



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ARC Charter

Effective Date:
04/01/11

SUBJ: Lavatory Oxygen Installation Requirements Aviation Rulemaking Committee

1. Purpose of this Charter. This charter creates the Aviation Rulemaking Committee (ARC) for Lavatory Oxygen Installation Requirements according to the authority of the Administrator of the Federal Aviation Administration (FAA) under section 106(p)(5) of Title 49 of the United States Code (49 U.S.C. 106(p)(5)). This charter also outlines the committee's organization, responsibilities, and tasks.

2. Audience. This charter applies to members of the Lavatory Oxygen Installation Requirements ARC, including aviation industry organizations and employees within the Office of the Associate Administrator for Aviation Safety. The audience for this charter also includes employees of the Office of Chief Counsel and the Office of Aviation Policy and Plans.

3. Background. The FAA was made aware of a vulnerability associated with chemical oxygen generators installed in lavatories. The FAA investigated this vulnerability and, together with the Transportation Security Administration (TSA) and the Federal Bureau of Investigation (FBI), validated the concern.

a. The FAA consulted with other States of design for transport category airplanes, as well as four major manufacturers of commercial airplanes regarding the probable course of action. In addition the FAA briefed the security directors of several labor and trade associations prior to taking action.

b. On February 10, 2011, the FAA issued sensitive security airworthiness directive (AD) 2011-04-09 directly to affected operators, that required chemical oxygen generators installed inside lavatories to be rendered inoperative within 21 days. The AD also required that flightcrews be notified that the lavatory oxygen was inoperative, yet the lavatories were still available for crew and passenger use in accordance with the AD. The AD applied to passenger carrying, transport category airplanes in part 121 operation, as well as US-registered transport category airplanes with a passenger capacity of 20 or more, operating in part 129.

c. With the oxygen systems in the lavatories rendered inoperative, the airplane does not comply with the airworthiness standards and operating rules of Title 14, Code of Federal Regulations, sections 25.1447, 119.51, 121.329, 121.333. Therefore, the AD also contained provisions for regulatory relief from those requirements until superseded by further rulemaking.

d. On March 8, 2011, the FAA published a Federal Register version of AD 2011-04-09, as well as Special Federal Aviation Regulation (SFAR) 111. SFAR 111 extended the regulatory relief granted by the AD to manufacturers, modifiers and other applicants for airworthiness certificates, in order to streamline the process for operators to comply with the AD. In addition, the SFAR contained two provisions to help mitigate the lack of oxygen in the lavatory. Operators were required to remove

Initiated By: ANM-100

oxygen masks and make sure that, in any event where oxygen masks are deployed, flight attendants make it a priority to check lavatories for occupants.

e. The FAA is now seeking to eliminate the previously identified security concerns with lavatory oxygen systems and restore oxygen in the lavatories in an expeditious manner, without reintroducing the vulnerability that prompted the original AD. There is considerable interest in this action, from the media, general public and aviation user groups. The FAA stated in the SFAR that we would issue further rulemaking to address both concerns.

4. Organization and Administration of the Lavatory Oxygen ARC. We will set up a committee of members of the aviation safety and security community, including airplane oxygen design specialists representing diverse viewpoints. FAA participation and support will come from all affected lines-of-business. Where necessary, the committee may invite additional subject matter experts as needed.

a. The committee sponsor is the Manager, Transport Airplane Directorate, who:

- (1) Appoints members or organizations to the committee, at his sole discretion;
- (2) Selects industry and FAA co-chairpersons for the committee;
- (3) Provides administrative support for the committee, through the Aircraft Certification Service;
- (4) Receives all committee recommendations and reports; and
- (5) At his discretion, determines when and how the committee recommendations and reports of the ARC are released to the public.

b. The co-chairpersons will:

- (1) Determine (with other committee members) when a meeting is required (a quorum is desirable at committee meetings, but not required);
- (2) Arrange notification to all members of the time and place of each meeting;
- (3) Draft an agenda for each meeting and conduct the meeting;
- (4) Keep meeting minutes; and
- (5) Provide status updates to the Manager, Transport Airplane Directorate, at 3 week intervals from the effective date of this charter.

5. Committee Membership. The committee will consist of approximately 20 members, representing airplane manufacturers, oxygen system specialists, FAA and other aviation industry participants. Members will be selected based on their familiarity with oxygen system design and requirements, as well as security considerations. Membership will be balanced in viewpoints, interests, and knowledge of the committee's objectives and scope. Committee membership is limited to promote discussion. Active participation and commitment by members is essential for achieving the committee's objectives. Attendance is essential for continued membership on the committee. The committee may invite additional participants as subject matter experts to support specialized work products.

6. Public Participation. Persons or organizations outside the committee who want to attend a meeting must get approval in advance of the meeting from a committee co-chairperson or designated federal representative.

7. Committee Procedures and Tasks.

a. The committee advises and provides written recommendations to the Manager, Transport Airplane Directorate, ANM-100.

b. Committee tasks include, but are not limited to, the following:

(1) Establishing criteria for in-service, new production and new type design airplanes, preferably in the form of performance standards, for safe and secure installation of lavatory oxygen systems.

(2) Determining whether the same criteria should apply to the existing fleet, to new production and to new type designs.

(3) Establishing what type of safety assessment approach should be used (e.g., SAE Document ARP5577 or § 25.1309). Define content and procedures of the safety assessment.

(4) Determining whether tamper resistance, active tamper evidence, or different system design characteristics are equivalent options.

(5) Developing guidance as necessary to satisfy the recommended criteria, for each system design characteristic as appropriate.

(6) Considering the pros and cons of different implementation options and recommending a schedule(s) for implementation with the advantages and disadvantages identified.

c. The committee may propose additional tasks as necessary to the Manager, Transport Airplane Directorate, for approval.

d. The ARC will submit a final report detailing recommendations within 3 months from the effective date of this charter. The Manager, Transport Airplane Directorate, may extend this deadline if it is in the interest of the FAA to do so.

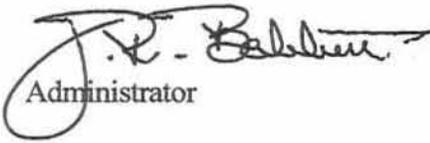
8. Cost and Compensation. The estimated cost to the Federal Government of the Lavatory Oxygen ARC is \$60,000, annually. All travel costs for government employees will be the responsibility of the government employee's organization. Non-government representatives serve without government compensation and bear all costs of their committee participation.

9. Availability of Records. Records, reports, agendas, working papers, and other documents made available to, prepared for, or prepared by the committee will be available for public inspection and copying at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA 98057-

3356, under the Freedom of Information Act, 5 U.S.C. 552. Fees will be charged for information furnished to the public according to the fee schedule in 49 CFR part 7. Sensitive Security Information that may be utilized as part of this ARC is also governed in 49 CFR part 15.

10. Committee Term. This committee becomes an entity on the effective date of this charter. The committee will remain in existence for a term of 6 months unless its term is ended sooner or extended.

11. Distribution. This charter is distributed to the Director level management in the Office of the Associate Administrator for Aviation Safety, the Office of the Chief Counsel, the Office of Policy, International Affairs, and Environment, and the Office of Rulemaking.


Administrator

Lavatory Oxygen Aviation Rulemaking Committee
Final Report

August 3, 2011

Lavatory Oxygen Aviation Rulemaking Committee

August 3, 2011

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I. Summary of Issue and Task

Following discovery of a security vulnerability associated with chemical oxygen generators (COG) installed in airplane lavatories, the FAA mandated that these COG be rendered inoperative in accordance with Airworthiness Directive 2011-04-09. Operators had their choice of expending the generator, or removing it. This action was complete in the US fleet by March 4, 2011.

As a result of this mandatory action, persons occupying the lavatory at the time of a decompression would have no immediate source of supplemental oxygen. Service experience indicates that the risk of personal injury from a decompression event is very low, however, not sufficiently low to warrant permanent removal of oxygen from lavatories.

The FAA formed an Aviation Rulemaking Committee (ARC) to make recommendations on the best way to address this issue. The ARC charter and tasking is summarized as follows:

- Establish criteria for safe and secure installation of chemical oxygen generators (COG).
- Determine whether the same criteria should apply to in-service, new production and new type design airplanes.
- Determine whether there are multiple equivalent options.
- Develop guidance as necessary.
- Recommend timelines for implementation

The manager of the Transport Airplane Directorate is the sponsor of the ARC, and the recipient of this report. ARC membership consisted of a cross-section of interested and expert parties from industry and authorities:

<u>Chuck Lanning</u>	Transport Canada	<u>Norbert Augustin</u>	Airbus
<u>Odile Tourret</u>	DGAC – France	<u>Thierry Leger</u>	Airbus
<u>Olivier Fages</u>	DGAC – France	<u>Keith Ayre</u>	Bombardier
<u>Thomas Ohnimus</u>	EASA	<u>Carlos Lima</u>	Bombardier
<u>Eric Duvivier</u>	EASA	<u>Bert Bailey</u>	Boeing
<u>Generoso</u>	ANAC	<u>Tim Holey</u>	Boeing
<u>Niederauer de Oliveira</u>			
<u>Antonio José Parente de Carvalho Júnior</u>	ANAC	<u>Edelcio Augusto Ruivo</u>	Embraer
		<u>Christiane Gomes Pinheiro</u>	Embraer
<u>Bob Vogt</u>	TSA	<u>Mike Bianchi</u>	Air Transport Association
<u>Chris Witkowski</u>	Association of	<u>Reginaldo Tinoco</u>	JAMCO

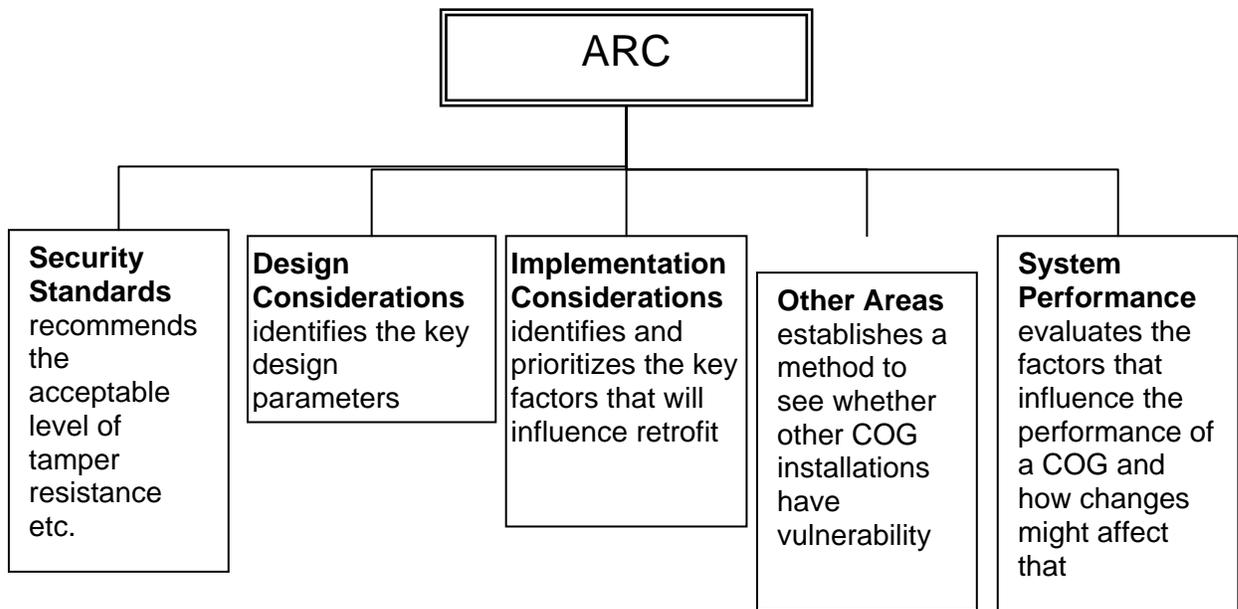
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John Black	Flight Attendants Association of Flight Attendants	<u>Joe Contino</u>	AVOX Systems Inc.
<u>Greg Bergner</u>	Airline Pilots Association	Craig Damlo	AVOX Systems Inc.
<u>Ben Thiesse</u>	American Airlines	Jim Cannon	BE Aerospace
<u>Rafael Nunez</u>	Delta Air Lines	<u>John Barker</u>	BE Aerospace
<u>Paul Lewis</u>	Us Airways		

The FAA was represented on the ARC by Pat Hemen of Flight Standards and Bob Hettman, Meghan Gordon and Jeff Gardlin of the Transport Airplane Directorate. The underlined names are 'official' members, whereas the other names are alternates.

II. ARC activities

A. Because of the short timeframe to complete the tasking, the ARC met, or conducted telecons every two weeks, following its first meeting on April 12, 2011. To effectively manage its tasks, the ARC formed five 'Focus Groups' (FG) to address key elements of the issues, and identify the parameters most critical to successfully completing the assigned tasks. The Focus Groups were organized as shown below.



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The specific Focus areas were identified as a result of the first ARC meeting discussions. The Focus groups met or held telecons independent of the ARC as a whole, so the frequency of ARC activity was essentially every few days.

B. Each of the focus groups is summarized below, with a description and discussion of the respective expected deliverable(s).

Security Standards: Responsible to recommend the acceptable level of tamper resistance, tamper evidence or combination of the two, for COG installation. The security standards FG assessed the conditions that created the vulnerability and what level of mitigation would be necessary to effectively eliminate the vulnerability. The focus was on tamper resistance, tamper evidence and alternative systems.

Design Considerations: Responsible for identifying the key design parameters that will influence what can be done to implement the changes needed to improve security. The design considerations FG reviewed the variations of designs in service to identify space constraints, system limitations and available design options.

Implementation Considerations: Responsible for identifying and prioritizing the key factors that will influence the time it takes to implement a retrofit. The focus was on the amount of time available for modification, the need to perform preparatory actions before modifications can commence and the possible need to consider interim measures.

Other Areas: Responsible for establishing a method to see whether other COG installations (e.g., crew rest area) could have the same concerns as the lavatories, and developing a tool for assessment

System Performance: Responsible to evaluate the factors that influence the performance of a chemical oxygen generator, and how any of the potential design changes might negatively impact performance. For example, any design changes that affect the COG ability to dissipate heat would increase the rate of chemical reaction, and potentially decrease the duration that oxygen is available.

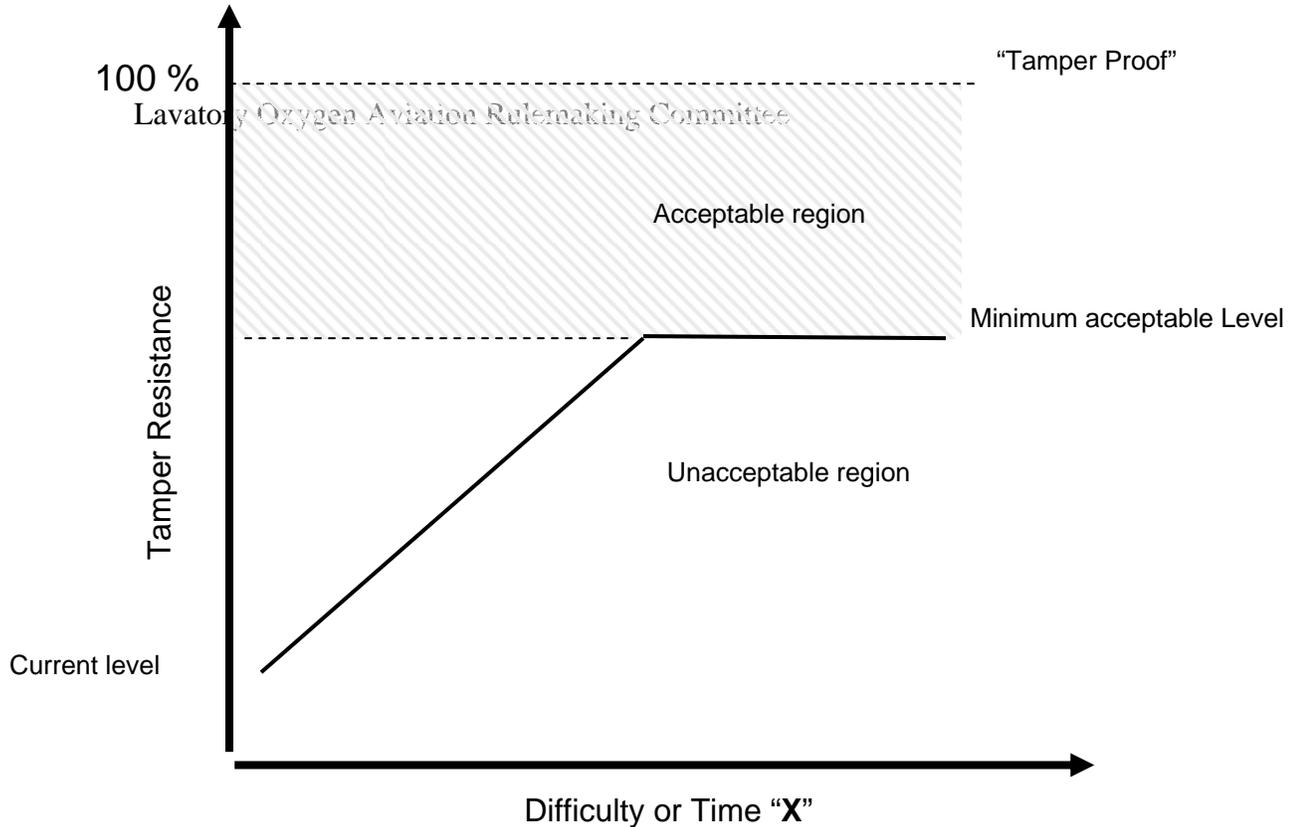
Each FG produced its own final input to the ARC, which is available for review if needed. The FG inputs are typically in the form of presentations or spreadsheets and contain more details than are summarized below.

III. Findings

The findings of each of the FG is summarized below, followed by a collective ARC finding.

A. Security Standards

The principal approaches to addressing this type of security concern are to employ tamper resistant features, tamper evident features, or some combination thereof. The



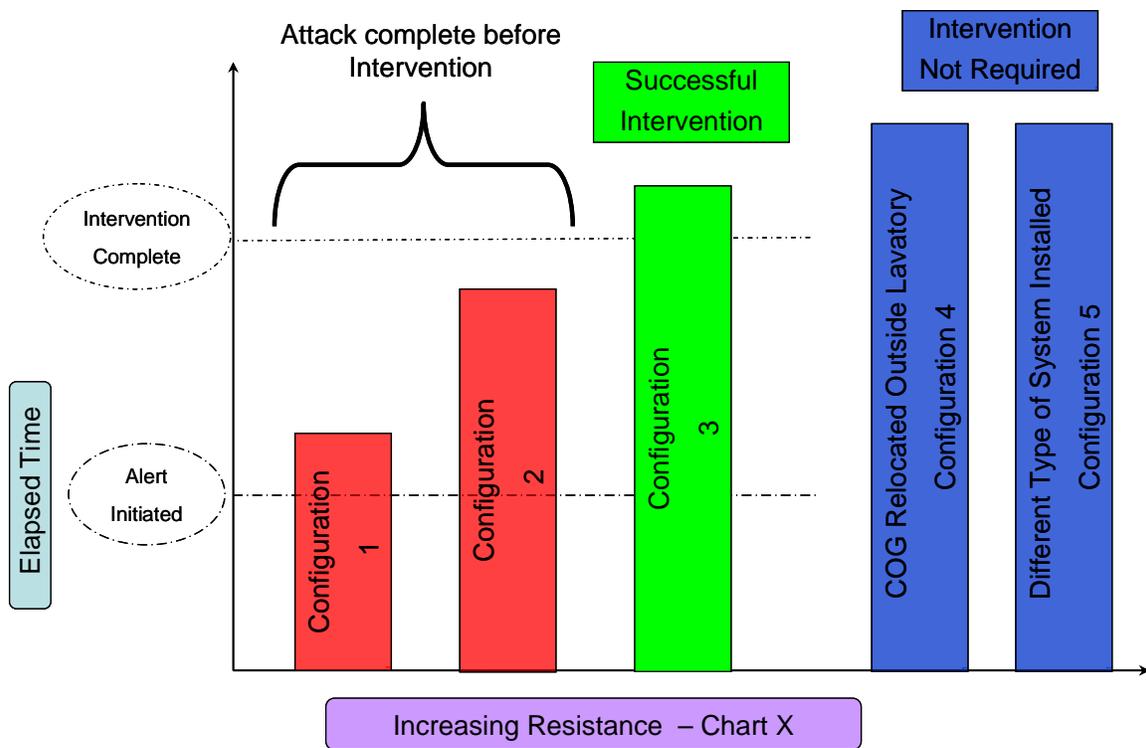
Security Standards FG determined that the principal benefits to tamper resistance were to delay the exploitation of the COG as weapon. However, because of the relative isolation within a lavatory, which is generally considered private, it is not likely that a delay in gaining access to the COG would be sufficient in itself to prevent a successful attack in most cases. This is because the typical measures of tamper resistance involve ‘special’ tools and fasteners. These measures are normally used as one of several layers of security. Thus the reliance on such measures is only one element of the security system. In the case of the COG installations no breaches of existing security protocols are necessary to access and use the generator as a weapon, i.e., no other layers of security exist, beyond the measures taken to address the generator installation itself. A graphical representation of tamper resistance versus the time afforded is shown below.

As a result of this determination, the Security Standards FG concluded that, in addition to tamper resistance, some form of active tamper evidence (e.g., an alarm) would be needed to shorten the time to intervention to less than that required to carry out the attack. Passive tamper evidence, such as a tamper evident seal, is not effective in this case, because it provides an after-the-fact notification of tampering. Because an active tamper evidence system requires crew response, crew training would be needed to inform the crews what the correct response would be, and how to carry it out. This could be significant, considering the potential ramifications and the likelihood that the attacker was determined. The Association of Flight Attendants has provided an SSI discussion of the potential crewmember response and the associated assumptions, which is available for reference to persons with a need to know. This draws on existing ‘common strategy’ principles as well as new ideas to address this situation specifically.

It should be noted that rendering the COG inaccessible from within the lavatory would be considered tamper proof (the 100% level shown in the figure above). Based on input from the Design Considerations FG, this option may be realistic for retrofit in certain cases, e.g., widebody airplanes. For new designs, that option may be feasible.

The FG also concluded that installation of a gaseous oxygen supply instead of a COG does not compromise security to any greater extent than other stored gaseous oxygen in the airplane, and could be a potential solution to mitigate the security concerns.

The figure below illustrates the relationship between the security mitigation means and its effectiveness. Configurations 1, 2 and 3 have both tamper resistant and tamper evident features. Configuration 1 has the fewest features and Configuration 3 has the most features. Configurations 4 and 5 do not require the same measures because the vulnerability is inherently mitigated. It should be noted that there are no current designs for a system satisfying the goals of configuration 3, although such configurations are considered feasible.



B. Design Considerations

The Design Considerations FG determined that virtually every COG is accessible from within the lavatory, without the use of any prohibited device. Depending on the design, the generator may be easily removable. There are varying sizes of COG based on the oxygen supply necessary for the routes flown. Typical are 12 or 22 minute supplies. The FG also verified that some airplane models use an alternative supplemental oxygen design (e.g., centralized gaseous system) in the lavatories, either as an option or standard equipment.

The limitations imposed on any redesign involve: the space available within the COG mounting area, the effect of the COG temperature (in normal operation) on any adjacent parts or materials, the need to consider flexible cabin configurations that permit relocation of the modular lavatory; and the requirements for oxygen quantity that dictate the size of the supply.

The Design Considerations FG also identified that while there may be common approaches, the actual number of installation variations is quite large, especially considering airplanes in the fleet that are out of production. This will add to the number of new designs needed and the documentation necessary for certification.

Moving the COG any distance from its current location will complicate the activation process. This is because the oxygen flow is typically activated mechanically when the mask is pulled. If the COG is moved away from the masks then this simple mechanical activation may not be practicable.

The Design Considerations FG also assessed the ramifications of adding an active tamper-evidence system (e.g., an alarm). One of the options considered was to utilize the existing smoke alarm in the lavatory and simply add a signal tied to the COG. While this is possible on certain airplane types, it is not possible on most Boeing airplanes. Other means of adding such a feature that are either additions to the lavatory, or use existing systems to send a signal to the flight deck were also investigated. There may be feasible options, but they will require time to develop and significant time to install. In general, the need for an active tamper-evident system will significantly complicate the retrofit effort.

In terms of the time to design and obtain FAA approval, the FG estimates that a distributed stored gas system, for which there is no existing design that could immediately be used for retrofit, may take somewhat longer to develop than modifications to make the COG secure. However, as is discussed under the Implementation Considerations FG, the overall time to implement the gaseous system solution may be significantly less. Distributed gaseous bottles typically weigh more than current COG with similar oxygen capacity.

The FG also considered the quantity of oxygen necessary to show compliance with the regulations, and how that is determined currently. Recent developments with variable flow orifices, using blood oxygen saturation, rather than tracheal partial pressure might result in a reduced weight installation, but again are not currently available.

C. Implementation Considerations

The Implementation Considerations FG reviewed the factors that will influence implementation time and effort. There are several key parameters that will drive the time needed to implement. The Implementation Considerations FG also discussed the potential for interim measures (which would likely be able to be installed during an overnight visit), primarily directed at providing oxygen for the crew to use in the lavatory. This last point is discussed further in section F.

There are several main factors that will drive implementation. The first one is the downtime necessary to incorporate a modification. Under current maintenance schedules, airplanes are available every few days for about 6 hours during an overnight maintenance visit. Within 18 months, only about 3% of the airplanes will have had an extended maintenance visit. Within 24 months, an additional 3% of the airplanes will be down for maintenance. After 36 months, roughly 62% of the airplanes will be on the ground for multiple days for maintenance. However, to cover the entire fleet with scheduled maintenance visits would require 72 months. Thus, any modifications that require more than 6 hours would result in unscheduled out of service time, with any interval less than six years. Note that it might be possible to utilize multiple six hour visits, depending on the nature of the modification and the potential for partial modifications that leave the airplane in a compliant/airworthy condition.

Another factor is the incorporation of active tamper-evident features, in addition to requiring development time, that will likely increase the time to implement. Installation of active tamper evidence will involve system changes, possibly software changes, and will be mostly performed on the airplane. In addition, the crew will have to be trained to respond to any ‘alarm’ that is incorporated as a security measure. To be effective, crew training should be accomplished prior to the alarm feature being deployed into the fleet. This would have the effect of delaying implementation, unless the training could be accomplished during the development phase, with any necessary refinements introduced into recurrent training.

Factors that would help to mitigate the time to modify an airplane include the degree to which modifications can be accomplished on assemblies while off the airplane. The airplane installation could then be more a matter of removal and replacement, which could more reasonably be accomplished on an overnight visit. As noted above, this is probably not possible for active tamper-evident designs.

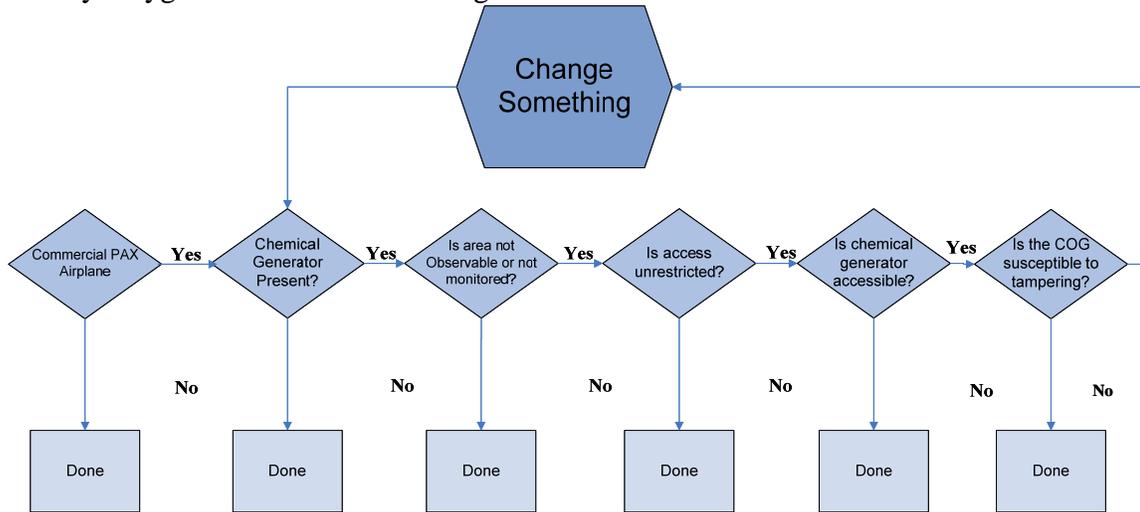
The implementation group also considered that access to the installed generator for maintenance is necessary, so design solutions also have to balance the need for maintenance access. Depending on the approach taken, maintenance ramifications could be significant.

Lastly, any ramifications from the findings of the Other Areas FG would have to be factored into implementation planning.

D. Other Areas

The Other Areas FG was formed to characterize the issues that made the lavatory installation a security vulnerability so that other COG installations could be assessed. There are a variety of COG installations, including crew rest compartments, remote galleys, portable breathing equipment and passenger ‘mini suites’. The FG developed the following decision chart to perform that assessment:

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For any particular area, the decision chart would be used to determine whether the design needed to be changed to address a security vulnerability. It should be noted that the ‘change’ might be different than what is done for the lavatory. The FG also developed some guidance for assessing and addressing the various decision points. For example, a crew rest with hard walls could be addressed by limiting access by a locked door with a secured key vs. a crew rest with only curtains could be addressed by keeping the curtains open when not in use. Because the outcome of the assessments might suggest additional vulnerability, this would be considered sensitive security information. Each airframe manufacturer and operator was asked to assess their known installations using the above criteria. Based on the review so far, it appears that there will be at least a few additional installations that will require some level of change to meet the new standards.

E. System Performance

The System Performance FG reviewed the potential effect on system performance, considering the types of security measures under consideration. For example, the rate of chemical reaction is influenced by the operating temperature environment. If the COG is shielded in a way that limits its ability to dissipate heat, it might produce oxygen faster, and therefore for less time. Similarly, if the COG is relocated further from the lavatory, it will delay the delivery of oxygen to the occupant (due to the extra distance the oxygen will travel) by some amount.

After reviewing the probable approaches, the FG concluded that the effect on the system performance, either in duration or initial delivery time would be negligible. A more likely outcome relative to system performance is if the volume available for the COG itself is reduced due to shielding etc., given that the overall volume available is very limited. In that case, using the current methods of defining acceptable quantities of oxygen, a reduced supply could result.

F. Overall ARC Findings

After reviewing the nature of the vulnerability, several design permutations and the constraints on performing modifications to the large fleet of passenger carrying commercial airplanes, the ARC determined that there is not a simple solution.

Furthermore, solutions will require a longer retrofit time than initially anticipated. This is primarily driven by the recommendation to include an active tamper-evidence (alarm) system in conjunction with the addition of any tamper resistance features.

The ARC also notes that there are at present no actual design and operational solutions developed. While the concepts discussed in this report are considered valid, the successful execution of those concepts remains. This is especially significant with respect to the operational protocols necessary to make an active tamper-evidence feature useful.

The ARC has also determined that while the lavatory COG installations are unique in their combination of characteristics that result in the security vulnerability, there could be other installations with a similar vulnerability. Detailed assessments are needed to identify other affected areas.

Utilization of an alternative oxygen supply (e.g., stored gas) may provide the most expeditious retrofit of the fleet, particularly for operators with large fleets. However, stored gas bottles of the same capacity may not fit in the existing COG locations in all cases.

With respect to the need for interim measures, there is general agreement that this depends on the length of time needed to fully restore oxygen to the lavatory. However, there is not full agreement on the acceptable projected length of time lavatories can remain without oxygen, that should trigger use of interim measures. The regulatory, design, implementation and operational considerations are similar to those for a final solution, except for oxygen duration, so adopting an interim measure will effectively temporarily take away resources from developing the final solution. The primary concern is for crewmembers, who may have safety related duties to perform in the event of a decompression, and while they may not be permanently injured, may be unable to effectively perform those duties if not provided with supplemental oxygen.

Using the current ARC estimate of approximately 4 years to complete a retrofit of the fleet, the Association of Flight Attendants believes interim measures are needed. A proposal is provided in Appendix 5.

Finally, while objective standards can be developed to allow multiple design solutions, guidance material on methods of compliance is crucial to the process and will be needed concurrent with the new standards.

IV. Recommendations

Based on its assessment of the vulnerability and the design, certification and implementation constraints, the ARC has the following recommendations.

1. Adopt new standards into part 25, for the secure installation of chemical oxygen generators. Such standards could be added to § 25.795 or § 25.1450, but in any

case should be cross-referenced. See appendix 1 for expanded proposed rule language and preamble.

2. Adopt new requirements into parts 121 and 129 making the new standards in part 25 mandatory for airplanes in service. A 4 year compliance time (from the date of the rule) should allow approximately 2 years for design and certification, and an additional 2 years to perform the retrofit of existing airplanes. This will require that design and development take place in advance of published standards. This schedule is an aggressive schedule, with optimal assumptions. It does not account for slips in the program due to unexpected design or materiel issues. Any unexpected interruptions in the schedule would extend the time needed for retrofit. Operators are concerned that 2 years is not sufficient for design and certification.
3. Issue advisory material that defines key terms and provides methods of compliance (see appendix 2).
4. Issue policy to formally accept alternative Oxygen dosage measurement approaches to reduce the need for special findings on each certification project and thereby shorten the time needed for certification.

V. Proposed Approach for Regulatory and Advisory Material

The following is a proposed approach to the regulatory and advisory material necessary to implement the ARC recommendations.

Amend § 25.1450 to refer to § 25.795

Amend 25.795 to incorporate the actual security standards, applicable to COG installations in general, and not limited to lavatories

Add a new operating requirement, such as § 121.330 to require compliance with the new security standards in § 25.795, after a certain date. This would be applicable to airplanes as defined in AD 2011-04-09 and SFAR 111.

Amend part 129 in a manner similar to part 121.

Modify and supersede SFAR 111 and AD 2011-04-09 as necessary to facilitate COG installations prior the effective/compliance date of the rule, so that AMOCs are not required each time a new installation is approved.

Advisory Material

Definitions: The following terms apply to this standard and should be defined for consistent use while making assessments for acceptable compliance methods.

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- Access
- Alteration
- Activation
- Immediately obvious
- Observable
- Tamper Resistance
- Tamper Evident
- Intervention

In addition, there needs to be criteria for assessing any arbitrary installation to determine whether a vulnerability exists.

Include lists of installations that are considered observable and immediately obvious.

Include figures depicting acceptable concepts of tamper resistance.

Discuss the link between tamper-evidence and the need for crew training/response.

Appendix 1
Draft Regulatory Language

Amend 25.1450 as follows:

* * *
(b)(3) Each chemical oxygen generator installation must meet the requirements of § 25.795[d]

Amend 25.795 as follows:

* * *
Add a new paragraph (d) and re-designate existing paragraphs (d) and (e) as (e) and (f)

(d) Each chemical oxygen generator or its installation must be designed to be secure by meeting one of the following:
(1) Resistance to tampering, or
(2) A combination of tamper resistant and active tamper evident features, or
(3) Installed in a location or manner that any attempt to access the generator would be immediately obvious, or
(4) A combination of approaches captured in paragraphs (1), (2) or (3) of this section that the Administrator finds provides a secure installation.

Add a new 121.330 as follows:

After (a date XX months from the effective date), no person may operate a transport category airplane in passenger-carrying operations unless each chemical oxygen generator installation meets the requirements specified in § 25.795(d) in effect on (the effective date).

Add a new 129.30 as follows:

After (a date XX months from the effective date), no person may operate a transport category airplane, registered in the United States, with a maximum passenger capacity of 20 or greater in passenger-carrying operations unless each chemical oxygen generator installation meets the requirements specified in § 25.795(d) in effect on (the effective date).

Appendix 2

Advisory Material required

Definitions:

- **COG-Chemical Oxygen Generator**
Access - The ability to put ones hands on the COG for the intent of making alterations for a purpose that the COG was not originally designed. This also includes gaining access to the surrounding area next to the surface of the COG
- **Alteration** - The ability to alter or change the configuration of the COG once “Access” has been gained for the purpose of using the COG for other than its intended function.
- **Activation** – To release the firing mechanism of the COG for the purpose of initiating the chemical reaction inside.
- **Immediately Obvious:** A situation where the attempt to gain access to the generator would be readily recognized as suspicious (i.e., prior to gaining “access”).. This would only be in locations with “unrestricted access” that are “observable”.
- **Observable** – The ability of a crew member to see if a person attempts to gain “access” to a COG installation during the course of their normal duties.
- **Tamper Resistance** – The level of deterrence for gaining “Access” to the COG.
- **Tamper Evidence** – A unique and active alert to crew members that someone is trying to gain “access” to the COG and immediate crew intervention is necessary.
 - Active tamper evidence – crew is notified in real time to intervene if tampering is attempted
- **Intervention** - The actions **crew** must take to prevent damage to the aircraft, once an alert is activated indicating that the COG is being tampered with. The time it takes to interact with someone in the lavatory has not been determined however it has been assumed that it will take several minutes to resolve the issue.
- **Unrestricted access** – An area of the cabin that passengers can access without overcoming locks or other mechanical closure means.

Criteria for assessing an installation:

Question Number	Assessment Statement	Response	Assessment Criteria
1.	Is the aircraft under FAA jurisdiction? Determine if/how to address EASA	If no, aircraft is not required to comply to FAA requirements Check for other FCAA requirements.	<ul style="list-style-type: none"> • Operating under 14 CFR 121 or • US-registered and operating under 14CFR part 129, with a maximum passenger capacity of 20 or greater

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		If yes, go to Question 2.	
2.	Is the aircraft a transport category passenger?	If no, the aircraft is compliant. If yes, go to Question 3.	<ul style="list-style-type: none"> • The aircraft is a transport category • Airplane is operating with 20 or greater passengers. • Freighters, and VIP aircraft are not affected by this rule • If part 121 passenger aircraft operator go to question 3
3.	Is a chemical O2 generator (COG) used on the aircraft?	If no, the aircraft is compliant. If yes, go to Question 4.	<ul style="list-style-type: none"> • Check aircraft IPC • Check the maintenance manuals • Review drawing system
4.	Is the chemical generator in an area that is not observable by the crewmembers?	If no, the aircraft is compliant. If yes, go to Question 5.	<ul style="list-style-type: none"> • Observation can be by crewmembers. • Check the area where the COG is installed. Isolated areas such as galleys, lavatories, crew rests, enclosed occupied compartments, lower lobe lavatory complexes are potential areas of concern and require further evaluation: <ul style="list-style-type: none"> • Are crew in the vicinity? • Are there physical barriers between the observer and the area being evaluated? • How great is the distance between the observer and the area being evaluated? • How accessible is the COG? • Curtained areas are also considered potential areas of concern and may require further evaluation (see

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			<p>above)</p> <ul style="list-style-type: none"> Monitoring can be by flight attendants or flight deck crew. Alarms or some other active alerting tamper indication method can be used.
5.	Is access to the chemical O2 not immediately obvious?	If no, the aircraft is compliant. If yes, go to Question 6.	<ul style="list-style-type: none"> Are there locks on doors/access panels? Are tamper resistance fasteners on panels?
6.	Is the chemical O2 generator susceptible to tampering?	If no, the aircraft is compliant. If yes, render the COG inert or remove the COG from the airplane and replace with an acceptable O2 source that isn't a potential threat. Alternatively, revise the design to meet one of the previous conditions to achieve compliance.	<ul style="list-style-type: none"> Check if the COG be compromised in place. Assess the vulnerability of the adjacent materials to contain the compromised device .Assess the ability of the 'compartment' to contain the event. Check if the COG can be removed.

Tamper Evidence and the relationship with crew response. The effectiveness of the tamper evidence system depends on intervention. That is, the 'alarm' by itself does not inhibit the attack. Once an alert is activated indicating that the COG is being tampered with, actions by flight attendants along with any available authorized responders are necessary in order to prevent catastrophic damage to the aircraft. Therefore, there is a critical relationship between the tamper evidence system and training and capability of the crew to respond to it. The time needed to neutralize an adversary in the lavatory may take up to several minutes and depends on several factors.

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The elapsed times required to turn the COG into a weapon and the intervention response times are functions of not only the design features but also many complex and difficult to define human factors-dependent variables, including but not limited to the individual capabilities and numbers of flight attendants/authorized responders relative to the terrorists/accomplices, as well as the extensiveness of the training received.

Appendix 3
Oxygen Generator characteristics

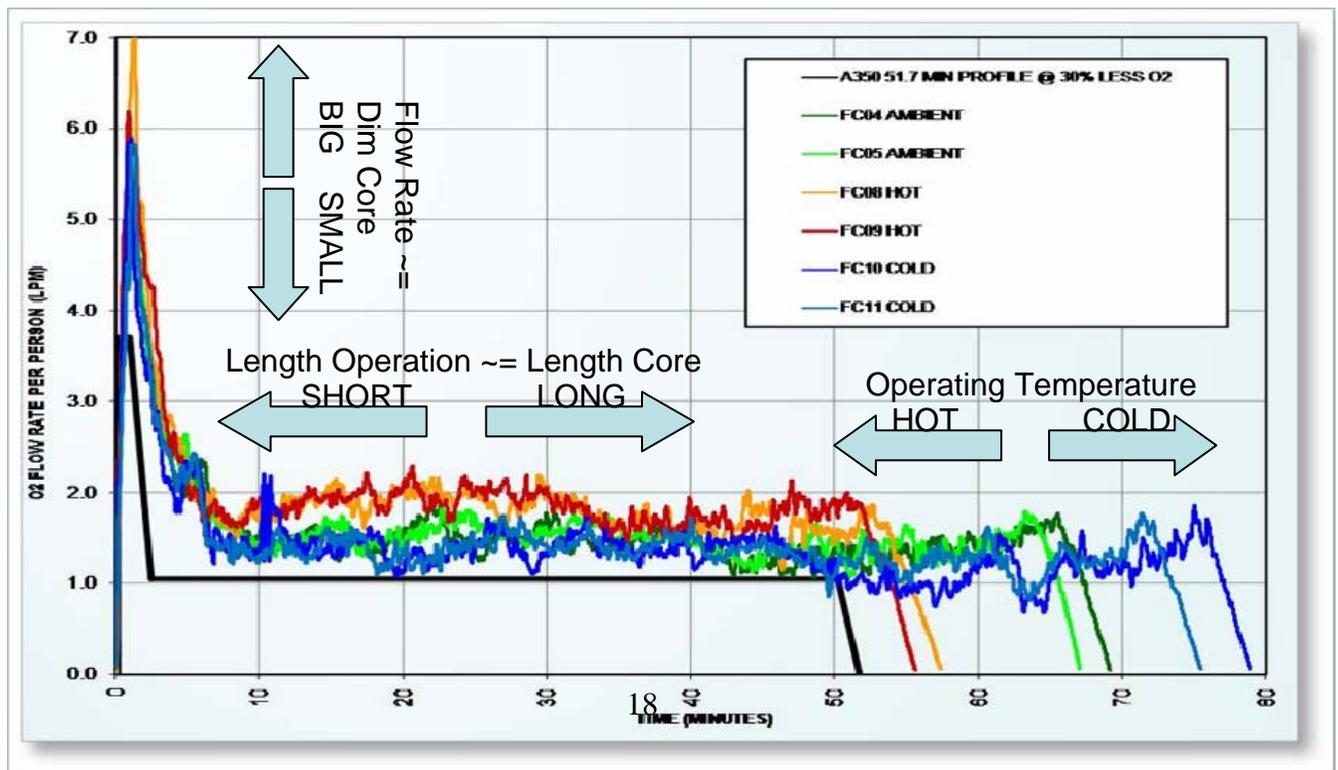
Typical Envelope Dimensions and Weights for 2-person COG

Duration	# Person	Mass (lb/g)		Diameter (in/cm)		Total Length (in/cm)	
12 minute - Spec	2 person	0.95	431	2.50	6.35	8.16	20.73
22 minute - Spec	2 person	2.07	939	1.75	4.45	8.97	22.78
12 minute -Actual	2 person	0.95	431	2.50	6.35	7.45	18.92
22 minute -Actual	2 person	1.49	676	2.75	6.99	8.80	22.35
12 minute -Actual	2 person	0.88	400	2.50	6.35	7.72	19.61
22 minute -Actual	2 person	1.28	580	2.75	6.99	8.83	22.43
12 minute - Dev	2 person	0.62	280	2.00	5.08	8.16	20.73
22 minute - Dev	2 person	0.90	410	2.25	5.72	8.97	22.78

Diameter range: 1.75-2.75

Length range: 7.45-8.97

Typical envelope dimensions for common oxygen generators are depicted in the table above. The “spec” dimensions are design criteria which includes a maximum design weight. The “actual” dimensions are based on actual available designs, while the “Dev” dimensions include oxygen generators that are currently under development. In general, the diameter drives the flow rate, while the length dictates the duration. The total quantity of oxygen is represented by the volume of the COG.



Appendix 4
Draft Implementation Schedules

ARC Implementation Schedule 06/30/2011														
ID	Task Name	Duration	Comments	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	ARC Implementation Group - Mod Schedule -	2093 days	This schedule assumes Mod paperwork and parts are available. See Design group chart for Certification timeline. See Implementation spreadsheet for implementation pro's/oon's for each of the design proposals.	[Gantt bar from Year 1 to Year 8]										
2	1. Tamper Resistance	1570 days		[Gantt bar from Year 1 to Year 6]										
3	Install Tamper resistance screws: In the access panels	261 days	Can be done in an overnight as stand alone	[Gantt bar in Year 1]										
4	Install Tamper resistance screws to secure the O2 canister	261 days	Can be done in an overnight as stand alone	[Gantt bar in Year 1]										
5	Install protective shielding around the O2 canisters with tamper resistance screws	261 days	Can be done in an overnight as stand alone	[Gantt bar in Year 1]										
6	Locate COG on back side of ceiling panel with tamper resistant attaching COG. Additionally, use tamper resistant fasteners to ceiling panel.	1570 days	Cannot be done in an overnight visit	[Gantt bar from Year 1 to Year 6]										
7	Move canisters from the lav area to a remote location	1570 days	Cannot be done in an overnight visit	[Gantt bar from Year 1 to Year 6]										
8	designs that do not incorporate an O2 Generator (New designs, 747 plumbed system).	1570 days	Cannot be done in an overnight visit	[Gantt bar from Year 1 to Year 6]										
9	redesign the plastic access panels to a more resistance type panel (composite, reinforced, etc)	261 days	can be done in an overnight visit	[Gantt bar in Year 1]										
10														
11														
12														

ID	Task Name	Duration	Comments	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
13	2. Tamper Evidence	2093 days		[Gantt bar from Year 1 to Year 8]										
14	Install proximity style switch at the access panel, wired to existing audio/visual cues. Alerts F/A crew only who in turn alert the flight deck	1570 days	cannot be done in an overnight, most likely will require lav removal to accomplish	[Gantt bar from Year 1 to Year 6]										
15	Install proximity style switch at the access panel using independent audio/visual cues. Requires new wiring, power sources, separate audio visual cues and corresponding attachments to existing structure, wire runs, breakers, etc.	1570 days	cannot be done in an overnight, most likely will require lav removal to accomplish	[Gantt bar from Year 1 to Year 6]										
16	Depending on the complexity of tamper evidence, crew/maintenance training could require CBT/Classroom training which could need to be done prior to implementation (i.e. crew responses to an event).	2093 days	UPDATE: If it is determined that additional training such as what was proposed within the securities group is needed, that type of training would need to be done ahead of implementation.	[Gantt bar from Year 1 to Year 8]										
17														
18	3. Gaseous System solution	526 days	Additional work needed for those systems that currently do not meet the FAR/CERT requirements	[Gantt bar from Year 1 to Year 2]										
19	Interim solution - portable bottle brought in by the crew/marshalls/other required personnel	261 days	possibly done in an overnight if retrofit is under 6 hrs downtime. Will require training of personnel prior to implementation	[Gantt bar in Year 1]										

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ID	Task Name	Duration	Comments	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
20	Interim solution - portable bottle stored in existing LOC container	526 days	possibly done in an overnight if retrofit is under 6 hrs downtime per lav. The implementation time could be reduced depending on the various installations combinations.		[Task Bar]									
21	Permanent solution - gaseous system developed to replace existing COG's	526 days	possibly done in an overnight if retrofit is under 6 hrs downtime per lav		[Task Bar]									
22														
23	AD IMPACT	0 days	A review of O2 AD's reveals that there should be no impact on previously accomplished AD's as a result of possible modifications to this system from this effort.		◆ 1/3									
24		0 days	Also note that it is incumbent upon each designer of these new modifications to review any possible conflicts between the new design and previous AD's.		◆ 6/30									

Project: ARC implementation schedule Date: Mon 7/18/11	Task	[Blue Bar]	Milestone	◆	External Tasks	[Grey Bar]
	Split	[Dotted Bar]	Summary	[Thick Arrow]	External Milestone	◆
	Progress	[Black Bar]	Project Summary	[Grey Arrow]	Deadline	↓

Appendix 5
AFA Concept Interim Measure Proposal
Using Airworthiness Directive

Interim Compressed Gas Cylinder Lavatory Oxygen System

The Association of Flight Attendants-CWA is concerned that a lack of supplemental oxygen in lavatories of airplanes affected by airworthiness directive (AD) 2011-04-09 presents a hazard that could compromise the health of crewmembers and thereby jeopardize flight safety. We propose that the Federal Aviation Administration (FAA), on an interim basis, require that all affected airlines install compressed oxygen cylinder systems as temporary replacements for the chemical oxygen generators that were removed or discharged as required by AD 2011-04-09. This proposed action will:

- Achieve the necessary restoration, at minimal cost and development time, of acceptable interim oxygen capability to one person occupying an affected lavatory during a rapid decompression at high flight altitude;
- Allow the required equipment to be installed during overnight stops, avoiding the need to unduly delay retrofits for scheduled maintenance downtimes or require airlines to perform costly unscheduled installations;
- Not re-introduce the “unsafe condition” (security vulnerability) that led the FAA to issue AD 2011-04-09; and
- Provide “breathing space” in the event of unanticipated delays in the development, regulatory approval and final installation of safe, secure, permanent oxygen system capabilities to all affected lavatories.

Small, emergency portable oxygen systems are currently manufactured for aviation use. One example is the Aerox PRO-O² Emergency Oxygen System. This unit, consisting of an aluminum cylinder, flow regulator and mask, is about the size of a 1 pint bottle of water, weighs 1.6 lbs filled and can be used for about 9 minutes from one mask at 3.6 Lpm. Retail cost is approximately \$400 including one mask, regulator and filled bottle. Other units with varying pressures and capacities are available at roughly the same cost (see Table below). Each system may be appropriately modified and adapted for installation in the compartments formerly occupied by charged lavatory chemical oxygen generators disabled as a result of FAA AD 2011-04-09. Based on a personal conversation with the equipment supplier (on July 7, 2011), a two mask regulator (for those infrequent occasions when two persons occupy a lavatory, for example, a parent with a child) with retaining pins could be obtained on short notice.

One unit (comprising a compressed gas cylinder, regulator with tubing and one or two masks and mounting hardware) should be installed in each lavatory. With approximately 20,000 lavatories across an affected fleet of approximately 6000 airplanes (numbers are based on the table labeled “Cost Range per Individual Part 121 Airplane,” FAA/SFAR 111, 76 Federal Register No. 45, p. 12553, March 8, 2011,) total initial oxygen system equipment investment is approximately \$8M.

Lavatory Oxygen Aviation Rulemaking Committee

A draft AD to require timely installation of the proposed lavatory oxygen systems concludes this proposal below:.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0157; Directorate Identifier 2010-NM-261-AD; Amendment 39-16630; AD 2011-xx-yy]

RIN xxxx-yyyy

Airworthiness Directives; Various Transport Category Airplanes Equipped With Chemical Oxygen Generators Installed in a Lavatory

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

ACTION: Final rule; request for comments.

SUMMARY: This document publishes in the Federal Register an amendment to restore acceptable minimum levels of supplemental oxygen in the lavatories of airplanes affected by airworthiness directive (AD) 2011-04-09, which was sent previously by individual notices to the known U.S. owners and operators of affected airplanes identified above. This AD requires installing compressed oxygen cylinder systems as replacements for the chemical oxygen generators that were removed or discharged as required by AD 2011-04-09. This AD was prompted by concerns that a lack of supplemental oxygen presents a hazard that could compromise the health of crewmembers and thereby jeopardize flight safety. We are issuing this AD to eliminate this hazard.

DATES: This AD becomes effective mmmm dd, 2011 to all persons.

We must receive comments on this AD by mmmmm dd, 2011.

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

Lavatory Oxygen Aviation Rulemaking Committee

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Jeff Gardlin, Aerospace Engineer, Cabin Safety Branch, ANM-115, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone 425-227-2136; fax 425-227-1149; e-mail jeff.gardlin@faa.gov;
or

Robert Hettman, Aerospace Engineer, Propulsion and Mechanical Systems Branch, ANM-112, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2683; fax (425) 227-1149; e-mail robert.hettman@faa.gov.

SUPPLEMENTARY INFORMATION: On February 10, 2011, we issued AD 2011-04-09, which applies to certain passenger-carrying transport category airplanes operating in 14 CFR part 121 air carrier service; or U.S.-registered and operating under 14 CFR part 129, with a maximum passenger capacity of 20 or greater; and equipped with any chemical oxygen generator installed in any lavatory.

Background

This AD was prompted by concerns that a lack of supplemental oxygen in lavatories presents a hazard that could compromise the health of crewmembers and thereby jeopardize flight safety. We are issuing this AD to mitigate this hazard.

Related Rulemaking

We are currently planning to issue a special Federal Aviation Regulation (SFAR) to address the regulatory compliance issues resulting from carrying out the actions required by this AD until the type certification and operational rules are modified.

This AD is applicable to U.S.-registered transport category airplanes operating under 14 CFR part 129 as identified in paragraph (c) of this AD. We will monitor actions taken by other airworthiness authorities to implement the requirements of this AD into their own fleets to determine if additional rulemaking actions are necessary.

Action by the State of Design

This AD is applicable to all transport category airplanes identified in paragraph (c) of this AD. For the purposes of the FAA's responsibility to notify other airworthiness authorities of continued airworthiness issues under International Civil Aviation Organization (ICAO) Annex 8, this AD is considered an action by the State of Design for United States products.

Comments Invited

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This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments before it becomes effective. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2011-0157; Directorate Identifier xxxx-NM-yyy-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. 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.

We are issuing this rulemaking under the authority described in subtitle VII, part A, subpart III, section 44701, “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will 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.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979), and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD): **2011-xx-yy Transport Category Airplanes:** Amendment 39-16630. Docket No. FAA-2011-0157; Directorate Identifier xxxx-NM-yyy-AD.

Effective Date

(a) This AD becomes effective mmm dd, 2011, to all persons.

Affected ADs

(b) None.

Applicability

(c) This AD applies to transport category airplanes, in passenger-carrying operations, that have been or would be affected by the requirements of AD 2011-04-09, and are:

(1) Operating under 14 CFR part 121; or

(2) U.S.-registered and operating under 14 CFR part 129, with a maximum passenger capacity of 20 or greater.

Subject

(d) Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 35, Oxygen.

Unsafe Condition

(e) This AD was prompted by concerns that a lack of supplemental oxygen in lavatories presents a hazard that could compromise the health of crewmembers and thereby jeopardize flight safety. We are issuing this AD to mitigate this hazard.

Compliance

(f) Comply with this AD within the compliance times specified, unless already done.

Installation of Interim Compressed Oxygen System

(g) Within 180 days after the effective date of this AD, in the compartment in which a chemical oxygen generator is installed or had been installed in each lavatory affected by AD 2011-04-09, install hardware consisting of one (two) oxygen mask(s) with associated tubing and a compressed oxygen cylinder with attached flow regulator that is of approximately the same size and shape as the chemical oxygen generator that was part of the original system design and that is:

(1) Of an approved type or is in conformity with the manufacturing, packaging, marking, labeling, and maintenance requirements of 49 CFR parts 171, 172, and 173, except §173.24(a)(1);

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- (2) Maintained by the certificate holder in accordance with an approved maintenance program;
- (3) Free of flammable contaminants on all exterior surfaces;
- (4) Capable of providing a minimum mass flow of supplemental oxygen to the user that meets the requirements of 14 CFR 25.1443(c) and provide oxygen for at least xx min;
- (5) Constructed so that all valves, fittings, and gauges are protected from damage; and
- (6) Appropriately secured.

Visually inspect the system to ensure proper activation in the event of a decompression and close the mask dispenser door.

Note 1: Chemical oxygen generators are considered a hazardous material and subject to specific requirements under Title 49 CFR for shipping. Oxygen generators must be expended prior to disposal but are considered a hazardous waste; therefore, disposal must be in accordance with all Federal, State, and local regulations. Expended oxygen generators are forbidden in air transportation as cargo. For more information, contact 1-800-HMR-4922.

Note 2: Design approval holders are not expected to release service instructions for this action.

Compliance with Federal Aviation Regulations

(h) Notwithstanding the requirements of Sections 25.1447, 121.329, 121.333, and 129.13 of the Federal Aviation Regulations (14 CFR 25.1447, 121.329, 121.333, and 129.13), operators complying with this AD are authorized to operate affected airplanes until this action is superseded by other rulemaking.

Parts Installation

(i) After the effective date of this AD, no person may install a chemical oxygen generator in any lavatory on any affected airplane.

Special Flight Permit

(j) Special flight permits, as described in Section 21.197 and Section 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199), are not allowed.

Alternative Methods of Compliance (AMOCs)

(k)(1) The Manager, Transport Standards Staff, ANM-110, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to an individual identified in either paragraph (k)(1)(i) or (k)(1)(ii) of this AD.

(i) Jeff Gardlin, Aerospace Engineer, Cabin Safety Branch, ANM-115, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2136; fax (425) 227-1149; e-mail jeff.gardlin@faa.gov.

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(ii) Robert Hettman, Aerospace Engineer, Propulsion and Mechanical Systems Branch, ANM112, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 980573356; telephone (425) 227-2683; fax (425) 227-1149; e-mail robert.hettman@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector or, lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

Contact Information

(l) For technical information about this AD, contact:

(1) Jeff Gardlin, Aerospace Engineer, Cabin Safety Branch, ANM-115, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2136; fax (425) 227-1149; e-mail jeff.gardlin@faa.gov.

(2) Robert Hettman, Aerospace Engineer, Propulsion and Mechanical Systems Branch, ANM112, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 980573356; telephone (425) 227-2683; fax (425) 227-1149; e-mail robert.hettman@faa.gov.

(m) For FAA Flight Standards information about this AD, contact the manager at your local certificate management office (CMO) or certificate management team (CMT).

Issued in Renton, Washington, on mmmm dd, 2011.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.

Appendix 6

ARC Charter



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ARC Charter

Effective Date:
04/01/11

SUBJ: Lavatory Oxygen Installation Requirements Aviation Rulemaking Committee

1. Purpose of this Charter. This charter creates the Aviation Rulemaking Committee (ARC) for Lavatory Oxygen Installation Requirements according to the authority of the Administrator of the Federal Aviation Administration (FAA) under section 106(p)(5) of Title 49 of the United States Code (49 U.S.C. 106(p)(5)) . This charter also outlines the committee’s organization, responsibilities, and tasks.

2. Audience. This charter applies to members of the Lavatory Oxygen Installation Requirements ARC, including aviation industry organizations and employees within the Office of the Associate Administrator for Aviation Safety. The audience for this charter also includes employees of the Office of Chief Counsel and the Office of Aviation Policy and Plans.

3. Background. The FAA was made aware of a vulnerability associated with chemical oxygen generators installed in lavatories. The FAA investigated this vulnerability and, together with the Transportation Security Administration (TSA) and the Federal Bureau of Investigation (FBI), validated the concern.

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a. The FAA consulted with other States of design for transport category airplanes, as well as four major manufacturers of commercial airplanes regarding the probable course of action. In addition the FAA briefed the security directors of several labor and trade associations prior to taking action.

b. On February 10, 2011, the FAA issued sensitive security airworthiness directive (AD) 2011-04-09 directly to affected operators, that required chemical oxygen generators installed inside lavatories to be rendered inoperative within 21 days. The AD also required that flightcrews be notified that the lavatory oxygen was inoperative, yet the lavatories were still available for crew and passenger use in accordance with the AD. The AD applied to passenger carrying, transport category airplanes in part 121 operation, as well as US-registered transport category airplanes with a passenger capacity of 20 or more, operating in part 129.

c. With the oxygen systems in the lavatories rendered inoperative, the airplane does not comply with the airworthiness standards and operating rules of Title 14, Code of Federal Regulations, sections 25.1447, 119.51, 121.329, 121.333. Therefore, the AD also contained provisions for regulatory relief from those requirements until superseded by further rulemaking.

d. On March 8, 2011, the FAA published a Federal Register version of AD 2011-04-09, as well as Special Federal Aviation Regulation (SFAR) 111. SFAR 111 extended the regulatory relief granted by the AD to manufacturers, modifiers and other applicants for airworthiness certificates, in order to streamline the process for operators to comply with the AD. In addition, the SFAR contained two provisions to help mitigate the lack of oxygen in the lavatory. Operators were required to remove oxygen masks and make sure that, in any event where oxygen masks are deployed, flight attendants make it a priority to check lavatories for occupants.

e. The FAA is now seeking to eliminate the previously identified security concerns with lavatory oxygen systems and restore oxygen in the lavatories in an expeditious manner, without reintroducing the vulnerability that prompted the original AD. There is considerable interest in this action, from the media, general public and aviation user groups. The FAA stated in the SFAR that we would issue further rulemaking to address both concerns.

4. Organization and Administration of the Lavatory Oxygen ARC. We will set up a committee of members of the aviation safety and security community, including airplane oxygen design specialists representing diverse viewpoints. FAA participation and support will come from all affected lines-of-business. Where necessary, the committee may invite additional subject matter experts as needed.

- a. The committee sponsor is the Manager, Transport Airplane Directorate, who:
- (1) Appoints members or organizations to the committee, at his sole discretion;
 - (2) Selects industry and FAA co-chairpersons for the committee;

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- (3) Provides administrative support for the committee, through the Aircraft Certification Service;
- (4) Receives all committee recommendations and reports; and
- (5) At his discretion, determines when and how the committee recommendations and reports of the ARC are released to the public.

b. The co-chairpersons will:

- (1) Determine (with other committee members) when a meeting is required (a quorum is desirable at committee meetings, but not required);
- (2) Arrange notification to all members of the time and place of each meeting;
- (3) Draft an agenda for each meeting and conduct the meeting;
- (4) Keep meeting minutes; and
- (5) Provide status updates to the Manager, Transport Airplane Directorate, at 3 week intervals from the effective date of this charter.

5. Committee Membership. The committee will consist of approximately 20 members, representing airplane manufacturers, oxygen system specialists, FAA and other aviation industry participants. Members will be selected based on their familiarity with oxygen system design and requirements, as well as security considerations. Membership will be balanced in viewpoints, interests, and knowledge of the committee's objectives and scope. Committee membership is limited to promote discussion. Active participation and commitment by members is essential for achieving the committee's objectives. Attendance is essential for continued membership on the committee. The committee may invite additional participants as subject matter experts to support specialized work products.

6. Public Participation. Persons or organizations outside the committee who want to attend a meeting must get approval in advance of the meeting from a committee co-chairperson or designated federal representative.

7. Committee Procedures and Tasks.

a. The committee advises and provides written recommendations to the Manager, Transport Airplane Directorate, ANM-100.

b. Committee tasks include, but are not limited to, the following:

(1) Establishing criteria for in-service, new production and new type design airplanes, preferably in the form of performance standards, for safe and secure installation of lavatory oxygen systems.

(2) Determining whether the same criteria should apply to the existing fleet, to new production and to new type designs.

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(3) Establishing what type of safety assessment approach should be used (e.g., SAE Document ARP5577 or § 25.1309). Define content and procedures of the safety assessment.

(4) Determining whether tamper resistance, active tamper evidence, or different system design characteristics are equivalent options.

(5) Developing guidance as necessary to satisfy the recommended criteria, for each system design characteristic as appropriate.

(6) Considering the pros and cons of different implementation options and recommending a schedule(s) for implementation with the advantages and disadvantages identified.

c. The committee may propose additional tasks as necessary to the Manager, Transport Airplane Directorate, for approval.

d. The ARC will submit a final report detailing recommendations within 3 months from the effective date of this charter. The Manager, Transport Airplane Directorate, may extend this deadline if it is in the interest of the FAA to do so.

8. Cost and Compensation. The estimated cost to the Federal Government of the Lavatory Oxygen ARC is \$60,000, annually. All travel costs for government employees will be the responsibility of the government employee's organization. Non-government representatives serve without government compensation and bear all costs of their committee participation.

9. Availability of Records. Records, reports, agendas, working papers, and other documents made available to, prepared for, or prepared by the committee will be available for public inspection and copying at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA 98057-3356, under the Freedom of Information Act, 5 U.S.C. 552. Fees will be charged for information furnished to the public according to the fee schedule in 49 CFR part 7. Sensitive Security Information that may be utilized as part of this ARC is also governed in 49 CFR part 15.

10. Committee Term. This committee becomes an entity on the effective date of this charter. The committee will remain in existence for a term of 6 months unless its term is ended sooner or extended.

11. Distribution. This charter is distributed to the Director level management in the Office of the Associate Administrator for Aviation Safety, the Office of the Chief Counsel, the Office of Policy, International Affairs, and Environment, and the Office of Rulemaking.

(iv) Loan losses (dollar amount and as a percentage of average portfolio balance) in the aggregate and by subportfolio, including: domestic closed-end first-lien mortgages; domestic junior lien mortgages and home equity lines of credit; commercial and industrial loans; commercial real estate loans; credit card exposures; other consumer loans; and all other loans; and

(v) Pro forma regulatory capital ratios and the tier 1 common ratio and any other capital ratios specified by the Board;

(4) An explanation of the most significant causes for the changes in regulatory capital ratios and the tier 1 common ratio; and

(5) With respect to a stress test conducted pursuant to section 165(i)(2) of the Dodd-Frank Act by an insured depository institution that is a subsidiary of the covered company and that is required to disclose a summary of its stress tests results under applicable regulations, changes in regulatory capital ratios and any other capital ratios specified by the Board of the depository institution subsidiary over the planning horizon, including an explanation of the most significant causes for the changes in regulatory capital ratios.

(c) *Content of results.* (1) The following disclosures required under paragraph (b) of this section must be on a cumulative basis over the planning horizon:

(i) Pre-provision net revenue and other revenue;

(ii) Provision for loan and lease losses, realized losses/gains on available-for-sale and held-to-maturity securities, trading and counterparty losses, and other losses or gains;

(iii) Net income before taxes; and

(iv) Loan losses in the aggregate and by subportfolio.

(2) The disclosure of pro forma regulatory capital ratios, the tier 1 common ratio, and any other capital ratios specified by the Board that is required under paragraph (b) of this section must include the beginning value, ending value, and minimum value of each ratio over the planning horizon.

■ 7. Subparts G and H are removed and reserved.

■ 8. Subparts J through U are added and reserved.

By order of the Board of Governors of the Federal Reserve System, March 4, 2014.

Robert deV. Frierson,
Secretary of the Board.

[FR Doc. 2014-05053 Filed 3-10-14; 8:45 am]

BILLING CODE 6210-01-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA-2012-0812; Amendment No. 25-138]

RIN 2120-AK36

Requirements for Chemical Oxygen Generators Installed on Transport Category Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This final rule amends the type certification requirements for chemical oxygen generators installed on transport category airplanes so the generators are secure and not subject to misuse. This rule increases the level of security for future transport category airplane designs but does not directly affect the existing fleet of those airplanes.

DATES: This action becomes effective *May 12, 2014*.

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

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this action, contact Jeff Gardlin, Airframe and Cabin Safety Branch, ANM-115, Transport Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, Northwest Mountain Region, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone: (425) 227-2136; email: jeff.gardlin@faa.gov.

For legal questions concerning this action, contact Douglas Anderson, Federal Aviation Administration, Office of the Regional Counsel, ANM-7, Northwest Mountain Region, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone: (425) 227-2166; email: douglas.anderson@faa.gov.

SUPPLEMENTARY INFORMATION:

Authority for This Rulemaking

The FAA’s authority to issue regulations 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 final rule 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 minimum standards required in the interest of safety for the design and performance of aircraft; regulations and minimum standards in the interest of safety for inspecting, servicing, and overhauling aircraft; and regulations for other practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it revises the safety standards for design and operation of transport category airplanes.

List of Abbreviations and Acronyms Frequently Used in This Document

AD Airworthiness Directive
ARAC Aviation Rulemaking Advisory Committee
COG Chemical Oxygen Generator
LOARC Lavatory Oxygen Aviation Rulemaking Committee
SFAR Special Federal Aviation Regulation

I. Overview of Final Rule

This final rule adopts new standards for chemical oxygen generators (COG) installed in transport category airplanes. These new standards, based on the recommendations of the Lavatory Oxygen Aviation Rulemaking Committee (LOARC), pertain to future applications for type certificates, address potential security vulnerabilities with COG installations, and provide performance-based options for acceptable methods of compliance.

II. Background

The FAA became aware of security vulnerabilities with certain types of oxygen systems installed inside the lavatories of most transport category airplanes. To address the underlying security issues, the FAA chartered an aviation rulemaking committee (ARC) to make recommendations regarding new standards for oxygen system installations, as well as how to implement those standards.

Specifically, the LOARC was tasked to:

- Establish criteria for in-service, new production and new type design airplanes, preferably in the form of performance standards, for safe and secure installation of lavatory oxygen systems;
- Determine whether the same criteria should apply to the existing fleet and to new production and type designs;
- Establish what type of safety assessment approach should be used, for example, in accordance with Society of Automotive Engineers (SAE)

International Document ARP5577¹ or Title 14, Code of Federal Regulations (14 CFR) 25.1309, as well as define content and procedures of the safety assessment;

- Determine whether tamper resistance, active tamper evidence, or different system design characteristics are equivalent options;
- Develop guidance as necessary to satisfy the recommended criteria for each system design characteristic as appropriate; and
- Consider the advantages and disadvantages of different implementation options and recommend a schedule(s) for implementation.

The LOARC identified five key subjects to focus on to develop its recommendations and fulfill its charter. Those subjects were:

- Design considerations—identifying and characterizing the design constraints and key factors affecting an installation.
- Security standards—identifying the necessary components of a secure installation, in terms of both new designs and for retrofit.
- System performance—identifying the factors that affect system performance in general and how modifications to enhance security might affect system performance.
- Implementation considerations—identifying the major factors to implement the new requirements into the fleet as expeditiously as practicable, as well as assessing how long certain actions will take.
- Other affected areas—characterizing the parameters that resulted in the determination of a security vulnerability for lavatory COG installations and establishing criteria for evaluating other installations against those characteristics.

The ARC submitted its recommendations to the FAA. Those recommendations are the basis for these new standards. On January 9, 2013, the FAA published a notice of proposed rulemaking (NPRM), Notice No. 13–01, entitled Requirements for Chemical Oxygen Generators Installed on Transport Category Airplanes in the *Federal Register* (78 FR 1765). The comment period for the NPRM closed on March 11, 2013. Additional background and historical information is contained in the NPRM. (See the docket for this rulemaking at www.regulations.gov.)

III. Discussion of Public Comments and Final Rule

The FAA received comments from four commenters regarding the NPRM for this final rule. Those commenters were the Association of Flight Attendants, The Boeing Company (hereafter referred to as “Boeing”), Bombardier, and an individual commenter.

Support for the NPRM

The Association of Flight Attendants and Bombardier concurred with the proposal without further comment.

Requests To Revise Applicability

Boeing commented that the proposed rule should be limited to lavatory installations and indicated that this would be consistent with the LOARC’s recommendation. We disagree. The LOARC generalized its recommendations to apply to any COG installation. The effect of these new regulations on any given COG installation will vary. For most interior arrangements, lavatories are the only installation where design changes will be necessary. We did not change this final rule based on this comment.

Boeing proposed that we modify the applicability of the proposed rule to correspond with Airworthiness Directive (AD) 2011–04–09, Amendment 39–16630 (76 FR 12556, March 8, 2011), such that all-cargo airplanes and airplanes operating under Code of Federal Regulations (CFR) parts other than part 121 operations would not be affected. We disagree. While the final rule is intended to address the security of COGs on primarily passenger-carrying airplanes operating under part 121, all types of operations will benefit to some degree. Once installations are defined for an airplane type, the airplane could be operated under any operating regulation and would not require changes. This approach also accommodates future changes in operating requirements by making the COG standards a basic design requirement. Also, § 25.1450 contains a provision that excludes compliance with the new standards for airplanes approved using Special Federal Aviation Regulation (SFAR) 109. We did not change this final rule based on this comment.

An individual commented that the in-service fleet should be modified for any COG installation and not just lavatories. We disagree. The proposed rule did not address in-service airplanes, so adding retrofit requirements would be beyond the scope of the proposal. However, the FAA has taken action to revise COG

installations that have a known unsafe condition by issuing AD 2011–04–09, Amendment 39–16630 (76 FR 12556, March 8, 2011) and AD 2012–11–09, Amendment 39–17072 (77 FR 38000, June 26, 2012). If we identify additional unsafe conditions on in-service airplanes, we will issue additional ADs. We did not change this final rule based on this comment.

The same individual also proposed that the requirements apply to newly-produced airplanes, in addition to new type certificates. We disagree. As discussed above, the FAA has already taken action on installations identified as being potentially unsafe. The referenced ADs apply to newly produced airplanes, as well as existing airplanes. This final rule raises the level of safety for future type certificates, but it is not meant to affect current airplanes in production. We did not change this final rule based on this comment.

Request To Revise Economic Analysis

Boeing commented that if the proposed rule applies to all COG installations, the economic analysis was not accurate, since it assumes there will be little cost impact. We disagree. As previously noted, all COG installations are affected by this final rule, but the vast majority of installations will not require any design changes because they are located where it would be immediately obvious if anyone attempted to access them. In those cases, the installation complies with the rule because of its location and would not require any physical changes to the generator or method of installation. In addition, because this rule applies to new applications for type certification, any design changes to existing approaches that might be needed can readily be accommodated during the design process. Therefore, the economic assessment is valid. We did not change this final rule based on this comment.

Boeing also commented that if the requirements of this rule were imposed as a result of § 21.101, the cost ramifications would be more significant and that this was not accounted for in the economic evaluation. We disagree. It is true that these requirements could be imposed on significant product-level design changes. However, as noted in the “Benefits” discussion of the Type Certification Procedures for Changed Products (65 FR 36244, June 7, 2000) final rule, compliance is required with all later regulations where such compliance will materially contribute to the level of safety.

The provisions of § 21.101 do not require compliance with later requirements under specified

¹ Aerospace Recommended Practice (ARP) 5577, *Aircraft Lightning Direct Effects Certification*, dated September 30, 2002.

circumstances. In particular, where the costs involved would not be commensurate with the safety benefit achieved. Therefore, the incremental costs for changed products have already been justified by the benefits and are not attributable to this final rule.

Accordingly, no change was made to this final rule as a result of this comment.

Comments on Design Considerations

An individual commented on the detailed technical merits any such system should have, as well as the processes necessary to ensure such systems can be maintained and produced. We agree that most of the comments are worthwhile design considerations, but they are beyond the scope of this rulemaking effort, which defines a minimum performance standard for COG installations. The commenter also addressed the economics of product development and marketing, which is also beyond the scope of the notice. We did not change this final rule based on the individual's comments.

Request To Maintain Paragraph Numbering

Boeing suggested that the current paragraph numbering be maintained in the CFR, such that § 25.795(d) is retained as "exceptions." Boeing suggested this would assist future applicants administratively, since the amendment level would not affect which paragraph contained a requirement. We partially agree. While we understand the reason for the comment, an applicant must always specify the certification basis when applying for a design change, so the paragraph numbering should not be an issue. Furthermore, for consistency with existing regulations, a paragraph covering exceptions should come after the substantive requirements of the section. We did not change this final rule based on this comment.

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 (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, 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 (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 final rule.

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

This final rule adopts new standards for future type certificate applications pertaining to COGs installed on transport category airplanes. The new standards are intended to eliminate potential security vulnerabilities. Consequently, the primary benefit of this rule is that air carriers may continue to provide supplemental oxygen to individuals in lavatories during emergencies while ensuring that individuals in lavatories cannot tamper with the supplemental oxygen system.

The rule will affect future certifications, but as the newest certificated airplanes are in compliance with this final rule, these costs are expected to be minimal. The Boeing Model 787 and the Airbus A350 established an acceptable design, or received type certification between 3 and 5 years ago (hence predating this rule). The FAA expects that these systems can be incorporated into future type certificated airplanes at a minimal cost.

Secondly, the "newer" oxygen systems (such as those on the Boeing Model 787 and the Airbus A350) are cost efficient in comparison to the more

traditional COGs.² The "newer" systems weigh less and deliver oxygen more effectively than the traditional COGs. The lesser weight of the materials used to construct the newer systems, combined with a reduction in the amount of oxygen required per passenger, translates into fuel cost savings over an airplane's lifespan.

The design standards for secure oxygen systems apply to future transport category airplane type certificates only. Airplanes currently in production, or already in the existing fleet, are excluded from this rule. Thus, there are no costs to the existing fleet or airplanes in production.

For these reasons this final rule is expected to have a minimal impact with positive net benefits, and a regulatory evaluation was not prepared. The FAA has therefore determined that this final rule is not a "significant regulatory action" as defined in section 3(f) of Executive Order 12866, and is not "significant" as defined in DOT's Regulatory Policies and Procedures.

B. Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (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

² <http://www.businesswire.com/news/home/20050518005123/en/Boeing-Selects-Aerospace-Pulse-Oxygen-System-Outfit>.

factual basis for this determination, and the reasoning should be clear.

The Small Business Administration (SBA) small-entity size standard for aircraft manufacturers is 1,500 employees or less. No U.S. manufacturers of transport category airplanes are small entities; thus, this final rule will not affect small entities, and a regulatory flexibility analysis was not prepared.

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 rulemaking will 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 (Pub. L. 96–39), as amended by the Uruguay Round Agreements Act (Pub. L. 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 final rule and determined that it would improve a safety objective and therefore is not considered an unnecessary obstacle to international trade.

D. 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 \$143.1 million in lieu of \$100 million. This final 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 is no new requirement for information collection associated with this final rule.

F. International Compatibility and Cooperation

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA 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 identified no differences with these regulations.

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.

G. Environmental Analysis

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

V. Executive Order Determinations

A. Executive Order 13132, Federalism

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

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

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

VI. How To Obtain Additional Information

A. Rulemaking Documents

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

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

Copies may also be obtained by sending a request (identified by amendment or docket number of this rulemaking) to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267–9680.

B. Comments Submitted to the Docket

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

C. Small Business Regulatory Enforcement Fairness Act

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

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The Amendments

In consideration of the foregoing, the Federal Aviation Administration amends 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. Amend § 25.795 by redesignating paragraphs (d) and (e) as (e) and (f) respectively, and by adding a new paragraph (d) to read as follows:

§ 25.795 Security considerations.

* * * * *

(d) Each chemical oxygen generator or its installation must be designed to be secure from deliberate manipulation by one of the following:

(1) By providing effective resistance to tampering,

(2) By providing an effective combination of resistance to tampering and active tamper-evident features,

(3) By installation in a location or manner whereby any attempt to access the generator would be immediately obvious, or

(4) By a combination of approaches specified in paragraphs (d)(1), (d)(2) and (d)(3) of this section that the Administrator finds provides a secure installation.

* * * * *

- 3. Amend § 25.1450 by adding a new paragraph (b)(3) to read as follows:

§ 25.1450 Chemical oxygen generators.

* * * * *

(b) * * *

(3) Except as provided in SFAR 109, each chemical oxygen generator installation must meet the requirements of § 25.795(d).

* * * * *

Issued under authority provided by 49 U.S.C. 106(f), 44701(a), and 44703 in Washington, DC, on February 19, 2014.

Michael P. Huerta,
Administrator.

[FR Doc. 2014-05291 Filed 3-10-14; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 39**

[Docket No. FAA-2013-0872; Directorate Identifier 2013-SW-012-AD; Amendment 39-17784; AD 2014-05-11]

RIN 2120-AA64

Airworthiness Directives; Airbus Helicopters (Type Certificate Previously Held by Eurocopter France) (Airbus Helicopters)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for Airbus Helicopters Model AS332C, AS332L, AS332L1, AS332L2, EC225LP, and SA330J helicopters with a certain tail rotor control turnbuckle (turnbuckle) installed. This AD requires inspecting the turnbuckles for corrosion or a crack, and depending on the results, either replacing the turnbuckle or treating the turnbuckle for corrosion. This AD was prompted by a report that a turnbuckle had failed because of corrosion. The actions of this AD are intended to detect corrosion or a crack on a turnbuckle and prevent the failure of a turnbuckle, loss of control of the tail rotor and subsequent loss of control of the helicopter.

DATES: This AD is effective April 15, 2014.

The Director of the Federal Register approved the incorporation by reference of certain documents listed in this AD as of April 15, 2014.

ADDRESSES: For service information identified in this AD, contact Airbus Helicopters, Inc., 2701 N. Forum Drive, Grand Prairie, TX 75052; telephone (972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at <http://www.airbus-helicopters.com/techpub>. You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the European Aviation Safety Agency (EASA) AD, any incorporated-by-reference service information, the economic evaluation,

any comments received, and other information. The street address for the Docket Operations Office (phone: 800-647-5527) is U.S. Department of Transportation, Docket Operations Office, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT:

Robert Grant, Aviation Safety Engineer, Safety Management Group, FAA, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone (817) 222-5110; email robert.grant@faa.gov.

SUPPLEMENTARY INFORMATION:**Discussion**

On October 24, 2013, at 78 FR 63429, the **Federal Register** published our notice of proposed rulemaking (NPRM), which proposed to amend 14 CFR part 39 by adding an AD that would apply to Eurocopter France (now Airbus Helicopters) Model AS332C, AS332L, AS332L1, AS332L2, EC225LP, and SA330J helicopters with a turnbuckle, part number (P/N) 330A27-5031-20, installed. The NPRM proposed to require inspecting the turnbuckles for corrosion or a crack, and depending on the results, either replacing the turnbuckle or treating the turnbuckle for corrosion. The proposed requirements were intended to detect corrosion or a crack on a turnbuckle and prevent the failure of a turnbuckle, loss of control of the tail rotor and subsequent loss of control of the helicopter.

The NPRM was prompted by AD No. 2013-0081, dated March 26, 2013, issued by EASA, which is the Technical Agent for the Member States of the European Union. EASA published AD No. 2013-0081 to correct an unsafe condition for Eurocopter Model SA330J, AS332C, AS332C1, AS332L, AS332L1, AS332L2, EC225LP helicopters equipped with tail rotor control turnbuckles, part number 330A27-5031-20. EASA advises that one of the two turnbuckles installed on the tail rotor's yaw flight control cables failed on a helicopter because of corrosion. The subsequent investigation revealed a lack of Mastinox sealant coating between both sides of the turnbuckle's internal tappings and the interface screws of the end-fitting components of the yaw flight control cables. To address this condition, EASA issued AD No. 2013-0081, which requires repetitive inspections of each turnbuckle and, depending on the results, either replacing the turnbuckle or treating the turnbuckle for corrosion. EASA revised its AD and issued AD No. 2013-0081R1, dated June 20, 2013, to clarify some of the requirements.