Exemption No. 10296

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98057-3356

In the matter of the petition of **Presidential Airways, Inc.** for an exemption from § 25.855 of Title 14, Code of Federal Regulations	**Regulatory Docket No. FAA-2011-0175**

GRANT OF EXEMPTION

By letter dated February 22, 2011, Mr. Michael Allyn Gray, Chief Pilot Fixed Wing, Presidential Airways, Inc, P.O. Box 849, Moyock, NC, 27958, petitioned for an exemption to the requirements of Title 14, Code of Federal Regulations (14 CFR) 25.855(a) pertaining to cargo or baggage compartments. The exemption is requested for CASA Model C-212-CC, C-212-CD, and C-212-DF series airplanes operated by Presidential Airways under operating certificate 3PRA806M. Specifically, the purpose of this petition is to allow Presidential Airways to operate their C-212-CC, C-212-CD, and C-212-DF aircraft in a passenger/cargo (or "combi") compartment configuration.

This exemption would provide relief from § 25.855(a), which specifies that, for each cargo and baggage compartment not occupied by crew or passengers, the compartment must meet one of the class requirements of § 25.857. By association, ventilation requirements of § 25.831 must be exempted as well. While § 25.857 (cargo compartment requirements) does not reference § 25.831 (ventilation system requirements), if the ventilation system is not functioning, then smoke could continue to penetrate into the occupied areas. In lieu of meeting these requirements, the applicant proposes to meet new Class F cargo-compartment requirements approved via the European Aviation Safety Agency (EASA), and studied through an FAA Aviation Rulemaking Advisory Committee (ARAC) activity. In addition, Presidential Airways seeks an exemption for the approved smoke detector, in lieu of detectors that meet TSO-C1d, requesting instead to allow the use of inexpensive, building-type smoke detectors, and with provisions for testing and remote indication.

The petitioner requests relief from the following regulations:

Section 25.855 states that, for each cargo or baggage compartment, the following apply:

(a) The compartment must meet one of the class requirements of § 25.857.

Section 25.857 classifies cargo compartments as Class A, B, C or E and specifies the requirements for each in terms of access, smoke and fire detection, fire extinguishers, and related matters.

Section 25.831:

(e) Except as provided in paragraph (f) of this section, means must be provided to enable the occupants of the following compartments and areas to control the temperature and quantity of ventilating air supplied to their compartment or area independently of the temperature and quantity of air supplied to other compartments and areas:

(1) The flight crew compartment.

(2) Crewmember compartments and areas other than the flight crew compartment unless the crewmember compartment or area is ventilated by air interchange with other compartments or areas under all operating conditions.

(f) Means to enable the flight crew to control the temperature and quantity of ventilating air supplied to the flight crew compartment independently of the temperature and quantity of ventilating air supplied to other compartments are not required if all of the following conditions are met:

(1) The total volume of the flight crew and passenger compartments is 800 cubic feet or less.

(2) The air inlets and passages for air to flow between the flight crew and passenger compartments are arranged to provide compartment temperatures within 5 degrees F. of each other and adequate ventilation to occupants in both compartments.

The petitioner supports its request with the following information:

This section quotes, in part, the relevant information from the petitioner's documentation. The complete petition is available at the Department of Transportation's Federal Docket Management System, on the Internet at http://regulations.gov, in docket no. FAA-2011-0175.

Nature & Extent of Relief Sought

Presidential Airways desires an exemption from the existing classes of cargo compartments, and believes that its proposal for exemption demonstrates an equivalent level of safety. The classification of the cargo area is to be considered Class F, with the following requirements:

A Class F cargo or baggage compartment is one in which:

(1) There are means to extinguish or control a fire without requiring a crewmember to enter the compartment;

(2) There are means to exclude hazardous quantities of smoke, flames, or extinguishing agent, from any compartment occupied by the crew or passengers;

(3) There is a separate approved smoke detector or fire detector system to give warning at the pilot or flight engineer station.

Further, Presidential Airways desires an exemption for the approved smoke detector. It is requested to allow the use of inexpensive building type smoke detectors, with provisions for testing and remote indication. The aerospace smoke detectors are very expensive and not packaged for rough handling. Prices for the aircraft smoke detector are $3,000 per detector plus monitoring controls - high quality building detectors cost $30. Using the building type detectors would allow more detectors to be used. It is proposed that a series of building type smoke detectors be installed under fire containment covers covering the cargo. At least two detectors would be installed under each blanket and two warning indicators would be installed in the cockpit, allowing for redundant detection in each segregated cargo area as well as redundant annunciation. These detectors would be wired in parallel with a test feature and remote LED (light emitting diode) and alarm provisions.

A means will be provided to extinguish or control a fire without requiring a crewmember to enter the compartment. This will be accomplished by the use of Fire Containment Covers (FCC) which will be installed around all cargo, except obviously non-flammable items, such as metal stock, machinery, non-flammable fluids without flammable packaging, etc. The FCCs will be made of woven fiberglass-based materials that will pass the oil burner test of 14 CFR 25, Appendix F, Part II. FCCs will completely surround all cargo, including being underneath the cargo, except for obviously non-flammable items, such as metal stock, machinery, and non-flammable fluids without flammable packaging. A valve will be installed in the FCCs to allow fire-fighting attempts without removing or loosening the FCCs. Cargo restraint nets will be installed over the FCCs.

A means will be provided to exclude hazardous quantities of smoke, flames, or extinguishing agents from any compartment occupied by the crew or passengers. There is an approved procedure for elimination of smoke and fumes in the airplane flight manual (AFM).

A separate approved smoke detector(s) or fire detector system(s) will be installed in the cargo area and a fire/smoke warning indicator will be provided in the cockpit. Smoke or fire detectors placed within each FCC fully enclosed volume provide such a means. The use of non-TSO’d inexpensive building type smoke detectors is requested to be used. The detectors may be wired or Wireless, but they will incorporate provisions for sensor redundancy, testing, and remote cockpit indication. At least two detectors will be placed within each FCC fully enclosed volume.

Two additional fire extinguishers will be carried on the aircraft. Crewmembers will receive training in the use of the fire extinguishers and the cargo fire containment covers; they will also receive training in the use of the approved procedure for the elimination of smoke and fumes which is specified in the airplane flight manual.

Information in Support of this Petition

The requirement for meeting the requirements of Class B cargo space adversely affects Presidential Airways from an operations cost standpoint and adversely affects air

transportation services to the Department of Defense and other Government agencies between locations in the Area of Responsibility (AOR) which include, but are not limited to: Afghanistan, Kyrgyzstan, Pakistan, Uzbekistan and Ouagadougou, Burkina Faso and various Forward Operating Locations (FOLs) in West Africa. Presidential Airways will be required to exercise the privileges of this exemption outside the United States to support various U.S. Government contracts in the areas listed above and others as required.

Presidential Airways has provided additional details of the design and operation of their limited number of CASA Model C-212-CC, C-212-CD, and C-212-DF series airplanes on which they plan to demonstrate an acceptable level of safety. They provided descriptions of the ventilation and heating system, as well as a proposed AFM procedure for a smoke/fire event in the cargo contained within the FCCs. Presidential Airways also shows that they can demonstrate an adequate level of safety on this airplane by meeting some of the requirements as studied by an FAA ARAC activity, and as issued by EASA for the classification of a Class F cargo compartment.

Comments in the Public Interest

The focus of the Presidential Airways petition is to offer a 5000-pound payload aircraft capable of delivering supplies and personnel to Department of Defense and other U.S. Government agencies in remote locations in Afghanistan, Kyrgyzstan, Pakistan, Uzbekistan and Ouagadougou, Burkina Faso and various Forward Operating Locations (FOLs) in West Africa. This aircraft is of optimum size to support a variety of missions. It should be noted that road systems do not exist or are inadequate in most of the operating areas, nor is there scheduled air service in many of these areas. The ability to operate a midsized passenger/cargo aircraft is vital to the various Government agencies and in some cases is the primary means of resupply.

The CASA 212 cabin deck is 21 feet in length with a volume of 770 cubic feet. Access to the cockpit is open allowing either flight crew member a clear view of the cabin. Access to the cabin from the flight deck is unobstructed allowing for quick inspection of cargo and fire fighting, as necessary.

In view of the small size of the CASA 212, a partition required by 14 CFR 25.855(b) could actually inhibit detection, and smoke and fume elimination procedures.

Presidential Airways is FAA approved for transportation of hazardous materials and meets all the applicable requirements of 49 CFR. The *Will-Carry Hazardous Materials Operations Manual and Training Program* is contained in Appendix B of the *Presidential Airways General Operations Manual* (GOM). All personnel and flight crews who are required by the GOM are properly trained in accordance with this program; associated training records are maintained by the company.

Certain 14 CFR 25 certified aircraft, and the CASA 212 in particular, are used to transport personnel and their belongings to remote locations. Presidential Airways only operates the CASA as an “On-Demand Charter” and the primary customer is the Department of Defense and other U.S. Government agencies. Air service is the only means of transportation into some of these remote locations.

Federal Register Publication

A summary of this Notice of Petition for Exemption was published in the Federal Register on March 30, 2011. One comment was received, which was not relevant to the content of the petition.

The FAA's analysis

Presidential Airways has proposed to use some of the requirements, for a classification of cargo compartment, that have been studied in an FAA ARAC activity and are approved by EASA in their Certification Specifications for Large Aeroplanes per Amendment 25-8. The FAA assembled an ARAC to address changes to Class B cargo-compartment standards under FAR Part 25 (59 FR, 29212, July 20, 1994). After this evaluation, the ARAC recommended the FAA develop revised certification standards for Class B cargo compartments and for a new Class F cargo compartment. Presidential Airways intends to use several means of ensuring fire suppression, according to some EASA requirements for Class F cargo compartments and as studied by the FAA ARAC activity. A Class F cargo compartment is one equipped with a means to control or extinguish a fire without requiring a crewmember to enter the compartment. Presidential Airways does not anticipate allowing crewmember access to the compartment in the presence of a fire warning.

The proposed Class F compartments include a built-in fire extinguisher/suppression system, or require the use of acceptable fire-containment covers (FCCs). In addition, the Class F compartment must have a fire- or smoke-detection system installed in accordance with the new proposed § 25.857(f). Unless the compartment is equipped with other means of containing the fire and protecting critical systems and structure, a Class F compartment must have a liner that meets the requirements of part III of Appendix F, or other approved equivalent methods.

Presidential Airways proposes to employ:

- smoke detectors that meet other industry and/or government standards
- FCCs as a means to exclude hazardous quantities of smoke penetration into occupied areas
- FCCs to afford protection of critical airplane systems and equipment
- FCCs as a means to suppress a fire without the need for a crewmember to actively fight the fire

Presidential Airways suggests that their proposal is equivalent to the new Class F cargo-compartment regulations set by EASA and as studied by an FAA ARAC.

DOT/FAA/AR-96/5, *Evaluation of Large Class B Cargo Compartment's Fire Protection*, June 1996, reported on the effectiveness of FCCs, which are flexible, fire-resistant covers sized to fit over pallets and containers. Some of the woven fiberglass-based covers tested would pass the oil-burner test (14 CFR part 25, appendix F, part III) required for Class C cargo-compartment liners. Presidential Airways proposes to use FCCs to completely enclose cargo, thereby affording suitable protection. They further propose to place two fire detectors within each FCC fully enclosed volume. As studied by an FAA ARAC activity, the FAA anticipate that Presidential Airways will load all cargo in one area, using as many FCCs as necessary to provide complete coverage (i.e., under, over, and around all cargo), and will place two smoke/fire detectors within

each FCC fully enclosed volume. Presidential Airways further proposes the use of inexpensive building-type smoke detectors. The building-type smoke detectors may be used, provided that they incorporate sensor redundancy, provisions for testing, and remote indication to the cockpit (via either wired or wireless means) in the event of a fire in items carried.

Presidential Airways operates CASA 212 aircraft as an "On-Demand Charter" service, the primary customer being the Department of Defense and other U.S. Government agencies. Operation of this airplane is intended for use in remote areas of the world where road systems do not exist or are inadequate in most of the operating areas, and in areas that have no scheduled air service. Operating a mid-sized passenger/cargo aircraft into remote areas in some cases is the only means of transportation into some of these remote locations.

The CASA Model C-212-CC, C-212-CD, and C-212-DF series airplanes – as operated in a "combi mode" – represent a single-deck configuration for carrying both passengers and cargo. This "combi mode" does not meet any of the current regulatory classifications for cargo compartments. The FAA finds, however, that the equipment and procedures Presidential Airways, Inc., proposes are appropriate and will provide an acceptable level of safety for the interior configuration of their CASA Model C-212-CC, C-212-CD, and C-212-DF series airplanes as they conduct their operations in remote areas of the world.

The FAA's decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest and will not adversely affect the level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 U.S.C. 40113 and 44701, delegated to me by the Administrator, the petition of Presidential Airways, Inc, for an exemption from the requirement of 14 CFR 25.855, to permit installation of a passenger/cargo configuration via the use of fire-containment covers (FCCs) with building-type smoke and fire detectors, thus allowing the transportation of passengers and cargo on the main deck of CASA Model C-212-CC, C-212-CD, and C-212-DF series airplanes, is hereby granted, with the following limitations:

1. A means, such as an approved fire extinguisher, will be provided to extinguish or control a fire in the compartment without requiring a crewmember to enter the compartment.
2. FCCs will be constructed of materials that pass the oil-burner test of 14 CFR part 25, appendix F, part II, must be used.
3. FCCs will completely surround all cargo, including under the cargo, except for obviously non-flammable items such as metal stock, machinery, and non-flammable fluids without flammable packaging.
4. Cargo restraint nets that meet TSO-C90c will be installed over the FCCs.
5. The FCCs will exclude hazardous quantities of smoke, flames, or extinguishing agent from any compartment occupied by the crew or passengers.
6. The airplane flight manual (AFM) will contain an approved procedure for elimination of smoke and fumes from the compartments.

7. A separate, approved smoke-detector or fire-detector system, meeting at least U.S. National Fire Protection Association (NFPA) and U.S. UL approval, will be installed in the cargo area.
8. Smoke or fire detectors placed within each FCC fully enclosed volume will provide a fire/smoke warning indication in the cockpit.
9. The use of non-TSO, building-type smoke detectors is permitted. These smoke detectors may be wired or wireless, and must incorporate provisions for sensor redundancy, testing, and remote cockpit indication.
10. At least two smoke detectors must be placed within each FCC fully enclosed volume.
11. Crewmembers must receive training in the use of the cargo-fire containment covers and fire extinguishers. They must also receive training in the use of the approved procedure for the elimination of smoke and fumes, which will be specified in the AFM.
12. Two additional U.S. UL- or U.S. Coast Guard-approved fire extinguishers, appropriate for the kinds of fires likely to occur, in addition to the required number of extinguishers, must be carried on the aircraft.
13. Limitations (1) through (12) must be documented as operating limitations in the limitations section of the AFM supplement.

Issued in Renton, Washington on June 22, 2011.

/s/ K. C. Yanamura

K. C. Yanamura
Acting Manager, Transport Airplane Directorate
Aircraft Certification Service