



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-5595; Directorate Identifier 2015-NM-087-AD]

RIN 2120-AA64

Airworthiness Directives; Zodiac Seats California LLC Seating Systems

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain Zodiac Seats California LLC seating systems. This proposed AD was prompted by a determination that the affected seating systems may cause serious injury to the occupant during forward impacts when subjected to certain inertia forces. This proposed AD would require removing affected seating systems. We are proposing this AD to prevent serious injury to the occupant during forward impacts in emergency landing conditions.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-5595; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Patrick Farina, Aerospace Engineer, Cabin Safety Branch, ANM-150L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5344; fax: 562-627-5210; email: patrick.farina@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2016-5595; Directorate Identifier 2015-NM-087-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will

also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We determined that occupants of certain Zodiac Seats California LLC seating systems having model numbers 4157, 4170, and 4184, may experience serious injury during forward impacts when subjected to inertia forces as defined by 14 CFR 25.561 and 14 CFR 25.562 (and thus are noncompliant with 14 CFR 25.785). The affected seating systems are installed on, but not limited to, various transport category airplanes.

The impact of the head onto a typical transport passenger seat back during seat qualification testing normally results in an initial contact followed by an unimpeded sliding motion down the back of the seat. That type of interaction does not typically result in excessive neck loading or direct concentrated loading on the neck. The design of the affected seating systems introduce new injury mechanisms such that the chin can catch on the seat, causing high neck bending loads and direct concentrated loading on the neck. This interaction between the head and the seat during forward impacts can result in serious injury to the occupant.

14 CFR 25.785 states that seat designs cannot cause a serious injury to the occupant when making proper use of the seat and restraint and subjected to the inertia forces specified in 14 CFR 25.561 and 14 CFR 25.562. Specifically, 14 CFR 25.785(b) states:

Each seat, berth, safety belt, harness, and adjacent part of the airplane at each station designated as occupiable during takeoff and landing must be designed so that a person making proper use of these facilities will not suffer serious injury in an emergency landing as a result of the inertia forces specified in sections 25.561 and 25.562.

Use of the affected seating systems could result in serious injury to the occupant during forward impacts in emergency landing conditions.

FAA’s Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs.

Proposed AD Requirements

This proposed AD would require removing affected seating systems.

Costs of Compliance

We estimate that this proposed AD affects 10,482 seating systems installed on but not limited to various transport category airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Removal	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$890,970

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

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

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

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

List of Subjects in 14 CFR Part 39

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

The Proposed Amendment

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

PART 39 - AIRWORTHINESS DIRECTIVES

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

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

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Zodiac Seats California LLC: Docket No. FAA-2016-5595; Directorate Identifier 2015-NM-087-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Zodiac Seats California LLC seating systems, having model numbers and part numbers identified in table 1 to paragraphs (c), (g), (i), (j) and (k) of this AD, installed on, but not limited to, the airplanes identified in paragraphs (c)(1) through (c)(9) of this AD, all type certificated models in any category.

(1) The Boeing Company Model 717-200 airplanes.

(2) Bombardier, Inc. Model CL-600-2C10 (Regional Jet Series 700, 701, & 702) airplanes.

(3) Bombardier, Inc. Model CL-600-2D24 (Regional Jet Series 900) airplanes.

(4) Bombardier, Inc. Model DHC-8-400, -401, and -402 airplanes.

(5) Empresa Brasileira de Aeronautica S.A. (Embraer) Model EMB-145XR airplanes.

(6) Embraer S.A. Model ERJ 170-100 LR airplanes.

(7) Embraer S.A. Model ERJ 170-200 LR, and -200 STD airplanes.

(8) Embraer S.A. Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes.

(9) Embraer S.A. Model ERJ 190-200 LR airplanes.

Table 1 to paragraphs (c), (g), (i), (j) and (k) of this AD – Affected Seating Systems

Model Number	Part Number	Description
4157	4157(-)(-)(-)	Double Seat Assembly System
4157	4158(-)(-)(-)	Double Seat Assembly System
4157	4175(-)(-)(-)	Double Seat Assembly System

Model Number	Part Number	Description
4157	4176()-()-()	Double Seat Assembly System
4157	4177()-()-()	Double Seat Assembly System
4157	4178()-()-()	Double Seat Assembly System
4170	4170()-()	Triple Seat Assembly System
4170	4169()-()	Double Seat Assembly System
4170	4171()-()	Single Seat Assembly System Exit Row
4170	4172()-()	Double Seat Assembly System Exit Row
4184	4184()-()-()	Double Seat Assembly System

(d) Subject

Air Transport Association (ATA) of America Code 2520, Passenger Compartment Equipment.

(e) Unsafe Condition

This proposed AD was prompted by a determination that the affected seating systems may cause serious injury to the occupant during forward impacts when subjected to certain inertia forces. We are issuing this AD to prevent serious injury to the occupant during forward impacts in emergency landing conditions.

(f) Compliance

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

(g) Seating System Removal

Within 60 months after the effective date of this AD, remove all seating systems having a model number and part number identified in table 1 to paragraphs (c), (g), (i), (j), and (k) of this AD.

(h) Definition of a Direct Spare

For the purposes of this AD, a “direct” spare has the same part number as the part it replaces.

(i) Parts Installation Limitations: Seating Systems

As of the effective date of this AD, no person may install on any airplane any Zodiac Seats California LLC seating systems having any model number and part number identified in table 1 to paragraphs (c), (g), (i), (j), and (k) of this AD that are approved under TSO-C127a; except as specified in paragraphs (i)(1) and (i)(2) of this AD.

(1) Seating systems may be removed from service for the purpose of performing maintenance activities and reinstalled on airplanes operated by the same operator but only until the operator complies with the removal of affected seating systems required by paragraph (g) of this AD.

(2) New seating systems may be installed as direct spares for the same part number seating systems but only until the operator complies with the removal of affected seating systems required by paragraph (g) of this AD. Seating systems installed as direct spares are subject to the applicable requirements and compliance times specified in this AD.

(j) Parts Installation Provisions: Installation and Rearrangement

Installation of a seating system having any model number and part number identified in table 1 to paragraphs (c), (g), (i), (j), and (k) of this AD, other than those installed as direct spares, is considered a new installation that needs approval; except re-arrangement of the existing installed seating systems on an airplane is acceptable until the operator complies with the removal of affected seating systems required by paragraph (g) of this AD, provided the re-arrangement follows the same installation instructions and limitations as the original certification (e.g., if the original limitations allowed 32” to 34” pitch, the new layout must be pitched within that range).

(k) Parts Installation Prohibition: Components of Seating Systems

As of the effective date of this AD, no person may install on any airplane any component of any seating system having any model number identified in table 1 to paragraphs (c), (g), (i), (j), and (k) of this AD that is approved under TSO-C127a; except as specified in paragraphs (k)(1), (k)(2), and (k)(3) of this AD.

(1) Components of seating systems specified in paragraph (g) of this AD may be removed from service and re-installed on airplanes operated by the same operator but only until the operator complies with the removal of affected seating systems required by paragraph (g) of this AD.

(2) New components of seating systems may be installed as direct spares for the same part number components but only until the operator complies with the removal of affected seating systems required by paragraph (g) of this AD.

(3) Components of seating systems specified in paragraph (g) of this AD that are installed as direct spares are subject to the applicable requirements and compliance times specified in paragraph (g) of this AD.

(l) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (m) of this AD. Information may be emailed to:

9-ANM-LAACO-AMOC-Requests@faa.gov.

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

(m) Related Information

For more information about this AD, contact Patrick Farina, Aerospace Engineer, Cabin Safety Branch, ANM-150L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5344; fax: 562-627-5210; email: patrick.farina@faa.gov.

Issued in Renton, Washington, on April 11, 2016.

Victor Wicklund,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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