DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 91, 119, 121, 125, and 135

[Docket No. 29318; Notice No. 98–12]

RIN 2120–AG35 FAA-98-4458-1

Prohibition on the Transportation of Devices Designed as Chemical Oxygen Generators as Cargo in Aircraft

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM)

SUMMARY: The FAA is proposing to ban. in certain domestic operations, the transportation of devices designed to chemically generate oxygen, including devices that have been discharged and newly manufactured devices that have not yet been charged for the generation of oxygen, with limited exceptions. These devices could, if inadvertently transported when charged, initiate or provide a secondary source of oxygen to fuel a fire. This proposed ban is intended to enhance aviation safety by reducing the risk of human error in recognizing whether such a device is charged or has been discharged.

DATES: Comments must be received on or before October 26, 1998.

ADDRESSES: Comments on this notice may be delivered or mailed. in duplicate, to: U.S. Department of Transportation Dockets, Docket No. FAA-98-29318: 400 Seventh St.. SW., Rm. Plaza 401, Washington. DC 20590. Comments may also be sent electronically to the following internet address: 9–NPRM–CMTS@faa.dot.gov. Comments may **be** filed and/or examined in Room Plaza 401 between 10 a.m. and 5 p.m. **weekdays,** except federal holidays.

FOR FURTHER INFORMATION CONTACT: David L. Catey, Flight Standards Service, Air Transportation Division, AFS-ZOO. Federal Aviation Administration. 800 Independence Ave., Washington, DC 20591. Telephone: (202) 267–8166.

SUPPLEMENTARY **INFORMATION:**

Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such written data. views, or arguments, as they may desire. Comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the proposals in this notice are also invited. Substantive comments should be accompanied by cost estimates. Comments must identify the regulatory docket or notice number and be submitted in duplicate to the Rules Docket address specified **above.**

All comments received, as well as a report summarizing each substantive public contact with FAA personnel on this rulemaking, will be filed in the docket. The docket is available for public inspection before and after the comment closing date.

All comments received on or before the closing date will **be** considered by the Administrator before taking action on this proposed rulemaking. Late-filed comments will be considered to the extent practicable. The proposals contained in this notice may be changed in light of the comments received,

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a pre-addressed. stamped postcard with those comments on which the following statement is made: "Comments to Docket No. 29318." The postcard will be date stamped and mailed to the commenter.

Availability of NPRM

An electronic copy of this document may be downloaded using a modem and suitable communications software from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: 703–321–3339), the Government Printing Office's electronic bulletin board service (telephone: 202–512-1661). or the FAA's Aviation Rulemaking Advisory Committee Bulletin Board service (telephone: 1–800–FAA–ARAC).

Internet users may reach the FAA's webpage at http://www.faa.gov/avr/arm/nprm/nprm.htm or the Government Printing Office's webpage at http://www.access.gpo.gov/nara for access to recently published rulemaking **documents.**

Any person may obtain a copy of this NPRM by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM-I, 800 Independence Avenue, SW.. Washington. DC 20591, or by calling (202) 267–9680. Communications must identify the notice number or docket number of this NPRM.

Persons interested in being placed on the mailing list for future NPRM's should request from the **above** office a copy of Advisory Circular No. 1 1–2A, Notice of Proposed Rulemaking Distribution System, that describes the application procedure.

I. Background

A. Accident Involving Chemical Oxygen Generators

On May 11. 1996, ValuJet flight 592 crashed into an Everglades swamp shortly after takeoff from Miami International Airport, Florida. Both pilots, the three flight attendants. and all 105 passengers were killed. Before the accident. the flight crew reported to air traffic control that it was experiencing smoke in the cabin and cockpit. The evidence indicates that five fiberboard boxes containing as many as 144 chemical oxygen generators. most with unexpended oxidizer cores, and three aircraft wheel/tire assemblies had been loaded in the forward cargo compartment shortly before departure. These items were being shipped as company material. Additionally, some passenger baggage and U.S. mail were loaded into the forward cargo compartment. which had no fire/smoke detection system to alert the cockpit crew of a fire within the compartment. On August 19. 1997. the NTSB issued its aircraft accident report entitled "In-Flight Fire and Impact With Terrain; ValuJet Airlines Flight 592." In that report. the NTSB determined that one of the probable causes of the accident resulted from a fire in the airplane's Class D cargo compartment that was initiated by the actuation of one or more of the chemical oxygen generators being improperly carried as cargo.

B. Incidents Involving Chemical Oxygen Generators

In addition to the ValuJet accident discussed **above.** the FAA and the NTSB have investigated as many as 20 other incidents involving chemical oxygen generators, all caused by either undeclared, improperly packaged, or mishandled units. Fortunately, none of these incidents resulted in loss of life; however, they show the various ways in which chemical oxygen generators can pose dangers. The NTSB's August 19. 1997, accident report on the crash of ValuJet flight 592 also cited the following incidents:

(1) On August 10, 1986. an American Trans Air McDonnell Douglas DC–10–40 arrived without incident at Chicago's O'Hare International Airport: however, after the passengers and crew had deplaned, a fire spread rapidly throughout the entire cabin and destroyed the airplane. The National Transportation Safety Board (NTSB) concluded that the fire started as a result of a mechanic's improper handling of a chemical oxygen generator inside a seatback that was being shipped as company material. (The NTSB

learned as a consequence of this incident that some air carriers were not taking the required precautions when shipping chemical oxygen generators and were not aware that solid-state passenger supplemental chemical oxygen generators were capable of generating high temperatures and were classified as hazardous materials when carried as company material in cargo compartments.)

(2) On February 19. 1988, Eastern Airlines flight 215 carrying 131 passengers and 6 crewmembers experienced a" in-flight fire but reached its destination safely. A chemical oxygen generator. taken out by a flight attendant while assisting a passenger who was complaining of shortness of breath, malfunctioned and was laid aside on the shelf of a beverage cart: it was then covered with a damp linen napkin for cooling. The cart. with the hot oxygen generator. was later put into the forward galley and several minutes later the linen napkin and other material in the galley caught fire. Flight attendants extinguished the fire with halon fire extinguishers.

(3) On November 7. 1992. an air cargo package fire broke out at a Wilson UTC. Inc.. freight-forwarder facility in North Hollywood. CA, where cargo was being loaded into a container that was to have been subsequently loaded onto a Qantas Airways flight. The container was moved to a concrete area where the fire was extinguished. The fire was caused by a chemical oxygen generator being shipped without proper papers. not marked or labeled in accordance with hazardous materials regulations, and not properly assembled.

(4) On September 24. 1993. a burning cargo container was unloaded from an aircraft at a Federal Express facility in Oakland, CA. As with the Wilson UTC incident described above, a chemical oxygen generator had been shipped without proper papers. not marked and labeled in accordance with hazardous materials regulations. and not properly assembled.

(5) On October 2 1, 1994. a box containing 37 chemical oxygen generators caught fire at an Emery Worldwide building in Los Angeles, CA Once again. the box of chemical oxygen generators was found to have been shipped without proper papers. not properly marked and labeled, and not properly assembled and packaged.

(6) On January 26. 1996. an undeclared shipment of 11 chemical oxygen generators was discovered during the loading of a" America West aircraft in Las Vegas. NV. A maintenance technician noticed partially obscured hazardous materials labels and opened the package to discover the chemical oxygen generators, packed at random, most with their actuating devices in the firing position. one with no retaining pin inserted.

(7) On April 12, 1997. one of Continental Airlines' contract maintenance companies shipped seven chemical oxygen generators on Continental flight 190. The chemical oxygen generators were loosely packed in a box containing a life vest and their percussion firing mechanisms were in the "disarmed" position. The shipping papers listed the contents of the box simply as "aircraft parts."

C. National Transportation Safety ***Board (NTSB) Recommendation***

On May 31. 1996. the NTSB issued Recommendation A-96-29. which stated that the Research and Special Projects Administration (RSPA) should, "in cooperation with the Federal Aviation Administration, permanently prohibit the transportation of chemical oxygen generators as cargo on board any passenger or cargo aircraft when the generators have passed their expiration dates, and the chemical core has not bee" depleted." (Class I, Urgent Action)

D. Research and Special Programs Administration (RSPA) Actions

0" May 24, 1996, RSPA published a" interim final rule in the Federal Register (61 FR 26418). which temporarily prohibited the offering for transportation and the transportation of chemical oxygen generators as cargo in passenger-carrying operations. The RSPA interim final rule was adopted as a final rule on December 30, 1996 (61 FR 68952). resulting in the permanent ban on carrying chemical oxygen generators as cargo on all passenger-carrying operations. On the same date. RSPA proposed to limit the carriage of oxidizers. including compressed oxygen. to accessible locations on all-cargo operations, and prohibit such oxidizers from being transported in all passenger-carrying aircraft (61 FR 68955. Dec. 30. 1996).

0" June 5. 1997. RSPA adopted a more specific shipping description for chemical oxygen generators to make it easier for carriers to identify these devices, and also specified additional packaging requirements (see 49 CFR 171.101 (62 FR 30770-30771, June 5, 1997)). If a chemical oxygen generator is shipped with its means of initiation attached, the generator must incorporate at least two positive means of preventing unintentional initiation, and be classed and approved by RSPA. A person who offers a chemical oxygen generator must: (1) Ensure that the generator is offered in conformance with the conditions of the approval: (2) maintain a copy of the approval at each facility where the chemical oxygen generator is packaged; and (3) mark the approval number on the outside of the package (see 49 CFR 171.102, special provision 60 (62 FR 30772. June 5, 1997, and 62 FR 34669, June 27, 1997)). When transported by air (on all-cargo aircraft). a chemical oxygen generator must conform to the provisions of the approval issued by RSPA and be contained in a packaging prepared and originally offered for transportation by the approval holder (see 49 CFR 171.102. special provision A51 (62 FR 30772. June 5. 19'97)).

On August 20. 1997, RSPA published a Supplemental Notice of Proposed Rulemaking (SNPRM) (62 FR 44374) to determine whether the proposed oxidizer prohibition should extend to Classes B and C compartments on passenger-carrying aircraft. RSPA also proposed in the SNPRM to completely prohibit the carriage of chemical oxygen generators that have been discharged ("spent") and to prohibit the carriage of personal-use chemical oxygen generators on passenger-carrying aircraft (see also 61 FR 68955, Dec. 30. 1996).

E. Design of Cargo Compartments Aboard Aircraft

Various features incorporated into the designs of cargo compartments are intended to control or extinguish fires that might occur. Under the Federal Aviation Regulations. cargo compartments in transport category aircraft are classified into five categories. Classes A. B. C, D, and E (14 CFR 25.857). Although the FAA has not classified cargo compartments in non-transport category aircraft, the FAA believes that the same risks also apply to compartments in non-transport category aircraft that share similar design features. It should be noted that none of the compartments are designed to control fires fueled by chemical oxygen generators. In brief, the five classes of compartments are as follows:

Class A Compartments

A Class A compartment is one which is easily accessible in flight and in which the presence of a fire would be easily discovered by a crewmember.

Class B Compartments

A Class B compartment is one which is completely accessible in flight to a crewmember with a hand held fire extinguisher: from which no hazardous quantities of smoke, flames, or extinguishing agent will enter any

compartment occupied by the crew or passengers when the compartment is being accessed: and in which an approved smoke detector or fire detector system is installed.

Class c compartments

A Class C compartment is not accessible but has an approved smoke detector or fire detector system, an approved built-in fire-extinguishing system, a means to control ventilation and drafts so that the extinguishing agent can control a fire that starts within the compartment, and a means to exclude hazardous quantities of smoke, flames or extinguishing agent from any compartment occupied by crew or passengers.

Class D Compartments

A Class D compartment is designed to control ventilation and drafts. The compartment volume does not exceed 1,000 cubic feet, and there are means to exclude hazardous quantities of smoke, flames or noxious gases from any compartment occupied by crew or passengers. Its design is intended to confine and control the severity of a fire by limiting air flow. For a compartment of 500 cubic feet (cu. ft.) or less, an air flow of 1500 cu. ft. per hour (three air exchanges per hour) is acceptable. On February 17, 1998, the FAA issued a final rule (63 FR 8032) that requires that compartments designated as Class D on passenger-carrying aircraft used in part 121 operations meet fire detection and suppression standards for Class C compartments as applicable, by the year 2000. In addition. the final rule requires that, for all-cargo part 121 operations. Class D compartments meet at least the detection standards of Class E compartments.

Class E Compartments

A Class E compartment is found on all-cargo aircraft, has an approved smoke or fire detector system, a means to shut off the ventilating airflow. a means to exclude hazardous quantities of smoke, flames or noxious gases from the flight crew compartment. and required crew emergency exits are accessible under any cargo loading condition.

II. Today's Proposed Action

The actions proposed in this notice. in conjunction with RSPA's actions regarding chemical oxygen generators, are responsive to the NTSB's recommendations and are based on FAA's assessment of possible human errors in identifying a device designed as a chemical oxygen generator that is charged versus one that has never bee,, charged or has been previously discharged. The FAA proposes to define a "device designed as a chemical oxygen generator" as a device that: (1) Is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction, regardless of whether the expiration date for the device has passed; (2) has been discharged, and thus has already produced oxygen by chemical reaction. regardless of whether there is residue remaining in the device; and (3) Is newly manufactured but not charged with chemicals for the generation of oxygen. The FAA also proposes to include. in 14 CFR 119.3. the same definition of chemical oxygen generator that is currently found in 14 CFR 25.1450. i.e., "a device which produces oxygen by chemical reaction." The FAA's definition differs slightly from RSPA's, as finalized in its May 24, 1996 interim final rule (61 FR 26418). which defines an oxygen generator (chemical) as " a device containing chemicals that upon activation release oxygen as a product of chemical reaction." Although worded slightly differently. the FAA does not view these definitions as being in direct conflict, Nevertheless, the FAA requests comments as to whether the inclusion of the part 25 definition of chemical oxygen generator in § 119.3 causes confusion for air carriers and hazardous materials shippers/offerors.

The FAA is very concerned about the possibility of the packaging of a device designed as a chemical oxygen generator being mismarked because of the hazards posed by such devices. In certain circumstances, devices designed as chemical oxygen generators can initiate fires on aircraft. Even in cases where they are shipped in accordance with the Hazardous Materials Regulations (HMR's) (49 CFR parts 171-180) and do not actually start a fire, their presence may contribute to the severity of a fire by providing a secondary source of oxygen not otherwise present. Therefore, the FAA believes that the transportation of these items poses an unacceptable risk in both domestic (I) passenger-carrying operations conducted under 14 CFR parts 91, 121, 125. and 135. and (2) all-cargo operations conducted under 14 CFR parts 91. 121, 125, and 135 when those items are transported in cargo compartments that are not equipped with fire/smoke detection systems. The prohibition would not. however, extend to those devices designed as chemical oxygen generators that are installed in an aircraft to conform with aircraft type-certification requirements or are present to conform with. or permitted to be carried under, FAA operating rules for a particular flight.

The FAA notes that the proposed prohibition on the carriage of devices designed as chemical oxygen generators would overlap, in some instances. with RSPA's final and proposed hazardous materials regulations. The FAA would not charge a person with the same violation of both FAA's and RSPA's rules to enhance the sanction sought. Accordingly. the FAA would not seek more than a single civil penalty for any one violation; however, there are situations in which two sanctions for a violation might be appropriate. For example, a violation might warrant remedial certificate suspension or revocation because a certificate holder's qualifications to hold a certificate might be at issue. At the same time, a civil penalty for that violation might also be warranted.

A. Passenger-Carrying Operations

The FAA proposes to ban the transportation of any device designed as a chemical oxygen generator aboard domestic passenger-carrying aircraft conducting operations under parts 91, 121. 125,and 135 of the Federal Aviation Regulations. The ban would also apply to any person who carries or acts in any manner that could result in the carriage (shipment) of devices that are the subject of the proposed ban; therefore, any person who attempts to offer such devices for carriage on board a domestic aircraft, even if not successful, would be in violation of the prohibition.

Devices designed as chemical oxygen generators can produce a secondary source of oxygen not otherwise present aboard an aircraft. A fire in an oxygen-enriched environment increases the risk that control of the aircraft will be lost. This may be caused by damage to the aircraft's flight control cables, hydraulic systems. or electrical systems. In addition, compared to a fire that is not in an oxygen-enriched environment. a fire that is fed by a secondary source of oxygen increases the risk that the flames and resultant toxic fumes and smoke will cause injuries or death. The heat generated from charged and activated chemical oxygen generators. including what is sometimes referred to as "hotel oxygen" or "executive emergency oxygen kits." could cause a fire to start in clothing. paper, and other items that might be carried near these devices. Even if these devices do not initiate a fire. they could become involved in a fire started elsewhere and feed the fire with o gen.

The ? AA believes that for passenger-carrying operations, the most prudent

thing to do is to ban, in the cabin and in all cargo compartments. the carriage of devices designed as chemical oxygen generators. These devices would be banned in both the cargo areas and cabins of passenger-carrying aircraft operated under parts 91. 121. 125. and 135 of the Federal Aviation Regulations, unless those devices were installed in that aircraft for the aircraft to be in conformity with aircraft type-certification or are otherwise permitted to be carried under FAA operating rules for that particular flight.

This proposed rule supplements RSPA's December 30. 1997 final rule (61 FR 68952) prohibiting chemical oxygen generators from being shipped as cargo aboard aircraft engaged in passenger operations. Specifically, the proposed rule applies to devices designed as chemical oxygen generators: therefore, this proposed ban applies to devices that are newly manufactured but are not charged with chemicals for the generation of oxygen. The FAA believes that these devices might be manufactured in one location and transported to another location to be charged. This could lead to human errors in determining whether the device designed as a chemical oxygen generator has been charged. The FAA specifically requests comments on whether these devices are manufactured in one location, but charged in another location.

The proposed ban would also apply to fully charged devices that contain a chemical or chemicals that produce oxygen by chemical reaction. Although the prohibition of fully charged devices is similar to RSPA's final prohibition (61 FR 68952). the FAA believes that it is necessary to include it in this rulemaking so as to avoid the confusion of an operator having to consult two different sets of regulations to determine whether fully charged chemical oxygen generators are banned from passenger-carrying operations.

The FAA's proposed ban also would apply to devices designed as chemical oxygen generators that have been discharged and have only some residue remaining or have had all of the chemicals consumed in the generation of oxygen (spent chemical oxygen generators) in both passenger-carrying and all-cargo operations under parts 9 1. 121. 125, and 135. The FAA believes that there would be an increase in safety by banning all chemical oxygen generators in passenger-carrying operations. even if those devices are believed to have been previously discharged. From reports about the ValuJet accident, it appears that some people might have believed that the chemical oxygen generators had been previously discharged, when in fact they had not. While it may be true that a chemical oxygen generator that has been discharged does not present an actual fire or smoke threat to aviation, human errors in assessing whether such devices have been discharged can result in catastrophes. The FAA believes that the public interest in reducing the possibility of this type of human error, which could result in loss of life and property, outweighs any public or private interest in the transportation of devices designed as chemical oxygen generators on passenger-carrying operations conducted by air carriers and other commercial operators.

In addition to the general rationale provided above to support the proposed ban on the transportation of devices designed as chemical oxygen generators. the FAA believes that there is additional rationale to support the ban in specific classes of cargo compartments in transport-category aircraft. Although the FAA has not classified the cargo compartments in non-transport category aircraft, the following discussion and analysis of risks in Classes B, C, and D cargo compartments also applies to cargo compartments in non-transport category aircraft that share similar design features.

Concerns Regarding Class B Compartments

One major concern regarding fires in Class B compartments is that the supplemental oxygen breathing system for passengers is not designed to be a system that would protect them from smoke and fumes. Instead. the supplemental oxygen system for passengers was designed to provide a combination of supplemental oxygen and ambient cabin air for use in emergency depressurization situations. When passengers use the supplemental oxygen system. they continue to inhale some amount of ambient air in the cabin. Dangerous or even fatal levels of smoke and fumes are more likely to develop when a fire is fed by a secondary source of oxygen. and would be inhaled by passengers in such a situation. Thus, a fire fed by a secondary source of oxygen creates additional smoke and fume risks to passengers that would not otherwise be present in fires that are not fed by a secondary source of oxygen.

Another problem is that. although all areas of thk Class B compartment must be accessible to the contents of a hand-held fire extinguisher. devices designed as chemical oxygen generators in such compartments may not be readily accessible and easily removed from the location of the fire. In other words, in a Class B compartment the crewmember might not be able to quickly remove a device designed as a chemical oxygen generator from the fire area because of its size. weight, or location. Even if a halon or water fire extinguisher is present. it may not have a sufficient quantity of halon or water to extinguish a fire that continues to reignite because it is being fed by a secondary source of oxygen.

Concerns Regarding Class C Compartments

Like Class B compartments. Class C compartments may not adequately protect passengers if an oxygen-fed fire exists. The current means of suppression in Class C compartments is halon. Halon, however, will not always suppress an oxygen-fed fire, and thus the FAA believes it would be in the public interest to ban devices designed as chemical oxygen generators from Class C compartments. Additionally. unlike a Class B compartment that a crewmember can enter. a Class C compartment is not accessible to crewmembers. While the design of a Class C cargo compartment can be very effective in fighting most types of fires, the FAA believes that oxygen-fed fires present an unacceptable risk in this environment since a crewmember cannot remove a device designed as a chemical oxygen generator from the area of the fire.

Concerns Regarding Class D Compartments

Class D cargo compartments have the same problems as Class B and Class C compartments. In addition, smoke and fire detection devices are not required in Class D compartments. The first indication of a fire is generally in the form of smoke or fumes entering the cabin or the flight deck. Another initial indication might be that the passengers or crew realize that the passenger compartment floor has become hot. By the time the flight crew realizes that there might be a fire in the Class D compartment, it may be too late to save the aircraft by making an emergency landing. Also. the crew cannot take direct firefighting measures against a fire in a Class D compartment. Even indirect firefighting measures, such as attempting to starve the fire of oxygen by depressurizing the aircraft, will not be effective if a fully charged device designed as a chemical oxygen generator is involved in the fire. Ultimately the safety of the flight depends on the actions of the crew. and time is of the essence. Since entry into a Class D compartment is not possible, and

depressurization of the cabin with passengers is impractical, the only way the crew could save the aircraft would be to land it as soon as possible. and their ability to do so would depend on the availability of a suitable landing site.

B. All-Cargo Operations

The FAA is also proposing to ban the transportation of any device designed as a chemical oxygen generator in domestic, "all-cargo operations" (as defined in 14 CFR 119.3) conducted under parts 91, 121, 125, and 135 of the Federal Aviation Regulations, with limited exceptions. The ban would apply to any person who carries or acts in any manner that would result in the carriage (shipment) of devices that are the subject of the proposed ban. Much of the analysis of the potential dangers of shipping devices designed as chemical oxygen generators and the possibility of human error in passenger-carrying operations also apply to all-cargo operations. Transport-category aircraft used in all-cargo operations often have Class E compartments that are not found in passenger-carrying, transport-category aircraft.

Exception To Allow for the Transportation of Chemical Oxygen Generators in All-Cargo Operations

The FAA is proposing to allow all-cargo operators under 14 CFR parts 91, 121, 125 and 135 ***to carry unexpired*** chemical oxygen generators under certain circumstances in both transport and non-transport category aircraft. This exception to the general prohibition would not. however. permit the carriage of those devices designed as chemical oxygen generators that have previously been discharged or those that are newly manufactured but are not charged for the generation of oxygen. Further. a chemical oxygen generator that has passed its expiration (i.e., time-in-service) date is not eligible for the exception. and thus cannot be carried as cargo in an all-cargo operation. Neither the FAA nor RSPA specify the expiration date for such chemical oxygen generators in their regulations. Rather, the expiration date is established through the aircraft certification process and then incorporated into an operator's aircraft inspection program or, in the case of an air carrier with a continuous airworthiness maintenance program. incorporated into its maintenance time limitations.

This proposed exception differs from RSPA's December 30. 1996 final rule. which would allow the carriage of chemical oxygen generators aboard aircraft used in all-cargo operations, regardless of the expiration date on the generators. This is because RSPA views any chemical oxygen generators. whether expired or unexpired. as having the same inherent risk. The FAA believes, however, that a human performance problem exists that makes the distinction between expired and unexpired generators important. The FAA is concerned that an individual may mistakenly believe that an "expired" chemical oxygen generator is. in effect, no longer a hazard, and thus can be shipped without any of the safeguards imposed by the HMR's. Therefore, to avoid such a mistake, the FAA proposes to ban the shipment of "expired" chemical oxygen generators aboard both passenger and all-cargo operations. Accordingly, if finalized. a person would be in violation of FAA's prohibition if he or she offered "expired" chemical oxygen generators for carriage aboard a domestic all-cargo aircraft, notwithstanding the fact that RSPA's rules permit such carriage. The FAA specifically requests comment on whether the proposed ban on air shipment of "expired" chemical oxygen generators would negatively impact all-cargo operations.

The proposed exception for domestic all-cargo operations is therefore limited to the carriage of ***unexpired*** chemical oxygen generators (i.e.. those that are charged but whose expiration dates have not yet passed), provided that the generators are: (1) Originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)); (2) labeled and loaded In accordance with the HMRs (49 CFR parts 171–180); (3) separated from other cargo before flight: and (4) restricted to the quantity limits specified in the HMR's.

The FAA believes that the proposed exception to the ban in all-cargo operations strikes the appropriate safety balance for the following reasons: (1) requiring packaging by a RSPA Special Provision 60 approval holder. as well as compliance with the HMR labeling and loading requirements for chemical oxygen generators would reduce the likelihood that accidental activation would occur: (2) the separation requirement. which is broader in scope than RSPA's separation requirement, would reduce the likelihood that such generators are placed beside incompatible hazardous materials. as well as other cargo; and (3) the quantity limitation would ensure that excess carriage of these devices on any one flight does not occur. RSPA's regulations provide physical and performance standards for segregating certain incompatible materials. including oxidizing substances, from other hazardous materials on aircraft (49 CFR 175.78). FAA's proposal is broader in scope. however. in that devices designed as chemical oxygen generators would have to be separated from all other cargo before flight, not just other incompatible hazardous materials. The FAA specifically requests comments on this approach.

The FAA recognizes that the crew in an all-cargo part 121 operation would have access to protective breathing equipment (PBE) (both smoke and fume and firefighting), which would enable them to function and survive in a fire, smoke and toxic fume environment for a longer period than the crew in a part 135 operation. This is because part 135 operators are not required to have PBE aboard an aircraft. Therefore, the FAA may consider, for a future rulemaking. the extent to which PBE, such as smoke and fume PBE. should be required for part 135 operators transporting certain hazardous cargo.

The FAA requests comment on whether it would be helpful if both RSPA and FAA were to provide cross-references to each other's respective regulations as they pertain to devices designed as chemical oxygen generators. Such cross-referencing would serve to notify all hazardous materials shippers/offerors as well as aircraft operators that they must comply with both FAA and RSPA regulations when shipping devices designed as chemical oxygen generators. The FAA also requests comment on how best to inform foreign shippers of the FAA restrictions on the carriage of devices designed as chemical oxygen generators on aircraft operated under parts 91, 121. 125 and 135 of the Federal Aviation Regulations.

III. Exceptions for Materials and Devices That Are Required Parts of the Aircraft or That Are Otherwise Required or Permitted To Be Carried Under FAA Operating Rules

The FAA believes that oxygen devices required to be in aircraft as specified in the FAA's certification and operating rules are safe. as they are maintained in accordance with approved maintenance and airworthiness programs, and are essential for the safety of the crew and passengers. Therefore, devices designed as chemical oxygen generators that are installed in aircraft to conform with aircraft type-certification requirements, or are present to conform with. or permitted to be carried under, FAA operating rules for that particular flight are exempt from the proposed ban. This exception for the carriage of devices designed as chemical oxygen generators under the FAA operating rules is

limited to those items that are required for the particular operation flown. so as to preclude operators from pre-positioning such devices in circumvention of the prohibition.

IV. Economic Summary

Proposed and final rule changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic effect of regulatory changes on small entities. Third, the Office of Management and Budget directs agencies to assess the effect of regulatory changes on international trade. In conducting these analyses, the FAA has determined that the proposed rule would generate benefits thatjustify its costs and is not an economically significant regulatory action as defined in Executive Order 12866: however. it is considered significant under the Executive Order and DOT Order 2100.5, Policies and Procedures for Simplification, Analysis. and Review of Regulations, because of the public interest involved. The FAA certifies that this proposed rule. if adopted, will not have a significant impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act because almost no newly manufactured devices designed as chemical oxygen generators are expected to be transported by air. The FAA also certifies that this proposed rule. if adopted, will not constitute a barrier to international trade and does not contain any Federal intergovernmental or private sector mandates; therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply. The Office of Management and Budget (OMB) has reviewed this rule under Executive Order 12866.

Overview

This proposed rule would ban, in certain aircraft. the transportation of devices designed to chemically generate oxygen. including devices that have been discharged and newly manufactured devices that have not yet been charged for the generation of oxygen.

For the following reasons, a shortened regulatory evaluation will be prepared for this proposed rule, which will serve as both the summary and full regulatory evaluation. All but one of the requirements of this proposed rule have been covered and analyzed by the regulatory evaluation prepared for RSPA's supplemental notice of proposed rulemaking (SNPRM) (62 FR 44374, Aug. 20, 1997). A copy of the full regulatory evaluation for that SNPRM is included in the docket for this proposed rule. The one requirement not covered by RSPA's SNPRM represents the proposed ban for newly manufactured devices that have not yet been charged for the generation of oxygen. That is, this proposed rule includes the ban for newly manufactured devices. Since these newly manufactured devices have little or no economic value and are not considered to be time-critical, they are not expected to be shipped by air. Thus. little or no costs (quantitative or qualitative) are expected to be imposed on the U.S. aviation community. These newly manufactured devices are expected to generate only qualitative safety benefits (such benefits will be discussed in more detail below in the benefits section). Therefore, it is for this reason that the evaluation for this proposed rule will only focus on the potential costs and benefits associated with banning the newly manufactured devices on aircraft operators conducting their operations under parts 91, 12 1, 125. and 135.

Costs

The FAA has determined that this proposed rule would not impose any additional costs on the U.S. aviation community. Based on conversations with industry and FAA technical personnel, it is unlikely that the newly manufactured devices would be shipped by air because they have little or no economic value. Oxygen generators go through several stages of processing before becoming a fully functional and valued commodity. Because they are shipped in large quantities and not considered to be time-critical, newly manufactured devices are likely to be shipped by rail and truck to the final processing plant(s) for future use as oxygen generators. While the FAA believes this cost assessment to be reasonably accurate. there is still a small element of uncertainty about coverage of all of the potential costs associated with newly manufactured devices. As the result of this uncertainty, the FAA solicits comments from the aviation community as to accuracy of this assessment. The FAA requests that comments be as detailed as possible and cite or include supporting documentation.

Benefits

This proposed rule is considered to be complementary to RSPA's SNPRM and would generate potential qualitative benefits by ensuring that the enhanced safety benefits of RSPA's SNPRM would be fully realized. This task would be accomplished by reducing the risk of human error in recognizing whether such a device is charged or has been charged, and which could, if inadvertently transported aboard an airplane when charged, initiate or provide a secondary source of oxygen to fuel a fire. While the chance of newly manufactured devices being shipped by air is small, it still could happen in the absence of this proposed ban. Regardless of how small the likelihood may be, this proposed ban would ensure that newly manufactured devices would not be shipped by air: thus, this action would further reduce the chance of mislabeling of oxygen generators due to human error.

V. Initial Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily burdened by government regulations. The RFA requires agencies to review rules that may have a "significant economic impact on a substantial number of small entities."

In terms of regulatory flexibility. the FAA has determined that this proposed rule would not have a significant economic impact on a substantial number of small entities. As stated previously in the cost section of this evaluation, the proposed rule is not expected to impose any compliance costs on those aircraft operators operating under parts 91, 121. 125, and 135.

VI. International Trade Impact Assessment

In accordance with the Office of Management and Budget's memorandum dated March 1983. federal agencies engaged in rulemaking activities are required to assess the effects of regulatory changes on international trade. The FAA finds that the proposed rule would not have a detrimental impact on the trade opportunities for either U.S. firms conducting business abroad or foreign firms conducting business in the United States. This assessment is based on the belief that the proposed rule would not impose any costs on potentially impacted aircraft operators.

VII. Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (the Act). enacted as Pub. L. 104-4 on March 22, 1995. requires each federal agency, to the

extent permitted by law. to prepare a written assessment of the effects of any federal mandate in a proposed or final agency rule that may result in the expenditure by State. local, and tribal governments, in the aggregate, or by the private sector. of $100 million or more (adjusted annually for inflation) in any one year. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a proposed "significant intergovernmental mandate." A "significant intergovernmental mandate" under the Act is any provision in a federal agency regulation that will impose an enforceable duty upon State, local, and tribal governments. in the aggregate. of $100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533. which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments. the agency shall have developed a plan that, among other things, provides for notice to potentially affected small governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory proposals. This proposed rule does not contain any federal intergovernmental mandates. However, it does contain a private sector mandate. Since expenditures by the private sector will not exceed $100 million annually, because little or no costs are imposed by this proposed rule, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

VIII. Federalism Implications

The regulations proposed herein will not have substantial direct effects on the states. on the relationship between the national government and the states, or on the distribution of power and responsibilities among various levels of government. Thus. in accordance with Executive Order 12612. it is determined that this proposal would not have federalism implications warranting the preparation of a Federalism Assessment.

IX. Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), there are no requirements for information collection associated with this proposed rule.

X. International Compatibility

The FAA has reviewed corresponding International Civil Aviation Organization international rules and Joint Aviation Authorities rules and has identified no conflicts between these proposed amendments and the foreign requirements and prohibitions. Moreover, these proposed rules, if adopted. will not apply to foreign operators. Nonetheless. the FAA seeks comment on whether there are any differences between the proposed rules and any corresponding ICAO standards.

XI. Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the Federal Aviation Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying 14 CFR in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish such regulatory distinctions as he or she considers appropriate. Because this proposed rule would apply to the operation of both transport and non-transport category airplanes under 14 CFR parts 91. 121. 125, and 135, it could, if adopted, affect intrastate aviation in Alaska. The FAA therefore specifically requests comments on whether there is Justification for applying the proposed rule differently to intrastate operations in Alaska.

List of Subjects

14 CFR Part 91

Aircraft, Airmen, Aviation Safety.

14 CFR Part 119

Administrative practice and procedure. Air carriers, Aircraft, Aviation safety, Charter flights, Reporting and recordkeeping requirements.

14 CFR Part 121

Air carriers, Aircraft, Airmen, Aviation safety.

14 CFR Part 125

Aircraft. Airmen. Aviation safety.

14 *CFR Part 135*

Air taxis. Aircraft. Aviation safety.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend the Federal Aviation Regulations (14 CFR parts 91, 119. 121. 125. and 135) as follows:

PART 91—GENERAL OPERATING AND FLIGHT RULES

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

Authority: 49 U.S.C. 106(g), 1155, 40103, 40113, 40120, 44101, 44111, 44701, 44712, 44715, 44716, 44717, 44722, 46306, **46315,** 46316, 46504, 46506, 46507, 47122, **47508, 47520, 47531, articles I2 and 29 of the** Convention an International Civil Aviation **(62 stat.** 1180).

2. Amend § 91.1 by adding paragraph (c) to read as follows:

591.1 Applicability.

* * * * *

(c) Each person who carries, or acts in any manner that would result in the carriage of. a device designed as a chemical oxygen generator is required to comply with the prohibitions in § 91.20 of this part.

3. Section 91.20 is added to read as follows:

591.20 Prohibitions on the carriage of devices designed as chemical oxygen generators.

(a) Except as provided in paragraphs (b) and (c) of this section. no person may carry. or act In any manner that could result in the carriage of a device designed as a chemical oxygen generator. as defined in paragraph (d) of this section. This section is not intended to affect a **person's** obligation to comply with 49 CFR 172.101 and 173.21.

(b) For all-cargo operations, an unexpired chemical oxygen generator may be transported if it is originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)), and in accordance with the labeling and loading requirements of the Hazardous Materials Regulations (49 CFR parts 171 through 180), provided-

(1) It is located in a Class B or E cargo compartment. or a compartment that is equipped with a fire/smoke detection system:

(2) It is separated from other cargo before flight; and

(3) The quantity carried does not exceed the quantity limits specified in the Hazardous Materials Regulations (49 CFR parts 171 through 180).

(c) This section does not apply to chemical oxygen generators that are installed to meet aircraft certification requirements or are carried to meet other requirements of this part for that particular flight.

(d) For purposes of this section, a "device designed as a chemical oxygen generator" includes-

(1) A device that is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction. regardless of whether the expiration date for the device has passed:

(2) A device that has been discharged and thus has already produced oxygen by chemical reaction. regardless of whether there is residue remaining in the device; and

(3) A device that is newly manufactured but not charged with chemicals for the generation of oxygen..

PART 119—CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

1. The authority for part 119 continues to read as follows:

Authority: 49 U.S.C. 106(g), 1153, 40101, 40102, 40103, 40113, 44105, 44106, 44111, 44701-44717, 44722, 44901, 44903, 44904, 44906, 44912, 44914, 44936, 44938, 46103, 46105.

2. Section 119.3 is amended by adding the following definition in alphabetical order:

§ 119.3 Definitions.

* * * * *

Chemical oxygen generator means a device that produces oxygen by chemical reaction.

* * * * *

PART 121—OPERATING REQUIREMENTS: DOMESTIC, FLAG, AND SUPPLEMENTAL OPERATIONS

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

Authority: 49 U.S.C. 106(g), 40113, 40119, 44101, 44701-44702, 44705, 44709-44711, 44713, 44716-44717, 44722, 44901, 44903-44904, 44912, 46105.

2. Amend § 12 1.1 by adding paragraph (g) to read as follows:

§ 121.1 Applicability.

* * * * *

(g) Each person who carries, or acts in any manner that would result in the carriage of, a device designed as a chemical oxygen generator is required to comply with the prohibitions in 5121.540.

3. Section 121.540 is **added to read as** follows:

§ 121.540 Prohibitions on the carriage of devices designed as chemical oxygen generators.

(a) Except as provided in paragraphs (b) and (c) of this section, no person may carry. or act in any manner that could result in the carriage of. a device designed as a chemical oxygen generator. as defined in paragraph (d) of this section. This section is not intended to affect a person's obligation to comply with 49 CFR 172.101 and 173.21.

(b) For all-cargo operations, an unexpired chemical oxygen generator may be transported if it is originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)) and in accordance with the labeling and loading requirements of the Hazardous Materials Regulations (49 CFR parts 171 through 180). provided-

(1) It is located in a Class B or E cargo compartment, or a compartment that is equipped with a fire/smoke detection system:

(2) It is separated from other cargo **before** flight: and

(3) The quantity carried does not exceed the quantity limits specified in the Hazardous Materials Regulations (49 CFR parts 171 through 180).

(c) This section does not apply to chemical oxygen generators that are installed to meet aircraft certification requirements or are carried to meet other requirements of this part for that particular flight.

(d) For purposes of this section. a "device designed as a chemical oxygen generator" includes-

(1) A device that is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction, regardless of whether the expiration date for the device has passed;

(2) A device that has been discharged and thus has already produced oxygen by chemical reaction, regardless of whether there is residue remaining in the device: and

(3) A device that is newly manufactured **but** not charged with chemicals for the generation of oxygen.

PART 125—CERTIFICATION AND OPERATIONS: AIRPLANES HAVING A SEATING CAPACITY OF 20 OR MORE PASSENGERS OR A MAXIMUM PAYLOAD CAPACITY OF 6,000 POUNDS OR MORE

1. The authority citation for part 125 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701-44702, 44705, 44710-44711, 44713, 44716-44717.44722.

2. Amend § 125.1 by adding paragraph (d) to read as follows:

9125.1 Applicability.

* * * * *

(d) Each person who carries, or acts in any manner that would result in the carriage of. a device designed as a chemical oxygen generator is required to comply with the prohibitions in § 125.335.

3. Section 125.335 *is* added to read as follows:

§ 125.335 Prohibitions on the carriage of oxidizers and devices designed as or used for the generation of oxygen.

(a) Except as provided in paragraphs (b) and (c) of this section, no person may carry or act in any manner that could result in the carriage of. a device designed as a chemical oxygen generator as defined in paragraph (d) of this section. This section is not intended to affect a person's obligation to comply with 49 CFR 172.101 **and 173.21.**

(b) For all-cargo operations, an unexpired chemical oxygen generator may be transported if it is originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)) and in accordance with the labeling and loading requirements of the Hazardous Materials Regulations (49 CFR parts 171 through 180). provided-

(1) It is located in a Class B or E cargo compartment. or a compartment that is equipped with a fire/smoke detection system.

(2) It is separated from other cargo **before** flight: and

(3) The quantity does not exceed the quantity limits specified in the Hazardous Materials Regulations (49 CFR parts 171 through 180).

(c) This section does not apply to chemical oxygen generators that are installed to meet aircraft certification requirements or are carried to meet other requirements of this part for that particular flight.

(d) For purposes of this section, a "device designed as a chemical oxygen generator" includes—

(1) A device that is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction, regardless of whether the expiration date for the device has passed;

(2) A device that has been discharged and thus has already produced oxygen by chemical reaction regardless of whether there is residue remaining in the device; and

(3) A device that is newly manufactured but not charged with chemicals for the generation of oxygen.

PART 135—OPERATING REQUIREMENTS: COMMUTER AND ON-DEMAND OPERATIONS

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

Authority: 49U.S.C 106(g), **40113,** 44701-44702, 44705, 44709, 44711-44713, 44715-44717.44722.

2. Amend § 135.1 by adding paragraph (e) to read as follows:

5135.1 Applicability.

* * * * *

(e) **Each person who** carries. **or acts** in any manner that would result in the carriage of, a device designed as a chemical oxygen generator is required to comply with the prohibitions in § 135.88.

3. Section 135.88 is added to read as follows:

§ 135.88 Prohibitions on the carriage of devices designed as chemical oxygen generators.

(a) Except as provided in paragraphs (b) and (c) of this section, no person may carry or act in any manner that would result in the carriage of, a device designed as a chemical oxygen generator as defined in paragraph (d) of this section. This section is not intended to affect a person's obligation to comply with 49 CFR 172.101 and 173.21.

(b) For all-cargo operations, an unexpired chemical oxygen generator may be transported if it is originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)) and in accordance with the labeling and loading requirements of the Hazardous Materials Regulations (49 CFR parts 171 through 180). provided-

(1) It is located in a Class B or E cargo compartment or a compartment that is equipped with a fire/smoke detection system:

(2) It is separated from other cargo before flight: and

(3) The quantity carried does not exceed the quantity limits specified in the Hazardous Materials Regulations (49 CFR parts 171 through 180).

(c) This section does not apply to chemical oxygen generators that are installed to meet aircraft certification requirements or are carried to meet other requirements of this part for that particular flight.

(d) For purposes of this section, a "device designed as a chemical oxygen generator" includes-

(1) A device that is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction, regardless of whether the expiration date for the device has passed:

(2) A device that has been discharged and thus has already produced oxygen by chemical reaction, regardless of whether there is residue remaining in the device: and

(3) A device that is newly manufactured but not charged with chemicals for the generation of oxygen.

Issued in Washington, DC on August 21, 1998.

Richard O. Gordon,

Acting Director, Flight Standards Service.

IFR Doc. 98-23010 Filed 8–26–98; 8:45 am]

BILLING CODE 4910–13–P

[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 91, 119, 121, 125, and 135

[Docket No. FAA-1998-4450; Noticr No. 98-13]

RIN 2120-AG35

Prohibition on the Transport&ion of Devices Designed as Chemical Oxygen Generators as Cargo in Aircraft; Correction

AGENCY : Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM); correction.

SUMMARY: This document contains a correction to the NPRM published in the Federal Register (62 FR 45912) on August 27, 1998. The NPRM proposes to ban, in certain domestic operations, the transportation of devices designed to chemically generate oxygen, including devices that have been discharged and newly manufactured devices that have not yet been charged for the generation of oxygen, with limited exceptions.

FOR FURTHER INFORMATION CONTACT: David L. Catey, (202) 267-8166.

9/25/98

Correction of Publication

In proposed rule FR Doc. 98-23010, beginning on page 45912 in the Federal Register issue of August 27, 1998, make the following corrections:

On page 45912, in the first column, in the heading, "[Docket No. 29318; Notice No. 98-12]", should read "[Docket No. FAA-1998-4458; Notice No. 98-13]".

In the ADDRESSES section on page 45912, in the first column, in the fifth line, the docket number "FAA-98-29318", should read 'FAA-1998-4458".

In the Comments Invited section on page 45912, in the second column, last paragraph, first line, "Docket No. 29318", should read "Docket No. FAA-1998-4458".

Issued in Washington, DC on September 18, 1998.

Donald P. Byrne
Assistant Chief Counsel

[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 91, 119, 121, 125, and 135

[Docket No. 29318 ; Notice No. 98-12]

RIN 2120-AG35

Prohibition on the Transportation of Devices Designed as Chemical Oxygen Generators as Cargo in Aircraft

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA is proposing to ban, in certain domestic operations, the transportation of devices designed to chemically generate oxygen, including devices that have been discharged and newly manufactured devices that have not yet been charged for the generation of oxygen, with limited exceptions. These devices could, if inadvertently transported when charged, initiate or provide a secondary source of oxygen to fuel a tire. This proposed ban is intended to enhance aviation safety by reducing the risk of human error in recognizing whether such **a** device is charged or has been discharged.

DATES: Comments must be received on or before [insert date 60 days after date of publication in the Federal Register.]

ADDRESSES: Comments on this notice may be delivered or mailed, in duplicate, to: U.S. Department of Transportation Dockets, Docket No. FAA-98-29318 ; 400 Seventh St., SW., Rm. Plaza 401, Washington, DC 20590. Comments may also be sent

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electronically to the following intemet address: 9-NPRM-CMTS@faa.dot.gov. Comments may be filed and/or examined in Room Plaza 401 between 10 a.m. and 5 p.m. weekdays, except federal holidays.

FOR FURTHER INFORMATION CONTACT: David L. Catey, Flight Standards Service, Air Transportation Division, AFS-200, Federal Aviation Administration, 800 Independence Ave., Washington, .DC 20591. Telephone: (202) 267-8166.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments, as they may desire. Comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the proposals in this notice are also invited. Substantive comments should be accompanied by cost estimates. Comments must identify the regulatory docket or notice number and be submitted in duplicate to the Rules Docket address specified above.

All comments received, as well as a report summarizing each substantive public contact with FAA personnel on this rulemaking, will be tiled in the docket. The docket is available for public inspection before and after the comment closing date.

All comments received on or before the closing date will be considered by the Administrator before taking action on this proposed rulemaking. Late-tiled comments will be considered to the extent practicable. The proposals contained in this notice may be changed in light of the comments received.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a pre-addressed, stamped postcard with

those comments on which the following statement is made: "Comments to Docket No. 293 18." The postcard will be date stamped and mailed to the commenter.

Availability of NPRM

An electronic copy of this document may be downloaded using a modem and suitable communications software from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: 703-321-3339), the Government Printing Office's electronic bulletin board service (telephone: 202-512-166 I), or the FAA's Aviation Rulemaking Advisory Committee Bulletin Board service (telephone: 1-800-FAA-ARAC).

Internet users may reach the FAA's webpage at http://www.faa.gov/avr/arm/nprm/nprm.htm or the Government Printing Office's webpage at http://www.access.gpo.gov/nara for access to recently published rulemaking documents.

Any person may obtain a copy of this NPRM by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM-I, 800 Independence Avenue, SW., Washington, DC 20591, or by calling (202) 267-9680. Communications must identify the noticenumber or docket number of this NPRM.

Persons interested in being placed on the mailing list for future NPRM's should request from the above office a copy of Advisory Circular No. 1 1-2A, Notice of Proposed Rulemaking Distribution System, that describes the application procedure.

I. Background

A. Accident Involving Chemical Oxygen Generators

On May 11, 1996, ValuJet flight 592 crashed into an Everglades swamp shortly after takeoff from Miami International Airport, Florida. Both pilots, the three flight attendants, and all 105 passengers were killed. Before the accident, the flight crew reported to air traffic control that it was experiencing smoke in the cabin and cockpit. The evidence indicates that five fiberboard boxes containing as many as 144 chemical oxygen generators, most with unexpended oxidizer cores, and three aircraft wheel/tire assemblies had been loaded in the forward cargo compartment shortly before departure. These items were being shipped as company material. Additionally, some passenger baggage and U.S. mail were loaded into the forward cargo compartment, which had no tire/smoke detection system to alert the cockpit crew of a tire within the compartment. On August 19, 1997, the NTSB issued its aircraft accident report entitled "In-Flight Fire and Impact With Terrain; ValuJet Airlines Flight 592." In that report, the NTSB determined that one of the probable causes of the accident resulted from a tire in the airplane's Class D cargo compartment that was initiated by the actuation of one or more of the chemical oxygen generators being improperly carried as cargo.

B. Incidents Involving Chemical Oxygen Generators

In addition to the ValuJet accident discussed above, the FAA and the NTSB have investigated as many as 20 other incidents involving chemical oxygen generators, all caused by either undeclared, improperly packaged, or mishandled units. Fortunately, none of these incidents resulted in loss of life; however, they show the various ways in which chemical oxygen generators can pose dangers. The NTSB's August 19, 1997, accident report on the crash of ValuJet flight 592 also cited the following incidents:

(1) On August 10, 1986, an American Trans Air McDonnell Douglas DC-10-40 arrived without incident at Chicago's O'Hare International Airport; however, after the passengers and crew had deplaned, a tire spread rapidly throughout the entire cabin and destroyed the airplane. The National Transportation Safety Board (NTSB) concluded that the tire started as a result of a mechanic's improper handling of a-chemical oxygen generator inside a seatback that was being shipped as company material. (The NTSB learned as a consequence of this incident that some air carriers were not taking the required precautions when shipping chemical oxygen generators and were not aware that solid-state passenger supplemental chemical oxygen generators were capable of generating high temperatures and were classified as hazardous materials when carried as company material in cargo compartments.)

(2) On February 19, 1988, Eastern Airlines flight 21 S carrying 131 passengers and 6 crewmembers experienced an in-flight tire but reached its destination safely. A chemical oxygen generator, taken out by a flight attendant while assisting a passenger who was complaining of shortness of breath, malfunctioned and was laid aside on the shelf of a beverage cart; it was then covered with a damp linen napkin for cooling. The cart, with the hot oxygen generator, was later put into the forward galley and several minutes later the linen napkin and other material in the galley caught tire. Flight attendants extinguished the tire with halon tire extinguishers.

(3) On November 7, 1992, an air cargo package tire broke out at a Wilson UTC, Inc., freight-forwarder facility in North Hollywood, CA, where cargo was being loaded into a container that was to have been subsequently loaded onto a Qantas Airways flight. The container was moved to a concrete area where the tire was extinguished. The tire

was caused by a chemical oxygen generator being shipped without proper papers, not marked or labeled in accordance with hazardous materials regulations, and not properly assembled.

(4) On September 24, 1993, a burning cargo container was unloaded from an aircraft at a Federal Express facility in Oakland, CA. As with the Wilson UTC incident described above, a chemical oxygen generator had been shipped without proper papers, not marked and labeled in accordance with hazardous materials regulations, and not properly assembled.

(5) On October 21, 1994, a box containing 37 chemical oxygen generators caught tire at an Emery Worldwide building in Los Angeles, CA. Once again, the box of chemical oxygen generators was found to have been shipped without proper papers, not properly marked and labeled, and not properly assembled and packaged.

(6) On January 26, 1996, an undeclared shipment of 11 chemical oxygen generators was discovered during the loading of an America West aircraft in Las Vegas, NV. A maintenance technician noticed partially obscured hazardous materials labels and opened the package to discover the chemical oxygen generators, packed at random, most with their actuating devices in the tiring position, one with no retaining pin inserted.

(7) On April 12, 1997, one of Continental Airlines' contract maintenance companies shipped seven chemical oxygen generators on Continental flight 190. The chemical oxygen generators were loosely packed in a box containing a life vest and their percussion tiring mechanisms were in the "disarmed" position. The shipping papers listed the contents of the box simply as "aircraft parts."

C. National Transportation Safety Board (NTSB) Recommendation

On May 31, 1996, the NTSB issued Recommendation A-96-29, which stated that the Research and Special Projects Administration (RSPA) should, "in cooperation with the Federal Aviation Administration, permanently prohibit the transportation of chemical oxygen generators as cargo on board any passenger or cargo aircraft when the generators have passed their expiration dates, and the chemical core has not been depleted." (Class I, Urgent Action)

D. Research and Special Programs Administration (RSPA) Actions

On May 24, 1996, RSPA published an interim final rule in the Federal Register (61 FR 26418). which temporarily prohibited the offering for transportation and the transportation of chemical oxygen generators as cargo in passenger-carrying operations. The RSPA interim final rule was adopted as a final rule on December 30, 1996 (61 FR 68952), resulting in the permanent ban on carrying chemical oxygen generators as cargo on all passenger-carrying operations. On the same date, RSPA proposed to limit the carriage of oxidizers, including compressed oxygen, to accessible locations on ah-cargo operations, and prohibit such oxidizers from being transported in all passenger-carrying aircraft (61 FR 68955, Dec. 30, 1996).

On June 5, 1997, RSPA adopted a more specific shipping description for chemical oxygen generators to make it easier for carriers to identify these devices, and also specified additional packaging requirements (see 49 CFR 171.101 (62 FR 30770-30771, June 5, 1997)). If a chemical oxygen generator is shipped with its means of initiation attached, the generator must incorporate at least two positive means of preventing

unintentional initiation, and be classed and approved by RSPA. A person who offers a chemical oxygen generator must: (1) ensure that the generator is offered in conformance with the conditions of the approval; (2) maintain a copy of the approval at each facility where the chemical oxygen generator is packaged; and (3) mark the approval number on the outside of the package (see 49 CFR 171.102, special provision 60 (62 FR 30772, June 5, 1997, and 62 FR 34669, June 27, 1997)). When transported by air (on all-cargo aircraft), a chemical oxygen generator must conform to the provisions of the approval issued by RSPA and be contained in a packaging prepared and originally offered for transportation by the approval holder (see 49 CFR 171.102, special provision A51 (62 FR 30772, June 5, 1997)).

On August 20, 1997, RSPA published a Supplemental Notice of Proposed Rulemaking (SNPRM) (62 FR 44374) to determine whether the proposed oxidizer prohibition should extend to Classes B and C compartments on passenger-carrying aircraft. RSPA also proposed in the SNPRM to completely prohibit the carriage of chemical oxygen generators that have been discharged ("spent") and to prohibit the carriage of personal-use chemical oxygen generators on passenger-carrying aircraft (see also 61 FR 68955, Dec. 30, 1996).

E. Design of Cargo Compartments Aboard Aircraft

Various features incorporated into the designs of cargo compartments are intended to control or extinguish tires that might occur. Under the Federal Aviation Regulations, cargo compartments in transport category aircraft are classified into five categories, Classes A, B, C, D, and E (14 CFR 25.857). Although the FAA has not classified cargo

compartments in non-transport category aircraft, the FAA believes that the same risks also apply to compartments in non-transport category aircraft that share similar design features. It should be noted that none of the compartments are designed to control fires fueled by chemical oxygen generators. In brief, the five classes of compartments are as follows:

Class A Compartments

A Class A compartment is one which is easily accessible in flight and in which the presence of a tire would be easily discovered by a crewmember.

Class B Compartments

A Class B compartment is one which is completely accessible in flight to a crewmember with a hand held fire extinguisher; from which no hazardous quantities of smoke, flames, or extinguishing agent will enter any compartment occupied by the crew or passengers when the compartment is being accessed; and in which an approved smoke detector or fire detector system is installed.

Class C Compartments

A Class C compartment is not accessible but has an approved smoke detector or fire detector system, an approved built-in fire-extinguishing system, a means to control ventilation and drafts so that the extinguishing agent can control a tire that starts within the compartment, and a means to exclude hazardous quantities of smoke, flames or extinguishing agent from any compartment occupied by crew or passengers.

Class D Compartments

A Class D compartment is designed to control ventilation and drafts. The compartment volume does not exceed 1,000 cubic feet, and there are means to exclude hazardous quantities of smoke, flames or noxious gases from any compartment occupied by crew or passengers. Its design is intended to confine and control the severity of a fire by limiting air flow. For a compartment of 500 cubic feet (cu. ft.) or less, an air flow of 1500 cu. ft. per hour (three air exchanges per hour) is acceptable. On February 17, 1998, the FAA issued a final rule (63 FR 8032) that requires that compartments designated as Class D on passenger-carrying aircraft used in part 121 operations meet fire detection and suppression standards for Class C compartments, as applicable, by the year 2000. In addition, the final rule requires that, for all-cargo part 121 operations, Class D compartments meet at least the detection standards of Class E compartments.

Class E Compartments

A Class E compartment is found on ah-cargo aircraft, has an approved smoke or fire detector system, a means to shut off the ventilating airflow, a means to exclude hazardous quantities of smoke, flames or noxious gases from the flight crew compartment, and required crew emergency exits are accessible under any cargo loading condition.

II. Today's Proposed Action

The actions proposed in this notice, in conjunction with RSPA's actions regarding chemical oxygen generators, are responsive to the NTSB's recommendations and are based on FAA's assessment of possible human errors in identifying a device designed as a chemical oxygen generator that is charged versus one that has never been charged or

has been previously discharged. The FAA proposes to define a "device designed as a chemical oxygen generator" as a device that: (1) is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction, regardless of whether the expiration date for the device has passed; (2) has been discharged,' and thus has already produced oxygen by chemical reaction, regardless of whether there is residue remaining in the device; and (3) is newly manufactured but not charged with chemicals for the generation of oxygen. The FAA also proposes to include, in 14 CFR 119.3, the same definition of chemical oxygen generator that is currently found in 14 CFR 25.1450, i.e., "a device which produces oxygen by chemical reaction." The FAA's definition differs slightly from RSPA's, as finalized in its May 24, 1996 interim final rule (61 FR 26418), which defines an oxygen generator (chemical) as " a device containing chemicals that upon activation release oxygen as a product of chemical reaction." Although worded slightly differently, the FAA does not view these definitions as being in direct conflict. Nevertheless, the FAA requests comments as to whether the inclusion of the part 25 definition of chemical oxygen generator in § 119.3 causes confusion for air carriers and hazardous materials shippers/offerors.

The FAA is very-concerned about the possibility of the packaging of a device designed as a chemical oxygen generator being mismarked because of the hazards posed by such devices. In certain circumstances, devices designed as chemical oxygen generators can initiate tires on aircraft. Even in cases where they are shipped in accordance with the Hazardous Materials Regulations (HMR's) (49 CFR parts 171-180) and do not actually start a tire, their presence may contribute to the severity of a tire by providing a secondary source of oxygen not otherwise present. Therefore, the FAA

believes that the transportation of these items poses an unacceptable risk in both domestic (1) passenger-carrying operations conducted under 14 CFR parts 91, 121, 125, and 135, and (2) all-cargo operations conducted under 14 CFR parts 91, 121, 125, and 135 when those items are transported in cargo compartments that are not equipped with tire/smoke detection systems. The prohibition would not, however, extend to those devices designed as chemical oxygen generators that are installed in an aircraft to conform with aircraft type-certification requirements or are present to conform with, or permitted to be carried under, FAA operating rules for a particular flight.

The FAA notes that the proposed prohibition on the carriage of devices designed as chemical oxygen generators would overlap, in some instances, with RSPA's final and proposed hazardous materials regulations. The FAA would not charge a person with the same violation of both FAA's and RSPA's rules to enhance the sanction sought. Accordingly, the FAA would not seek more than a single civil penalty for any one violation; however, there are situations in which two sanctions for a violation might be appropriate. For example, a violation might warrant remedial certificate suspension or revocation because a certificate holder's qualifications to hold a certificate might be at issue. At the same time, a civil penalty for that violation might also be warranted.

A. Passenger-Carrying Operations

The FAA proposes to ban the transportation of any device designed as a chemical oxygen generator aboard domestic passenger-carrying aircraft conducting operations under parts 91, 121, 125, and 135 of the Federal Aviation Regulations. The ban would also apply to any person who carries or acts in any manner that could result in the

carriage (shipment) of devices that are the subject of the proposed ban; therefore, any person who attempts to offer such devices for carriage on board a domestic aircraft, even if not successful, would be in violation of the prohibition.

Devices designed as chemical oxygen generators can produce a secondary source of oxygen not otherwise present aboard an aircraft. A tire in an oxygen-enriched environment increases the risk that control of the aircraft will be lost. This may be caused by damage to the aircraft's flight control cables, hydraulic systems, or electrical systems. In addition, compared to a fire that is not in an oxygen-enriched environment, a fire that is fed by a secondary source of oxygen increases the risk that the flames and resultant toxic fumes and smoke will cause injuries or death. The heat generated from charged and activated chemical oxygen generators, including what is sometimes referred to as "hotel oxygen" or "executive emergency oxygen kits," could cause a tire to start in clothing, paper, and other items that might be carried near these devices. Even if these devices do not initiate a fire, they could become involved in a tire started elsewhere and feed the tire with oxygen.

The FAA believes that for passenger-carrying operations, the most prudent thing to do is to ban, in the cabin and in all cargo compartments, the carriage of devices designed as chemical oxygen generators. These devices would be banned in both the cargo areas and cabins of passenger-carrying aircraft operated under parts 91, 121, 125, and 135 of the Federal Aviation Regulations, unless those devices were installed in that aircraft for the aircraft to be in conformity with aircraft type-certification or are otherwise permitted to be carried under FAA operating rules for that particular flight.

This proposed rule supplements RSPA's December 30, 1997 final rule (61 FR 68952) prohibiting chemical oxygen generators from being shipped as cargo aboard aircraft engaged in passenger operations. Specifically, the proposed rule applies to devices designed as chemical oxygen generators; therefore, this proposed ban applies to devices that are newly manufactured but are not charged with chemicals for the generation of oxygen. The FAA believes that these devices might be manufactured in one location and transported to another location to be charged. This could lead to human errors in determining whether the device designed as a chemical oxygen generator has been charged. The FAA specifically requests comments on whether these devices are manufactured in one location, but charged in another location.

The proposed ban would also apply to fully charged devices that contain a chemical or chemicals that produce oxygen by chemical reaction. Although the prohibition of fully charged devices is similar to RSPA's final prohibition (61 FR 68952), the FAA believes that it is necessary to include it in this rulemaking so as to avoid the confusion of an operator having to consult two different sets of regulations to determine whether fully charged chemical oxygen generators are banned from passenger-carrying operations.

The FAA's proposed ban also would apply to devices designed as chemical oxygen generators that have been discharged and have only some residue remaining or have had all of the chemicals consumed in the generation of oxygen (spent chemical oxygen generators) in both passenger-carrying and ah-cargo operations under parts 91, 121, 125, and 135. The FAA believes that there would be an increase in safety by banning all chemical oxygen generators in passenger-carrying operations, even if those

devices are believed to have been previously discharged. From reports about the ValuJet accident, it appears that some people might have believed that the chemical oxygen generators had been previously discharged, when in fact they had not. While it may be true that a chemical oxygen generator that has been discharged does not present an actual fire or smoke threat to aviation, human errors in assessing whether such devices have been discharged can result in catastrophes. The FAA believes that the public interest in reducing the possibility of this type of human error, which could result in loss of life and property, outweighs any public or private interest in the transportation of devices designed as chemical oxygen generators on passenger-carrying operations conducted by air carriers and other commercial operators.

In addition to the general rationale provided above to support the proposed ban on the transportation of devices designed as chemical oxygen generators, the FAA believes that there is additional rationale to support the ban in specific classes of cargo compartments in transport-category aircraft. Although the FAA has not classified the cargo compartments in non-transport category aircraft, the following discussion and analysis of risks in Classes B, C, and D cargo compartments also applies to cargo compartments in non-transport category aircraft that share similar design features.

Concerns Regarding Class B Compartments--One major concern regarding tires in Class B compartments is that the supplemental oxygen breathing system for passengers is not designed to be a system that would protect them from smoke and fumes. Instead, the supplemental oxygen system for passengers was designed to provide a combination of supplemental oxygen and ambient cabin air for use in emergency depressurization situations. When passengers use the supplemental oxygen system, they continue to

inhale some amount of ambient air in the cabin. Dangerous or even fatal levels of smoke and fumes are more likely to develop when a tire is fed by a secondary source of oxygen, and would be inhaled by passengers in such a situation. Thus, a tire fed by a secondary source of oxygen creates additional smoke and fume risks to passengers that would not otherwise be present in fires that are not fed by a secondary source of oxygen.

Another problem is that, although all areas of the Class B compartment must be accessible to the contents of a hand-held tire extinguisher, devices designed as chemical oxygen generators in such compartments may not be readily accessible and easily removed from the location of the fire. In other words, in a Class B compartment the crewmember might not be able to quickly remove a device designed as a chemical oxygen generator from the fire area because of its size, weight, or location. Even if a halon or water fire extinguisher is present, it may not have a sufficient quantity of halon or water to extinguish a tire that continues to re-ignite because it is being fed by a secondary source of oxygen.

Concerns Regarding Class C Compartments--Like Class B compartments, Class C compartments may not adequately protect passengers if an oxygen-fed fire exists. The current means of suppression in Class C compartments is halon. Halon, however, will not always suppress an oxygen-fed tire, and thus the FAA believes it would be in the public interest to ban devices designed as chemical oxygen generators from Class C compartments. Additionally, unlike a Class B compartment that a crewmember can enter, a Class C compartment is not accessible to crewmembers. While the design of a Class C cargo compartment can be very effective in fighting most types of fires, the FAA believes that oxygen-fed fires present an unacceptable risk in this environment

since a crewmember cannot remove a device designed as a chemical oxygen generator from the area of the fire.

Concerns Regarding Class D Compartments--Class D cargo compartments have the same problems as Class B and Class C compartments. In addition, smoke and tire detection devices are not required in Class D compartments. The first indication of a fire is generally in the form of smoke or fumes entering the cabin or the flight deck. Another initial indication might be that the passengers or crew realize that the passenger compartment floor has become hot. By the time the flight crew realizes that there might be a fire in the Class D compartment, it may be too late to save the aircraft by making an emergency landing. Also, the crew cannot take direct firefighting measures against a fire in a Class D compartment. Even indirect firefighting measures, such as attempting to starve the tire of oxygen by depressutizing the aircraft, will not be effective if a fully charged device designed as a chemical oxygen generator is involved in the fire. Ultimately the safety of the flight depends on the actions of the crew, and time is of the essence. Since entry into a Class D compartment is not possible, and depressurization of the cabin with passengers is impractical, the only way the crew could save the aircraft would be to land it as soon as possible, and their ability to do so would depend on the availability of a suitable landing site.

B. All-Cargo Operations

The FAA is also proposing to ban the transportation of any device designed as a chemical oxygen generator in domestic, "all-cargo operations" (as defined in 14 CFR 119.3) conducted under parts 91, 121, 125, and 135 of the Federal Aviation Regulations,

with limited exceptions. The ban would apply to any person who carries or acts in any manner that would result in the carriage (shipment) of devices that are the subject of the proposed ban. Much of the analysis of the potential dangers of shipping devices designed as chemical oxygen generators and the possibility of human error in passenger-carrying operations also apply to all-cargo operations. Transport-category aircraft used in all-cargo operations often have Class E compartments that are not found in passenger-carrying, transport-category aircraft.

Exception To Allow for the Transportation of Chemical Oxygen Generators in All-Cargo Operations--The FAA is proposing to allow ah-cargo operators under 14 CFR parts 91, 121, 125 and 135 to carry unexpired chemical oxygen generators under certain circumstances in both transport and non-transport category aircraft. This exception to the general prohibition would not, however, permit the carriage of those devices designed as chemical oxygen generators that have previously been discharged or those that are newly manufactured but are not charged for the generation of oxygen. Further, a chemical oxygen generator that has passed its expiration (i.e., time-in-service) date is not eligible for the exception, and thus cannot be carried as cargo in an all-cargo operation. Neither the FAA nor RSPA specify the expiration date for such chemical oxygen generators in their regulations. Rather, the expiration date is established through the aircraft certification process and then incorporated into an operator's aircraft inspection program or, in the case of an air carrier with a continuous airworthiness maintenance program, incorporated into its maintenance time limitations.

This proposed exception differs from RSPA's December 30, 1996 final rule, which would allow the carriage of chemical oxygen generators aboard aircraft used in all-

cargo operations, regardless of the expiration date on the generators. This is because RSPA views any chemical oxygen generators, whether expired or unexpired, as having the same inherent risk. The FAA believes, however, that a human performance problem exists that makes the distinction between expired and unexpired generators important. The FAA is concerned that an individual may mistakenly believe that an "expired' chemical oxygen generator is, in effect, no longer a hazard, and thus can be shipped without any of the safeguards imposed by the HMR's. Therefore, to avoid such a mistake, the FAA proposes to ban the shipment of "expired" chemical oxygen generators aboard both passenger and all-cargo operations. Accordingly, if finalized, a person would be in violation of FAA's prohibition if he or she offered "expired" chemical oxygen generators for carriage aboard a domestic all-cargo aircraft, notwithstanding the fact that RSPA's rules permit such carriage. The FAA specifically requests comment on whether the proposed ban on air shipment of "expired" chemical oxygen generators would negatively impact all-cargo operations.

The proposed exception for domestic all-cargo operations is therefore limited to the carriage of unexpired chemical oxygen generators (i.e., those that are charged but whose expiration dates have not yet passed), provided that the generators are: (1) originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)); (2) labeled and loaded in accordance with the HMRs (49 CFR parts 171-l 80); (3) separated from other cargo before flight; and (4) restricted to the quantity limits specified in the HMR's.

The FAA believes that the proposed exception to the ban in all-cargo operations strikes the appropriate safety balance for the following reasons: (1) requiring packaging

by a RSPA Special Provision 60 approval holder, as well as compliance with the HMR labeling and loading requirements for chemical oxygen generators would reduce the likelihood that accidental activation would occur; (2) the separation requirement, which is broader in scope than RSPA's separation requirement, would reduce the likelihood that such generators are placed beside incompatible hazardous materials, as well as other cargo; and (3) the quantity limitation would ensure that excess carriage of these devices on any one flight does not occur. RSPA's regulations provide physical and performance standards for segregating certain incompatible materials, including oxidizing substances, from other hazardous materials on aircraft (49 CFR 175.78). FAA's proposal is broader in scope, however, in that devices designed as chemical oxygen generators would have to be separated from all other cargo before flight, not just other incompatible hazardous materials. The FAA specifically requests comments on this approach.

The FAA recognizes that the crew in an all-cargo part 121 operation would have access to protective breathing equipment (PBE) (both smoke and fume and firefighting), which would enable them to function and survive in a tire, smoke and toxic fume environment for a longer period than the crew in a part 135 operation. This is because part 135 operators are not required to have PBE aboard an aircraft. Therefore, the FAA may consider, for a future rulemaking, the extent to which PBE, such as smoke and fume PBE, should be required for part 135 operators transporting certain hazardous cargo.

The FAA requests comment on whether it would be helpful if both RSPA and FAA were to provide cross-references to each other's respective regulations as they pertain to devices designed as chemical oxygen generators. Such cross-referencing would serve to notify all hazardous materials shippers/offerors as well as aircraft

operators that they must comply with both FAA and RSPA regulations when shipping devices designed as chemical oxygen generators. The FAA also requests comment on how best to inform foreign shippers of the FAA restrictions on the carriage of devices designed as chemical oxygen generators on aircraft operated under parts 91, 121, 125 and 135 of the Federal Aviation Regulations.

III. Exceptions for Materials and Devices That Are Required Parts of the Aircraft or That Are Otherwise Required or **Permitted to be Carried Under FAA Operating Rules**

The FAA believes that oxygen devices required to be in aircraft as specified in the FAA's certification and operating rules are safe, as they are maintained in accordance with approved maintenance and airworthiness programs, and are essential for the safety of the crew and passengers Therefore, devices designed as chemical oxygen generators that are installed in aircraft to conform with aircraft type-certification requirements, or are present to conform with, or permitted to be carried under, FAA operating rules for that particular flight are exempt from the proposed ban. This exception for the carriage of devices designed as chemical oxygen generators under the FAA operating rules is limited to those items that are required for the particular operation flown, so as to preclude operators from pre-positioning such devices in circumvention of the prohibition.

IV. Economic Summary

Proposed and final rule changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that each Federal agency shall

propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic effect of regulatory changes on small entities. Third, the Office of Management and Budget directs agencies to assess the effect of regulatory changes on international trade. In conducting these analyses, the FAA has determined that the proposed rule would generate benefits that justify its costs and is not an economically significant regulatory action as defined in Executive Order 12866; however, it is considered significant under the Executive Order and DOT Order 2100.5, Policies and Procedures for Simplification, Analysis, and Review of Regulations, because of the public interest involved. The FAA certifies that this proposed rule, if adopted, will not have a significant impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act because almost no newly manufactured devices designed as chemical oxygen generators are expected to be transported by air. The FAA also certifies that this proposed rule, if adopted, will not constitute a barrier to international trade and does not contain any Federal intergovernmental or private sector mandates; therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply. The Office of Management and Budget (OMB) has reviewed this rule under Executive Order 12866.

Overview

This proposed rule would ban, in certain aircraft, the transportation of devices designed to chemically generate oxygen, including devices that have been discharged and newly manufactured devices that have not yet been charged for the generation of oxygen.

For the following reasons, a shortened regulatory evaluation will be prepared for this proposed rule, which will serve as both the summary and full regulatory evaluation. All but one of the requirements of this proposed rule have been covered and analyzed by the regulatory evaluation prepared for RSPA's supplemental notice of proposed rulemaking (SNPRM) (62 FR 44374, Aug. 20, 1997). A copy of the full regulatory evaluation for that SNPRM is included in the docket for this proposed rule. The one requirement not covered by RSPA's SNPRM represents the proposed ban for newly manufactured devices that have not yet been charged for the generation of oxygen. That is, this proposed rule includes the ban for newly manufactured devices. Since these newly manufactured devices have little or no economic value and are not considered to be time-critical, they are not expected to be shipped by air. Thus, little or no costs (quantitative or qualitative) are expected to be imposed on the US. aviation community. These newly manufactured devices are expected to generate only qualitative safety benefits (such benefits will be discussed in more detail below in the benefits section). Therefore, it is for this reason that the evaluation for this proposed rule will only focus on the potential costs and benefits associated with banning the newly manufactured devices on aircraft operators conducting their operations under parts 91, 121, 125, and 135.

Costs

The FAA has determined that this proposed rule would not impose any additional costs on the U.S. aviation community. Based on conversations with industry and FAA technical personnel, it is unlikely that the newly manufactured devices would be shipped by air because they have little or no economic value. Oxygen generators go through

several stages of processing before becoming a fully functional and valued commodity. Because they are shipped in large quantities and not considered to be time-critical, newly manufactured devices are likely to be shipped by rail and truck to the final processing plant(s) for future use as oxygen generators. While the FAA believes this cost assessment to be reasonably accurate, there is still a small element of uncertainty about coverage of all of the potential costs associated with newly manufactured devices. As the result of this uncertainty, the FAA solicits comments from the aviation community as to accuracy of this assessment. The FAA requests that comments be as detailed as possible and cite or include supporting documentation.

Benefits

This proposed rule is considered to be complementary to RSPA's SNPRM and would generate potential qualitative benefits by ensuring that the enhanced safety benefits of RSPA's SNPRM would be fully realized. This task would be accomplished by reducing the risk of human error in recognizing whether such a device is charged or has been charged, and which could, if inadvertently transported aboard an airplane when charged, initiate or provide a secondary source of oxygen to fuel a tire. While the chance of newly manufactured devices being shipped by air is small, it still could happen in the absence of this proposed ban. Regardless of how small the likelihood may be, this proposed ban would ensure that newly manufactured devices would not be shipped by air; thus, this action would further reduce the chance of mislabeling of oxygen generators due to human error.

V. Initial Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily burdened by government regulations. The RFA requires agencies to review rules that may have a "significant economic impact on a substantial number of small entities."

In terms of regulatory flexibility, the FAA has determined that this proposed rule would not have a significant economic impact on a substantial number of small entities. As stated previously in the cost section of this evaluation, the proposed rule is not expected to impose any compliance costs on those aircraft operators operating under parts 91, 121, 125, and 135.

VI. International Trade Impact Assessment

In accordance with the Office of Management and Budget's memorandum dated March 1983, federal agencies engaged in rulemaking activities are required to assess the effects of regulatory changes on international trade. The FAA finds that the proposed rule would not have a detrimental impact on the trade opportunities for either U.S. firms conducting business abroad or foreign firms conducting business in the United States. This assessment is based on the belief that the proposed rule would not impose any costs on potentially impacted aircraft operators.

VII. Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, requires each federal agency, to the extent permitted by law, to

prepare a written assessment of the effects of any federal mandate in a proposed or final agency rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more (adjusted annually for inflation) in any one year. Section 204(a) of the Act, 2 U.S.C. 1534 (a), requires the federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a proposed "significant intergovernmental mandate." A "significant intergovernmental mandate" under the Act is any provision in a federal agency regulation that will impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of $100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments, the agency shall have developed a plan that, among other things, provides for notice to potentially affected small governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory proposals. This proposed rule does not contain any federal intergovernmental mandates. However, it does contain a private sector mandate. Since expenditures by the private sector will not exceed $100 million annually, because little or no costs are imposed by this proposed rule, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

VIII. Federalism Implications

The regulations proposed herein will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the

distribution of power and responsibilities among various levels of government. Thus, in accordance with Executive Order 12612, it is determined that this proposal would not have federalism implications warranting the preparation of a Federalism Assessment.

IX. Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), there are no requirements for information collection associated with this proposed rule..

X. International Compatibility

The FAA has reviewed corresponding International Civil Aviation Organization international rules and Joint Aviation Authorities rules and has identified no conflicts between these proposed amendments and the foreign requirements and prohibitions Moreover, these proposed rules, if adopted, will not apply to foreign operators. Nonetheless, the FAA seeks comment on whether there are any differences between the proposed rules and any corresponding ICAO standards.

XI. Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the Federal Aviation Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying 14 CFR in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish such regulatory distinctions as he or she considers appropriate. Because this proposed rule would apply to the operation of both transport and non-transport category airplanes under 14 CFR parts 91, 121,125,

and 135, it could, if adopted, affect intrastate aviation in Alaska. The FAA therefore specifically requests comments on whether there is justification for applying the proposed rule differently to intrastate operations in Alaska.

List of Subjects

14 CFR Part 91

Aircraft, Airmen, Aviation Safety

14 CFR Part 119

Administrative practice and procedure, Air carriers, Aircraft, Aviation safety, Charter flights, Reporting and recordkeeping requirements.

14 CFR Part 121

Air carriers, Aircraft, Airmen, Aviation safety.

14 CFR Part 125

Aircraft, Airmen, Aviation safety.

14 CFR Part 135

Air taxis, Aircraft, Aviation safety.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend the Federal Aviation Regulations (14 CFR parts 91, 119, 121, 125, and 135) as follows:

PART 91—GENERAL OPERATING AND FLIGHT RULES

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

Authority: 49 U.S.C. 106(g), 1155, 40103, 40113, 40120, 44101, 44111, 44701, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46504, 46506, 46507, 47122, 47508, 47528, 4753 1, articles 12 and 29 of the Convention on International Civil Aviation (62 stat. 1180).

2. Amend §91.1 by adding paragraph (c) to read as follows::

§ 91.1 Applicability

* * * * *

(c) Each person who carries, or acts in any manner that would result in the carriage of, a device designed as a chemical oxygen generator is required to comply with the prohibitions in 591.20 of this part.

3. Section 91.20 is added to read as follows:

§ 91.20 Prohibitions on the carriage of devices designed as chemical oxygen generators.

(a) Except as provided in paragraphs (b) and (c) of this section, no person may carry, or act in any manner that could result in the carriage of a device designed as a chemical oxygen generator, as defined in paragraph (d) of this section. This section is not intended to affect a person's obligation to comply with 49 CFR 172.101 and 173.21.

(b) For all-cargo operations, an unexpired chemical oxygen generator may be transported if it is originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)), and in accordance with the labeling and loading requirements of the Hazardous Materials Regulations (49 CFR parts 171-180), provided--

(1) It is located in a Class B or E cargo compartment, or a compartment that is equipped with a fire/smoke detection system;

(2) It is separated from other cargo before flight; and

(3) The quantity carried does not exceed the quantity limits specified in the Hazardous Materials Regulations (49 CFR parts 171- 180).

(c) This section does not apply to chemical oxygen generators that are installed to meet aircraft certification requirements or are carried to meet other requirements of this part for that particular flight.

(d) For purposes of this section, a "device designed as a chemical oxygen generator" includes--

(1) A device that is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction, regardless of whether the expiration date for the device has passed;

(2) A device that has been discharged and thus has already produced oxygen by chemical reaction, regardless of whether there is residue remaining in the device; and

(3) A device that is newly manufactured but not charged with chemicals for the generation of oxygen.

PART 119--CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

1. The authority for part 119 continues to read as follows:

Authority: 49 USC. 106(g), 1153, 40101, 40102, 40103, 40113, 44105, 44106, 44111, 44701-44717, 44722, 44901, 44903, 44904, 44906, 44912, 44914, 44936, 44938, 46103, 46105.

2. Section 119.3 is amended by adding the following definition in alphabetical order:

§119.3 Definitions.

* * * * *

Chemical oxygen generator means a device that produces oxygen by chemical reaction.

* * * * *

PART 121--OPERATING REQUIREMENTS: DOMESTIC, FLAG, AND SUPPLEMENTAL OPERATIONS

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

Authority: 49 U.S.C. 106(g), 40113, 40119, 44101, 44701-44702, 44705, 44709-44711, 44713, 44716-44717, 44722, 44901, 44903-44904, 44912, 46105.

2. Amend § 121.1 by adding paragraph (g) to read as follows:

§ 121.1 Applicability

* * * * *

(g) Each person who carries, or acts in any manner that would result in the carriage of, a device designed as a chemical oxygen generator is required to comply with the prohibitions in $12 1.540.

3. Section 12 1.540 is added to read as follows:

§ 121.540 Prohibitions on the carriage of devices designed as chemical oxygen generators.

(a) Except as provided in paragraphs (b) and (c) of this section, no person may carry, or act in any manner that could result in the carriage of, a device designed as a chemical oxygen generator, as defined in paragraph (d) of this section. This section is not intended to affect a person's obligation to comply with 49 CFR 172.101 and 173.2 1.

(b) For all-cargo operations, an unexpired chemical oxygen generator may be transported if it is originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)) , and in accordance with the labeling and loading requirements of the Hazardous Materials Regulations (49 CFR parts 171-180), provided--

(1) It is located in a Class B or E cargo compartment, or a compartment that is equipped with a fire/smoke detection system;

(2) It is separated from other cargo before flight; **and**

(3) The quantity carried does not exceed the quantity limits specified in the Hazardous Materials Regulations (49 CFR parts 171- 180).

(c) This section-does not apply to chemical oxygen generators that are installed to meet aircraft certification requirements or are carried to meet other requirements of this part for **that** particular flight.

(d) For purposes of this section, a "device designed as **a** chemical oxygen generator" includes--

(I) A device that is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction, regardless of whether the expiration date for the device has passed;

(2) A device that has been discharged and thus has already produced oxygen by chemical reaction, regardless of whether there is residue remaining in the device; and

(3) A device that is newly manufactured but not charged with chemicals for the generation of oxygen.

PART 125--CERTIFICATION AND OPERATIONS: AIRPLANES HAVING A SEATING CAPACITY OF 20 OR MORE PASSENGERS OR A MAXIMUM PAYLOAD CAPACITY OF 6,000 POUNDS OR MORE

1. The authority citation for part 125 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701-44702, 44705, 44710-44711, 44713, 44716-44717, 44722.

2. Amend §125.1 by adding paragraph(d) to read as follows:

§ 125.1 Applicability

* * * * *

(d) Each person who carries, or acts in any manner that would result in the carriage **of,** a device designed as a chemical oxygen generator is required to comply with the prohibitions in $125.335.

3. Section 125.335 is added to read as follows:

§ 125.335 Prohibitions on the carriage of oxidizers and devices designed as or used for the generation of oxygen.

(a) Except as provided in paragraphs (b) and (c) of this section, no person may carry, or act in any manner that could result in the carriage of, a device designed as a chemical oxygen generator as defined in paragraph (d) of this section. This section is not intended to affect a person's obligation to comply with 49 CFR 172.10 1 and 173.21.

(b) For all-cargo operations, an unexpired chemical oxygen generator may be transported if it is originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)) , and in accordance with the labeling and loading requirements of the Hazardous Materials Regulations (49 CFR parts 171-180), provided--

(1) It is located in a Class B or E cargo compartment, or a compartment that is equipped with a fire/smoke detection system,

(2) It is separated from other cargo before flight; and

(3) The quantity does not exceed the quantity limits specified in the Hazardous Materials Regulations (49 CFR parts 171- 180).

(c) This section does not apply to chemical oxygen generators that are installed to meet aircraft certification requirements or are carried to meet other requirements of this part for that particular flight.

(d) For purposes of this section, a "device designed as a chemical oxygen generator" includes--

(I) A device that is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction, regardless of whether the expiration date for the device has passed;

(2) A device that has been discharged and thus has already produced oxygen by chemical reaction regardless of whether there is residue remaining in the device; and

(3) A device that is newly manufactured but not charged with chemicals for the generation of oxygen.

PART 135--OPERATING REQUIREMENTS: COMMUTER AND ON-DEMAND OPERATIONS

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

Authority: 49 U.S.C. 106(g), 40113, 44701-44702, 44705, 44709, 4471I-44713, 44715-44717, 44722.

2. Amend § 135.1 by adding paragraph (e) to read as follows:

§ 135.1 Applicability

• * * * *

(e) Each person who carries, or acts in any manner that would result in the carriage of, a device designed as a chemical oxygen generator is required to comply with the prohibitions in $135.88.

3. Section 135.88 is added to read as follows:

§ 135.88 Prohibitions on the carriage of devices designed as chemical oxygen generators.

(a) Except as provided in paragraphs (b) and (c) of this section, no person may carry, or act in any manner that would result in the carriage of, a device designed as a chemical oxygen generator as defined in paragraph (d) of this section. This section is not intended to affect a person's obligation to comply with 49 CFR 172.101 and 173.21.

(b) For all-cargo operations, an unexpired chemical oxygen generator may be transported if it is originally prepared and offered for transportation by a RSPA Special Provision 60 approval holder (49 CFR 172.102(c)), and in accordance with the labeling and loading requirements of the Hazardous Materials Regulations (49 CFR parts 171-180), provided--

(1) It is located in a Class B or E cargo compartment or a compartment that is equipped with a tire/smoke detection system;

(2) It is separated from other cargo before flight; and

(3) The quantity carried does not exceed the quantity limits specified in the Hazardous Materials Regulations (49 CFR parts 171-I 80).

(c) This section does not apply to chemical oxygen generators that are installed to meet aircraft certification requirements or are carried to meet other requirements of this part for that particular flight.

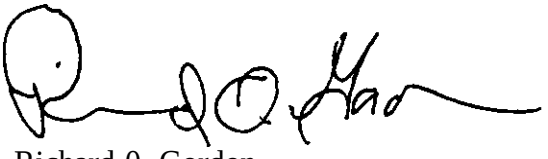
(d) For purposes of this section, a "device designed as a chemical oxygen generator" includes--

(1) **A** device that is charged with or contains a chemical or chemicals that produce oxygen by chemical reaction, regardless of whether the expiration date for the device has passed;

(2) A device that has been discharged and thus has already produced oxygen by chemical reaction, regardless of whether there is residue remaining in the device; and

(3) A device that is newly manufactured but not charged with chemicals for the generation of oxygen.

Issued in Washington, DC on



Richard 0. Gordon,
Acting Director, Flight Standards Service.

U.S. Department
of Transportation

Federal Aviation Administration
Office of Aviation Policy and Plans

Washington, D.C. 20590

PRELIMINARY REGULATORY EVALUATION, INITIAL REGULATORY FLEXIBILITY DETERMINATION, AND TRADE IMPACT ASSESSMENT

PROHIBITION OF OXIDIZERS AND OXIDIZING MATERIALS AS CARGO IN AIRCRAFT

Supplemental Notice of Proposed Rulemaking
(49 CFR Parts 171 and 172)

Prepared by
OPERATIONS REGULATORY ANALYSIS BRANCH, APO-310
for
Research and Special Programs Administration
July 1997

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EXECUTIVE SUMMARY

This regulatory evaluation examines the costs and benefits of the proposed rule to amend 49 CFR parts 171 and 172 that pertain to carriage of oxidizers and oxidizing materials (including chemical oxygen generators) as cargo in aircraft. The proposed rule would prohibit the carriage of packages containing oxidizers aboard passenger aircraft and in the non-accessible cargo compartment areas aboard cargo-only aircraft. In addition, this proposal would prohibit transportation of spent chemical oxygen generators aboard passenger and cargo aircraft. This prohibition would apply to foreign and domestic passenger and cargo-only aircraft entering, leaving or operating within the United States. The purpose of this proposed rule is to enhance air transportation safety by ensuring that oxidiin and spent chemical oxygen generators are not involved in any fires that might occur in the cargo compartments of passenger aircraft and in cargo-only aircraft.

The ten-year cost of the requirements to prohibit oxidizers aboard passenger-carrying aircraft and in inaccessible cargo locations of cargo aircraft would be $34.7 million ($24 million, present value). Of the $34.7 million cost estimate, the prohibition of oxidizers aboard aircraft in Class B and C cargo compartments account for $ 17 million ($12 million discounted) of the total costs. The cost estimate includes the cost impact to passenger aircraft operators. While RSPA and FAA have been unable to estimate quantitative potential safety benefits for oxidiin, the risks imposed by such items, nonetheless, warrants the adoption of the additional operating procedures imposed by the proposed rule.

The proposed rule is not expected to present a significant impediment to either U.S. firms doing business abroad, or foreign firms doing business in the United States. Furthermore, RSPA and FAA have determined that the proposed rule would not have a significant economic impact on a substantial number of small commercial air carriers.

I. INTRODUCTION

This regulatory evaluation examines the costs and benefits of the proposed rule to amend 43 CFR Parts 171 and 172 that pertain to carriage of oxidizers and oxidizing materials (including chemical oxygen generators) as cargo in aircraft. The proposed rule would enhance air transportation safety by prohibiting the carriage of packages containing oxidizers aboard passenger aircraft and in the non-accessible compartment areas aboard cargo-only aircraft. In addition, oxidizers tendered as cargo must be positioned in the cargo compartment in such a way that they are accessible to the aircraft crew at all times. This proposal would also prohibit the transportation of spent chemical oxygen generators aboard passenger and cargo aircraft. These requirements would apply to both U. S. and foreign operated passenger and cargo aircraft entering, leaving or operating within the United States.

II. BACKGROUND

The National Transportation Safety Board (NTSB) and the Federal Aviation Administration (FAA) are investigating the May 11, 1996, crash of a passenger-carrying aircraft which resulted in 110 fatalities. Preliminary evidence indicates that chemical oxygen generators were carried as cargo on board the aircraft and may have initiated a fire or otherwise become involved in a fire that resulted in the accident. On May 31, 1996, NTSB issued two recommendations, as follows:

> ...permanently prohibit the transportation of chemical oxygen generators as cargo on board any passenger or cargo only aircraft when the generators have passed their expiration dates, and the chemical core has not been depleted. (Class I, Urgent Action) (A-96-29)
>
> prohibit the transportation of oxidizers and oxidizing materials (e.g.. nitric acid) in cargo compartments that do not have fire or smoke detection systems. (Class I, Urgent Action) (A-96-30)

0" May 24, 1996, the Research and Special Projects Administration (RSPA) published a" interim final rule in the Federal Register (61 FR 26418) under Docket HM-224 which temporarily prohibits the offering for transportation and the transportation of chemical oxygen generators as cargo in passenger-carrying aircraft. RSPA requested that comments on the temporary ban be received by July 23, 1996. The interim final rule was adopted as a final rule on December 31, 1996, resulting in the permanent ban on carrying chemical oxygen generators as cargo on passenger-carrying aircraft.

The actions proposed in this notice are responsive to the NTSB recommendations and are based on RSPA's and FAA's assessment of the hazards posed by oxidizers and chemical oxygen generators. RSPA and FAA agree with the NTSB that, in certain circumstances, oxidizers can contribute to the severity of a fire and may pose an unseasonable risk when transported aboard a" aircraft. Even in cases where they are shipped in accordance with DOT's Hazardous Materials Regulations (HMR) and do not actually start a fire, their presence may contribute to the severity of a fire. Therefore, RSPA and FAA believe that the carriage of these materials in cargo compartments poses an unacceptable risk in transportation.

I" fact, RSPA and FAA believe that for passenger-carrying aircraft, the most prudent thing to do is to ban the carriage of oxidizers (items that require an oxidizer or oxygen label under the HMR) and spent chemical oxygen generators

in all cargo compartments. Transportation in commerce of these substances and devices would be banned in the cabin of passenger-carrying aircraft, unless those substances and devices were installed in order for the aircraft to be in conformity with the type-certification requirements or otherwise present i." order to conform to an FAA operating rule. In this proposal, RSPA and FAA would permit the use of oxygen furnished by the certificate holder in accordance with § 121.574 for medical reasons during flight. RSPA specifically requests comments relating to the safety aspects of permitting personal medical oxygen that meets the shipping requirements of the HMR to be stowed as cargo in the passenger compartment in accordance with the provisions of § 121.285.

Various features incorporated into a cargo compartment's design are intended to control or extinguish a fire which might occur in that compartment. Under the Federal Aviation Regulations, cargo compartments are classified into five categories, however, for this rulemaking only four categories are applicable: Classes B, C, D, and E. In brief, the definitions and functional attributes of cargo compartments aboard aircraft' are as follows:

Class B - a compartment that any part of the compartment is accessible in flight to a crew member with a hand held fire extinguisher and that has an approved smoke detector or fire detector system.

Class C - a compartment that is not accessible but has an approved built-in smoke or fire detector system, and a fire-extinguishinq system, and a means to control ventilation so that the extinguishing agent can control any fire that may start within the compartment, and a means to exclude hazardous quantities of smoke, flames or extinguishing agent from any compartment occupied by crew or passengers.

Class D - a compartment that is not accessible but any likely fire occurring within it will be completely confined without endangering the safety of the airplane or the occupants, by ventilation that is controlled so that any fire will not progress beyond safe limits. Class "D" compartment volume may not exceed 1,000 cubic feet, and there are means to exclude hazardous quantities of smoke, flames or noxious gases from any compartment occupied by crew or passengers. A class D compartment is not required to have a fire or smoke detection system or a fire suppression system.

Class E - the cabin area used on cargo-only aircraft which has an approved smoke or fire detector system, a means to shut off the ventilating airflow, and a means to exclude hazardous quantities of smoke, flames or noxious gases from entering the flight crew compartment.

RSPA and FAA also believe that for the transport category, all-cargo aircraft, threats to safety may be minimized by requiring the stowage of any hazardous material that is required to have a" OXIDIZER or OXYGEN label, under Title 49, Part 172, Subpart E, only in a" accessible location within a Class E cargo compartment.

Reason for Ban in Class B Compartments

While the crew should be adequately protected from smoke and fumes due to

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The definition of Classes A. B, C, and D compartments donottakeinto account firesthat could be fueled by the presence of oxidizers or chemical oxygen generators.

the requirement of having protective breathing equipment, the supplemental oxygen breathing system for passengers is not designed to be a system that protects them from smoke and fumes. Instead, the supplemental oxygen system for passengers is designed to provide a combination of supplemental oxygen and ambient cabin air for use in emergency decompression situations. When passengers use the supplemental oxygen system, they inhale some ambient air in the cabin, also. Dangerous or even fatal levels of smoke and fumes are more likely to develop when a fire is fed by a secondary source of oxygen. Thus, a fire fed by a secondary source of oxygen creates additional smoke and fume risks to passengers that would not otherwise be present in fires that are not fed by a secondary source of oxygen.

Another problem is that although all areas of the Class B compartment must be accessible to a crew member equipped with a hand-held fire extinguisher, oxidizers and spent chemical oxygen generators in such compartments may not, because of their size or weight, be separated from other cargo during flight. In other words, in Class B compartments the crewmember might not be able to remove the oxidizer or chemical oxygen generator from the fire area because of its size or weight.

Also, even if a halon or water fire extinguisher is present, it may not have a sufficient quantity of halon or water to extinguish a fire that continues to reignite because it is being fed by a secondary oxygen source.

Reason for Ban in Class C Compartments

While Class C cargo compartments can be very effective in controlling most types of fires, RSPA and FAA believe that oxygen-fed fires present an unacceptable risk in the aviation environment. As to the potential problem of removing a package containing an oxidizer or chemical oxygen generator discussed above, a Class C compartment presents even greater risks than a Class B compartment. Unlike a Class B compartment that a crew member can physically enter, a Class C compartment is not physically accessible to crew members. Thus, for Class C compartments, there is no possibility for a crew member to remove an oxidizer from the area of the fire.

III. MAJOR ASSUMPTIONS

In an effort to facilitate this evaluation, some general assumptions are employed. Specific assumptions are given in those areas for which they apply. The general assumptions are as follows:

1. The proposed rule is expected to take effect in 1997.

2. Every aircraft operator, including those operating under 14 CFR parts 121, 125, 135, and foreign operators entering or leaving the United States, that transport hazardous materials in commerce, and the customers for which the oxidizers are carried would be subject to requirements of the proposed rule.

3. All cargo aircraft with non-accessible cargo compartments and all passenger-carrying aircraft would be impacted by this proposal.

4. In the absence of this proposed rule, oxidizer and spent chemical oxygen generator cargo shipments would grow at an average annual rate of 3 percent.

5. Capacity utilization in the aviation industry for cargo shipments is less than 100 percent, based on information provided by air carriers on U. S. DOT form 41.

6. Revenue lost, due to the oxidizer ban for passenger aircraft would not be recovered through additional shipments of other freight.

7. No revenue loss is expected for cargo aircraft operators because oxidizers can be placed in the accessible "E" compartment (where there is no weight restriction).

8. Only passenger air carriers who transport spent chemical oxygen generators would be impacted.

9. Spent chemical oxygen generator refers to a chemical oxygen generator that has been used or discharged, but has a residual amount of hazardous material left inside the container.

Iv. COSTS AND BENEFITS

A. Analysis of Costs

1. Oxidizers

On December 30, 1996, RSPA issued a notice of proposed rulemaking (NPRM) to ban oxidizers in Class D compartments in passenger and cargo only aircraft. The potential cost of compliance associated with that action is recalculated to be $18 million ($12 million, discounted) over the next ten years, as detailed in the Appendix. This supplemental proposed rule, however, would impose additional changes on air carriers by banning oxidizers in class B and C cargo compartments on passenger aircraft and all non-accessible compartments in cargo only aircraft. The cost of compliance (in the form of lost revenue) on passenger air carriers imposed by this proposed rule is estimated to be $17 million' ($12 million, discounted), in 1996 dollars, over the next 10 years.

RSPA and FAA have been unable to determine any cost impact on cargo aircraft carriers, but recognize there could, nonetheless, be a potential logistical impact. Occasionally, hazardous materials are tendered for shipment that are not compatible and must be kept separated from each other during transport. Currently, incompatible materials are transported in separate compartments. Therefore, the proposed rule may have an impact upon cargo airlines because of their inability to carry incompatible hazardous materials on the same flight. As a result, one of the hazardous products tendered to the airline for transport may experience a delay. RSPA and FAA solicit information from cargo only aircraft operators who feel they would incur costs from implementation of the proposed rule.

2. Chemical Oxygen Generators

On December 30, 1996, RSPA issued a final rule prohibiting oxygen generators as cargo in passenger aircraft, and estimated that the prohibition would have a minimal cost impact.' This SNPRM further expands that rulemaking by banning the

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2 All estimates of costs and benefits have been undated to the third quarter of 19% using the Implicit Price Deflator for Gross Domestic Product as published in the Survey of Current Business, December 1996. Table 7.1, p. D-17.

3 Prohibition of Oxygen Generators as Cargo in Passenger-Aircraft; Final Rule and Prohibition of Oxidizers Aboard Aircraft; Proposed Rule 49 CFR Part 171 et al., Department of Transportation, Research and Special Programs Administration. Federal Register, Vol. 61, No. 251, December 30, 1996.

shipment of spent chemical oxygen generators. RSPA and FAA determined that the cost of compliance associated with banning the shipment of spent chemical oxygen generators to be eve" less than the above minimal costs for the ban on shipping oxygen generators. A spent chemical oxygen generator has no residual or economic value. Since there is no need to ship them by aircraft, RSPA and FAA determined that there is almost no cost impact associated with a prohibition to ship spent oxygen generators by aircraft.

Total Cost of Proposed Rule

The incremental increased cost of the supplemental proposed rule is approximately $17 million ($12 million, discounted) over the next 10 years. This incremental cost estimate pertains to the ban on shipping oxidizers in C and B compartments in passenger aircraft, and the associated requirement in § 175.85(b) that prohibits those materials from being carried in an inaccessible compartment aboard a cargo-only aircraft. This proposal has no cost impact pertaining to ban on the shipment of spent chemical oxygen generators.

RSPA and FAA are aware that the estimated oxidizer ban cost does not include any reduction in variable operating costs, such as fuel savings, that may result due to less weight being carried aboard the aircraft. In addition, this cost estimate may not represent a net loss to the aviation industry. RSPA and FAA expect that cargo only operators will experience an increase in oxidizer shipments; therefore, much of the lost revenue experienced by passenger air carriers would be recovered as increased revenue by cargo-only carriers. RSPA and FAA believe, therefore, the overall cost to the aviation industry may be less than the above costs estimated for this proposed rule.

B. **Analysis of Benefits**

1. **Oxidizers**

Notwithstanding current regulatory restrictions, hazardous materials, including oxidizers, are occasionally improperly carried in airplane cargo compartments through inadvertent or deliberate package mislabeling. Over the past 10 years, there are only two documented incidents where oxidizers (of types other than oxygen generators) were known to be present in the cargo compartment of a U. S air carrier when a fire occurred. These incidents are described below:

Case One: The first incident occurred July 16, 1986, on a Federal Express flight in a B-727-25C airplane. According to the NTSB report, an in-flight fire started in a cargo "igloo" during high altitude cruise due to spillage of nitric acid onto a wooden packaging crate. The fire went out when the aircraft was depressurized. However, smoke and acid fumes leaking into the cabin were considered to be a hazard to the cockpit crew. A" emergency landing was made at Cincinnati after a missed approach at Charleston, WV. The aircraft landed without further incident and the crew members safely evacuated the aircraft." Casualty loss: None (neither injuries nor apparent damage to the aircraft). Type of aircraft inv ved: cargo only.

Case Two: The second incident occurred February 3, 1988, on American Airlines flight 132, in a DC-9-83 aircraft. According to the NTSB report, flight 132 had an in-flight fire while en route to Nashville Airport, Tennessee, from Dallas/Fort Worth International Airport, Texas. As the aircraft was on a final instrument landing system approach, a flight attendant and a deadheading first officer notified the cockpit crew of smoke in the passenger cabin. The NTSB found that hydrogen peroxide solution (an oxidizer) and a sodium orthosilicate-based mixture had been shipped and loaded into the mid-cargo compartment of the

airplane. The shipment was improperly packaged and it was not identified as a hazardous material. After the hydrogen peroxide leaked from its container, a fire started in the class D cargo compartment. The fire eventually breached the cargo compartment, and the passenger cabin floor over the mid-cargo compartment became hot and soft. The aircraft landed without further incident, and the 120 passengers and six crew members safely evacuated the aircraft. Casualty loss: 18 passengers and crew members received minor injuries. While there appeared to have been some damage to the cargo compartment of the aircraft, there was not sufficient information provided in the NTSB report to determine to what extent. Therefore, no aircraft damage will be considered in the regulatory evaluation for this incident. Type of aircraft involved: passenger.

Fortunately, the involvement of oxidizers (other than now prohibited oxygen generators) in cargo compartment fires have been rate events in the past. The two events that occurred during the past 10 years resulted in only minor injuries and damage, though damage from one of the fires extended outside the cargo compartment. RSPA and FAA believe, however, that the risk of fire as evidenced by the number of actual fires that occasionally occur justifies taking a proactive position with respect to banning oxidizers in cargo compartments.

One analytical tool commonly used in the statistical analysis of rare events is the Poisson probability distribution. This tool provides a means to statistically estimate the probability of the occurrence of rare and random events based on an observed rate of occurrence. In the case of cargo compartment fires in the presence of oxidizers, the observed mean is two over 10 years.' Applying the Poisson probability distribution, the number of fires with oxidizers and their probabilities are shown below in Table 1.

The Poisson probability distribution with a mean of two, as show" in Table 1, suggests that there is a small chance (14 percent) that there will be no oxidizer fires in the next decade based on the past accident history. However, there is an 86 percent probability that there will be one or more such fires. In addition, there is a 14 percent probability that there will be four or more fires with oxidizers present.

TABLE 1

Probability Analysis Oxidizer Incidents (mean of 2)

Number of Events	Probability of Event	Cumulative Probability of Event
0	14%	14%
1	27%	41%
2	27%	68%
3	18%	86%
4	9%	95%
5	4%	98%
6	1%	100%

Source: U. S. Dept. of Trans., FAA, APO-310, January, 1997

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It is only fortuitous that the incidences used for the probability analysis occurred in the class "D" cargo compartment, and when considering the issue of airline and passenger safety, is not germane to the probability analysis.

Any one of these future events could also be much more serious than the two incidents previously described that did occur aboard U. S. air carrier airplanes during the past decade. Fire aboard an aircraft is one of the greatest threats to safety that can happen in air transportation. For example, an Air Canada flight from Dallas in 1983 made an emergency landing to the Greater Cincinnati International Airport because of a fire of undetermined origin. As soon as the airplane stopped, it was evacuated. However, 23 passengers were not able to get out of the aircraft before the interior was engulfed in a flash fire, and was destroyed. In 1983 a British Airtours flight was aborted during takeoff, and 55 of the 137 onboard were not able to evacuate before a fire engulfed and destroyed the aircraft.

This proposal would reduce the likelihood that cargo compartment fires will be enhanced by oxidizers and thereby, increases the probability that cargo compartment fires would be successfully contained or extinguished. One measure of calculating whether the proposed ban on oxidizers is cost-beneficial is to determine if it would prevent accidents that otherwise would claim at least thirteen lives over the next 10 years.' RSPA and FAA are confident this proposed ban has thepotential to achieve that level of benefits.

2. Chemical Oxygen Generators

Over the past 10 years, based on the accident and incident data base maintained by NTSB and the FAA, there have been two incidents and two accidents involving fires and chemical oxygen generators in the cargo compartments of U. S. aircraft. These incidents and accidents are listed and summarized below:

Case One (accident): The ValuJet Flight 592 accident that occurred in the Florida Everglades on May 11, 1996, highlights the hazard that oxidizers may present in the presence of fire. The official accident investigation report has not yet been released, but 110 people died in that accident as a result of a fire in a cargo compartment that may have been started and then enhanced to catastrophic proportions by chemical oxygen generators in the cargo compartment.

Case Two (accident): On August 10, 1986, a McDonnell Douglas DC-lo-40 in cargo only operation was destroyed by a fire that rapidly expanded through the entire plane. The Safety Board concluded that company maintenance personal had placed damaged passenger seatbacks (that had in them solid-state chemical oxygen generators) in the forward cargo compartment with seat covers and oil. A fire initiated in the forward cargo compartment in the vicinity of where the oxygen canister was found with a dented striker plate. The seat covers ignited, fire burned through the cabin floor, and subsequently, it spread throughout the entire cabin.

Case Three (incident): Fire associated with chemical oxygen generators, occurred on November 6, 1992, in Los Angeles, California. Information is limited because the incident is currently under review.

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[5] Number of necessary fatalities prevented was calculated by dividing $34.7 million by $2.7 million. The $2.7 million is a critical value for a fatality avoided which was developed by the U. S. Department of Transportation.

Case Four(incident): Fire associated with chemical oxygen generators, occurred on September 23, 1993, in Oakland, California. Information is also limited in this incident because it is also Currently under review.

These occurrences suggest an average historical rate of four random events during a 10-year period. In an effort to estimate the potential safety benefits of spent chemical oxygen generators, this evaluation employs a Poisson probability distribution to estimate the number of potential future incidents and accidents. Just as the Poisson probability distribution was applied to statistically estimate the probability of an incident involving oxidizers, the same procedure can be performed to statistically estimate the probability of an incident and accident involving chemical oxygen generators. A rate of four occurrences (accidents and incidents) involving fires and chemical oxygen generators per 10-year period was used in developing the Poisson distribution for chemical oxygen generators.

Applying the Poisson probability distribution, the number of fires with chemical oxygen generators and their probabilities are shown in Table 2. The numbers in Table 2 suggest in the absence of any regulatory action that there is only a two percent probability of no chemical oxygen generator fire in the next decade, based on actual incident and accident history. But, there is a 98 percent probability there will be one or more such fires in the same time period. There is a 57 percent probability that there will be four or more incidents and accidents in the next 10 years, as there was in the last 10 years, with chemical oxygen generators present.

TABLE 2

Probability Analysis of Oxygen Generator Incidents & Accidents (mean of 4)

Number of Events	Probability of Event	Cumulative Probability of Event
0	2%	22
1	72	92
2	152	242
3	20%	43%
4	202	632
5	162	792
6	10%	89%
7	6%	95%
8	3%	98%
9	1%	99%
10	1%	100%

Source: U. S. Dept. of Trans., FAA, APO-310, January, 1997.

To determine the potential benefits that would result from this proposed rule, RSPA and FAA estimated the average costs associated with potential future fire accidents involving chemical oxygen generators. In the May 11. 1996 accident, there were 110 casualties and a McDonnell Douglas DC-g-32 was destroyed. The monetary value of this loss was ascertained in several steps. First, a critical economic value of S2.7 million was applied to each human

casualty.' This computation resulted in an estimate of $297 million ($2.7 million x 1101. Next the value of the destroyed aircraft was estimated to be $6 million.' If this rulemaking prevents a reoccurrence of just one of this type of catastrophic accident, the expected value of potential safety benefits would be $303 million, $213 million discounted.'

Informed FAA technical personnel believe, that had the ban for spent chemical oxygen generators been in effect, it is unlikely that the ValuJet accident would have occurred. The ValuJet accident took place because a mislabeled oxygen generator was loaded as an "empty" when, in fact, it was "full". If the ban had been in effect, there is a significant probability that the full chemical oxygen generators, which were thought to be empty, would not have been loaded on the aircraft.

Summary of Benefit Analysis

In the absence of any preventive action by the Department of Transportation (DOT), the potential for even greater losses in the future are possible. According to the above probability analyses, there is the potential for as many as six incidents or accidents involving oxidizers (Table 1) and the potential for up to 10 incidents or accidents involving chemical oxygen generators (Table 2). In the future, there is a real possibility for more than one catastrophic on board fire during the next 10 years in the absence of this proposed rule. For the above reasons, RSPA and the FAA are undertaking preventive actions to eliminate the threat of fires started by oxygen generators (or enhanced by the presents of oxidizers) on board passenger aircraft. This rulemaking is one of those preventive actions.

C. Comparison of Costs and Benefits

The proposed rule would impose an estimated ten-year cost of $34.7 million ($24 million, discounted) by banning the shipment of oxidizers on passenger aircraft, and no costs for banning the shipment of spent oxygen generators on passenger and cargo aircraft. The oxidizer-ban costs probably are overstated for reasons explained previously in the cost section. While RSPA and FAA have been unable to estimate quantitative potential safety benefits for banning the shipment of oxidizers, the risks imposed by such items, nonetheless, warrants the adoption of the additional operating procedures imposed by the proposed rule.

Preventing one catastrophic accident like the May 11, 1996 ValuJet accident, would result in benefits of $303 million ($213 million, discounted over ten years). RSPA and FAA consider the ban on shipping spent oxygen generators, which would impose no costs on the aviation industry, to be a cost-beneficial rulemaking. Furthermore, the ban on shipping spent chemical oxygen generators would be cost-beneficial even if it was only one percent effective at preventing the above type of accident.

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[6] Based on critical economic value guidelines developed by the U. S. Department Of Transportation.

[7] Estimates based on values listed in Avmark, July, 1996.

*This evaluation recognizes that another accident took place that involved a cargo aircraft. Since RSPA and FAA have no information that indicates to what extent spent chemical generators was a contributing factor, this evaluation only focuses on the accident involving ValuJet.

V. INITIAL REGULATORY FLEXIBILITY DETERMINATION

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities (small business and small not-for-profit organizations which are independently owned and operated, and small government jurisdictions)- are not unnecessarily and disproportionately burdened by Federal regulations. The RFA requires regulatory agencies to review rules which may have "a significant economic impact on a substantial number of small entities." Since this proposed rule would primarily impact those entities operating under CFR 14 part 121, RSPA adopted the Federal Aviation Administration (FAA) Order 2100.14A (Regulatory Flexibility Criteria and Guidance) as the standard by which the potential impact on small entities would be determined. The potential impact on small entities is based on the cost of compliance for oxidizers and spent chemical oxygen generators.

According to FAA Order 2100.14A, a substantial number of small entities is defined as a number which is not less than 11 and which is more than one-third of the small entities *subject* to a proposed or existing rule. A significant economic impact refers to the annualized threshold assigned to each entity group potentially impacted by rulemaking actions. For this proposed rule, the small entities are eight 14 CFR part operators who carry hazardous cargo (scheduled and "on-scheduled). The annualized significant economic impact threshold for non-scheduled aircraft operators is estimated to be 54,900. Similarly, the annualized significant economic impact threshold for scheduled aircraft operators is estimated to be $70,100 (operators with less than 60 passenger seats) and $125,500 (operators with more than 60 passenger seats).[9]

A small entity is defined in the FAA Order 2100.14A as a" operator of aircraft for hire with nine or fewer aircraft owned but not necessarily operated. RSPA and FAA identified a total of eight operators who meet this definition. These operators are divided into two groups: (1) non-scheduled small part 121 operators and (2) scheduled small part 121 operators.

To determine the impact of the proposed rule on these small entities, RSPA and FAA estimated the annualized cost impact on each of those small entities within the two groups. The annualized cost impact per small entity is based on the annual number of to" miles for oxidizer shipments times the respective revenue per to" mile estimate. The results of this procedure is shown below.

Small Entities, Non-scheduled

RSPA and FAA determined there are six non-scheduled part 121 aircraft operators who meet the definition of a small entity. The annualized cost of compliance estimate for each of the small entities was derived by multiplying their respective discounted 10-year costs (lost revenue and increased shipper costs) times the capital recovery factor of 0.14238 (10 years, 7 percent rate of interest). The 10-year potential estimated cost of compliance for each of these entities is $60,000[10] ($42,200, discounted). Thus, over the 10-year

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[9] All cost estimates in this action are expressed in 1996 dollars.

[10] Costs for small entities where there is no specific data regarding revenue ton miles or freight revenues, RSPA and FAA used the average potential lost revenue for National and Large Regional carriers, calculated as: $66,000 (aggregate potential lost revenue) / 11 (affected

period (1997 - 2006), the annualized potential cost of compliance would be $6,000 (for example, 0.14238 X $42,200). Of the six small entities within this group, only two would have annualized cost that exceeds the significant economic impact threshold of $4,900, as shown in Table 3. While one-third of the above aircraft operators would incur significant economic costs, a substantial number of them would not be impacted because they are less than 11.

Small Entities, Scheduled

RSPA and FAA also determined that there are two part 121 scheduled aircraft operators who meet the definition of a small entity. The lo-year potential cost of compliance for the scheduled entity with less than 60 passenger seats would be $60,000 ($42,200, discounted). Similarly, for the entity with more than 60 passenger seats, the lo-year cost of compliance would be $9.800" ($6,900, discounted). The annualized cost of compliance estimate for each of the small entities was derived by multiplying their respective discounted 10-year costs times the capital recovery factor of 0.14238 (10 years, 7 percent rate of interest). Over the lo-year period, the annualized potential cost of compliance for the entity with less than 60 passenger seats and the entity with more than 60 passenger seats would be $6,000 and $1,000, respectively. These annualized cost of compliance estimates are far less than their respective significant economic thresholds of $70,100 and $125,500, as shown in Table 3.

carriers) = $6,000.

[11] Small Scheduled Operators with less than 60 seats have a costs of ($60,000 or $42,200, discounted), thia cost is greater than Small Scheduled Operators with more than 60 seats ($9,800 or $6,900), due to RSPA's and FAA's use of estimated industry averages for Revenue Ton miles, Freight Revenue and Oxidizer Ton Miles. RSPA and FAA used industry averages due to a lack of data for Non-scheduled and Under 60 Passenger seat Scheduled Operators.

Table 3

Summary of Annualized Cost of Compliance Per Small Entity (In 1996 Dollars)

Air Carrier	Number of Airplanes	14 CFR Part	Estimated Annualized Costs	Annualized Economic Impact Threshold	Significant Economic Impact
Column A	Column B	Column C	Column D	Column E	Column F
Part I - Scheduled					
Airline 1 - Pax AC	1	121	$6,000	$70,100	No
Airline 2 - Pax AC	5	121	$1,000	$125,500	No
Part II - Non-Scheduled					
Airline 3 - Cargo AC	4	121	$0	$0	No
Airline 4 - Cargo AC	9	121	$0	$0	No
Airline 5 - Cargo AC	3	121	$0	$0	No
Airline 6 - Cargo AC	3	121	$0	$0	No
Airline 7 - Pax AC	2	121	$6,000	$4,900	Yes
Airline 8 - Pax AC	8	121	$6,000	$4,900	Yes

Source: U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy and Plans (APO), Operations Regulatory Analysis Branch, APO-310, January, 1997.

In view of the aforementioned discussion, RSPA and FAA determined that the proposed rule would not have a significant economic impact on a substantial number of small entities.[12] While the proposed rule would have a significant economic impact on two of the eight small entities examined in this RFA determination, it would not impact a substantial number of those small entities.

VI. INTERNATIONAL TRADE IMPACT ASSESSMENT

This proposed rule would neither impose a competitive trade disadvantage on U.S. firms conducting business abroad nor on foreign firms doing business in the United States. This assessment is based on the fact that the proposed ban of oxidizers would apply to both U.S. aircraft operators and those foreign aircraft operators who fly into and within the United States.

VII. UNFUNDED MANDATES

Title II of the Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, requires each Federal agency, to the extent permitted by law, to prepare a written assessment of the effects of any Federal mandate in a proposed or final agency rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more (adjusted annually for inflation) in any one year. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the Federal agency to develop an effective process to permit timely input by

[12] Although two of these eight small entities would incur significant economic impact, they do not constitute a substantial number. As noted previously, a substantial number of small entities is defined as a number which is not less than 11 and which is more than one-third of the small entities subject to a proposed or existing rule.

elected officers (or their designees) of State, local, and tribal governments on a proposed "significant intergovernmental mandate." A "significant intergovernmental mandate" under the Act is any provision in a Federal agency regulation that would impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of $100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments, the agency shall have developed a plan that, among other things, provides for notice to potentially affected small governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory proposals.

This proposed rule does not contain any Federal intergovernmental or private sector mandate. Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

APPENDIX

Detailed Discussion and Methodology of Potential Cost Estimates and Capacity Utilization

APPENDIX

SECTION A - Detailed Cost Discussion for Complete Ban

This appendix discusses the cost associated with a total ban of oxidizers in passenger aircraft (compartments B, C, and D) and a ban in the C and D compartments of cargo only aircraft. The total cost of the prohibition would be approximately $35 million ($24 million, discounted) over ten years. This ban represents the impact of the proposed rule for oxidizers and that portion of the supplemental proposed rule for oxidizers.

The potential cost of compliance consists of the lost revenue for aircraft operators affected by the proposed rule. Based on available data, the approach taken to estimate the potential lost revenue to the air carrier industry is as follows:

(1) determination of the percent of hazardous materials shipped by air in relation to all air cargo;

(2) estimation of the percentage of oxidizers to all hazardous materials,

(3) estimation of air ton miles of oxidizers shipped; and,

(4) estimation of revenue for air ton miles of oxidizers shipped.

Cost Impact on Air Carriers that Carry Both Passengers and Hazardous Cargo

Most of the passenger carrying aircraft operators in the United States also carry cargo. However, not all of these air carriers carry hazardous materials. Some air carriers only carry non-hazardous freight or mail and these air carriers are not affected by the proposed rule.

The potential lost revenue to the affected passenger air carriers who carry hazardous materials is estimated to be $3 million the first year of the proposed rule, as illustrated in Table B-2 in Section B of this Appendix. This cost estimate is derived by summing the potential lost revenue for each affected carrier in each operator category and adding an estimated 30 percent premium. The 30 percent estimate represents the premium for special handling of hazardous materials."

Arriving at the potential lost revenue necessitated several steps, which are explained in detail'in Section B of this Appendix. The major steps are discussed as follows:

(1) Determination of the revenue per ton mile" for each air carrier;

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13 Discussions with air cargo carriers established there is an added cost to shippers of hazardous materials. The degree of added cost, or premium. ranged from 15 percent to 50 percent. RSPA adopted the mid-point estimate of this range, which amounted to a 30 percent surcharge to shippers by air carriers to handle hazardous material.

14 Air Carrier Financial Statistics. Quarterly. U.S. Department of Transportation. Bureau of Transportation Statistics, Office of Airline Information. Washington, DC. Income Statement:

(2) Determination of each air carrier's market share of hazardous materials by dividing an air carriers' individual revenue ton miles by the total revenue ton miles for those passenger aircraft operators that carry hazardous materials;

(3) Estimation of the ton miles of oxidizers for each individual carrier by multiplying an air carrier's market share by the estimated total amount of air ton miles of oxidizers handled by all passenger aircraft; and,

(4) Estimation of the lost revenue was accomplished by multiplying the revenue per ton mile by the estimated revenue ton miles of oxidizers. For example, assume the revenue per ton mile for an air carrier is 16 cents and the estimated ton miles of oxidizers was 57,410. By multiplying 57,410 by .16 results in potential lost revenue of $9,347.

The $3 million lost revenue estimate for the first year represents a ban on oxidizers being carried as cargo aboard passenger carrying aircraft. In addition, as stated previously in the major assumptions section, in the main body of this regulatory evaluation, RSPA and FAA assume that revenue loss would not be replaced with revenue from the addition of other non-hazardous cargo. RSPA and FAA believe that the loss in revenue is an over estimate of the true impact that the proposed ban would have on air carrier revenues. The ban's impact on air carrier revenues would be less than S3 million because of fuel savings from carrying less weight and labor savings from the avoided special handling of oxidizers and oxygen generators.

Cost Impact on Cargo Air Carriers ho Carry Hazardous Material

There are many aircraft of varying sizes which carry only freight. However, some of the cargo only aircraft operators carry only mail or non-hazardous freight. Because the proposed rule would ban oxidizers in the non-accessible compartment on cargo air carriers, carriers whose aircraft have accessible compartments or those who do not carry hazardous materials would not be adversely affected by this proposed rule. RSPA and FAA believe that there would be no cost impact on those cargo air carriers that do carry hazardous materials, because of their ability to shift hazardous cargo from the non-accessible compartment to accessible compartments located within the airplane."

Additionally, many shippers that currently use passenger aircraft to ship oxidizers by air, could still ship by air using cargo air carriers. Capacity utilization is such that cargo air carriers could absorb most of the freight lost by passenger carriers." Therefore, much of the revenue lost by the passenger carriers, would be gained by cargo only carriers.

RSPA and FAA recognize that not all oxidizers shipped by passenger aircraft would be transferred to cargo only aircraft, but, RSPA and FAA do not have enough data to estimate an amount that would be reallocated from passenger to

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Fourth Quarter and 12 Months Ended December 31. 1995. Air Carrier Traffic Statistics Monthly. U. S. Department of Transportation, Bureau of Transportation Statistics, Office of Airline Information. Washington, DC. Month and Twelve Months Ended December 1995 and 1994.

[15] Oxidizers would be placed in areas that would be accessible to crew members with tire extinguisher equipment.

[16] The appendix offers a detail discussion of capacity utilization for cargo and passenger aircraft.

cargo only aircraft. However, RSPA and FAA believe that there are no "delay" costs to shippers because those shippers can still ship on all cargo aircraft. If the cost of shipping on all cargo aircraft were too high for some shippers, they could choose to utilize rail or truck for the transport of oxidizers.

Section B - Methodology for Derivation of Costs

To estimate the revenue air ton miles of oxidizers shipped separately for passenger air carriers and for cargo air carriers, it was first necessary to derive an estimate of the aggregate air tons miles for oxidizers shipped in 1995.

The data obtained, shown in upper portion of Table B-l, are both documented or observed over time, and include: (1) ton miles of all commodities shipped by air (less mail);[17] (2) percent of hazardous material transported by air in relation to all air cargo:" and (3) oxidizers portion of all hazardous materials."

The ultimate goal was to estimate the loss of revenue for the affected carriers by determining the revenue ton miles of oxidizers carried aboard affected aircraft and multiplying that by the affected air carriers overall revenue per ton mile. The derivation was accomplished through several steps, as illustrated in Table B-l and described in the following paragraphs..

Table B-1
Vital Economic Statistics

Statistics Obtained	Amount
1995 Air Ton Miles of all Commodities (less Mail)	20,979,463,000
Hazardous materials Transported by Air	8%
Oxidizers portion of all Hazardous Materials	1%
F M Calculated Statistics	**Amount**
RTM Ratio Passenger Airline that Carry Hazardous Material	40%
RTM Ratio Cargo Airlines that Carry Hazardous Material	60%
1995 Estimated Air Ton Miles Oxidizers	16,783,570
Oxidizers Passenger Airlines	6,716,016
Oxidizers Cargo Airlines	10,067,554

Source: U. S. Dept. of Trans., FAA, APO-310, January, 1997.

It was first necessary to determine the freight revenue ton miles for the affected passenger air carriers that carry hazardous materials and

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[17] Aii Carrier Traffic Statistics Monthly. U. S. Department of Transportation, Bureau of Transportation Statistic, Office of Airlii Information. Month and Twelve Months Ended December 1994 and 1995.

[18] U. S. Congress, Office of Technology Assessment. Transportation of Hazardous Materials, Report number OTA-SET-304 (Washington, DC; U. S. Government Printing Office, March, 1986). p. 55.

[19] Research and Special Programs Administration. Office of Hazardous Materials Standards. Based on the observation between 1991 and 1995 there were 3000 air transport hazmat events reported to RSPA; of this 20 involved oxidizers. These events all involve air transport only, and do not represent an average for all modes of transportation.

separately calculate the revenue ton miles for the affected cargo air carriers that carry hazardous materials. This was accomplished by adding the annual total revenue ton miles[20] for each affected carrier to get a total for each group. The totals for each was then divided separately by the total revenue ton miles for all affected air carriers (including both passenger and cargo air carriers that carry hazardous materials)." The results represent a group's share of revenue ton miles es a percentage or ratio of the whole and are shown in Table B-l es 40 percent and 60 percent for passenger and cargo, respectively.

The next step was to estimate the air ton miles for oxidizers. This was accomplished by multiplying the air ton miles of all commodities by 8 percent." This produces an intermediate estimate of the air ton miles of hazardous materials (20,979,463,000 X .08 = 1,678,357,040). Next, multiplying the air ton miles for hazardous materials by the ratio of oxidizers to hazardous materials (1,678,357,040 X .01) produces an estimated air ton miles for oxidizers of 16,783,570.

The final step to determine the appropriate oxidizer air ton miles was to apply the different RTM ratio for passenger and cargo air carriers to the estimated air ton miles for oxidizers. This produced the estimate of revenue ton miles for oxidizers carried on passenger air carriers (6,716,016) and the revenue ton miles for oxidizers carried on cargo air Carriers (10,067,554).[23]

Industry Statistics

This methodology, as summarized in Table B-2, is a disaggregation of the affected passenger air carriers statistics regarding revenue ton miles[24], freight revenue[25], revenue per ton mile, market share, estimated oxidizer ton miles, and potential lost revenue.

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[20] Air Carrier Traffic Statistics Monthly. Bureau of Transportation Statistics, Office of Airline Information, U. S. Department of Transportation. Month and Twelve Months Ended December 1995 and 1994.

[21] Air ton miles for the affected passenger carriers totaled 7,308,409,000 and 10,955,572,000 for affected cargo carriers, resulting in a total of 18,263,981,000. The passenger percent is 40 percent (7,308,409,000/18,263,981,000) and the cargo percent is 60 percent (10,955,572,000/ 18,263,981,000)

[22] U. S Congress, Office of Technology Assessment. Transportation of Hazardous Materials, Report number OTA-SET-304 (Washington, DC; U. S. Government Priming Office, March. 1986), P. 55. This pertains to air transport only, and does not represent an average for all modes of transportation.

[23] Calculated as follows: 16,783,570 X 0.40 = 6,716,016, the estimate of oxidizers carried aboard passenger air carriers; and 16,783,570 X0.60 = 10,067,554, the estimate of oxidizers carried aboard cargo air carriers.

[24] Air Carrier Traffic Statistics, Monthly. U. S. Department of Transportation, Bureau of Transportation Statistics, Office of Airline Information. Washington, DC. Month and Twelve Months Ended December, 1995 and 1994.

[25] Air Carrier Fiicial Statistics, Quarterly. U. S. Department of Transportation, Bureau of Transportation Statistics, Office of Airline Information. Washington, DC. Income Statement: Fourth Quarter and 12 Months Ended December 31. 1995.

TABLE B-2
LOST REVENUE
PASSENGER AIRLINES THAT CARRY HAZARDOUS MATERIALS

Airline (System)	Revenue Ton Miles	Freight Revenue	Revenue Per Ton Mile	Est. Ton Miles of Oxidizers	Potential Lost Revenue
Majors					
7 Airlines	7,071,473,	$2,366,516	$0.335	6,498,286	$2,174,695
Nationals					
10 Airlines	235,385,00	$162,265,0	$0.689	216,306	$149,113
Large Regionals					
1 Airline	1,551,000	$2,767,000	$1.784	1,415	$2,543
Medium Regionals					
NONE					
TOTALS	7,308,409,	$2,531,548	-----	6,716,017	$2.326.351
				30% premium for Hazardous Material	$697,905
				Total Estimated	**$3,024,256**

Source: U. S. Dept. of Trans., FAA, APO-310, January, 1997.

The purpose of the aggregation by size category is to provide comparison size category by size category, only for the carriers affected by the proposed rule.

Revenue ton miles and freight revenue, shown in Table B-2, represent the totals for the affected carriers from each category.*" Revenue per ton mile was calculated by dividing freight revenue by revenue ton miles for each affected air carrier.

Estimation of the revenue ton miles for oxidizers was accomplished by multiplying the market share[27] for each individual affected airline by the total oxidizers carried aboard all passenger air carriers (6,716,016). For

[26] There were 7 affected airlines in the 'Majors" category, 10 airlines in the 'Nationals" category. 1 airline in the "Large Regionals" category. and none in the "Medium Regionals" category.

[27] Market share was determined by dividing an individual air carrier's revenue ton miles by the industry total. For example, an individual airline's revenue ton miles of 1,675,258,000 divided by the total for all affected airlines of 7,308,409,000 equals a market share of approximately 23 percent.

example, one airline's market share was approximately 23 percent. That airline's market share times 6,716,016 equals an estimate of oxidizer ton miles of 1,539,468. Determination of potential lost revenue for an affected carrier was calculated by multiplying their oxidizer ton miles by their estimated revenue per ton miles. The potential lost revenue for all individual affected passenger carriers were then added together to arrive at a total for each size category. Finally, the category totals were summed to arrive at a final first-year cost of approximately $3 million.

Section C - Capacity Utilization

Currently capacity utilization, as shown in Table C-l for cargo carriers is 60 percent." This is the ratio of revenue ton miles to total available ton miles. Capacity percentage of 60 percent implies, on average, there is under utilization of cargo aircraft. Revenue ton miles represents one ton of revenue traffic transported one mile, and is computed by multiplying the aircraft miles flown on each inter-airport hop by the number of tons carried on that hop. By reversing that process, it is possible to determine the weighted average pounds of oxidizers shipped per flight.

Table C-l
Cargo Carrier Statistics[29]

Revenue Ton Miles (RTM) (millions)	Available RTM (millions)	Percent of Capacity	Total Annual Departures	Total Revenue Miles
Totals] 10,955	18,351	59.70%	491,626	347

Source: U.S. Dept. of Trans., FAA, APO-310, January, 1997

RSPA and FAA assume, as stated previously, cargo air carriers carry 60 percent of oxidizers, which represents approximately 10 million revenue ton miles. The average inter-airport hop can be determined by dividing total revenue miles by total annual departures (347,428,000/491,626). This yields an average of approximately 707 miles per inter-airport hop. To determine the RTM for oxidizers per trip is accomplished by dividing the total oxidizers shipped (10 million) by the annual departures (491,626), which equals approximately 20 RTM per departure. Therefore, the average oxidizer tons per mile can be computed by dividing the oxidizer RTM per departure (20) by the average mile per departure (707), which yields approximately .029, and finally multiply the average oxidizer ton per mile by 2000 (number of pounds in a ton) give a product of

[28] The Percent of Capacity represents a weighted average of all the cargo airlines that carry hazardous materials.

[29] Air Carrier Traffic Statistics, Monthly. U.S. Department of Transportation, Bureau of Transportation Statistics, Office of Airline Information. Washington, D.C. Month and Twelve Months Ended December 1995 and 1994.

approximately 58 pounds. This implies a weighted average of 58 pounds of oxidizers are carried on an aircraft per revenue departure.

If the same process is followed, and assuming cargo-only aircraft operations would pick up 100 percent of the lost freight pounds of passenger-carrying operations, the weighted average amount of oxidizers would be less than 100 pounds per trip.

Therefore, RSPA and FAA believe that because current capacity utilization is approximately 60 percent, the added amount of oxidizer shipments expected to be tendered to cargo only airlines can be absorbed without difficulty.

SECTION D - Cost Associated With D Compartment Ban

On December 30, 1996, RSPA issued a proposed rule banning oxidizers in the D compartment for passenger and cargo-only aircraft. The cost of compliance pertaining to that proposed rule is recalculated to be $18 million ($12 million, discounted), over the next ten years. The derivation of costs associated with the ban on D compartments is similar to the derivation of costs for the total ban with the following exceptions:

Unlike the total ban contained in this revised proposal, the December 30, 1996 proposal only impacted carriers with aircraft having D compartments.

Assuming (incorrectly) that there would be no shifting of oxidizers between D compartments and C or B compartments, RSPA and FAA estimated the lost revenue to be $25 million ($17 million, discounted) over ten years. That estimate was derived in the following steps:

Determine the ratio of aircraft with D compartments to the overall aircraft for each impacted carrier.'"

The ratio of aircraft with D compartments was applied to the estimated oxidizer ton miles, disaggregated.

The results of step 2 was multiplied by each individual impacted carriers revenue per ton mile.

The results from step 3 represents the potential lost revenue associated with banning oxidizers in D compartments for each impacted individual carrier, assuming no shifting of oxidizer cargo to another compartment.

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30 The weighted average, for the impacted carriers is approximately 70 percent.

Once the individual potential lost revenues are calculated, they are aggregated to determine a weighted average potential lost revenue for all the impacted carriers.

The results of step 5 are approximately $25 million.

In this revised analysis of the December 30, 1996 proposal, RSPA and FAA adjusted these calculations to consider that impacted aircraft operators have an opportunity to shift 30 percent of oxidizer cargo from the D compartment in passenger aircraft to the C compartments in passenger aircraft with C compartments. This assumption is based on data that indicate Class C cargo compartments comprise approximately 30 percent of all passenger aircraft cargo compartments for the impacted carriers.

The recalculated estimated cost of compliance of $18 million ($12 million, present value) is derived by multiplying $25 million times 70 percent ($18M = $25M X .70).