[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No.: FAA-2010-1175; Amdt. No. 25-138]

RIN 2120–AJ83

Installed Systems and Equipment for Use by the Flightcrew

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This rule amends design requirements in the airworthiness standards for transport category airplanes to minimize the occurrence of design-related flightcrew errors. The new design requirements will enable a flightcrew member to detect and manage his or her errors when the errors occur. Adopting this rule will eliminate regulatory differences between the airworthiness standards of the United States (U.S.) and those of the European Aviation Safety Agency (EASA) without affecting current industry design practices.

DATES: Effective [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For information on where to obtain copies of rulemaking documents and other information related to this final rule, see "How To Obtain Additional Information" in the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this final rule, contact Loran Haworth, Airplane and Flightcrew Interface Branch, ANM-

111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW, Renton, Washington, 98057-3356; telephone (425) 227-1133; facsimile (425) 227-1320; e-mail Loran.Haworth@faa.gov.

For legal questions about this final rule, contact Doug Anderson, Office of the Regional Counsel (ANM-7), 1601 Lind Avenue SW, Renton, Washington 98057-3356; telephone (425) 227-2166; facsimile 425-227-1007; e-mail Douglas.Anderson@faa.gov.

SUPPLEMENTARY INFORMATION:

Authority for this Rulemaking

The FAA's authority to issue rules on aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, the FAA is charged with prescribing regulations and minimum standards for the design and performance of aircraft that the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority. It prescribes new safety standards for the design, production, and operation of transport category airplanes.

List of Abbreviations and Acronyms Frequently Used In This Document

AFM	Airplane Flight Manual
ALPA	Air Line Pilots Association, International
ARAC	Aviation Rulemaking Advisory Committee
ATC	Air Traffic Control
DER	Designated Engineering Representative
EASA	European Aviation Safety Agency
EFB	Electronic Flight Bag
FAA	Federal Aviation Administration
FMS	Flight Management System
HF	Human Factors
ICAO	International Civil Aviation Organization
NPRM	Notice of Proposed Rulemaking
OEM	Original Equipment Manufacturer
RFA	Regulatory Flexibility Act
SBREFA	Small Business Regulatory Enforcement Fairness Act
STC	Supplemental Type Certificate
TC	Type Certificate
UM	Unit Member

I. Overview of Final Rule

This final rule adds § 25.1302 which addresses--

- Design requirements to minimize errors made by the flightcrew and enable them to detect and manage their errors when the errors occur;
- Flightcrew limitations and control requirements not covered by current regulations;
- Flightcrew interactions with the equipment that can be reasonably expected in service;
- Uniform standards that address design for flightcrew error in transport category airplanes; and
- Harmonization of the United States (U.S.) and EASA airworthiness standards.

II. Background

Accidents often result from a sequence or combination of flightcrew errors and safety related events. Flightcrews contribute positively to the safety of the air transportation system by using their ability to assess complex situations and make reasoned decisions. However, even trained, qualified, checked, alert flightcrew members can make errors.

Flightcrew errors that could impact safety are often detected and mitigated in the normal course of events. However, accident analyses have identified flightcrew performance and error as significant factors in a majority of accidents involving transport category airplanes. Some errors may be influenced by the design of the systems the flightcrew uses to operate the airplane and by the flightcrew interfaces of those systems, even those that are carefully designed.

The design of the flight deck and other systems may influence flightcrew task performance and may also affect the rate of occurrence and effects of flightcrew errors.

Human error is generally characterized as a deviation from what is considered correct in some context. In the hindsight of analysis of accidents, incidents, or other events of interest, these deviations might include an inappropriate action, a difference from what is expected in a procedure, a mistaken decision, a slip of the fingers in typing, an omission of some kind, and many other examples.

A. Statement of the Problem

The FAA tasked the Aviation Rulemaking Advisory Committee (ARAC) through its Human Factors Harmonization Working Group to review existing regulations and recommend measures to address the contribution of design and certification of transport category airplane flight decks to flightcrew error. The ARAC submitted its recommendations to the FAA in a report, Human Factors – Harmonization Working Group (HFHWG) Final Report, dated June 15, 2004. This final rule implements these recommendations.

The HFHWG acknowledged that existing regulations are designed to address differing aspects of flightcrew performance. Flightcrew capabilities are carefully considered through—

1. Airworthiness standards for the issuance of type certificates for airplanes (14 CFR part 25);
2. Airplane operating requirements (14 CFR part 121);
3. Certification and operating requirements (14 CFR part 119); and
4. Requirements for issuing pilot certificates and ratings (14 CFR part 61).

Taken together, these requirements provide a high degree of operational safety in the air transportation system. They take into consideration equipment design, training, qualifications for pilot certificates, airplane operations and procedures, and the interaction of systems, equipment and personnel and how each contribute to operating safely through risk management.

However, the HFHWG noted that design characteristics can contribute to flightcrew error. They recommended that more explicit requirements for design attributes related to managing and avoiding flightcrew error be included to augment the existing regulations. These requirements are codified in new § 25.1302.

EASA incorporated these same regulations in 2006 based on the ARAC recommendations. The requirements in the new § 25.1302 are harmonized with those in the current EASA CS 25.1302 (Amendment 25/3). Thus, this rulemaking eliminates regulatory differences between the applicable sections of the U.S. and Europe.

B. Current Requirements

Several existing regulations apply to aspects of flightcrew performance. These regulations are listed and discussed in the ARAC report, Human Factors – Harmonization Working Group Final Report, June 15, 2004, which is posted on the FAA Web site http://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/TAEhfhT1-072299.pdf

C. Summary of the NPRM

The FAA published a notice of proposed rulemaking (NPRM) on February 3, 2011 (76 FR 6088) and posted the draft of AC 25.1302 for comment at the same time. The proposed rule augments existing generally applicable rules with more explicit

requirements for design attributes related to avoiding and managing flightcrew error. The comment period closed on April 4, 2011 for both documents.

This rule is one aspect of a balanced approach involving both design approval requirements in the minimum airworthiness standards of part 25 and requirements for training/licensing/qualification, operations, and procedures such as those found in parts 61, 91, 121, and 135.

D. General Overview of Comments

The FAA received comments from Airbus, the Boeing Company, the Cessna Aircraft Company, the Garmin Company, the Mitsubishi Company and the Air Line Pilots Association, International (ALPA). The commenters discussed the following:

- Airbus had no comments on § 25.1302 and four comments on Advisory Circular (AC) 25.1302.
- Boeing welcomed § 25.1302 and had "no specific comments on the proposed rule."
- ALPA supports the new § 25.1302 as well as AC 25.1302.
- Cessna stated the "content of this regulation is indeed good and valuable; however demonstrating and documenting compliance to the stated requirements will very likely impose a large burden on the part of the applicant."
- Garmin also commented on cost and burden.
- Both Cessna and Garmin are concerned with future delegation of findings.
- Cessna and Mitsubishi both commented on the example of an intentional error described in the preamble.

None of the commenters opposed the proposed rule.

III. Discussion of Public Comments and Final Rule

Cost of Rule

The economic analysis for the proposed rule stated there would be no additional costs to transport airplane manufacturers as they are already in compliance or intend to fully comply with the EASA standard. Cessna and Garmin commented that the cost impact of this rule is not small and unimportant.

Cessna believes substantial nonrecurring cost will result from demonstrating compliance with this rule. In addition to securing the services of human factors specialists, substantial time and cost will be associated with the "more methodological approach" specified in Figure 1 of Advisory Circular 25.1302.

The FAA notes all new transport airplane type certificate (TC) applicants, including Cessna, are expected to seek EASA validation. In response to our request for clarification, Cessna explicitly did not dispute our statement in the NPRM that "The requirements of these proposed standards are similar to those in the current EASA CS 25.1302. Means of compliance are intended to be identical." The costs to which Cessna refers are unavoidable if Cessna is to comply with the current CS 25.1302, as well as our rule. There are no incremental costs as a result of the harmonization of standards itself. Accordingly, no change was made to this rule as a result of this comment.

Garmin commented that "very few applicants have truly complied with the EASA rule and many manufacturers have noted increased cost and certification burden in showing compliance to the rule. Additionally, very few 'clean sheet' aircraft certifications have been performed since 2006, while a majority of certification projects typically involve type design changes to already certified

aircraft (examples include updating avionics systems, engines, drag reduction, interior enhancements, etc). In this process applicants often are not required to comply with the latest certification regulations. The FAA's draft AC 25.1302 makes clear the proposed rule's applicability is not limited to new TC designs but is also intended for STC design changes." Garmin believes the FAA may not have considered the cost impact of these efforts.

For design changes, increased costs result only if both of the following are true:

1. The project would not be expected to seek EASA validation, and
2. The certification basis for the design change is updated to include this rule.

The requirements of § 21.101, Designation of Applicable Regulations, will determine which future design changes need to have the certification basis updated to include the requirements of this final rule. Minor changes to the flight deck are not considered significant product-level changes and would not warrant changing the certification basis under § 21.101. Significant changes to the flight deck do require an updated certification basis; however, costs associated with the updated certification basis required by § 21.101 were accounted for in the economic evaluation for that rule.

As noted in the Benefits discussion of Type Certification Procedures for Changed Products (65 FR 36244, June 7, 2000), compliance is required with all later regulations where such compliance will contribute materially to the level of safety.

The requirements of § 21.101 do not require compliance with later regulations under the following circumstances:

(1) if the change in the aeronautical product is not significant,

(2) for those areas or components of the product not affected by the change,

(3) if such compliance would not contribute materially to the level of safety of the changed product,

(4) or in the final analysis, if such compliance would be impractical; i.e., would result in costs that would not commensurate with the safety benefit that would be derived.

Therefore, the incremental costs for changed products have already been justified by the benefits and are not attributable to this rulemaking. Accordingly, no change was made to this rule as a result of this comment.

Applicability and Scope

Manufacturers are concerned about the broad applicability of the rule.

Cessna expressed concern about documentation needed when the applicant seeks a design approval before a training program is accepted. Cessna stated that in nearly every case, the aircraft manufacturer is going to seek aircraft certification prior to training program acceptance. So, in nearly every situation, the original equipment manufacturer (OEM) would have to guess the impacts on training time because the training provider is rarely involved, or even selected in some cases, at that early phase due to company confidentiality with new products.

The FAA is aware that applicants may have different processes for developing a training program while simultaneously seeking design approval. Given these different processes, the applicant only needs to document novel, complex, or highly integrated

design features and any new and different design assumptions that have the potential to affect training time or flightcrew procedures. It is not necessary to document the impact on training time to receive a design approval. However, the close relationship between design requirements and requirements for training, licensing, operations and procedures is recognized and is also clarified in AC 25.1302.

Cessna recommended more specific information to address the possibility that failure conditions may present conflicting information on flightdeck displays. Cessna states that conflicting indications can be addressed by accomplishment of appropriate flightcrew procedures (i.e., selection of reversion display modes).

Airworthiness design guidance regarding information conflicts is provided in AC 25-11A and AC 25.1302. For example, AC 25-11A provides guidance on reversion display modes. In addition, AC 25.1302 paragraph 5-8 C 1 (d) states: "The applicant should describe what conclusion the flightcrew is expected to draw and what action should be taken when information on the display conflicts with other information on the flightdeck either with or without a failure." Other examples can be found by searching for the word "failure" in AC 25.1302. These issues are also covered as part of the systems safety assessment required by § 25.1309. We do agree with Cessna that when the flightcrew is fully aware of and understands the information conflict, crew procedures may be used to help flightcrew members make display reversion selections or to ignore the erroneous information.

Cessna stated there was no discussion regarding the interface with other equipment, such as the electronic flight bag (EFB). AC 120-76A provides guidance for Class 3 EFB's; however, Class 1 and 2 EFB's are considered portable electronic devices

that are not part of the airplane type design, and thus conflicts between information on these devices and installed systems are not covered under § 25.1302.

Cessna remarked that § 25.1302(a) requires that information on all possible functions and features for all flight deck equipment be included in the Airplane Flight Manual (AFM). Cessna acknowledged the intent of § 25.1302 is to require "necessary information" for the flightcrew to properly accomplish tasks associated with use of equipment, which should not require an exhaustive discussion of all possible functions or uses. Cessna stated that identifying and addressing every possible function or use of all installed equipment, especially for a flight management system (FMS) with extensive capabilities and features, would result in voluminous written material which is of little benefit to the flightcrew.

Cessna suggests limiting the provision of information in the AFM to only what is necessary for the airplane in its operational environment. More extensive discussions of "all features and capabilities" could be in the information provided by the equipment manufacturer (e.g., a Pilot's Guide).

Cessna is correct that the intent is that flightcrews be provided with all "necessary information." However, we do not agree that § 25.1302(a) requires all information to be in the AFM. A major function of § 25.1302 is to require that installed systems, rather than the AFM, provide information needed by the crew. Section 25.1302 does not require an exhaustive discussion of all possible functions or uses, but does require a discussion of the tasks associated with the intended function as further clarified in AC 25.1302. Guidance for the level of information of the equipment's intended

function and types of documents needed to show compliance with § 25.1302(a) is contained in section 5-3 of AC 25.1302.

ALPA stated that the provisions contained in the NPRM and AC should apply to both normal and non-normal operations. These provisions call for equipment to be designed so the flightcrew can safely perform the tasks associated with the equipment's intended function in both normal and non-normal operations. ALPA noted the AC includes this provision, but the NPRM does not, and proposes that the following text be added to the introductory paragraph of § 25.1302: "The applicant must show that these systems and installed equipment, individually and in combination with other such systems and equipment, are designed so that qualified flightcrew members trained in their use can safely perform all of the tasks associated with the systems' and equipment's intended function 'during normal and non-normal conditions'."

The FAA notes this issue is addressed under the heading, "Applicability and Scope" of the NPRM preamble. The FAA envisions that equipment will be designed so the flightcrew can safely perform tasks associated with the equipment's intended function. This requirement would apply to operations in both normal and non-normal conditions, since the requirements of § 25.1302 are generally applicable and not limited to specific conditions. Therefore, we did not change the rule in this regard.

Ambiguity in the Rule

Cessna suggested that "the FAA and foreign regulatory agencies have little experience in establishing compliance with highly subjective criteria such as stated in the proposed rule, and this will likely lead to ambiguity and differences of opinion among the agencies and individual offices within the agencies."

The FAA notes that the rule, its guidance material, and harmonization with EASA's regulations will provide more structure, reduce ambiguity, and help resolve differences of opinion. It is the lack of any criteria that leads to differences. The methods of compliance established in AC 25.1302 provide acceptable ways for applicants to address the performance-based aspects of the rule. As is often the case, we expect that as the FAA and industry gain experience with § 25.1302, those methods of compliance will be further refined. The FAA did not change the rule language based on the above comments.

Delegation and Oversight

Both Cessna and Garmin expressed concerns about delegation and oversight of proposed § 25.1302. Cessna saw no clear path for delegation of compliance findings for the requirements of § 25.1302 to authorized individuals or organizations. No Unit Member (UM) or Designated Engineering Representative (DER) chart exists for Human Factors (HF), so Cessna assumed either there would be no delegation in this area or the delegation would be accomplished through creative use of the "special" delegation on other systems charts. Cessna stated, "the FAA has not been willing to approve this delegation for HF specialists in the past," and suggested "the FAA needs a well thought out approach to HF issues prior to simply adopting this regulation for harmonization with EASA."

Cessna further stated in a follow-up discussion that the proposed FAA requirements and guidance for § 25.1302 are similar to those of EASA, but not identical. Cessna stated EASA has a process for delegating findings to the FAA or a designee, but the FAA currently lacks a delegation process and this will result in additional costs for

this rule "should the applicant have to wait for availability of limited FAA human factors specialists in finding compliance."

Garmin stated that there is a question of designee oversight and authority. It is not clear who is delegated to make findings of compliance in this proposed rule or corresponding AC.

The FAA recognizes the need to plan an approach for delegation and oversight. The FAA will strive to work with industry and designees to develop the experience necessary to delegate in this area. This may initially result in limitations requiring the FAA's review of designee recommendations before we fully delegate the findings. Until the FAA and designees have gained experience in applying the standards and recommending findings of compliance, we will not fully delegate the findings. This is typical of all new airworthiness standards.

We are currently defining the roles and responsibilities for all HF specialists in the FAA Aircraft Certification Service. These actions will also aid in determining the technical roles and responsibilities of potential HF designees. When the work is completed, we intend to develop a plan for formalizing HF delegation. Until that time, we expect that formal findings of compliance to § 25.1302 will be handled by limiting designees approval authority until they have established their knowledge, skills, and abilities to make HF findings. We have not changed the rule language based on this comment.

We also note that whatever the costs incurred owing to initially limited delegation, these costs are unavoidable if the applicant is to comply with the current CS 25.1302, as well as our rule. There are no incremental costs as a result of the

harmonization of standards itself. The existence of a delegation program is desirable for many reasons, including reduced certification burden to both the FAA and manufacturers. However, a delegation program does not create any incremental costs or reduce savings that may result from harmonization of the FAA standards with EASA standards.

Redundancy of Rule

Cessna stated the proposed rule is redundant for certain controls already installed in the cockpit. The proposed rule should clarify that controls addressed in §§ 25.777 and 25.779 are excluded from the requirements of § 25.1302.

Section 25.1302 is generally applicable and not intended to replace more specific rules. We consider §§ 25.777, 25.779, and 25.1302 to be consistent and mutually supportive. We do not believe that showing compliance with §§ 25.777 or 25.779 would in any way conflict with the requirements of § 25.1302. However, showing compliance with those specific rules is not sufficient, by itself, to show that flightcrew errors associated with controls have been properly addressed as required by § 25.1302. Therefore, compliance with § 25.1302 for flight deck controls still must be shown.

Equipment Behavior and Pilot Background

Cessna commented the proposal appears to ignore pilot background. Many pilots express different perceptions of the same equipment based on their prior background. Cessna believes this is a significant contributor to their perception of equipment function and operation. If the intent of the "qualified flightcrew" in § 25.1301(c)(1) is to eliminate prior bias from earlier training and/or operation of other systems, it is not clear. Cessna also made a related statement on error management and prior training and recommended a clear statement of the level of training presumed.

While we understand the concern, this rule is not intended to directly address prior bias from earlier training or operation of other systems. This rule assumes at least the minimum flightcrew requirements for the intended operation, as discussed at the beginning of subchapter 5-2 of AC 25.1302. We do not intend that the design must compensate for deficiencies in flightcrew training or experience. Given the qualification assumption, the behavior of the installed equipment must be predictable and unambiguous to the flightcrew. AC 25.1322-1, chapter 5-6 also provides additional information regarding system behavior.

Intentional Errors

Cessna took issue with the preamble statement, "An example of an intentional error that might occur would be a situation where an alert occurs, but the flightcrew does not perform the associated procedure because they believe it to be a nuisance alert." In this situation, § 25.1302(d) requires the applicant to show that this error can be detected. Cessna interpreted this statement to mean it is an "error" to ignore something intentionally, and thus the applicant has to make sure the pilot detects and manages the fact that he or she is ignoring something intentionally. Cessna suggested that the statement should focus on reducing the number of nuisance alerts. Mitsubishi Aircraft Corporation also commented on the same example and suggested deleting the sentence and referring to § 25.1322.

We agree with Cessna that not responding to a valid alert is an error. In this example, the flightcrew ignores the alert since they believe it is not valid. Cessna is also correct in stating that the design must provide a means to allow the flightcrew to manage the error as stated in § 25.1302(d). In response to Cessna's comment that the rule should

promote the reduction of nuisance alerts, we note that this requirement is already included in §§ 25.1322(d) and 25.1322(d)(1).

We do not agree with Mitsubishi that the sentence should be deleted since this is a good illustration of an intentional error. Mitsubishi requested to "instead, cover the proposed rule with the existing regulation and statement from § 25.1322(d)." The error discussed in the preamble is the intentional act of disregarding a valid alert. This sentence is still warranted to illustrate the distinction for the appropriate application of this regulation. The example in this sentence demonstrates the flightcrew's misinterpretation of a valid alert as being a nuisance alert (i.e., it is invalid) which may be caused by design deficiencies that lead to frequent nuisance alerts. This is one underlying design deficiency that § 25.1302 is intended to address. While this particular example relates to nuisance alerts, there may be other design characteristics that lead flightcrew members to make other kinds of intentional errors.

No changes to the rule text were made based on these comments.

Type of Flightcrew Participation

ALPA suggested the rule promote design for active flightcrew participation, as opposed to design for passive flightcrew involvement, i.e., systems that only monitor operation. ALPA suggested keeping the flightcrew actively involved in the process of controlling all the aircraft systems, equipment, and the aircraft itself, so that they understand the situation better. Active designs would enable the flightcrew to detect failures better and intervene quicker in airplane operation.

While it may be desirable for the flightcrew to be "actively involved" with some systems, the FAA believes it is not appropriate to require "active involvement" for all

systems and equipment. Such a mandated involvement may impose a significant workload on the flightcrew. However, the FAA agrees the design should enable the flightcrew to understand the situation, detect failures, and determine the need for intervention in a timely manner. Unrelated to the ALPA comment, the FAA clarified the intent of this rule for controls and information with the following change (shown in italic) to the rule language in this same section: "Flight deck controls must be installed to allow accomplishment of all the tasks required to safely perform the equipment's intended function *and information must be provided* to the flightcrew that is necessary to accomplish the defined tasks." This wording change provides clarity while remaining in harmony with the intent of the EASA CS 25.1302(a) language.

Visibility of System and Equipment Displays

ALPA commented that AC 25.1302 discusses the need for the system and equipment displays to be visible in all lighting conditions. ALPA supports this and recommends revising § 25.1302(b)(1) as follows: "Be provided in a clear and unambiguous manner at a resolution and precision appropriate to the task *in all lighting conditions and in all phases of flight* (additions in italicized text)*."*

The FAA generally agrees with the ALPA recommendation; however, the rule already requires a "clear and unambiguous manner at a resolution and precision appropriate to the task" in all phases of flight, which would indicate the flightcrew would need sufficient lighting for controls and information to be clear and unambiguous. This issue is covered in AC 25.1302. No change to the rule language was made as a result of this comment.

IV. Regulatory Notices and Analyses

A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Orders 12866 and 13563 direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Public Law 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Public Law 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of $100 million or more annually (adjusted for inflation with base year of 1995). This portion of the preamble summarizes the FAA's analysis of the economic impact of the final rule.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected cost impact is so minimal that a proposed or final rule does not warrant a full evaluation, this order permits that a statement to that effect and the basis for it be included in the preamble if a full regulatory evaluation of the costs and benefits is not prepared. Such a determination has been made for this final rule.

The reasoning for this determination follows similar logic used in the NPRM. The final rule, § 25.1302, addresses human factors as they apply to installed equipment on the flight deck because crew limitations and design-related errors are not currently covered by the regulations in so specific a manner. The final rule will harmonize with EASA's CS

25.1302, which is already in effect and for which there is no counterpart in the current CFR. This final rule will require compliance from manufacturers and modifiers of transport category aircraft. A review of current manufacturers has revealed they already meet or intend to meet the EASA standard as it exists in CS 25.1302. The compliance of manufacturers with the EASA requirements increase safety by (1) reducing the likelihood of flight crew errors and (2) enabling detection and recovery from errors that do occur, or mitigating their effects. Since the manufacturers intend to comply with the EASA requirements, there will be no additional safety benefits from compliance with this rule. And since the requirements in the final rule are identical to those in CS 25.1302, the manufacturers will incur no additional costs. We received no comments on the NPRM regarding a similar determination. Although there are no additional costs or benefits accruing to manufacturers as a result of this final rule, the rule does promote the social benefit of international cooperation between the FAA and EASA. The FAA therefore has determined that this final rule has benefits that justify the costs and does not warrant a full regulatory evaluation.

The FAA has also determined that this final rule is not a "significant regulatory action" as defined in section 3(f) of Executive Order 12866, and is not "significant" as defined in DOT's Regulatory Policies and Procedures.

B. Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (Public Law 96-354) (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to

assure that such proposals are given serious consideration." The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA. However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The FAA believes that this final rule will not have a significant impact on a substantial number of small entities for the following reason: As noted above, this final rule will not entail additional costs to manufacturers as they are already in compliance or intend to fully comply with the EASA standard. We received no comments from small entities on the same determination made in the NPRM. Therefore as the FAA Administrator, I certify that this final rule will not have a significant economic impact on a substantial number of small entities.

C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Public Law 96-39), as amended by the Uruguay Round Agreements Act (Public Law 103-465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of

standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this final rule and determined that it will promote international trade by harmonizing with corresponding European Aviation Safety Agency (EASA) regulations.

D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of $100 million or more (adjusted annually for inflation with the base year 1995) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action." The FAA currently uses an inflation-adjusted value of $143.1 million.

This final rule does not contain such a mandate. The requirements of Title II do not apply.

E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. The FAA has determined that there is no new requirement for information collection associated with this final rule. To the extent you may have comments on the information collection burdens associated with the aircraft certification application

process, please direct those comments to the information collection associated with OMB Control Number 2120-0018.

International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform its regulations to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has reviewed the corresponding ICAO Standards and found no ICAO standards comparable to § 25.1302.

F. Environmental Analysis

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in FAA Order 1050.1E, Chapter 3, Paragraph *312d* and involves no extraordinary circumstances.

G. Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the FAA, when modifying its regulations in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation and to establish appropriate regulatory distinctions. In the NPRM, the FAA requested comments on whether the final rule should apply differently to intrastate operations in Alaska. The agency did not receive any comments and has determined,

based on the administrative record of this rulemaking, that there is no need to make any regulatory distinctions applicable to intrastate aviation in Alaska.

V. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. The agency determined that this action will not have a substantial direct effect on the States, or the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, does not have Federalism implications.

B. Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this final rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The agency has determined that it is not a "significant energy action" under the executive order and it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

C. Executive Order 13563, Improving Regulation and Regulatory Review

The FAA analyzed this final rule under the principles and criteria of Executive Order 13563, Improving Regulation and Regulatory Review. The agency determined that this rule is adopted under public participation with an open exchange of all stakeholders. The rule is tailored to impose the least burden on society while obtaining regulatory objectives. It is a carefully written rule which harmonizes with the existing

EASA rule and minimizes the cumulative effects of new and existing rules in human factors.

D. Executive Order 13609, Promoting International Regulatory Cooperation

Executive Order (EO) 13609, Promoting International Regulatory Cooperation, (77 FR 26413, May 4, 2012) promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policy and agency responsibilities of Executive Order 13609, Promoting International Regulatory Cooperation. The agency has determined that this action would eliminate differences between U.S. aviation standards and those of other civil aviation authorities by harmonizing EASA CS 25.1302 with this new rule. Transport Canada will also harmonize with this new rule after it is issued.

VI. How To Obtain Additional Information

A. Rulemaking Documents

An electronic copy of a rulemaking document my be obtained by using the Internet —

1. Search the Federal eRulemaking Portal (http://www.regulations.gov);
2. Visit the FAA's Regulations and Policies Web page at http://www.faa.gov/regulations_policies/ or
3. Access the Government Printing Office's Web page at http://www.gpo.gov/fdsys/.

Copies may also be obtained by sending a request (identified by notice,

amendment, or docket number of this rulemaking) to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW, Washington, DC 20591, or by calling (202) 267-9680.

B. Comments Submitted to the Docket

Comments received may be viewed by going to http://www.regulations.gov and following the online instructions to search the docket number for this action. Anyone is able to search the electronic form of all comments received into any of the FAA's dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.).

C. Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document, may contact its local FAA official, or the person listed under the FOR FURTHER INFORMATION CONTACT heading at the beginning of the preamble. To find out more about SBREFA on the Internet, visit http://www.faa.gov/regulations_policies/rulemaking/sbre_act/.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Human factors, Reporting and recordkeeping requirements, Safety, Transportation.

The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends part 25 of Title 14, Code of Federal Regulations, 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. 106(g), 40113, 44701, 44702 and 44704

2. Add § 25.1302 to subpart F to read as follows:

§ 25.1302 Installed systems and equipment for use by the flightcrew.

This section applies to installed systems and equipment intended for flightcrew members' use in operating the airplane from their normally seated positions on the flight deck. The applicant must show that these systems and installed equipment, individually and in combination with other such systems and equipment, are designed so that qualified flightcrew members trained in their use can safely perform all of the tasks associated with the systems' and equipment's intended functions. Such installed equipment and systems must meet the following requirements:

(a) Flight deck controls must be installed to allow accomplishment of all the tasks required to safely perform the equipment's intended function, and information must be provided to the flightcrew that is necessary to accomplish the defined tasks.

(b) Flight deck controls and information intended for the flightcrew's use must:

(1) Be provided in a clear and unambiguous manner at a resolution and precision appropriate to the task;

(2) Be accessible and usable by the flightcrew in a manner consistent with the urgency, frequency, and duration of their tasks; and

(3) Enable flightcrew awareness, if awareness is required for safe operation, of the effects on the airplane or systems resulting from flightcrew actions.

(c) Operationally-relevant behavior of the installed equipment must be:

(1) Predictable and unambiguous; and

(2) Designed to enable the flightcrew to intervene in a manner appropriate to the task.

(d) To the extent practicable, installed equipment must incorporate means to enable the flightcrew to manage errors resulting from the kinds of flightcrew interactions with the equipment that can be reasonably expected in service. This paragraph does not apply to any of the following:

(1) Skill-related errors associated with manual control of the airplane;

(2) Errors that result from decisions, actions, or omissions committed with malicious intent;

(3) Errors arising from a crewmember's reckless decisions, actions, or omissions reflecting a substantial disregard for safety; and

(4) Errors resulting from acts or threats of violence, including actions taken under duress.

Issued in Washington, DC, on April 22, 2013.

Michael P. Huerta
Administrator

[FR Doc. 2013-10554 Filed 05/02/2013 at 8:45 am; Publication Date: 05/03/2013]