



**Ramp check:**  
**Don't get caught with your belts down!**

**Your seatbelts must have a TSO tag.**

**Without them your aircraft is considered unairworthy.**

**Seats and seat belts are the No. 2 item to be inspected during a “ramp inspection” by the FAA.**

*Relative data is highlighted in this document.*

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## **CHAPTER 56 CONDUCT A FAR PART 91 RAMP INSPECTION**

### **Section 1 Background**

#### **1. PTRS ACTIVITY CODE.** 1661

**3. OBJECTIVE.** The objective of this task is to determine that an airman or operator is in continuing compliance with the FAR during an actual operational situation. Successful completion of this task results in an indication in district office files of either a satisfactory or an unsatisfactory inspection.

**5. GENERAL.** An operations inspector conducts ramp inspections on airmen and aircraft operating under various FAR. This chapter deals with FAR Part 91 operators, which are by far the most numerous. Ramp inspections involving other FAR parts are found in the appropriate related task heading.

#### **A. Definitions.**

(1) For the purposes of this chapter, an operator may be a pilot, an executive/corporate operator, an air agency, etc.

(2) A ramp inspection is defined as surveillance of an airman, operator, or air agency during actual operations at an airport or heliport.

**B. Inspector Conduct.** The inspector shall always have identification available, since an airman or operator may or may not know an inspector.

(1) For special considerations concerning surveillance at fly-ins, airshows, and other gatherings of general aviation aircraft and airmen, see Related Task #50, Surveillance of an Aviation Event, Section 1, paragraph 5A (1)-(4).

(2) An inspector must not board any aircraft without the knowledge of the crew or operator. Some operators may prefer to have a company representative present to answer questions.

(3) If the surveillance will delay a flight, the inspector should use prudent judgement whether or not to continue. (4) The inspector should also bear in mind that he or she may not be able to complete all items on every ramp inspection.

#### **C. Common Reasons for a Ramp Inspection.**

Ramp inspections may result when the inspector:

(1) Observes an unsafe operation in the traffic pattern or in the ramp

(2) Is notified by ATC of an unsafe operation

(3) Conducts normal surveillance

#### **D. Ramp Inspections Planned for a Specific**

**Operator.** Most ramp inspections are not planned for a specific operator; however, when they are planned, the inspector should review the office files. Some of the reasons a ramp inspection might be planned include:

(1) Recurring complaints

(2) Suspected violations of the FAR

(3) Special emphasis program required by the regional office or headquarters

**E. FAR Part 135.** Procedures and details of a FAR Part 135 ramp inspection are found in Order 8400.10, Air Carrier Inspector's Handbook.

**F. Additional Background.** When conducting a ramp inspection of an executive/corporate operator or a FAR Part 125 deviation holder, see Related Task #55, Inspect an executive/Corporate Operator, Section 1.

**7. RAMP INSPECTION JOB AIDS.** The FAR Part 91 Ramp Inspection Job Aid (Figure 56-1) is a job aid provided for the inspector's use in accomplishing this task. This job aid is used when conducting a ramp inspection of a single pilot, a flight instructor, an air agency, or other less complex ramp inspections. The Executive/Corporate Operator Ramp Inspection Job Aid (Refer to Related Task #55, Inspect an Executive/ Corporate Operator) should be used for corporate operators of large and turbine powered or turbojet aircraft or FAR Part 125 deviation holders. If the operations inspector is accompanied by an airworthiness inspector, then the "Aircrew" section is for the operations inspector's use, and the "Aircraft" section is for the airworthiness inspector's use.

**9. AIRWORTHINESS COORDINATION.**

If an air-worthiness inspector is not available for the inspection and suspected airworthiness discrepancies are discovered during the inspection, the operations inspector must coordinate with an airworthiness

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inspector at the district office to determine the disposition of the discrepancy. This should be accomplished before completing the inspection.

**11. DISCREPANCIES FOUND DURING INSPECTION.**

The inspection should be continued unless a discrepancy is discovered that would affect the safety of flight or dispatch of the aircraft which may result in a violation of the FAR. All discrepancies must be noted on the job aid and discussed with the operator. The inspector may explain how to correct discrepancies found during the inspection, but the inspector should keep in mind that it is the operator's responsibility to ensure that items are in compliance with the FAR.

**A. Responsibility for Airworthiness.**

The airworthiness of the aircraft is the responsibility of the pilot (FAR § 91.3) and monitored by airworthiness inspectors. However, if an operations inspector finds an obviously unairworthy aircraft, it is the responsibility of the operations inspector to see that an Aircraft Condition Notice (FAA Form 8620-1) is issued. If accompanied by an airworthiness inspector, he or she may issue FAA Form 8620-1. However, an operations inspector may have to contact the nearest Flight Standards office to have an airworthiness inspector issue the notice.

**B. FAA Form 8620-1.**

The form (Figure 56-2) is in triplicate. The top and middle sheet (both white) go to the airworthiness unit, which mails the original to the owner/lessee and retain the second. The buff-colored card must be placed on the aircraft where the operator can easily see it.

**13. PILOT DOCUMENTS.**

When asked to present airman and medical certificates, a pilot may present a radio license formerly required by the FCC or make a statement that he or she does not have one. The FCC has determined that pilots are no longer required to have this license unless flying internationally.

**15. PILOT CONDITION.**

If an inspector has reason to suspect a pilot or other required crewmember under the influence of alcohol, see Chapter 44, Introduction to FAR Part 91 Related Tasks, Section 3.

**17. AIRCRAFT DOCUMENTS.**

Following are considerations when examining aircraft documents, including registration and airworthiness certificates and approved flight manuals. Discrepancies found concerning the airworthiness or registration certificates shall be brought to the attention of the operator, documented, and given to the airworthiness unit for action.

**A. N-Numbers.**

The N-number on the registration certificate must match the N-number on the airworthiness certificate.

**B. Registration Certificate.**

If the registered owner has changed you may see a temporary registration (Pink Slip) which is good for 120 days. If the ownership has changed without a Pink Slip or the N numbers do not match, the registration is not valid.

### **C. Radio Station License.**

An aircraft FCC radio license is required although the FAA does not regulate the requirement. The license may be for that particular N-number or a fleet license. The expiration date of the license is in the upper right hand corner. Any discrepancy concerning the radio license should be brought to the attention of the operator only.

### **D. Flight Manual.**

An Aircraft Flight Manual is required to be on board the aircraft (FAR § 91.9 {91.31}) along with the appropriate markings and placards.

### **E. Weight and Balance Information.**

Weight and balance documents, including a list of equipment, must be on board the aircraft. Some multiengine operators have Minimum Equipment Lists (MEL's) with a letter of authorization issued by a district office. These constitute a supplemental type certificate for the aircraft and must be on board. The inspector should compare inoperative equipment to the MEL to assure compliance. (Refer to Related Task #58, Approve a Minimum Equipment List.)

### **F. Airworthiness Certificate.**

The certificate most often seen by an inspector is a standard airworthiness certificate, which is issued for normal, utility, acrobatic, and transport category aircraft. A restricted, limited, or experimental certificate must be accompanied by a list of limitations and conditions (FAR § 21.183-191) necessary for safe operation. A Special Flight Permit (Ferry Permit) is issued to aircraft that may not be airworthy but are capable of safe flight under certain conditions which are listed and issued with the permit (FAR §§ 21.197, 91.203 {91.27}, and 91.213 {91.30}). Review the list of limitations and conditions to assure a valid airworthiness certificate. The N-number on the certificate must match the N-number on the fuselage to be valid.

### **19. FOREIGN PILOTS OR AIRCRAFT.**

An operator with a foreign pilot certificate and an aircraft registered in the same foreign country (e.g., Canadian pilot, Canadian-registered aircraft) may operate in the U.S. However, the holder of a foreign pilot certificate may not operate a U.S. registered aircraft **10/1/90 8700.1 CHG 6 Vol. 2 56-3** here without first receiving a U.S. pilot certificate. (Refer to Related Task #29, Issue an Airman Certificate on the Basis of Foreign License.) The foreign pilot may show a current medical of his or her country or a U.S. medical.

### **21. IFR HELICOPTER OPERATIONS.**

Most rotor -craft are certificated VFR only. Under Special FAR 29-4 some rotorcraft have been approved for IFR. Operators holding approval, issued before MARCH 2, 1983, under SFAR 29 through SFAR 29-4 may continue to use that approval until surrendered, revoked, or otherwise terminated, or there is a change in aircraft ownership. After March 2, 1983, the new applicant must have met all certification requirements of FAR Part 27 (Normal Category Rotorcraft) or 29 (Transport Category Rotorcraft).

#### **A. Helicopter Documents.**

A letter of approval (Figure 56-3) with a list of limitations is issued for the helicopter. This letter, list of limitations, and a copy of SFAR 29-4 combine to become a Supplemental Type Certificate for the rotorcraft and must be on board in the Rotorcraft Flight Manual.

#### **B. Pilot Documents.**

The operator may be approved for a one-pilot or a two-pilot crew as listed in the letter of approval.

- (1) Each pilot must have an instrument – helicopter rating on his or her pilot certificate.
- (2) Each pilot must have a current instrument proficiency check accomplished in one of the rotorcraft listed on the letter of approval. The initial instrument proficiency check must include a check in each type rotorcraft authorized. Subsequent six-month checks must be in at least one type of rotor- craft in rotation.
- (3) A single pilot operation must have demonstrated ability using a Stability Augmentation System (SAS) or an autopilot.
- (4) The pilot may produce an FAA Form 8410-3, Airman Competence/Proficiency Check if the check was done under FAR Part 135 or a logbook endorsement (or copy of one). If a pilot took

this check in the calendar month before or after the month in which it was due, the check is considered to have been done when due.

### **23. CATEGORY II/III AUTHORIZATIONS.**

Category II/III operators under FAR Part 91 are issued an authorization with provisions which remain in effect one year. Operators with approved maintenance programs may be renewed for two years. (Refer to Related Task #59, Approve Category II or III Approach Minimums and Manual.)

#### **A. Aircraft Documents.**

The authorization or a facsimile must be on board. The operator must comply with a Category II/III manual which must also be on board. Category II/III authorizations other than FAR Part 91 are authorized by Operations Specifications.

#### **B. Pilot Documents.**

Category II/ III operators must use a PIC and, in some cases, an SIC. The PIC must have a Letter of Authorization based on a practical test. Initially the PIC must be checked in each type airplane authorized. Each six months thereafter the PIC must be checked in at least one type to renew all types. However, an authorization for any particular type aircraft cannot be renewed beyond 12 months after the practical in that type. If the pilot passes a practical test for renewal the month before expiration, he or she is considered to have passed during the month the authorization expired. There is no grace month as in FAR Part 125 or 135. A FAR Part 135 Airman Proficiency Check, FAA Form 8410-3, endorsed for Category II or III or a logbook endorsement (or facsimile of one) may be substituted for a letter of authorization.

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## **Section 2 Procedures**

### **1. PREREQUISITES AND COORDINATION REQUIREMENTS.**

#### **A. Prerequisites.**

This task requires knowledge of the regulatory requirements of FAR Parts 61 and 91 and FAA policies and qualification as an aviation safety inspector (operations).

#### **B. Coordination.**

This task requires coordination with the airworthiness unit and with the airman records section of AVN-460, Airmen Certification Branch.

### **3. REFERENCES, FORMS, AND JOB AIDS.**

#### **A. References.**

- FAR Parts 1, 63, 67, and 125
- FCC Part 87
- Category II/III authorization and manual, if applicable
- Order 8300.10, Air Carrier Inspector's Handbook
- Order 8700.1, General Aviation Operations Inspector's Handbook
- PTRS Field Office Manual

#### **B. Forms.**

- FAA Form 8000-36, PTRS Transmittal Form
- FAA Form 8620-1, Aircraft Condition Notice

(Figure 56-2)

#### **C. Job Aids.**

- Sample letters and figures

### **5. PROCEDURES.**

#### **A. PTRS.** Open PTRS file.

#### **B. Pre-Inspection Activities.**

- (1) Review the office file on the operator to determine if any prior violations of the FAR, past complaints, or inspection reports exist.
- (2) Note review findings and any areas of emphasis on the FAR Part 91 job aid.

#### **C. Location of Inspection.**

Proceed to the airport where the ramp inspection will be conducted. Determine whether or not it is necessary to identify FAA presence to the airport operator or other operators on the airport.

(Figure 56-4) Use the FAR Part 91 job aid to conduct the ramp inspection.

#### **D. Inspect Airman Documents.**

- (1) Inspect airman certificates to determine appropriate ratings and limitations for the type of operations being conducted.
- (2) Determine if certificates are genuine and legible. (See Chapter 1, Introduction to FAR Part 61 Related Tasks.)
- (3) Inspect airman medical certificates to determine if they are current and the appropriate class. Check for a Statement of Demonstrated Ability, if required, on the medical certificate.
- (4) If available, examine pilot logbooks (or other reliable records) to determine recency of experience and qualifications, e.g. --
  - (a) Biennial flight review
  - (b) Instrument proficiency check
  - (c) PIC proficiency check
- (5) If applicable, inspect pilot Category II and/or Category III authorization letters for currency. (FAR § 91.189 {91.6})
- (6) Note any discrepancies on the job aid.

#### **E. Record Aircraft Information.**

Record the N number, Make and model, and whether leased or owned on the job aid. If the vehicle is an ultralight, see Related Task #66, Inspect an Ultralight Vehicle.

#### **F. Inspect Aircraft.**

(Applies to all aircraft)

- (1) Determine that the proper airworthiness certificate is displayed at the cabin or cockpit entrance. Note that it is legible to passengers and/or crew.
- (2) Examine the registration certificate to ensure that it is issued for that specific aircraft. Determine that the N-number on the certificate matches the N-number on the aircraft. Check that the certificate is issued to the present owner of the aircraft. **8700.1 CHG 6 10/1/90 56-6 Vol. 2**
- (3) Check the radio station license and note its expiration date. If it has expired, inform the operator of the pertinent FCC requirements.
- (4) Determine that there is a current, approved Airplane Flight Manual (AFM) on board the aircraft.
- (5) Determine if there is current weight and balance information in the aircraft by examining the AFM. Compare equipment listed on the weight and balance form to the actual equipment installed.
- (6) If applicable, check the MEL to determine that it has:
  - (a) Been issued by N-number and serial number to the aircraft operator
  - (b) A Letter of Authorization from a district office; check deferred items for placards and dates (Refer to Related Task #58, Approve a Minimum Equipment List.)
- (7) If a Letter of Deviation from FAR Part 125 has been issued, ensure that a true copy is in the aircraft.
- (8) If the aircraft is leased, determine that a copy of the lease agreement or contract is being carried in the aircraft. Note the expiration date on the lease and determine if the lease is still valid.
- (9) If applicable, determine that copies of the approved Category II or Category III authorization and manual are in the aircraft.
  - (a) Review the Category II/III authorization and provisions.
  - (b) Check that the aircraft make, model, and N-number is listed.
  - (c) Consider any instrument, airport, or weather requirements listed there or in the manual.
- (10) If the aircraft operates under a letter of authorization for (NAT)(MNPS) North Atlantic Minimum Navigation Performance Specification airspace, determine if the letter is carried on board the aircraft.
- (11) Determine if pertinent and current aeronautical charts are available.
- (12) Ask the operator what type of instrument operations are conducted, for example: ILS, DME, RNAV. Determine if the required radio and navigational equipment is installed for the specific operations conducted.

### **G. Inspect Aircraft.**

(1) Determine the general airworthiness of the aircraft by inspecting the aircraft's exterior in a manner similar to a preflight inspection.

#### **(2) Inspect seats and safety belts for installation and condition.**

(3) If applicable, determine if a current VOR Equipment Check has been performed.

(4) Determine if an ELT (Emergency Locator Transmitter) is installed. Check the expiration date of the battery.

(5) Determine that the aircraft identification plate exists and is secured to aircraft fuselage exterior. (FAR § 45.11(a))

### **H. Inspection Items for Large and Turbine-Powered Multiengine Airplanes Only.**

In addition to the items in Paragraphs E(1) through (12) and F(1) through (4), inspect the following items:

(1) Determine if the aircraft has an emergency checklist available to the flight crew.

(2) Determine if the aircraft has one engine inoperative climb performance data available to the flight crew.

(3) Determine if pertinent and current aeronautical charts are available.

(4) Determine if a flashlight having two D-sized cell batteries, or equivalent, is accessible from the pilot station and in good working order.

(5) If the operator conducts overwater operations, determine that the required radio equipment is installed (FAR § 91.511 {91.191}).

(6) For transport category aircraft only, have the operator demonstrate that the aural speed warning device is in operating condition.

(7) Have the operator activate the smoking and safety belt signs. Determine if they are in operable condition. Check operation from the cockpit and the cabin. If applicable, at this time conduct the altitude alerting system or device check.

(8) Note whether the operator uses passenger briefing cards to supplement oral briefings. If so, **10/1/90 8700.1 CHG 6 Vol. 2 56-7** inspect the cards for location and correct information (FAR § 91.519 {91.199}).

(9) Determine if appropriate emergency equipment is on board the aircraft (FAR § 91.513 {91.193}).

(10) If the operator conducts overwater operations, inspect the following survival equipment for installation and condition: (a) Life preservers with approved survivor locator light (for each occupant) (b) Liferafts with approved survivor locator light (amount should accommodate the number of occupants of the aircraft)

(c) Pyrotechnic signaling devices (for each liferaft)

(d) Emergency radio signaling device

(e) Lifeline

(f) Appropriately equipped survival kit

### **I. Inspection Items for Turbojet Powered Civil Airplanes Only.**

In addition to the items in Paragraphs E(1) through (12), F(1) through (4), and Paragraph G(1) through (10), inspect the altitude alerting system or device for installation and operation. Conduct this test at the same time the smoking/safety belt sign and aural speed warning device test is accomplished.

### **J. Inspection Discrepancies.**

If a discrepancy is discovered during the inspection, enter it on the appropriate job aid in the remarks section.

(1) **Inform the operator of the discrepancy. Advise the operator that if the aircraft is operated without correcting the discrepancy, he or she may be in violation of the FAR.**

(2) If necessary, issue FAA Form 8620-1. (Figure 56-3)

(a) Attach the bottom card (buff) on the aircraft by the string. Place it so that the operator will easily see it. (b) Return the top and middle sheet (both white) to the airworthiness unit.

### **K. Review Job Aid.**

Upon completion of the inspection, review the job aid for any suspected violations. If an enforcement investigation is necessary see Related Task #182, Conduct an Investigation to Determine Compliance.

#### **L. Conclude Inspection.**

- (1) Discuss any pertinent safety information with the pilots or operator.
- (2) Return any documentation.
- (3) Advise the pilot or operator of any upcoming accident prevention or other safety meetings.
- (4) If no discrepancies were found, compliment the pilot or operator.

**M. PTRS Report.** Send a follow-up letter of correction (Figure 56-5) with a suspense date to remind a pilot or operator of noted discrepancies. Complete FAA Form 8000-36 in accordance with the PTRS field office manual. If the pilots or aircraft are not based in the inspector's district, forward a copy of the PTRS report and the job aid to the appropriate district office.

**N. District Office File.** File the job aids in accordance with normal office procedures.

**7. TASK OUTCOMES.** Completion of this task results in one or more of the following:

- A. An indication in the district office files of a satisfactory inspection.
- B. An indication in the district office files of an unsatisfactory inspection.
- C. A letter of correction.
- D. An aircraft condition notice.
- E. Information package sent to another district office.

#### **9. FUTURE ACTIVITIES.**

A. A pilot or operator may be subject to a compliance investigation if the inspection reveals a possible violation of the FAR.

B. A follow-up inspection may be conducted to determine if any noted discrepancies have been corrected. **10/1/90 8700.1 CHG 6 Vol. 2 56-9 8700.1 CHG 6 10/1/90 56-10 Vol. 2 10/1/90 8700.1 CHG 6 Vol. 2 56-11 10/1/90 8700.1 CHG 6 Vol. 2 56-12**

#### **FIGURE 56-3 IFR HELICOPTER LETTER OF APPROVAL**

ABC Construction, Inc.

1234 Any Street

USA

Gentlemen:

ABC Construction, Inc., is authorized by this approval to conduct helicopter operations under instrument flight rules (IFR) in accordance with Special Federal Aviation Regulation No. 29 (SFAR No. 29-4), and the limitations contained herein. A copy of this approval and a copy of SFAR No. 29-4 will be set forth as a supplement to the rotorcraft flight manual, along with those operating limitations considered necessary for the safe operation of the rotorcraft in IFR operations, as incorporated in the operating limitations section. This letter of approval, the operating limitations, and a copy of SFAR No. 29-4 constitute a supplemental type certificate and must be on board the aircraft. \

#### **LIMITATIONS:**

1. Only those helicopters listed, as follows, will be operated under this approval: (e.g., Bell Model 206, Serial No. 123245, Registration No. N54321).
2. For single pilot operation an approved and operable stability augmentation system SAS/autopilot may be used in lieu of a second in command. Otherwise, the minimum flightcrew must include a pilot in command and a second in command.
  - a. SAS/autopilot, make (XYZ) and model (123).
3. Each pilot must hold a rotorcraft-helicopter rating and an instrument helicopter rating (except as specified in paragraph 4).
4. For the purpose instrument instruction, each pilot in command must hold a flight instructor certificate with rotorcraft-helicopter and instrument-helicopter ratings. The second in command must hold a pilot's certificate with a rotorcraft-helicopter rating. The second pilot need not comply with paragraph 5 of this letter while undergoing the formal training program leading toward an instrument-helicopter rating.



5. Each PIC authorized single pilot approval must have satisfactorily accomplished an instrument proficiency check utilizing a stability augmentation system or autopilot in lieu of a second in command within the preceding 6 calendar months.
6. Each pilot crewmember must have in his/her personal possession evidence of proficiency issued by an FAA inspector or authorized check pilot within the previous 6 calendar months.
7. Each helicopter operated under instrument flight rules shall meet the instrument and equipment requirements of Section 91.33 and the following additional equipment:
  - a. An independently-powered standby attitude indicator.
  - b. A heated pitot tube and static port, or equivalent means of preventing airspeed and static system malfunction due to icing.
  - c. The required instruments per FAR 27.771 and 27.1321, or FAR 29.771 and 29.1321, as appropriate.
  - d. The pilot in command must use a boom mike. The transmitter must be capable of being activated through a device located on the flight controls.

**Figure 0-0 IFR HELICOPTER LETTER OF APPROVAL (con'd)**

The instruments and equipment must be operable. A complete set of flight controls shall be installed and operable at each pilot station, except that single pilot approval will require a set of flight controls only at the PIC station. 8. In accordance with Paragraph 4 of SFAR No. 29-4, fuel reserve required by FAR 91.23(a)(3) may be reduced to 30 minutes. 9. ABC Construction, Inc., will provide immediate notification to the Flight Standards District Office issuing this approval of any "hazardous" flight conditions encountered during IFR operations under SFAR No. 29-4. This approval will remain in effect until such time as it is surrendered, revoked, or otherwise terminated, or a change in the aircraft ownership takes place.

John P. Brown,  
Manager

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**FIGURE 56-5 LETTER OF CORRECTION**

FAA LETTERHEAD

Addressed to pilot/operator

Dear \_\_\_\_\_:

This letter is to notify you that an inspection of your [insert either documents or aircraft; if aircraft, indicate the make, model, and N-number] on [insert date of the inspection] at [insert location] revealed deficiencies in the following: List specific items and the related FAR, for example, MEL letter of authorization not carried on board the aircraft. Ref. FAR § 91.213. Your prompt attention to correcting these items is appreciated. Please respond to this office within 10 days to indicate your corrective action. If we may be of assistance, please call [include telephone number and operating hours of the district office].

Sincerely,

Signed by the inspector conducting the inspection



Department of  
Transportation  
**Federal Aviation  
Administration**  
Aircraft Certification  
Service  
Washington, DC

**TSO-C22g**  
Date: 3/5/93

## Technical Standard Order

### Subject: TSO-C22g, SAFETY BELTS

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a. Applicability.

(1) Minimum Performance Standards. This technical standard order (TSO) prescribes the minimum performance standard that safety belts must meet in order to be identified with the applicable TSO marking. New models of safety belts that are to be so identified and that are manufactured on or after the date of this TSO must meet the standards set forth in Society of Automotive Engineers, Inc. (SAE) Aerospace Standard (AS) Document No. AS 8043, "Torso Restraint Systems," dated March 1986, with the exceptions and revisions covered in subparagraphs (a) (4) and (a) (5) of this TSO. Through these exceptions and additions, this TSO only uses those sections of SAE AS 8043 applicable to the pelvic restraint (seat belt) portion of the torso restraint system. Safety belts approved prior to the date of this TSO may continue to be manufactured for an additional six months at which time they may no longer be manufactured under the provisions of their original approval.

(2) Exceptions.

- (i) Wherever SAE AS 8043 refers to torso restraint system(s) or pelvic restraint it shall be considered to be applicable to safety-belt restraint system(s).
- (ii) The information contained in Sections 1., 2.1, 2.3, and 2.9 of SAE AS 8043 is not relevant to safety belt restraint systems and shall be disregarded.
- (iii) Compliance with Sections 3.2, 3.2.2, 3.8, 5.9, 6.1, 6.1.2, 8.9, 9.3 and 9.4 of SAE AS 8043 is not required.
- (iv) Disregard references to breaking strength of upper torso restraint webbing and attachment hardware specified in Sections 4.2, 4.4, and 5.3 of SAE AS

8043 respectively.

(3) Additions.

(i) The definition in Section 2.2 of SAE AS 8043 shall read as follows: Safety Belt Restraint System: Consists of any webbing or similar device including all buckles or other fasteners, and all integral hardware designed to restrain movement of the pelvis, commonly referred to as a lap belt or safety belt.

(ii) The requirements of Section 3.2.1 of SAE AS 8043 shall read as follows: Safety Belt Restraint System: A safety belt restraint system shall provide pelvic restraint and shall not incorporate emergency locking retractors (inertia reels).

(iii) Section 9.1 of SAE AS 8043 is revised and shall read as follows: Installation: All components of three seat belt restraint systems shall be tested using a rigid test block, as shown in Figures 2 and 3, or a modified test block incorporating only the first 6 inches of the test block shown in Figure 3, or the equivalent, using the procedures in paragraph 9.2, as appropriate. Install the seat belt restraint system on the test block, as shown in Figure 2 and adjust to a length of 1220-1270 mm (48-50 inches), or as near as possible. An automatic locking retractor should be locked at the start of the test with a force on the webbing just sufficient to keep the retractor locked.

(4) Environmental Standards. SAE AS 8043 incorporates as reference the following environmental standards, for which a more recent version of these standards may be substituted, if approved by the manager of the aircraft certification office (ACO), Federal Aviation Administration (FAA), having geographical purview over the manufacturer's facilities.

(i) American Society for Testing Materials (ASTM) G23-81, Standard Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.

(ii) ASTM B117-73, Standard Method of Salt Spray (Fog) Testing.

(iii) ASTM D756-78, Standard Practice for Determination of Weight and Shape Changes of Plastics Under Accelerated Service Conditions.

(5) Test Methods. SAE AS 8043 incorporates as a reference the following test standards, for which a more recent version of these standards may be substituted, if approved by the manager of the ACO, having geographical purview over the manufacturer's facilities.

(i) American Association of Textile Chemist and Colorists (AATCC) Standard Test Method 8-1981, Colorfastness to Crocking.

- (ii) AATCC Standard Test Method 107-1981, Colorfastness to Water.
- (iii) Federal Test Method Standard 191, Method 5906.
- (iv) AATCC Chart for Measuring Transference of Color.

b. **Marking.** Each safety belt restraint system or separate sub-assembly must be marked in accordance with Federal Aviation Regulations (FAR) Section 21.607 (d), except that the rated strength of the safety belt restraint system shall be shown and the date of manufacture is required in lieu of the optional marking requirements of Section 21.607 (d) (3).

c. Data Requirements.

(1) In addition to FAR Section 21.605, the manufacturer shall furnish the manager of the ACO, FAA having geographical purview of the manufacturer's facilities, one copy each of the following technical data:

(i) A complete description of the safety belt restraint system, including detail drawings, material identification and specification.

(ii) Operating instructions and limitations.

(iii) Installation instructions and limitations.

(iv) A report of the tests conducted in accordance with SAE AS 8043 for qualification and approval of safety belt restraint systems.

(v) Detailed maintenance instructions, including specific guidance on the limits of wear and damage permissible to webbing material which would warrant replacement, i.e., explain how and/or when the breaking strength of the webbing would be expected to drop below the specified abrasion breaking strength.

(vi) The quality control functional test specification to be used to test each production article to ensure compliance with this TSO.

(2) In addition, the manufacturer must furnish to the user one copy of the data and information specified in paragraphs c (1) (ii) and c (1) (v). This data and information is necessary for proper installation and use and for continued airworthiness of the product or article. The manufacturer also must furnish the user a note with the following statement:

“The conditions and test required for TSO approval of this article are minimum performance standards. It is the responsibility of those desiring to install the article either on or within a specific type or class of aircraft to determine that

the aircraft installation conditions are within the TSO standards. The article may be installed only if further evaluation by the applicant (user/installer) documents an acceptable installation and is approved by the Administrator."

d. Availability of Referenced Documents.

(1) Copies of SAE AS 8043 may be purchased from the Society of Automotive Engineers, Inc., Department 331, 400 Commonwealth Drive, Warrendale, PA 15096.

(2) Copies of ASTM B117-73, D756-78, and G23-81 may be purchased from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

(3) Copies of AATCC 8-1981 and 107-1981 may be purchased from the American Association of Textile Chemists and Colorists, PO Box 12215, Research Triangle Park, NC 27709.

(4) Copies of Federal Test Method Standard 191 Method 5906 may be purchased from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

(5) Federal Aviation Regulations, Part 21, Subpart O, may be purchased from the Superintendent of Documents, US Government Printing Office, Washington, DC 20402-9325.

(6) Advisory Circular 20-110, "Index of Aviation Technical Standard Orders," may be obtained from the US Department of Transportation, Utilization and Storage Section, M-443.2, Washington, DC 20590.

/S/ John K. McGrath

Manager, Aircraft Engineering Division  
Aircraft Certification Service

**§ 21.607 General rules governing holders of TSO authorizations.**

**Each manufacturer of an article for which a TSO authorization has been issued under this part shall-**

**(a) Manufacture the article in accordance with this part and the applicable TSO;**

**(b) Conduct all required tests and inspections and establish and maintain a quality control system adequate to ensure that the article meets the requirements of paragraph (a) of this section and is in condition for safe operation;**

**(c) Prepare and maintain, for each model of each article for which a TSO authorization has been issued, a current file of complete technical data and records in accordance with §21.613; and**

**(d) Permanently and legibly mark each article to which this section applies with the following information:**

**(1) The name and address of the manufacturer.**

**(2) The name, type, part number, or model designation of the article.**

- (3) The serial number or the date of manufacture of the article or both.**
- (4) The applicable TSO number.**