Proposed Rules

Federal Register
Vol. 74, No. 130
Thursday, July 9, 2009

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

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA 2008–1292; Notice No. 09–05]

RIN 2120–AJ35

Flightcrew Alerting

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to amend the airworthiness standards for transport category airplanes concerning flightcrew alerting. The proposed standards address regulations regarding definitions, prioritization, color requirements, and performance for flightcrew alerting. This proposal would update the current regulations regarding the latest technology and functionality for flightcrew alerting. This proposal is necessary to add additional alerting functions, and consolidate and standardize definitions and regulations for flightcrew warning, caution, and advisory alerting systems. Adopting this proposal would harmonize standards between the U.S. and European Aviation Safety Agency for flightcrew warning, caution, and advisory alerting systems.

DATES: Send your comments on or before September 8, 2009.

ADDRESSES: You may send comments identified by Docket Number FAA 2008–1292 using any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov* and follow the online instructions for sending your comments electronically.
- *Mail:* Send comments to the Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12–140, Washington, DC 20590–0001.
- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* Fax comments to the Docket Management Facility at 202–493–2251.

For more information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

Privacy: We will post all comments we receive, without change, to *http://www.regulations.gov*, including any personal information you provide. Using the search function of our docket Web site, anyone can find and read the electronic form of all comments received into any of our dockets, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477–78) or you may visit *http://DocketsInfo.dot.gov.*

Docket: To read background documents or comments received, go to *http://www.regulations.gov* at any time and follow the online instructions for accessing the docket. Or, go to Docket Management Facility in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this proposed rule contact Loran Haworth, FAA, 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 425–227–1232; e-mail *Loran.Haworth@faa.gov.* For legal questions concerning this proposed rule contact Doug Anderson, FAA, 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: Later in this preamble under the Additional Information section, we discuss how you can comment on this proposal and how we will handle your comments. Included in this discussion is related information about the docket, privacy, and the handling of proprietary or confidential business information. We also discuss how you can get a copy of this proposal and related rulemaking documents.

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 promoting safe flight of civil aircraft in air commerce by prescribing regulations and minimum standards required in the interest of safety for the design and performance of aircraft. This change more accurately reflects language in Section 44701(a)(1). This proposed rule is within the scope of that authority. It prescribes new safety standards for the design and operation of transport category airplanes.

Background

Flightcrew Alerting Philosophy

The purpose of alerting functions on airplanes is to get the attention of the flightcrew, to inform them of specific airplane system conditions and certain operational events that require their awareness, and, in modern alerting systems, to make them aware of actions (for example, actions listed in an electronic checklist that accompanies an alert) to address the condition. To fulfill this purpose, designers of alerts must consider three elements. First, designers must determine what airplane system conditions (the sensed condition) should cause an alert (for example, engine overheating). Second, they must further consider what alert information should be communicated to the pilot within the specific flight deck and operational context (for example, the alert message, urgency, prioritization among other possible alerts, and if it should be suppressed). Finally, they must determine how the alert is presented to the flightcrew (for example, location of the alert on the flightdeck,

alert combinations [aural, visual, tactile], and color standardization). The condition sensing, information processing, and alert presentation features should all be designed to support the purpose of the alerting function. Conditions and events that do not require flightcrew awareness should not trigger an alert. The presentation of all alerting information should be accomplished using a consistent alerting philosophy.

Statement of the Problem

Title 14 Code of Federal Regulations (14 CFR) § 25.1322 became effective February 1, 1977,[1] and has never been amended. Since it was issued, there have been many advances in the design and technology of flight deck alerting devices. The new technologies associated with integrated visual, aural, and tactile flightcrew alerts and alert messaging are more effective in alerting the flightcrew and aiding them in decision making than the discrete colored lights for warning, caution, and advisory alerts prescribed in § 25.1322. The word ''alert'' in the above context is a generic term used to describe a flight deck indication meant to attract the attention of the flightcrew and identify a non-normal operational or airplane system condition. Warnings, cautions, and advisories are considered alerts.

Because § 25.1322 is outdated and lacks content commensurate with state of the art flight deck display technology, applicants have to perform additional work when showing compliance to that regulation. This also results in additional work for the FAA because we must generate issue papers and special conditions when applicants want to install advanced flightdeck designs and current display technologies that are not addressed in § 25.1322.

Currently § 25.1322 has the following deficiencies:

- It prescribes only a color standard for alerting lights and lags behind current alerting technology advancements. For example, discrete lights have been predominantly replaced with electronic displays that incorporate integrated warning, caution, and advisory text messages.
- It does not provide a definition for ''advisory,'' although the term is included in the title.
- It does not clearly define a prioritization scheme. The prioritization hierarchy requirement for alerts increases flight safety by informing the flightcrew of the urgency of the alerting condition, so the flightcrew can take appropriate and timely action.
- It prescribes only a visual requirement for timely attention-getting alert cues. Adding timely, attention-getting alert cues that include aural and tactile alerting in addition to visual cues increases flight safety by ensuring that the pilot is satisfactorily alerted and has adequate time to make any necessary correction.
- It does not prescribe a requirement for providing alerting information needed to enable the flightcrew to identify the alert and determine a corrective action, if any. Appropriate alerting information (for example, a message) increases flight safety by facilitating the flightcrew's ability to precisely identify the alert, which further assists the flightcrew in taking the appropriate corrective action.
- It does not address requirements for minimizing nuisance alerts. Minimizing nuisance alerts increases flight safety by reducing the impact of frequent false or nuisance alerts. False alerts and nuisance alerts increase the flightcrew's workload, reduce the flightcrew's confidence in the alerting system, negatively affect their reaction to a real alert, and may even lead the flightcrew to take an inappropriate action.
- It prescribes only the color ''amber'' for caution lights and not the color ''yellow.'' Yellow, which appears visually similar to amber, has also been accepted as an aviation industry standard for caution alerts.
- It does not clearly outline a consistent flight deck alerting philosophy that prescribes the objectives, the prioritization hierarchy, and the need to minimize nuisance alerts. A consistent flight deck alerting philosophy increases flight safety because it solidifies flightcrew expectations (for example, how an alert will be presented, how and when an alert should be suppressed, and the priority of the response) and reduces flightcrew interpretation time and errors.
- It uses ''warning'' in a generic sense without a specific, standardized definition. Standardizing terminology for flightcrew alerting supports consistent applications of and compliance with the standard.
- It does not address using integrated visual and aural alerts or prioritizing multiple alerts that occur concurrently.
- It does not address visual alerts for monochromatic displays.

History

Currently, § 25.1322 only considers discrete colored lights for warning, caution, and advisory alerts and does not consider new technologies that may be more effective in aiding the flightcrew in decision making. Transport category airplanes were designed with discrete red and amber lights for the flightcrew warning and caution alerting functions in the flight deck. A red light indicated a hazard to the flightcrew (for example, engine fire), which may require immediate corrective action. An amber light indicated the possible need for future corrective action. A green light indicated safe operation. For the flightcrew advisory alerting function, any light that was not red, amber, or green, including white, was used to indicate, for example, a system or operational status change. Each light normally indicated the alert status of a single system parameter, such as high engine oil temperature.

Development of the Proposal

Both the FAA and the aviation industry agree that the current rule is no longer appropriate for flight deck designs and needs to be updated. Based on information from aviation industry groups,[2] the FAA determined that discrete lights could be replaced with more effective logic-based integrated alerting systems that take advantage of the capabilities of newer display hardware and software. This was accomplished by implementing increasingly capable ''smart'' alerting logic for flightcrew alerting systems that are comprised of integrated and prioritized visual alerts, aural alerts (such as voice messages or tone generation systems), and tactile alerts (such as stick shakers). Smart alerting systems are highly integrated systems that monitor the status of an airplane and its operational environment and, when necessary, provide effective and timely flightcrew alerts in the flight deck with appropriate information. Compared to discrete lights, these ''smart'' integrated alerting systems more effectively alert and inform the flightcrew because they:

- Provide timely attention-getting cues through at least two different senses to sufficiently attract the flightcrew's attention for alerts requiring immediate flightcrew awareness (for example, in addition to a visual alert, providing an aural alert or a tactile alert).
- Provide more information with discrete lighted text messages (for example, ''CONFIG DOORS'') for correct

[1] Published in the **Federal Register** (41 FR 44567) on December 20, 1976; Amendment No. 25–38.

[2] The FAA reviewed recommendations from the Commercial Aviation Safety Team and the Aviation Rulemaking Advisory Committee. Information regarding these groups and their recommendations appears later in this NPRM and in the public docket.

identification of the alert condition and flightcrew actions (for example, actions shown in an electronic checklist that accompanies an alert).

• Prioritize the presentation of multiple alerts so that pilots know which alert to respond to first. For example, in a list of multiple visual alerts, warning alerts are presented above caution alerts. For aural alerts, warning alerts sound before caution alerts.

• Reduce the number of nuisance alerts so pilots are not distracted by inappropriate alerts.

FAA Safer Skies Initiative and Commercial Aviation Safety Team (CAST)

In 1997, the FAA initiated the ''Safer Skies'' program in an effort to reduce the number of fatal aviation accidents. That same year the U.S. aviation industry developed a safety plan that addressed many of the same issues. The ''Safer Skies'' and aviation industry initiatives were combined into the Commercial Aviation Safety Team (CAST). Working groups were established to perform in-depth analyses of the top accident categories in commercial aviation. The groups used a data-driven approach to:

• Analyze past accidents and incidents.

• Identify accident precursors.

• Develop specific safety enhancements (SE) to address precursors and contributing factors.

In May of 2001, the CAST provided safety enhancement recommendations to the FAA for airplane flightcrew alerts. Those recommendations appear below. The CAST working groups recommended a number of SEs in the ''Joint Safety Implementation Team, Results and Analysis—Approach & Landing Report,'' dated May 17, 2001.[3] The CAST SE Number 21 addresses flightcrew alerting and states:

Implement interactive electronic checklist and smart alerting systems that address issues such as:

• Reduced nuisance alerts,

• Reduced redundant alerts,

• Flight-phase sensitive alerts (for example, some alerts attenuated on takeoff roll, others on short final approach), and

• Built-in logic prompting the flightcrew to take appropriate actions.

That SE also states that § 25.1322 should be revised to include requirements for smart alerting systems. The proposed § 25.1322 addresses the alerting system improvements noted in SE Number 21.

Aviation Authorities

The proposed § 25.1322 results from a joint effort to harmonize the U.S. and EASA airworthiness standards for flightcrew, warning, caution, and advisory alerting systems.

Federal Aviation Administration

Title 14 CFR part 25 contains the U.S. airworthiness standards for type certification of transport category airplanes. Part 25 standards apply to airplanes manufactured within the U.S. and to airplanes manufactured in other countries and imported into the U.S. under a bilateral airworthiness agreement.

Joint Aviation Authorities (JAA)

Joint Airworthiness Requirement (JAR)–25 contains the European airworthiness standards for type certification of transport category airplanes. Thirty-seven European countries accept airplanes type certificated to JAR–25 standards, including airplanes manufactured in the U.S. that are type certificated to JAR–25 standards for export to Europe.

European Aviation Safety Agency (EASA)

A new aviation regulatory body, EASA, was established by the European Community to develop standards to ensure the highest level of safety and environmental protection, oversee their uniform application across Europe, and promote them internationally. EASA formally became responsible for certification of aircraft, engines, parts, and appliances on September 28, 2003. EASA will eventually absorb all functions and activities of the JAA, including its efforts to harmonize European airworthiness certification regulations with those of the U.S.

JAR–25 standards have been incorporated into EASA's ''Certification Specifications for Large Aeroplanes, (CS)–25,'' in similar if not identical language. EASA's CS–25 became effective on October 17, 2003.

Aviation Rulemaking Advisory Committee (ARAC)

The FAA, in cooperation with the JAA and representatives of American and European aerospace industries, recognized that a common set of standards would not only economically benefit the aviation industry, but also maintain a high level of safety. In 1988, the FAA and the JAA began a process to harmonize their respective airworthiness standards. In 1991, the FAA established the Aviation Rulemaking Advisory Committee (ARAC) to obtain industry's input on a wide range of regulatory issues, including the FAA/JAA harmonization efforts.[4]

In April, 2002, the FAA tasked ARAC to review and make recommendations for revising § 25.1322.[5] ARAC accepted the task and assigned the Avionics Systems Harmonization Working Group (ASHWG) to develop recommendations that would:

• Bring the safety standards up-to-date.

• Make the standards more appropriate for addressing flight deck design and technologies associated with visual, aural, and tactile annunciation.

• Address prioritization of multiple alerts that may occur at the same time.

At a minimum, the recommendations were to consider airworthiness, safety, cost, recent certifications and fleet experience, and harmonization of JAR 25.1322.

The ASHWG reviewed and recommended revisions to § 25.1322 that would make the standards more appropriate for addressing current and future flight deck design and technologies associated with visual, tactile, and aural annunciation and smart alerting systems. With the guidance of ARAC's Human Factors Harmonization Working Group (HFHWG) and CAST SE 21, the ASHWG identified potential human-error issues with flight deck alerting. The ASHWG also coordinated with RTCA, Inc. (formerly the Radio Technical Commission for Aeronautics) Special Committee 195, Flight Information Services Communications, in a review of the latest draft of RTCA DO–267, ''Minimum Aviation System Performance Standards for Flight Information Services-Broadcast (FIS–B) Data Link.''

Special Committee 195 identified potential conflicts between this proposed rule and RTCA DO–267, which allows flight deck weather displays to use the color ''red'' to depict warm fronts or low-pressure centers in a way that may appear inconsistent with the proposed § 25.1322. While the proposed § 25.1322 associates the use of the color ''red'' with conditions that require immediate pilot recognition and response, or represent a serious safety threat, it does allow limited use of red for functions other than flightcrew alerting (for example, the use of red and

[3] ''Joint Safety Implementation Team, Results and Analysis—Approach & Landing Report,'' dated May 17, 2001, is available in the public docket.

[4] Published in the **Federal Register** (56 FR 2190) on January 22, 1991.

[5] Published in the **Federal Register** (67 FR 19796) on April 23, 2002.

amber or yellow on weather radar displays). Red areas on a weather radar display represent more severe (higher) precipitation rates than the amber or yellow areas, and may suggest a higher probability of convective turbulence that may be hazardous. Such displays help the pilot determine areas to avoid, if possible. Such use of colors is not considered alerting, and does not typically degrade the effectiveness of flightdeck alerts. Additionally, what constitutes a severe weather condition for a given flight is a function of many factors, and whether to use red or amber or yellow to indicate reduced visibility or other weather conditions such as icing can be dependent on the general capabilities of the aircraft, for example whether it is approved for operation in icing or low visibility conditions.

This proposed rule would limit the use of red, amber, and yellow in the flight deck. This limitation would reduce potential human errors caused by red, amber, and yellow alert colors being used in non-alerting ways. The FAA's primary concern is that the flightcrew might become desensitized to the meaning and importance of color coding for alerts if the use of the colors red, amber, and yellow were not limited for non-alerting uses. In addition to weather radar displays, Terrain Awareness and Warning System (TAWS) displays (excluding the alerting functions) currently use red, amber, and yellow. TAWS displays indicate if terrain is above, at, or below the airplane's current altitude. Weather radar and TAWS displays are two examples of acceptable uses of red, amber, and yellow for non-alerting situations that have not interfered with flightcrew alerting. Both of these examples provide a progression from green to amber to red representing increasing degrees of threat, potential hazard, safety criticality, or need for flight crew awareness or possible response. The proposed rule includes provisions to allow limited use of red, amber, and yellow for non-alerting functions if it does not adversely affect flightcrew alerting. This means, for example, we may allow use of the color ''red'' in certain types of flight deck weather displays, but we would need to evaluate the effect on flightcrew alerting.

This proposed rule is based on the ASHWG's report. The Transport Airplane and Engine Issues Group approved the report and forwarded it to ARAC, which forwarded it to the FAA. EASA is also initiating rulemaking based on this report, and we are working with EASA to ensure harmonized standards.

Advisory Material

In addition to being tasked to recommend revisions to § 25.1322, the ASHWG was tasked to recommend a new advisory circular (AC) with guidance material identifying acceptable ways to comply with the recommended new and revised requirements. The JAA already provides guidance in Advisory Material Joint (AMJ) 25.1322. The ASHWG developed proposed language and submitted it to the FAA. Once the FAA has drafted a proposed AC it will be made available for public comment.

Discussion of the Proposed Regulatory Requirements

Expansion of Scope and Title Change

The proposed § 25.1322 would expand and update the current § 25.1322 from only addressing visual alerting lights to including all flightcrew alerting functions. These proposed flightcrew alerting functions include not only visual alerting lights but also aural, tactile, other visual display alerting methods, and integrated smart flightcrew alerting systems. We therefore propose to change the title of § 25.1322 from ''Warning, caution, and advisory lights'' to ''Flightcrew alerting.'' The new title would encompass all of the changes included in the proposed rule.

Administrator Approval for Deviation From Colored Light Standards

We also propose to remove the general text in the first sentence of the current § 25.1322 that allows a deviation from the standardization of the color of the lights for flightcrew alerting, if approved by the Administrator. We propose to limit the use of the colors red, amber, and yellow so flightcrews can unmistakably associate the use of red, amber, or yellow with flightcrew alerts, except as allowed in proposed § 25.1322(f). Proposed § 25.1322(f) would allow the use of red, amber, and yellow for non-alerting functions only if the applicant shows that the use is limited and would not adversely affect flightcrew alerting.

General Performance Standards for Flightcrew Alerts

We propose to add performance based requirements for all flightcrew alerting methods. These performance requirements would increase flight safety by setting standards for alerting elements in future alerting systems, including cueing by more than one sense, information content, ease and immediacy of detection, and alert intelligibility. Proposed § 25.1322(a) would require that:

1. Flightcrew Warning and Caution alerts provide timely attention-getting cues through at least two different senses by a combination of aural, visual, or tactile indications.

2. Flightcrew alerts provide the information needed to identify the alert and determine correct action, if any.

3. Flightcrew alerts be readily and easily detectable and intelligible by the flightcrew in all foreseeable operating conditions, including where multiple alerts are provided.

Hierarchy of Alerts

Some conditions that generate alerts are more urgent and safety critical than others and should take priority. The prioritization hierarchy requirements for alerts increase flight safety by informing the flightcrew of the urgency of the flight condition for each type of alert so the flightcrew can take appropriate action, normally by dealing with the most important conditions first. For clarifying the alerting categories currently embodied in § 25.1322, and prioritizing the hierarchy for alerts based on the urgency of flightcrew awareness and response, we propose to set the following definitions and conditions:

- Warning alerts would require immediate flightcrew awareness and an immediate flightcrew response (for example, ''CONFIG RUDDER'' indicating that rudder trim is not centered when engine thrust is at takeoff).
- A caution alert would require immediate flightcrew awareness and a less urgent flightcrew response (for example, an autothrottle disconnect alert).
- Advisory alerts would be required for conditions that require flightcrew awareness but may require subsequent flightcrew response (for example, the failure of a single fuel pump in a tank with redundant fuel pumps). Unlike warning and caution alerts, advisory alerts do not require immediate awareness and do not always require a subsequent flightcrew response.

Nuisance Alerts

Proposed § 25.1322(c) would include new airworthiness standards to minimize nuisance alerts for flightcrew alerting. A nuisance alert is an alert generated by a system that is functioning as designed, but is inappropriate or unnecessary for the particular condition. For example, the landing gear configuration warning may be automatically inhibited in those flight phases where that warning is clearly unnecessary and would distract the flightcrew. Nuisance alerts must be

minimized because the flightcrew's assessment of a nuisance alert increases their workload, reduces their confidence in the alerting system, and affects their reaction in case of a legitimate alert. Proposed § 25.1322(c) would require that the flightcrew alert presentation be designed to minimize nuisance alerts and their subsequent effects. The proposed rule would minimize the effect of nuisance alerts by:

- Permitting acknowledgement and suppression of visual and aural attention-getting cues to eliminate display clutter and reduce distractions.
- Preventing the presentation of inappropriate or unnecessary alerts that could cause a hazard if the flightcrew was distracted by or responded to the alert.
- Removing the presentation of a flightcrew alert when the alert condition no longer exists to reduce unnecessary flightcrew distractions, workload, and display clutter.

In addition, proposed § 25.1322(c) would require a means for suppressing an attention getting component of an alert caused by a failure of the alerting system that interferes with the flightcrew's ability to safely operate the airplane along with a clear and unmistakable indication that the alert has been suppressed. The means of suppressing the attention getting component of an alert resulting from a failure of the alerting system must not be readily available to the flightcrew such that it could be operated inadvertently or by habitual reflexive action. For example, the action of suppressing an aural alert or extinguishing a flashing master warning or caution light by reaching forward and pressing the alerting light (switch light) is a common acceptable means of suppressing the attention getting component(s) of the alerts, but would not be acceptable for suppressing alerts caused by failure of the alerting system.

Monochromatic Display Alerts

We propose to revise § 25.1322 to establish requirements for presenting visual alerts on monochromatic displays, as prescribed in proposed § 25.1322(e). Certain displays, such as head-up displays (HUD) located in the pilot's primary field of view, are monochromatic and are not capable of displaying alerting colors. Since there is an overall safety benefit in displaying alerts on the HUD, visual display coding techniques other than color need to be used for alerts appearing in the HUD so flightcrews can easily and clearly distinguish between warning, caution, and advisory alert categories. Proposed § 25.1322(e) would require that visual alert indications shown on monochromatic displays use display features such that the flightcrew can clearly distinguish between warning, caution, and advisory alert categories. For example, consistent display coding techniques such as location, shape, font style, size, boxing, texture, and other coding methods may be used to distinguish between each alert category.

Color Standardization

We propose to revise § 25.1322 to establish color standardization for warning, caution, and advisory alert indications on multicolor displays, as prescribed in proposed § 25.1322(d). The proposed color standardization in § 25.1322(d) is similar to the color standardization for indicator lights in the current § 25.1322(a) and (b), with the following changes:

- Current § 25.1322 prescribes only the color for warning, caution, and advisory lights. Proposed § 25.1322 would include color standardization for visual alerts beyond just discrete lights to include all visual alerts.
- Current § 25.1322(b) prescribes only the color ''amber'' for caution lights. The color ''yellow'' was added to proposed § 25.1322(d)(2) so that either amber or yellow light can be used for caution alert indications. Yellow was added because it is commonly used in flight deck displays and is visually similar to amber.
- Proposed § 25.1322(b)(3) defines what an ''advisory'' alert is. It also prohibits the use of amber or yellow for advisory alerts since the colors amber and yellow are already reserved for caution alerts (proposed § 25.1322(d)(2)) and color coding is used as the primary means for distinguishing between alert categories. Under the current rule, amber or yellow can be used for both caution and advisory alerts on the same display. This makes it more difficult for the flightcrew to rapidly distinguish between alerting categories when two alert categories (caution and advisory) are the same color. Using different colors to distinguish between the caution and advisory alerts will help satisfy other proposed rule changes that require alerts to ''be readily and easily detectable and intelligible by the flightcrew under all foreseeable operating conditions including those where multiple alerts are provided'' (proposed § 25.1322(a)(3)) and allow the flightcrew to correctly recognize the ''urgency of flightcrew response'' (§ 25.1322(b)).
- Proposed § 25.1322(d)(3) prescribes the colors for advisory alerts.
- Since proposed § 25.1322 is intended to address only alerting functions, the text from current § 25.1322(c) regarding use of the color ''green'' was not retained because green is used to indicate safe operation, not an alert. An alert indicates a non-normal operational or airplane system condition. Green is mentioned in proposed § 25.1322(d)(3) to specify that it cannot be used for an advisory alert.

Limitations on Using Red, Amber, and Yellow

We propose to include a new paragraph (f) in § 25.1322 to limit the use of red, amber, and yellow within the flight deck for functions other than flightcrew alerting, so that these colors can effectively indicate the immediacy of response commensurate with the associated hazard. The restrictions are necessary so that non-alerting uses of these same colors do not adversely affect the flightcrew's interpretation of how quickly they need to respond to an alert. By standardizing the colors used for alerts and by limiting the use of the above colors for other functions on the flight deck, the flightcrew will be more likely to both rapidly detect an alert and understand the urgency of the alert. An adverse effect would be slowed recognition of an alert and the urgency of the alert.

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. We have determined that there is no new information collection requirement associated with this proposed rule.

International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has determined that there are no ICAO Standards and Recommended Practices that correspond to these proposed regulations.

Regulatory Evaluation, Regulatory Flexibility Determination, International Trade Analysis Impact Assessment, and Unfunded Mandates Assessment

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs 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 (Pub. L. 96–354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Pub. L. 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 (Pub. L. 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 impacts of this proposed rule. We suggest readers seeking greater detail read the full regulatory evaluation, a copy of which we have placed in the docket for this rulemaking.

In conducting these analyses, FAA has determined that this proposed rule: (1) Has benefits that justify its costs, (2) is not an economically ''significant regulatory action'' as defined in section 3(f) of Executive Order 12866; however, the Office of Management and Budget has determined that this NPRM is a ''significant regulatory action'' because it harmonizes U.S. aviation standards with those of other civil aviation authorities, (3) is ''significant'' as defined in DOT's Regulatory Policies and Procedures; (4) would not have a significant economic impact on a substantial number of small entities; (5) would not create unnecessary obstacles to the foreign commerce of the United States; and (6) would not impose an unfunded mandate on state, local, or tribal governments, or on the private sector by exceeding the threshold identified above. These analyses are summarized below.

Total Benefits and Costs of This Rule

These proposed requirements need only prevent 10 serious injuries over the period of analysis, with estimated benefits of $8.3 million ($4.4 million present value). Based on a threshold analysis, this is extremely likely, given the history of flightcrew confusion of alerts contributing to accidents. The total estimated costs are $7.7 million ($4.1 million present value). Accordingly, estimated benefits of the proposal justify the costs.

Persons Potentially Affected by This Rule

Manufacturers of part 25 airplanes

Assumptions

Discount rate—7%

Period of analysis—Twenty Years (2009 through 2028).

Benefits of This Proposed Rule

By examining the historical data, we have shown that over the past twenty years, there were both non-fatal events and fatal events, which might have been prevented with the requirements contained in this NPRM. The potential severity of an event is demonstrated in the DC 9–82 accident on August 16, 1987, that occurred shortly after takeoff from Detroit Metropolitan Airport, which resulted in 154 deaths. The National Transportation Safety Board (NTSB) determined that one contributing factor was the airplane takeoff warning system, which failed to warn the flightcrew that the airplane was improperly configured for takeoff. This finding led to the current proposed rulemaking.

To quantify the benefits of this proposal, we have performed a ''threshold'' analysis. Threshold or ''break-even'' analysis answers the question, ''How small could the value of the benefits be before the rule would yield zero net benefits?'' [6]

Our threshold analysis demonstrates that if these proposed requirements prevent at least ten serious injuries ($830,000 per injury) over the period of analysis, the total estimated benefits would be $8.3 million ($4.4 million present value).

Costs of This Rule

We obtained compliance cost estimates from three part 25 airplane manufacturers and two designers of alerting systems. The two alerting system designers stated that there would be no additional cost. Although the manufacturers stated there were no additional manufacturing or operating costs that would occur as a result of this proposal, they indicated there would be additional design and certification cost. We averaged the three estimates from the part 25 manufacturers and arrived at an average cost estimate of $0.7 million per new aircraft design. When the average cost per new aircraft certification ($0.7 million) is multiplied by estimated annual number of new certifications (0.55), we arrive at annual costs of $385,000. When summed over the period of analysis the total estimated costs are $7.7 million ($4.1 million present value).

[6] OMB Circular A–4, September 2003.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (Pub. L. 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 current United States part 25 airplane manufacturers include: Boeing, Cessna Aircraft, Gulfstream Aerospace, Learjet (owned by Bombardier), Lockheed Martin, Raytheon Aircraft, and Sabreliner Corporation. All United States transport category aircraft manufacturers exceed the Small Business Administration small-entity criteria of 1,500 employees.

Given that there are no small entity manufacturers of part 25 aircraft, the FAA certifies that this proposed rule would not have a significant economic impact on a substantial number of small entities. The FAA solicits comments regarding this determination.

International Trade Analysis

The Trade Agreements Act of 1979 (Pub. L. 96–39), as amended by the Uruguay Round Agreements Act (Pub. L. 103–465), prohibits Federal agencies from establishing any 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 standards have a legitimate domestic objective, such the protection of safety, and do 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 notes the purpose is to ensure the safety of the American public, and has assessed the effects of this proposed rule to ensure it does not exclude imports that meet this objective. As a result, this proposed rule is not considered as creating an unnecessary obstacle to foreign commerce and has been determined that it would impose the same costs on domestic and international entities and thus has a neutral trade impact.

Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 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 (in 1995 dollars) 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 $136.1 million in lieu of $100 million.

This proposed rule does not contain such a mandate; therefore, the requirements of Title II do not apply.

Executive Order 13132, Federalism

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

Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying regulations in Title 14 of the CFR 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. Because this proposed rule would apply to the certification of future designs of transport category airplanes and their subsequent operation, it could, if adopted, affect intrastate aviation in Alaska. The FAA, therefore, specifically requests comments on whether there is justification for applying the proposed rule differently in intrastate operations in Alaska.

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 proposed rulemaking action qualifies for the categorical exclusion identified in FAA Order 1050.1E, paragraph 312(f), and involves no extraordinary circumstances.

Regulations That Significantly Affect Energy Supply, Distribution, or Use

The FAA has analyzed this NPRM under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). We have determined that it is not a ''significant regulatory action'' under the executive order because while it is not a ''significant regulatory action'' under Executive Order 12866, and DOT's Regulatory Policies and Procedures, it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

Additional Information

Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, please send only one copy of written comments, or if you are filing comments electronically, please submit your comments only one time.

We will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. We may change this proposal in light of the comments we receive.

Proprietary or Confidential Business Information

Do not file in the docket information that you consider to be proprietary or confidential business information. Send or deliver this information directly to the person identified in the **FOR FURTHER INFORMATION CONTACT** section of this document. You must mark the information that you consider proprietary or confidential. If you send the information on a disk or CD–ROM, mark the outside of the disk or CD–ROM and also identify electronically within the disk or CD–ROM the specific information that is proprietary or confidential.

Under 14 CFR 11.35(b), when we are aware of proprietary information filed with a comment, we do not place it in the docket. We hold it in a separate file to which the public does not have access, and we place a note in the docket that we have received it. If we receive a request to examine or copy this information, we treat it as any other request under the Freedom of Information Act (5 U.S.C. 552). We process such a request under the DOT procedures found in 49 CFR part 7.

Availability of Rulemaking Documents

You can get an electronic copy of rulemaking documents using the Internet by—

1. Searching the Federal eRulemaking Portal (*http://www.regulations.gov*);

2. Visiting the FAA's Regulations and Policies Web page at *http://www.faa.gov/regulations_policies/* or

3. Accessing the Government Printing Office's Web page at *http://www.gpoaccess.gov/fr/index.html.*

You can also get a copy by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue, SW., Washington, DC 20591, or by calling (202) 267–9680. Make sure to identify the docket number, notice number, or amendment number of this rulemaking.

You may access all documents the FAA considered in developing this proposed rule, including economic analyses and technical reports, from the internet through the Federal eRulemaking Portal referenced in paragraph (1).

List of Subjects in 14 CFR Part 25

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

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend Chapter I 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. Revise § 25.1322 to read as follows:

§ 25.1322 Flightcrew alerting.

(a) Flightcrew alerts must:

(1) For warning and caution alerts, provide timely attention-getting cues through at least two different senses by a combination of aural, visual, or tactile indications.

(2) Provide the flightcrew with the information needed to identify the alert and determine the correct action, if any.

(3) Be readily and easily detectable and intelligible by the flightcrew under all foreseeable operating conditions, including conditions where multiple alerts are provided.

(b) Alerts must conform to the following prioritization hierarchy based upon urgency of flightcrew awareness and urgency of flightcrew response.

(1) Warning: For conditions that require immediate flightcrew awareness and immediate flightcrew response.

(2) Caution: For conditions that require immediate flightcrew awareness and less urgent flightcrew response.

(3) Advisory: For conditions that require flightcrew awareness and may require subsequent flightcrew response.

(c) Alert presentation means must be designed to minimize nuisance effects. In particular a flightcrew alerting system must:

(1) Permit each occurrence of attention getting cues to be acknowledged and suppressed unless they are otherwise required to be continuous.

(2) Prevent the presentation of an alert that is inappropriate or unnecessary.

(3) Remove the presentation of the alert when the condition no longer exists.

(4) Provide a means to suppress an attention getting component of an alert caused by a failure of the alerting system that interferes with the flightcrew's ability to safely operate the airplane. This means must not be readily available to the flight crew such that it could be operated inadvertently, or by habitual reflexive action. In this case, there must be a clear and unmistakable annunciation to the flight crew that the alert has been suppressed.

(d) Visual alert indications that are shown on multicolor displays must conform to the following color convention:

(1) Red for warning alert indications.

(2) Amber or yellow for caution alert indications.

(3) Any color except red, amber, yellow, or green for advisory alert indications.

(e) Visual alert indications shown on monochromatic displays must use display coding techniques such that the flightcrew can clearly distinguish between warning, caution, and advisory alert categories.

(f) The colors red, amber, or yellow are normally reserved for alerting functions. The use of these colors for functions other than flightcrew alerting must be limited and must not adversely affect flightcrew alerting.

Issued in Washington, DC, on July 2, 2009.

K.C. Yanamura,

Deputy Director, Aircraft Certification Service.

[FR Doc. E9–16236 Filed 7–8–09; 8:45 am]

BILLING CODE 4910–13–P

SOCIAL SECURITY ADMINISTRATION

20 CFR Parts 404, 405, and 416

[Docket No. SSA–2007–0053]

Compassionate Allowances for Early-Onset Alzheimer's Disease and Related Dementias; Office of the Commissioner, Hearing

AGENCY: Social Security Administration (SSA).

ACTION: Announcement of public hearing.

SUMMARY: We are considering ways to quickly identify diseases and other serious medical conditions that obviously meet the definition of disability under the Social Security Act (Act) and can be identified with minimal objective medical information. We are calling this method ''Compassionate Allowances.'' We will hold a hearing on July 29, 2009, to obtain information about possible methods of identifying adults with Early-Onset Alzheimer's Disease and related dementias and the advisability of implementing compassionate allowances for people with these diseases.

DATES: This hearing will be held on July 29, 2009, between 8:30 a.m. and 5 p.m., Central Daylight Time (CDT), in Chicago, IL. The hearing will be held at the Drake Hotel, 140 East Walton Place, Chicago, IL 60611. While the public is welcome to attend the hearing, only invited witnesses will present testimony.

You may also watch the proceedings live via Webcast beginning at 9 a.m. CDT. You may access the Webcast line for the hearing on the Social Security Administration Web site at *http://www.socialsecurity.gov/compassionate_allowances/hearings0709.htm*.

ADDRESSES: You may submit written comments about the compassionate allowances initiative with respect to adults with Early-Onset Alzheimer's Disease and Related Dementias, as well as topics covered at this hearing by (1) e-mail addressed to *Compassionate.Allowances@ssa.gov*; or (2) regular mail to Nancy Schoenberg, Acting Director, Office of Compassionate Allowances and Disability Outreach, ODP, ORDP, Social Security Administration, 4671 Annex Building, 6401 Security Boulevard, Baltimore, MD 21235–6401. We welcome your comments, but we may not respond directly to comments sent in response to this notice of the hearing.

FOR FURTHER INFORMATION CONTACT: *Compassionate.Allowances@ssa.gov*. You may also mail inquiries about this meeting to Nancy Schoenberg at the above-mentioned address. For information on eligibility or filing for benefits, call our national toll-free number 1–800–772–1213 or TTY 1–800–325–0778, or visit Social Security online, at *http://www.socialsecurity.gov*.

SUPPLEMENTARY INFORMATION:

Background

Under titles II and XVI of the Act, we pay benefits to claimants who meet our rules for entitlement and have medically determinable physical or mental impairments that are severe enough to meet the definition of disability in the Act. The rules for determining disability can be very complicated, but some claimants have such serious medical conditions that their conditions obviously meet our disability standards. To better address the needs of these claimants, we have implemented the Compassionate Allowance initiative to quickly identify diseases and other medical conditions that invariably qualify under our Listing of Impairments based on minimal objective medical information.