essential to ensure that all personnel with an operational involvement in security-related situations are informed of current threat information. The final rule does not preclude airport operators, in-flight security coordinators, or ground security coordinators from being informed of the issuance of Security Directives. The FAA's analysis of the disseminations of past Security Directives (and their predecessor, Security Bulletins) suggests that in almost all instances at those airports assessed as potentially affected by a security threat, personnel likely to have an operational need to know and who would be provided with Security Directives information under the rule include: airport operators, in-flight security coordinators, and ground security coordinators. Indeed, some of these categories of personnel have been listed in Security Directives issued since the final rule was promulgated in 1989. Because the final rule was designed to cover many contingencies, the FAA determined that it was not feasible to list every category of personnel for which dissemination would be appropriate in every possible threat situation. Instead, the final rule requires certificate holders to distribute Security Directives to those persons that are specified by the FAA and to those persons determined by the carrier to have an operational need to know the information.

The FAA Should Allow Public Access to Threat Information

Senator Alfonse D'Amato comments that although Security Directives will contain some sensitive information that should be protected, he does not agree that specific credible threats should be withheld from the public. Senator D'Amato adds that members of the public deserve to be put in a position where they can protect themselves. The FAA is acutely sensitive to the importance of this issue and has implemented procedures to effect the public notification requirements of Section 109 of the Act. The adopted procedures provide for consideration of several factors prior to issuing a threat notification: specificity of the threat, credibility of intelligence, ability to counter the threat, protection of intelligence sources, impact of cancellation of flight vs. public notification, and ability of passengers and crew to reduce their risks as a result of notification.

The Reporters Committee for Freedom of the Press (Reporters Committee) urges the FAA to amend the final rule to

provide for routine FAA dissemination of specific threat information and does not believe that the Freedom of Information Act (FOIA) or section 316(d)(2) of the Federal Aviation Act of 1958, as amended, provides for the blanket withholding of threat information from the public. The Reporters Committee also states that, even though it recognizes that security systems depend in part on the ability of officials to keep specific surveillance techniques secret, it does not believe that disclosure of threats would compromise passenger safety in any way, and that refusal to disclose threats precludes public oversight of airline and airport security and impairs journalistic comment on government activities. Furthermore, the Reporters Committee believes the FAA should amend the rule to require that air carriers disclose immediately any information that does not directly threaten security.

The FAA realizes that public dissemination of threats to aviation security is a sensitive and controversial issue. Consistent with the adopted rule on Security Directives and Information Circulars and with the adopted rule governing flight and cabin crew notification guidelines (56 FR 27866, June 17, 1991), the current system of evaluating and responding to threats to civil aviation is founded on the principle that it is best for intelligence experts to evaluate threat information before dissemination to personnel directly responsible for dealing with those threats. The air carrier's security experts, generally in consultation with the FAA and other government entities, evaluate threat information against specific FAA-established criteria to determine "specificity" and "credibility." (The terms "specific" and "credible" are not interdependent and are commonly applied by intelligence experts to threat information involving a well defined target and which has been authenticated.)

Excluding those threats which are judged to be groundless or not requiring the application of specific countermeasures is a practical approach, given the hundreds of bogus threats received annually. Eliminating bogus threats is also critical to ensure that real threats are perceived as serious, not diluted in impact by a multiplicity of false alarms. The FAA's view is this limited distribution of threat information helps ensure that genuine threats are handled as thoroughly and expeditiously as possible.

Based on its expertise and experience in aviation security matters and on consultations with the Office of the Secretary of Transportation and other

government agencies, the FAA has determined that protecting the confidential sources of threat information, and thereby ensuring the free flow of this critical information to the agency, ultimately increases the security of crewmembers and the traveling public. The decision whether to disclose any threat information contained in a Security Directive or Information Circular is properly part of the FAA's overall aviation security responsibility. Toward that end the FAA is continuing existing control procedures, consistent with Section 109 of the Act, to minimize the number of agency personnel having access to intelligence information on threats to civil aviation.

Under appropriate circumstances, the Department of Transportation issues information on specific domestic threats to the public. The State Department issues travel advisories to American citizens. These advisories are issued for a variety of reasons, including general information on the level of the threat of terrorism; however, the State Department's policy is that the general public is advised of particular threats only when they are specific, credible, and cannot be countered. Because existing mechanisms within the U.S. government and procedures of other agencies provide for disclosure of threat information in appropriate circumstances, the FAA has not revised the rule. The FAA's action in this regard is consistent with the notification guidance in section 109 of the Act and the requirement to review working agreements between the intelligence community and the FAA in section 111 of the Act.

The Reporters Committee urges the FAA to revise its FOIA procedures regarding disclosure of Security Directives and Information Circulars and suggests that the FAA revise its FOIA procedures so that the Assistant Administrator for Civil Aviation Security is not the final arbiter regarding the release of a Security Directive or Information Circular. The Reporters Committee suggests that the FAA create a "FOIA unit" that would make such decisions, presumably only for Security Directives and Information Circulars, but not for other FAA documents subject to FOIA.

The final rule contemplates that air carriers and the FAA will receive requests for threat information contained in Security Directives and Information Circulars. The rule quite properly leaves any decision to release threat information under established procedures in the hands of those best equipped to assess the impact of

releasing such information. The FAA does not agree with the Reporters Committee's suggestion that there be a "FOIA unit." Even if the FAA had such a unit, its members would not necessarily be aware of related sensitive aviation security information needed to make a properly informed decision on the release of a particular document. The Assistant Administrator for Civil Aviation Security is best equipped to make these decisions. In addition, the Assistant Administrator for Civil Aviation Security is charged by statute with determining what information, if any, can be released based on an informed assessment that disclosure of such information would not be detrimental to the safety of persons traveling in air transportation.

The decision of the Assistant Administrator for Civil Aviation Security is subject to the concurrence of the Office of the Chief Counsel, and may be appealed to the Assistant Administrator for Public Affairs. A decision to uphold the denial of the Assistant Administrator for Civil Aviation Security is subject to the additional concurrence of the General Counsel, Office of the Secretary, Department of Transportation. These procedures fully comply with the FAA's obligations under the Freedom of Information Act and ensure the protection of sensitive information that might endanger aviation security. Thus, the FAA has not revised the final rule to provide for routine disclosure of threat information by the FAA or to provide amended FOIA procedures specific to Security Directives and Information Circulars.

The FAA Should Consult With Air Carriers Before Issuing Security Directives and There Should Be Some Post-Issuance Mechanism To Review Appropriateness of Countermeasures

The Air Transport Association of America (ATA) states that consultations with air carriers before the issuance of Security Directives is necessary in order for the FAA to develop the most effective and efficient mandatory countermeasures. It is the policy of the FAA to consult with air carriers when time allows; however, this policy will be carried out on a case-by-case basis. The rule allows the FAA flexibility to address the adequacy of U.S. air carriers' responses to the countermeasures prescribed in Security Directives. The rule states that carriers shall notify the FAA of how they have implemented the countermeasures, and that carriers unable to implement the countermeasures shall submit proposed alternative measures to the Assistant

Administrator for Civil Aviation Security for approval.

The ATA further states that the FAA and the air carriers need to be able to review the countermeasures after implementation in order to avoid future problems. The FAA understands that there will be occasions when it will be appropriate to assess situations in retrospect in order to make adjustments when responding to those types of situations in the future, and the FAA does not prohibit air carriers from contacting the FAA to discuss the appropriateness of countermeasures after threats have passed.

Security Directives Should Have Automatic Expiration Dates With Provisions for Extension, if Required

The ATA also states that threats typically are not of infinite duration and that Security Directives should carry automatic expiration dates. The ATA then states that if a threat were likely to persist beyond the expiration date of a Security Directive or an Information Circular, the FAA could extend its effectiveness.

The FAA does not agree that Security Directives should have automatic expiration dates in all cases because the nature of each threat determines the necessary duration. In many instances, however, it is appropriate to issue time-limited Security Directives. The FAA periodically evaluates all Security Directives, regardless of whether they

carry expiration dates, to determine if they should be rescinded or remain in effect. In the case of ongoing threats, the FAA may choose to amend an air carrier's approved security program.

The Rule Should State That the U.S. Government Shall Be Responsible for Coordinating Countermeasures With Foreign Governments

The ATA states that the U.S. government, not the air carriers, should be responsible for consultation and coordination with foreign governments with respect to countermeasures. The FAA agrees and the final rule does not burden air carriers with the responsibility of consulting with foreign governments regarding any threats or countermeasures. Since the rule was issued, the FAA has implemented section 104 of the Act, establishing a security liaison officer position for each airport outside the U.S. as determined by the Administrator. The Civil Aviation Security Liaison Officer (CASLO) is responsible for serving as the liaison between the Assistant Administrator for Civil Aviation Security and foreign authorities including foreign governments and airport authorities.

The FAA Should Establish and Publicize Its Enforcement Policy for Responding to Alleged Leaks of Security-Sensitive Information

The ATA states that the FAA should publicize its enforcement policy

regarding the unauthorized disclosure of security-sensitive information so that penalties for failure to comply with the regulation are clearly understood. Unauthorized disclosure of security information would significantly threaten the safety of crewmembers and the traveling public and could hamper the effectiveness of the aviation security program. Thus, the FAA regards unauthorized disclosure in violation of the regulation as a serious violation that would warrant enforcement action similar to other safety and security violations committed by individuals and air carriers.

Conclusion

The FAA has determined, after carefully considering the comments submitted in response to the final rule, that no further rulemaking action is necessary at this time. Amendment No. 108-6 remains in effect as prescribed by the July 6, 1989, final rule.

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