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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No.: FAA-2019-0218; Notice No. 19-3]

RIN 2120–AL15

High Elevation Airport Operations

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to amend certain airworthiness regulations applicable to cabin pressurization systems and oxygen dispensing equipment on transport category airplanes to accommodate airplane operations into or out of airports with elevations at or above 8,000 feet above sea level. Currently, the FAA makes and documents equivalent level of safety findings when an airplane manufacturer or modifier proposes to certify airplane cabin pressurization systems used for operations into or out of airports with elevations at or above 8,000 feet. In addition, the FAA grants exemptions from the automatic oxygen mask presentation requirements for operations into or out of airports with elevations at or above 14,000 feet. This proposed action is necessary to relieve the burden on industry and the FAA that results from project-specific equivalent level of safety (ELOS) requests and petitions for exemption to accommodate operations at high elevation airports for transport category airplanes.

DATES: Send comments on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Send comments identified by docket number FAA-2019-0218 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 Docket Operations, M-30; U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, 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 Docket Operations at 202-493-2251.

Privacy: In accordance with 5 USC 553(c), DOT solicits comments from the public to better inform its rulemaking process. DOT posts these comments, without edit, including any personal information the commenter provides, to http://www.regulations.gov, as described in the system of records notice (DOT/ALL-14 FDMS), which can be reviewed at http://www.dot.gov/privacy.

Docket: Background documents or comments received may be read at http://www.regulations.gov at any time. Follow the online instructions for accessing the docket or go to the 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.

FOR FURTHER INFORMATION CONTACT: For questions concerning this action, contact Robert Hettman, Propulsion & Mechanical Systems Section, AIR-672, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service, Federal Aviation Administration, 2200 S 216th Street, Des Moines, Washington, 98198; telephone and facsimile 206-231-3171; email robert.hettman@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 promoting safe flight of civil aircraft in air commerce by 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, relieving, safety standards for the design and operation of transport category airplanes.

I. Overview of Proposed Rule

The FAA proposes to amend title 14, Code of Federal Regulations (14 CFR) part 25. Specifically, the FAA proposes to amend §§ 25.841, "Pressurized cabins," and 25.1447, "Equipment standards for oxygen dispensing units," for airplanes equipped with cabin pressurization systems and oxygen dispensing equipment intended for operations into or out of airports with elevations at or above 8,000 feet, also referred to as "high elevation airports."

The proposed amendments to § 25.841 would eliminate the burden on industry and the FAA that results from project-specific ELOS findings currently necessary for the FAA to approve such designs for cabin pressurization systems intended to be used for operations into or out of high elevation airports.

Section 25.841(a) limits the cabin pressure altitude to not more than 8,000 feet at the maximum operating altitude of the airplane under normal operating conditions. Operating at the maximum operating altitude of the airplane is considered a normal operating condition. Section 25.841(a) was never intended to imply that the cabin pressure altitude could exceed 8,000 feet under normal operating conditions provided the airplane was below the maximum operating altitude. Accordingly, the FAA proposes to revise § 25.841(a) to clarify the limit on cabin pressure altitude to not more than 8,000 feet under normal operating conditions. This revision is not necessary for the other changes being proposed for operations into and out of high elevation airport operations, but since it is related, FAA is making this clarification here.

The cabin pressure altitude requirement in § 25.841(a) does not allow certification of airplane designs that can safely accommodate operations into or out of high elevation airports. The FAA proposes adding § 25.841(c) as an exception to § 25.841(a) to accommodate operations into or out of high elevation airports. Proposed § 25.841(c) would allow the cabin pressure in pressurized cabins and occupied compartments to be equal to or less than the airport elevation while the airplane operates at or below 25,000 feet, provided the cabin pressurization system is designed to minimize the time that passenger cabin occupants would be exposed to cabin pressures exceeding 8,000 feet in flight.

Section 25.841(b)(6) requires a warning indication at the pilot or flight engineer station to indicate when the safe or preset cabin pressure altitude limit is exceeded to alert the flightcrew to

potential hypoxic conditions. Section 25.841(b)(6) also states that this warning requirement for cabin pressure altitude limits is met if it warns the flightcrew when the cabin pressure altitude exceeds 10,000 feet. The FAA proposes adding new § 25.841(d) as an exception to § 25.841(b)(6) to allow an applicant to change the cabin altitude warning to 15,000 feet or 2,000 feet above the airport elevation, whichever is greater, when operating into or out of a high elevation airport.

Further, § 25.1447(c)(1) requires that airplanes being certified for operation above 30,000 feet must be equipped with oxygen dispensing units providing the required oxygen flow, and that such units must be automatically presented to the occupant before the cabin pressure exceeds 15,000 feet above sea level. Section 25.1447(c)(1) also states the crew must be provided with a manual means to make the dispensing units immediately available in the event of failure of the automatic system. This proposal would add § 25.1447(c)(5) as an exception to § 25.1447(c)(1) to allow approval of passenger cabin oxygen dispensing units that automatically deploy at 15,000 feet, or 2,000 feet above the airport elevation, whichever is greater, during operations into or out of high elevation airports. This proposed action would relieve industry from having to petition, and the FAA from the burden of evaluating and granting applicant-specific exemptions from § 25.1447(c)(1), currently necessary to increase the cabin pressure at which passenger cabin oxygen dispensing unties automatically deploy.

II. Background

A. Statement of the Problem

Cabin pressurization systems of airplanes are typically designed to maintain the interior cabin pressure so that the maximum cabin pressure altitude does not exceed 8,000 feet and to ensure that the change in cabin pressure altitude is minimized during flight. While an airplane is on the ground, the interior cabin pressure must be equal to the outside ambient air pressure to

allow for easy opening of the exit doors should there be a need for an emergency evacuation. When an airplane ascends, its cabin pressure altitude starts at the equivalent altitude of the airport and slowly changes as the airplane climbs until the cabin pressure altitude is stabilized at an altitude not exceeding 8,000 feet, which is the current regulatory maximum cabin pressure altitude allowable. However, when an airplane takes off from an airport with an elevation greater than 8,000 feet, the cabin pressure altitude must begin at that higher equivalent altitude and slowly decrease until it is less than 8,000 feet. Similarly, when an airplane is configured to land at a high elevation airport, the interior cabin pressure altitude will start near 8,000 feet and slowly rise as the airplane descends into the airport, until the interior cabin pressure altitude is the same as the equivalent pressure altitude at the airport when the airplane lands. Since the maximum cabin pressure altitude of 8,000 feet is exceeded when operating into or out of high elevation airports, the airplane is out of compliance with 14 CFR § 25.841.

Globally, there are several airports at elevations that exceed 14,000 feet. An example of a high elevation airport is Daocheng Yading Airport, in Tibet, at 14,472 feet.

To accommodate high elevation airport operations, applicants for type certificates incorporate design features for the cabin pressurization system that are intended to minimize the time that the cabin pressure altitude is above 8,000 feet. If a cabin altitude warning is set at 10,000 feet, for example, the flightcrew may receive nuisance warnings during high elevation airport takeoff and landing operations, unless special design features are incorporated. Accordingly, airplane manufacturers typically design the cabin pressurization control system to raise the cabin pressure altitude at which the warning occurs during these high elevation airport operations.

Currently, when an airplane manufacturer applies for certification of an airplane with a cabin pressurization system intended to be used for operations into or out of high elevation airports, the cabin pressurization system does not meet the design standard in § 25.841(a) and (b)(6) and the FAA must make an ELOS finding, if appropriate. An ELOS finding is made when the design does not comply with the applicable airworthiness provisions, but compensating factors provide an equivalent level of safety.[1] For the design standard provided by § 25.841(a) and (b)(6), compensating factors such as the flight crew's use of supplemental oxygen and minimizing the time that the cabin pressure altitude may be above 8,000 feet, provide an equivalent level of safety during high elevation airport operations. The FAA documents an ELOS finding in an ELOS memorandum that communicates to the public the rationale for the FAA's determination of equivalency to the level of safety intended by the regulations. The ELOS memorandum also documents those aspects of the ELOS finding that must be maintained for continued airworthiness. Processing an ELOS request (i.e., evaluating the request, making the finding, and creating the ELOS memorandum) creates an extra administrative burden on the applicant as well as the FAA during the aircraft certification process.[2] The FAA typically makes about four ELOS findings per year related to high elevation airport operations. For each ELOS finding related to high elevation airport operations, the FAA may spend 20 to 100 engineering hours, depending on how unique the proposed design features are, and whether or not the applicant has previously proposed airplane designs intended for such operations in the past. We estimate that applicants expend similar resources.

[1] The authority for the agency to make an ELOS finding is provided in 14 CFR §21.21(b). Paragraph (b) of § 21.21 specifies that the FAA must find an applicant for a type certificate meets the applicable airworthiness requirements of subchapter C of Chapter I of title 14 Code of Federal Regulations or that any airworthiness provisions not complied with are compensated for by factors that provide an equivalent level of safety.
[2] ELOS memorandums are available at http://rgl.faa.gov/.

Section 25.1447(c)(1) requires that, for airplanes certified for operations above 30,000 feet, oxygen dispensing equipment be automatically deployed before the cabin pressure altitude reaches 15,000 feet. To prevent unnecessary deployments and avoid unnecessary maintenance costs associated with servicing the oxygen system on airplanes intended to operate at high elevation airports, applicants typically incorporate design features to raise the automatic presentation altitude for the oxygen masks during high elevation airport operations. Currently, applicants that incorporate these design features do so pursuant to an agency-issued exemption from § 25.1447(c)(1).[3] A petition for exemption for airplanes certified for operation above 30,000 feet into high elevation airports creates a burden for applicants who develop the petition as well as the FAA in the agency's evaluation and analysis of the petition. The FAA typically grants one or two exemptions per year related to high elevation airport operations.[4] For each exemption related to high elevation airport operations, the FAA may spend 20 to 100 engineering hours depending on how similar the specific exemption petition is in relation to those previously granted. In addition to expended resources, exemptions typically increase the time for certification because the FAA follows the procedures for public comment described in 14 CFR part 11 as appropriate. We expect that applicants expend similar resources.

III. Discussion of the Proposal

A. Cabin Pressurization Requirements for Normal Operating Conditions

The intent of § 25.841(a) is to maintain a safe pressure environment within the cabin during normal operations. Currently, § 25.841(a) limits the cabin pressure altitude to not more

[3] The Administrator's exemption authority is provided by 49 U.S.C. 44701(e) and implemented in accordance with 14 CFR part 11.

[4] Complete exemption dockets can be found at https://www.regulations.gov/. Exemption grants and denials are also available at http://aes.faa.gov/ and http://rgl.faa.gov/

than 8,000 feet at the maximum operating altitude of the airplane under normal operating conditions. Operating at the maximum operating altitude of the airplane is considered a normal operating condition. Section 25.841(a) was never intended to imply that the cabin pressure altitude could exceed 8,000 feet under normal operating conditions provided the airplane was below the maximum operating altitude. The physiological effects associated with exposure to high cabin pressure altitudes, namely hypoxia, vary from one individual to the next as a function of altitude and time. Common effects associated with hypoxia include increased heart rate, decreased cognitive ability, nausea, and increased chance of cardiac arrest or stroke. These physiological effects are rare when the cabin pressure altitude does not exceed 8,000 feet. For clarity, the FAA proposes to revise § 25.841(a) to limit the cabin pressure altitude to not more than 8,000 feet under normal operating conditions even though this clarification is not necessary for the proposed changes for operations into and out of high elevation airport operations.

During normal operations into or out of high elevation airports, however, it is possible that the cabin pressure altitude will exceed 8,000 feet while the airplane is on the ground. When the airplane is on the ground with a higher pressure inside the passenger cabin compared to the outside air pressure, it could be difficult if not impossible to open the emergency exits depending on the design and magnitude of pressure differential. For example, landing at an airport that is at 10,000 feet while the passenger cabin is at 8,000 feet. This would impede emergency evacuation and decrease safety. Although some emergency exit designs may allow a cabin attendant to unlatch and start opening a door with a slight pressure differential, the door could quickly swing open and pull the attendant outside as the emergency escape slide is inflating, which would also impede evacuation efforts and endanger the flight attendant.

The FAA proposes adding § 25.841(c) as an exception to § 25.841(a), to accommodate operations into or out of high elevation airports. Proposed § 25.841(c) would allow the cabin pressure in pressurized cabins and occupied compartments to be equal to or less than the airport elevation while the airplane operates at or below 25,000 feet, provided the cabin pressurization system is designed to minimize the time that passenger cabin occupants would be exposed to cabin pressures exceeding 8,000 feet in flight. The exception to § 25.841(a) would only apply when the airplane is at or below 25,000 feet because the risk of hypoxia following a decompression increases with altitude. In addition, this will maintain consistency with other oxygen availability requirements that are not affected by this proposal. This proposed change would allow certification of airplane designs that can safely accommodate operations into or out of high elevation airports by minimizing the time that the cabin pressure may be above 8,000 feet without unnecessarily exposing occupants to high cabin pressures in the unlikely event of a pressurization failure.

B. Requirements for Flightcrew Warning Indication Following Loss of Pressurization

The intent of the design requirement in current § 25.841(b)(6) is to provide the flightcrew with a warning when the safe or preset cabin pressure altitude limit is exceeded. Consistent with the proposed addition of § 25.841(c) to accommodate operations into high elevation airports and to reduce the possibility of exposure to high cabin pressures above 25,000 feet, if a failure condition (decompression) occurs, the FAA proposes adding § 25.841(d) as an exception to § 25.841(b)(6).

Proposed § 25.841(d) would allow an applicant to change the cabin altitude warning to 15,000 feet, or 2,000 feet above the airport elevation, whichever is greater, when operating into or out of airports exceeding 8,000 feet provided that—

1. The airplane is at or below 25,000 feet;

2. An alert is provided to clearly indicate to the flightcrew that the cabin high altitude warning has shifted above 10,000 feet;
3. If the cabin altitude warning alert shifts above 10,000 feet automatically, an alert is provided to notify the flightcrew to take action should the automatic shift function fail; and
4. Either an alerting system is installed to notify the flightcrew on flight deck duty when to don oxygen mask(s), in accordance with the applicable operating regulations; or a flight procedure acceptable to the FAA administrator is provided in the airplane flight manual requiring the pilot in command to don oxygen when the cabin warning has shifted above 10,000 feet and other flightcrew on flight deck duty to monitor cabin pressure and utilize supplemental oxygen, in accordance with the applicable operating regulations.

In addition, the potential risk of hypoxia by the flightcrew members following a decompression during high elevation airport operations is also minimized because the cabin pressure warning altitude can only be raised above 10,000 feet while the airplane is at or below 25,000 feet above sea level. Further, there are operational requirements, such as those at 14 CFR 91.211, 121.333, and 135.157, that describe when supplemental oxygen must be used for passengers, cabin crew, and flightcrew members on flight deck duty. The use of supplemental oxygen for airplane occupants is a function of altitude, time exposure, and flightcrew members duties anticipated on the airplane. (Such requirements are intended to minimize the symptoms of hypoxia for airplane occupants, but are not being proposed for revision by this notice.) Therefore, airplane designs that meet the requirements proposed in this NPRM would maintain an appropriate level of safety that is consistent with previously issued ELOS determinations.

Also, for commonality with other regulatory text, the FAA is proposing to clarify existing § 25.841(b)(6), which currently requires an aural or visual signal to warn the flightcrew when the cabin pressure altitude exceeds 10,000 feet, to simply require an alert rather than a specific additional aural or visual signal. At Amendment 25-131 (75 FR 67201, November 2, 2010), effective January 3, 2011, the FAA created § 25.1322 to add flightcrew alerting requirements. An alert designed in accordance with § 25.1322 would ensure an appropriate alerting is provided to the flightcrew without the need for a separate aural or visual alert standard in § 25.841(b)(6), which allows for more options in developing an appropriate alert.

C. Requirements for Automatic Presentation of Oxygen Dispensing Equipment

The FAA proposes an exception to the passenger oxygen mask presentation requirement in current § 25.1447(c) to allow for presentation at higher altitudes when operating into high elevation airports. Section 25.1447(c) describes presentation requirements for passenger oxygen masks. In accordance with § 25.1447(c)(1), for airplanes certified for operation above 30,000 feet, oxygen masks providing the required oxygen flow must be automatically presented before the cabin pressure altitude exceeds 15,000 feet. Typical designs include oxygen mask storage doors located above the seats with electrically actuated latches. As electricity is supplied to the latches, the doors open and oxygen masks are made available. Electricity to the latches is typically provided through a pressure switch, which is either open or closed, depending on ambient pressure within the passenger cabin. Common pressure switches have a tolerance of ±500 feet, so it is possible for oxygen masks to be presented as low as 14,000 feet to ensure they are made available before the cabin pressure reaches 15,000 feet.

There are several airports throughout the world with elevations above 14,000 feet such that oxygen masks could be deployed when an airplane lands at or takes off from them. The FAA

has granted numerous exemptions from the automatic presentation requirements in § 25.1447(c)(1) to accommodate such operations.[5] For each exemption petition, the FAA works with the applicant to ensure that an adequate level of safety is maintained for each system design. To eliminate the need for exemptions as more airports open in high elevation terrains or more airplanes are designed with the intent to operate into existing high elevation airports, the FAA proposes adding § 25.1447(c)(5) as an exception to § 25.1447(c)(1). Proposed § 25.1447(c)(5) would allow oxygen mask presentation at altitudes of up to 2,000 feet above the airport elevation to prevent the unnecessary deployment of oxygen masks.

The FAA recognizes that a sudden loss of cabin pressure could expose passengers and cabin crew to higher cabin pressure altitudes before oxygen masks are presented if the automatic presentation altitude is raised. To mitigate this risk, the proposed changes include limitations on the exception in that the automatic presentation altitude for the masks can only be raised when operating into or out of high elevation airports, and only when the airplane is at or below 25,000 feet.

As previously discussed, the proposed changes will not negatively affect safety during high elevation airport operations because of the limited portion of the operation during which the proposed change will apply and the measures already in place to ensure safety during emergency conditions. Additionally, these proposed changes are consistent with previously granted exemptions and ELOS determinations.

[5] Some examples include exemption 9940 (Docket No. FAA-2009-0601), exemption 10089 (Docket No. FAA-2010-0290), exemption 13582 (Docket No. FAA-2015-3311) and exemption 17590 (Docket No. FAA-2017-0800).

IV. Regulatory Notices and Analyses

A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 and Executive Order 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, the 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, which 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.

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; (3) would not have a significant economic impact on a substantial number of small entities; (4) would not create unnecessary obstacles to the foreign commerce of the United States; and (5) would not impose an unfunded mandate on state, local, or tribal governments, or on the private sector by exceeding the threshold identified previously. These analyses are summarized below.

Currently, the FAA processes ELOS memorandums to document ELOS findings when an airplane manufacturer or modifier requests certification of airplane cabin pressurization systems used for operations into or out of airports with elevations at or above 8,000 feet. The FAA also processes exemptions to the automatic oxygen mask presentation requirements for operations into or out of airports with elevations at or above 14,000 feet. The proposed rule would eliminate the need to continue performing the administrative tasks and analyses associated with the processing of an ELOS or exemption to accommodate operations at high elevation airports for transport category airplanes without compromising safety.

This proposed rule would result in small quantifiable cost savings. As previously discussed, the FAA issues about four ELOS findings and up to two exemptions per year related to high elevation airports, involving 20 to 100 engineering hours for each ELOS or exemption project. The FAA estimates industry and the FAA may expend the same range of engineering hours for each ELOS and exemption project. Using an average aerospace engineer hourly wage of $65, the FAA estimates the total annual cost savings of this proposed rule would range from $15,600 to $78,000 for both industry and FAA.[6]

As previously discussed, in addition to expended resources, exemptions typically increase the time for certification because the FAA follows procedures for public comment described in 14 CFR part 11 as appropriate. This proposed rule may reduce this time resulting in cost savings.

[6] To simplify the analysis since the cost savings are small, the FAA uses an average aerospace engineer hourly wage adjusted for benefits of $65 for both industry and FAA based on 2017 Bureau of Labor Statistics data and FAA salary data. The range of cost savings are calculated as $7,800 = (4 ELOS + 2 exemptions) x ($65 hourly wage) x (20 engineering hours) and $39,000 = (4 ELOS + 2 exemptions) x ($65 hourly wage) x (100 engineering hours). These cost savings are doubled to reflect the total cost savings of the proposed rule since the FAA estimates the cost savings to industry and the FAA are the same.

As a result, this rulemaking will reduce the cost of airplane certification without reducing the current level of safety. The expected outcome would be a minimal economic impact resulting in a small regulatory burden relief. The FAA requests comments with supporting justification about the FAA determination of minimal economic impact.

Therefore, the FAA has determined that this proposed 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 potentially covers a wide-range of small entities, including small businesses, and not-for-profit organizations.

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 proposed rule would relieve the industry from requesting that the FAA make a determination that an ELOS exists for certification of airplane cabin pressurization systems used for operations into or out of airports with elevations at or above 8,000 feet above sea level. This proposed rule would also relieve industry from petitioning for exemptions to the automatic oxygen mask presentation requirements for operations into and out of airports with elevations at or above 14,000 feet above sea level. The expected outcome would be a minimal economic impact with small burden relief and savings for any small entity affected by this rulemaking action.

If an agency determines that a rulemaking will not result in a significant economic impact on a substantial number of small entities, the head of the agency may so certify under section 605(b) of the RFA. Therefore, as provided in section 605(b), the head of the FAA certifies that this proposed rulemaking would not result in 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 as 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 proposed rule and determined that it would have only a domestic impact and therefore no effect on international trade.

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 (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 a "significant regulatory action." The FAA currently uses an inflation-adjusted value of $155 million in lieu of $100 million. This proposed rule does not contain such a mandate; therefore, the requirements of Title II of the Act 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 would be no new requirement for information collection associated with this proposed rule.

F. International Compatibility and Cooperation

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA's policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has reviewed the corresponding ICAO Standards and Recommended Practices and has found no differences with these proposed regulations.

EASA certification requirements related to oxygen dispensing units in CS25.1447(c)(1) are similar to those in § 25.1447(c)(1). In Amendment 18 of Certification Specifications and

Acceptable Means of Compliance for Large Aeroplanes, CS-25[7], the European Aviation Safety Agency (EASA) describes an acceptable means of compliance (AMC) in AMC 25.1447(c)(1). Specifically, AMC 25.1447(c)(1) states: "The design of the automatic presentation system should take into account that when the landing field altitude is less than 610 m (2000 feet) below the normal preset automatic presentation altitude, the automatic presentation altitude may be reset to landing field altitude plus 610 m (2000 feet)." Thus, the FAA's proposed change to § 25.1447 is consistent with guidance provided by EASA.

EASA has not published advisory material to accommodate operations into or out of high elevation airports in consideration of the cabin pressure altitude and warning requirements in CS 25.841.

G. Environmental Analysis

FAA Order 1050.1F 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 paragraph 5-6.6 of FAA Order 1050.1F and involves no extraordinary circumstances.

V. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this proposed rule under the principles and criteria of Executive Order 13132, "Federalism." The agency has determined that this action would not have a substantial direct effect on the States, or on the relationship between the Federal Government and

[7] Amendment 18 of European Aviation Safety Agency, "Certification Specifications and Acceptable Means of Compliance for Large Aeroplanes," CS-25, dated June 22, 2016, can be found at this web address: https://www.easa.europa.eu/document-library/certification-specifications/cs-25-amendment-18.

the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, would not have Federalism implications.

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

The FAA analyzed this proposed 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 would not be a "significant energy action" under the executive order and would not be likely to have a significant adverse effect on the supply, distribution, or use of energy.

C. Executive Order 13609, International Cooperation

Executive Order 13609, "Promoting International Regulatory Cooperation," promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policies and agency responsibilities of Executive Order 13609, and has determined that this action would have no effect on international regulatory cooperation.

D. Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs.

This proposed rule is expected to be an Executive Order 13771 deregulatory action. Details on the regulatory relief provided by this proposed rule can be found in the Regulatory Evaluation section.

VI. Additional Information

A. Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. The agency also invites 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, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

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

Proprietary or Confidential Business Information: Commenters should not file proprietary or confidential business information in the docket. Such information must be sent or delivered directly to the person identified in the FOR FURTHER INFORMATION CONTACT section of this document, and marked as proprietary or confidential. If submitting information on a disk or CD ROM, mark the outside of the disk or CD ROM, and identify electronically within the disk or CD ROM the specific information that is proprietary or confidential.

Under 14 CFR 11.35(b), if the FAA is aware of proprietary information filed with a comment, the agency does not place it in the docket. It is held in a separate file to which the public does not have access, and the FAA places a note in the docket that it has received it. If the FAA receives a request to examine or copy this information, it treats it as any other request under the Freedom of Information Act (5 U.S.C. 552). The FAA processes such a request under Department of Transportation procedures found in 49 CFR part 7.

B. Availability of Rulemaking Documents

An electronic copy of rulemaking documents may be obtained from 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.gpo.gov/fdsys/.

Copies may also be obtained by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, DC 20591, or by calling 202-267-9677. Commenters must identify the docket or notice number of this rulemaking.

All documents the FAA considered in developing this proposed rule, including economic analyses and technical reports, may be accessed from the Internet through the Federal eRulemaking Portal referenced in item (1) above.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements

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(f), 106(g), 40113, 44701, 44702 and 44704.

2. Amend § 25.841 by revising paragraphs (a) introductory text and (b)(6) and adding paragraphs (c) and (d) to read as follows:

§ 25.841 Pressurized cabins.

(a) Except as provided in paragraph (c) of this section, pressurized cabins and compartments to be occupied must be equipped to provide a cabin pressure altitude of not more than 8,000 feet under normal operating conditions.

* * * * *

(b) * * *

(6) Warning indication at the pilot or flight engineer station to indicate when the safe or preset pressure differential and cabin pressure altitude limits are exceeded. Appropriate warning markings on the cabin pressure differential indicator meet the warning requirement for pressure differential limits, and an alert meets the warning requirement for cabin pressure altitude limits, if it warns the flightcrew when the cabin pressure altitude exceeds 10,000 feet, except as provided in paragraph (d) of this section.

* * * * *

(c) When operating into or out of airports with elevations at or above 8,000 feet, the cabin pressure in pressurized cabins and occupied compartments may be equal to or less than the airport elevation provided:

(1) The airplane is being operated at or below 25,000 feet; and

(2) The cabin pressurization system is designed to minimize the time in flight that passenger cabin occupants may be exposed to cabin pressure altitudes exceeding 8,000 feet.

(d) When operating into or out of airports with elevations exceeding 8,000 feet and the airplane is at or below 25,000 feet, the cabin altitude warning alert may be provided at 15,000 feet, or 2,000 feet above the elevation, whichever is greater, provided that:

(1) An alert is provided to clearly indicate to the flightcrew that the cabin high altitude warning has shifted above 10,000 feet;

(2) If the cabin altitude warning alert is shifted above 10,000 feet automatically, an alert is provided to notify the flightcrew to take action should the automatic shift function fail; and

(3) Either an alerting system is installed to notify the flightcrew members on flight deck duty when to don oxygen in accordance with the applicable operating regulations; or flight procedures acceptable to the FAA administrator are provided in the airplane flight manual that require the pilot flying to don oxygen when the high altitude cabin warning has shifted above 10,000 feet and require other flightcrew members on flight deck duty to monitor the cabin pressure to utilize oxygen in accordance with the applicable operating regulations.

3. Amend § 25.1447 by revising paragraph (c)(1) and adding paragraph (c)(5) to read as follows:

§ 25.1447 Equipment standards for oxygen dispensing units.

* * * * *

(c) * * *

(1) There must be an oxygen dispensing unit connected to oxygen supply terminals immediately available to each occupant wherever seated, and at least two oxygen-dispensing units connected to oxygen terminals in each lavatory. The total number of dispensing units and outlets in the cabin must exceed the number of seats by at least 10 percent. The extra units must be as uniformly distributed throughout the cabin as practicable. Except as provided in paragraph (c)(5) of this section, if certification for operation above 30,000 feet is requested, the dispensing units providing the required oxygen flow must be automatically presented to the occupants before the cabin pressure altitude exceeds 15,000 feet. The crewmembers must be provided with a manual means of making the dispensing units immediately available in the event of failure of the automatic system.

* * * * *

(5) When operating into or out of airports with elevations at or above 8,000 feet, the dispensing units providing the required oxygen flow may be automatically presented to the occupants at 15,000 feet or within 2,000 feet of the airport elevation, whichever is higher, provided the airplane is being operated at altitudes at or below 25,000 feet.

Issued under authority provided by 49 U.S.C. 106(f) and 44701(a) in Washington, DC, on March 29, 2019.

Earl Lawrence,
Executive Director, Aircraft Certification Service.

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