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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-0230; Project Identifier AD-2023-01064-A,Q,T; Amendment 39-23107; AD 2025-16-09]

RIN 2120-AA64

Airworthiness Directives; Various Airplanes

AGENCY:

Federal Aviation Administration (FAA), DOT.

ACTION:

Final rule.

SUMMARY:

The FAA is adopting a new airworthiness directive (AD) for all airplanes with certain Pacific Scientific Company rotary buckle assemblies (buckles) installed. This AD was prompted by a report of a manufacturing defect in the screws used inside the buckle. This AD requires inspecting the buckle screws, and depending on the results, reidentifying the buckle, replacing the screws and reidentifying the buckle, or replacing the buckle. This AD also allows optionally prohibiting use of the seat until the actions required by this AD are accomplished. This AD also prohibits installing certain buckles on any airplane. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective September 22, 2025.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of September 22, 2025.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA-2024-0230; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

- For Parker Meggitt material identified in this AD, contact Parker Meggitt Services, 1785 Voyager Avenue, Simi Valley, CA 93063; phone: 877-666-0712; email: TechSupport@meggitt.com; website: [Meggitt.com/services_and_support/customer_experience/update-on-buckle-assembly-service-bulletins](https://meggitt.com/services_and_support/customer_experience/update-on-buckle-assembly-service-bulletins).
- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at *regulations.gov* under Docket No. FAA-2024-0230.

FOR FURTHER INFORMATION CONTACT:

David Kim, Aviation Safety Engineer, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712; phone: 562-627-5274; email: David.Kim@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend [14 CFR part 39](#) by adding an AD that would apply to all airplanes with a restraint system with a Pacific Scientific Company rotary buckle assembly (buckle) part number (P/N) 1111475 (all dash numbers) or P/N 1111548-01 installed having a date of manufacture (DOM) between January 2012 and September 2012 inclusive, or an unknown DOM. The NPRM was published in the **Federal Register** on February 29, 2024 ([89 FR 14783](#)). The NPRM was prompted by a report of a manufacturing defect in the screws used inside the buckle. In the NPRM, for airplanes with the identified buckle, the FAA proposed to require inspecting the buckle screws, and depending on the results of that screw inspection, replacing the screws and reidentifying the buckle, or replacing the buckle.

The FAA issued a supplemental notice of proposed rulemaking (SNPRM) to amend [14 CFR part 39](#) by adding an AD that would apply to all airplanes with a restraint system with a Pacific Scientific Company rotary buckle assembly (buckle) P/N 1111475 (all dash numbers) or P/N 1111548-01 installed having a DOM between January 2012 and April 2013 inclusive, or an unknown DOM. The SNPRM was published in the **Federal Register** on February 11, 2025 ([90 FR 9293](#)). The SNPRM was prompted by discovery that an additional lot of screws are affected by the unsafe condition. The SNPRM proposed to require the same actions as those proposed in the NPRM, but with a broader applicability and updated service information. As an alternative, the SNPRM also proposed to allow removing the male side from the lap of the restraint system assembly and installing a placard stating that use of the seat is prohibited; use of that crewmember seat or passenger seat would then be prohibited until the proposed actions are accomplished and the male side from the lap of the restraint system assembly is reinstalled.

The FAA is issuing this AD to prevent cracking and missing screw heads when under load. The unsafe condition, if not addressed could result in a failure of the buckle to restrain the occupant.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from Boeing and United Airlines who supported the SNPRM without change.

The FAA received additional comments from three commenters, including Delta Air Lines (Delta) and American Airlines (American). The following presents the comments received on the SNPRM and the FAA's response to each comment.

Request To Apply Distinct P/N for Modified Buckles

An individual commenter requested the FAA revise the SNPRM to require identifying the buckle with a distinct P/N and/or more durable label. The commenter stated that the current labeling system wears off over time, potentially increasing the risk of confusion regarding compliance status. Further, the commenter contended that a unique identifier for compliant buckles would prevent unnecessary reinspection and improve long-term regulatory adherence.

The FAA disagrees. As the FAA stated in the SNPRM, the manufacturer introducing a new P/N for newly-manufactured parts is ideal; however, the FAA cannot mandate a company to change a P/N for an article. Applicable part-numbered buckles with an illegible or missing DOM, including those that may have never been marked, are considered as having an unknown DOM for the purposes of this AD and would be required to comply with the AD actions. The DOM marking was added to buckle P/N 1111475 (all dash numbers) starting in September 2012, while buckle P/N 1111548-01 has always been marked with the DOM. Additionally, part marking preservation and reidentification is the responsibility of the operators. No change has been made to this AD as a result of this comment.

Request To Clarify Screw Replacement Requirement

American requested that the FAA clarify whether all four screws must be replaced if at least one of the four screws has a Torx head. American noted that the "Differences Between This SNPRM and the Referenced Material" section of the SNPRM stated that all four screws must be replaced with hex head screws if any number of Torx head screws are found, but that the required actions specify replacement of only Torx head screws. American stated it was not sure if a buckle would have a mix of screws. Delta requested that the FAA revise paragraphs (g)(1)(ii)(B) and (g)(2)(ii)(B) of the proposed AD to require replacing all four screws if at least one of the four screws is found to have a Torx head. Delta explained that the current language might lead operators to interpret that only Torx head screws found need to be replaced, rather than all four, as stated in the referenced material.

The FAA agrees to clarify the screw replacement requirement in this AD and disagrees with the request to require replacement of all four screws if at least one of the four screws has a Torx head. Although the material referenced in this AD specifies replacing all four screws if at least one screw is a Torx head,

this AD only requires the replacement of Torx head screws. Hex head screws are not subject to the unsafe condition and therefore do not need to be replaced for the buckle to be considered airworthy.

No change is necessary to this AD regarding these comments.

Request To Extend Compliance Time

An individual commenter requested that the FAA extend the proposed 12-month compliance time to a compliance time of 18 to 24 months, due to constraints such as parts availability and fleet size. The commenter stated that the FAA's assertion that replacement parts are readily available may not fully account for global supply chain delays.

The FAA disagrees. The FAA determined the proposed 12-month compliance time after factoring the time needed to process the proposed AD before issuance of the final rule, as well as after evaluating the associated safety risks. According to the manufacturer, an ample number of spare parts and screws are in stock and will be available to modify the U.S. fleet within the required compliance time. To the extent spare parts may become unavailable, the FAA cannot base AD actions upon parts availability. While every effort is made to avoid grounding airplanes, the FAA must address the unsafe condition. The FAA did not make any changes to this final rule as a result of this comment.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products.

Material Incorporated by Reference Under [1 CFR Part 51](#)

The FAA reviewed Parker Meggitt Service Bulletin SB 1111475-25-001-2023 and SB 1111548-25-001-2023, both Revision 002, both dated April 1, 2024. This material specifies procedures for inspecting the buckle for any missing or loose screw heads and, depending on the results, replacing the buckle and sending the removed buckle to Parker Meggitt for repair or replacement. If after that first inspection, all of the screw heads are intact, this material specifies procedures for inspecting the buckle for any Torx head screws (alloy steel) and, depending on the results, allowing the buckle assembly to remain in-service temporarily, replacing any Torx head screws (alloy steel) with new hex head screws (stainless steel), and checking the functionality of the buckle. This material also specifies procedures for removing a buckle from a restraint system, installing a buckle on a restraint system, and returning buckles to Parker Meggitt. If the buckle passes the specified inspections or is modified by replacing Torx head screws (alloy steel) with new hex head screws (stainless steel), this material specifies procedures for reidentifying the back of the buckle. The buckle may be included as a component of a different part-numbered restraint system assembly. This material identifies known affected restraint system assembly P/Ns. These documents are distinct since they apply to different airplane configurations. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Costs of Compliance

The FAA estimates that this AD affects 21,313 buckles installed on restraint systems on airplanes worldwide. The FAA has no way of knowing the number of airplanes of U.S. Registry that may have a restraint system with an affected buckle installed. The estimated costs on U.S. operators reflects the maximum possible costs based on affected buckles installed on restraint systems in airplanes worldwide. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per buckle	Cost on U.S. operators
Inspecting a buckle	.1 work-hour × \$85 per hour = \$9	\$0	\$9	Up to \$191,817.

Estimated Costs for Optional Actions

Action	Labor cost	Parts cost	Cost per product
Removing male side of lap belt and placarding seat inoperative	1.5 work-hours × \$85 per hour = \$128	nominal	\$128

The FAA estimates the following costs to do any necessary repairs that would be required based on the results of the inspection. The agency has no way of determining the number of buckles that might need this repair:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per buckle
Replacing a set of screws (four)	.5 work-hour × \$85 per hour = \$43	nominal	\$43.
Replacing a buckle	.5 work-hour × \$85 per hour = \$43	\$740	783.
Reidentifying a buckle	minimal	nominal	nominal.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

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.

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

Regulatory Findings

This AD will not have federalism implications under [Executive Order 13132](#). This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

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

- (1) Is not a “significant regulatory action” under [Executive Order 12866](#),
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in [14 CFR Part 39](#)

- Air transportation
- Aircraft
- Aviation safety
- Incorporation by reference
- Safety

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends [14 CFR part 39](#) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

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

Authority: [49 U.S.C. 106\(g\)](#), [40113](#), [44701](#).

[§ 39.13](#) [Amended]

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

2025-16-09 Various Airplanes: Amendment 39-23107; Docket No. FAA-2024-0230; Project

(a) Effective Date

This airworthiness directive (AD) is effective September 22, 2025.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all airplanes, certificated in any category, with a restraint system with a Pacific Scientific Company rotary buckle assembly (buckle) part number (P/N) 1111475 (all dash numbers) or P/N 1111548-01 installed having a date of manufacture (DOM) between January 2012 and April 2013 inclusive, or an unknown DOM. These buckles may be installed on, but not limited to, The Boeing Company model airplanes.

Note 1 to paragraph (c): The buckle may be included as a component of a different part-numbered restraint system assembly.

Note 2 to paragraph (c): These buckles may also be installed on helicopters; however, the FAA determined that a shorter compliance time to accomplish the required actions is required for buckles installed on helicopters. Accordingly, the FAA published a separate AD (AD 2024-20-04, Amendment 39-22863 ([89 FR 85040](#), October 25, 2024)) to address all helicopters with an affected buckle installed.

(d) Subject

Air Transport Association (ATA) of America Code: 25, Equipment/Furnishings, or Joint Aircraft System Component (JASC) Code 2500, Cabin Equipment/Furnishings; and 2510, Flight Compartment Equipment.

(e) Unsafe Condition

This AD was prompted by a report of a manufacturing defect in the screws used inside the buckle. The FAA is issuing this AD to prevent cracking and missing screw heads when under load. The unsafe condition, if not addressed, could result in a failure of the buckle to restrain the occupant.

(f) Compliance

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

(g) Required Actions

(1) For airplanes with buckle P/N 1111475 (all dash numbers), within 12 months after the effective date of this AD, inspect each buckle screw for cracked, loose, and missing screw heads by following the

Accomplishment Instructions, paragraphs B.(1) and (2), of Parker Meggitt Service Bulletin SB 1111475-25-001-2023, Revision 002, dated April 1, 2024 (SB 1111475-25-001-2023 Rev 002).

(i) If any screw has a cracked, loose, or missing screw head, before further flight, replace the buckle with an airworthy buckle.

(ii) If none of the four screw heads are cracked, loose, or missing, before further flight, inspect each screw to determine if any screw has a Torx head by using one of the following methods in the Accomplishment Instructions of SB 1111475-25-001-2023 Rev 002: paragraph B.(4)(a) (Magnet Test); paragraph B.(4)(b) (Inspection); or paragraphs C.(2) through (4) (removing the buckle from the restraint system) and paragraphs D.(1)(a) through (d) (disassembling the buckle).

(A) If none of the four screws have a Torx head, before further flight, reassemble the buckle (if necessary) by following the Accomplishment Instructions, paragraphs D.(1)(f) through (l), of SB 1111475-25-001-2023 Rev 002, and reidentify the buckle with “INS. A” by following the Accomplishment Instructions, paragraph B.(6), of SB 1111475-25-001-2023 Rev 002.

(B) If at least one of the four screws has a Torx head, before further flight, with the buckle removed, replace each Torx head screw with a hex head screw, reassemble the buckle, and reidentify the buckle with “MOD. A” by following the Accomplishment Instructions, paragraphs D.(1)(e) through (m), of SB 1111475-25-001-2023 Rev 002, except you are not required to return any parts to Parker Meggitt. If a screw head breaks off during disassembly, before further flight, replace the buckle with an airworthy buckle.

Note 3 to paragraph (g)(1): SB 1111475-25-001-2023 Rev 002 refers to a magnifying glass as an “eye loupe.”

(2) For airplanes with buckle P/N 1111548-01, within 12 months after the effective date of this AD, inspect each buckle screw for cracked, loose, and missing screw heads by following the Accomplishment Instructions, paragraph B.(1), of Parker Meggitt SB 1111548-25-001-2023, Revision 002, dated April 1, 2024 (SB 1111548-25-001-2023 Rev 002).

(i) If any screw has a cracked, loose, or missing screw head, before further flight, replace the buckle with an airworthy buckle.

(ii) If none of the four screw heads are cracked, loose, or missing, before further flight, inspect each screw to determine which screws have a Torx head by using one of the following methods in the Accomplishment Instructions of SB 1111548-25-001-2023 Rev 002: paragraph B.(3)(a) (Inspection); or paragraph C. (removing the buckle from the restraint system) and paragraphs D.(1)(a) through (c) (disassembling the buckle).

(A) If none of the four screws have a Torx head, before further flight, reassemble the buckle (if necessary) by following the Accomplishment Instructions, paragraphs D.(1)(e) through (l), of SB 1111548-25-001-2023 Rev 002, and reidentify the buckle with “INS. A” by following the Accomplishment Instructions, paragraph B.(5), of SB 1111548-25-001-2023 Rev 002.

(B) If at least one of the four screws has a Torx head, before further flight, with the buckle removed, replace each Torx head screw with a hex head screw, reassemble the buckle, and reidentify the buckle with “MOD. A” by following the Accomplishment Instructions, paragraphs D.(1)(d) through (m), of SB

1111548-25-001-2023 Rev 002, except you are not required to return any parts to Parker Meggitt. If a screw head breaks off during disassembly, before further flight, replace the buckle with an airworthy buckle.

Note 4 to paragraph (g)(2): SB 1111548-25-001-2023 Rev 002 refers to a magnifying glass as an “eye loupe.”

(3) For a crewmember seat or passenger seat with a restraint system with a buckle identified in paragraph (c) of this AD installed, as an option for the actions required by paragraph (g)(1) or (2) of this AD, as applicable, within 12 months after the effective date of this AD:

(i) Remove the male side from the lap of the restraint system assembly.

(ii) Fabricate a placard using at least 1/8 inch letters with the words “USE OF THIS SEAT IS PROHIBITED” on it and install the placard on the seat within the crewmember or passenger's clear view. The seat is then inoperative until the actions required by paragraph (g)(1) or (2) of this AD, as applicable, are accomplished and the male side from the lap of the restraint system assembly is reinstalled.

(h) Parts Installation Prohibition

As of the effective date of this AD, do not install a buckle identified in paragraph (c) of this AD on any airplane unless the buckle is marked with “MOD. A” or “INS. A.”

(i) Credit for Previous Actions

You may take credit for actions required by paragraph (g)(1) or (2) of this AD, as applicable, if the corresponding actions were performed before the effective date of this AD using Parker Meggitt SB 1111475-25-001-2023, Revision 001, dated December 1, 2023, or Parker Meggitt SB 1111548-25-001-2023, Revision 001, dated December 1, 2023, as applicable, and provided torque of 15 to 25 in-lbs. (1.69 to 2.82 N-m) was applied on the four hex head screws (P/N 0901101-149) during any repair of the buckle.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, West Certification Branch, 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 West Certification Branch, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: AMOC@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.

(k) Additional Information

For more information about this AD, contact David Kim, Aviation Safety Engineer, FAA, 3960

Paramount Boulevard, Lakewood, CA 90712; phone: 562-627-5274; email: David.Kim@faa.gov.

(I) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the material listed in this paragraph under [5 U.S.C. 552\(a\)](#) and [1 CFR part 51](#).

(2) You must use this material as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Parker Meggitt Service Bulletin SB 1111475-25-001-2023, Revision 002, dated April 1, 2024.

(ii) Parker Meggitt Service Bulletin SB 1111548-25-001-2023, Revision 002, dated April 1, 2024.

(3) For Parker Meggitt material identified in this AD, contact Parker Meggitt Services, 1785 Voyager Avenue, Simi Valley, CA 93063; phone: 877-666-0712; email: TechSupport@meggitt.com; website: meggitt.com/services_and_support/customer_experience/update-on-buckle-assembly-service-bulletins.

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th Street, Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.

Issued on August 12, 2025.

Steven W. Thompson,

Acting Deputy Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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