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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-0221; Project Identifier AD-2023-01233-T; Amendment 39-22762; AD 2024-11-01]

RIN 2120-AA64

Airworthiness Directives; Airbus SAS Airplanes

AGENCY:

Federal Aviation Administration (FAA), DOT.

ACTION:

Final rule.

SUMMARY:

The FAA is superseding Airworthiness Directive (AD) 2021-21-02, which applied to certain Airbus SAS Model A318, A319, A320, A321, A330-200, A330-200 Freighter, A330-300, A330-800, A330-900, A340-200, A340-300, A340-500, A340-600, and A380-800 series airplanes. AD 2021-21-02 required replacing certain parts manufacturer approval (PMA) Ni-Cd batteries with serviceable Ni-Cd batteries or maintaining the electrical storage capacity of those PMA Ni-Cd batteries during airplane storage or parking. This AD was prompted by a determination that the on-wing preservation procedures originally provided in that AD did not ensure the expected preservation of the battery capacity. This AD adds airplanes to the applicability and requires replacing each affected part with a serviceable part before release to service of an airplane after a storage or parking period, as applicable. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective July 3, 2024.

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-0221; 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.

FOR FURTHER INFORMATION CONTACT:

Dan Rodina, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 206-231-3225; email dan.rodina@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend [14 CFR part 39](#) to supersede AD 2021-21-02, Amendment 39-21762 ([86 FR 62898](#), November 15, 2021) (AD 2021-21-02). AD 2021-21-02 applied to certain Airbus SAS Model A318, A319, A320, A321, A330-200, A330-200 Freighter, A330-300, A330-800, A330-900, A340-200, A340-300, A340-500, A340-600, and A380-800 series airplanes. The NPRM published in the **Federal Register** on February 9, 2024 ([89 FR 9074](#)). The NPRM was prompted by a determination that the on-wing preservation procedures originally provided in that AD did not ensure the expected preservation of the battery capacity. In the NPRM, the FAA proposed to add Model A300 series airplanes; Model A300 B4-600, B4-600R, and F4-600R series airplanes, and Model A300 C4-605R Variant F airplanes (collectively called Model A300-600 series airplanes); Model A310 series airplanes; and Model A350-941 and -1041 airplanes to the applicability. The FAA proposed that the superseding AD would retain none of the requirements of AD 2021-21-02. The FAA proposed to require replacing each affected part with a serviceable part before release to service of an airplane after a storage or parking period, as applicable. The FAA is issuing this AD to address reduced battery endurance performance, which could possibly result in failure to supply the minimum essential electrical power during abnormal or emergency conditions.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from Air Line Pilots Association, International (ALPA), who supported the SNPRM/NPRM without change.

The FAA received additional comments from American Airlines (AA) and United Airlines (UAL). The following presents the comments received on the NPRM and the FAA's response to each comment.

Request for Clarification of Terms

AAL requested clarification of “parking and storage” as intended by the proposed AD. The commenter asked whether “parking and storage” included extended heavy maintenance checks, such as an S-check that is abnormally extended beyond the 6-month time-limit due to inspection findings or material

sourcing issues, or extended downtime for aircraft repair or modification such as a large repair for aircraft tug collision damage or a large-scale interior modification.

The FAA agrees to clarify. It is the responsibility of the operator to apply the relevant instructions provided in the aircraft maintenance manual (AMM) related to extended heavy maintenance checks or downtime for aircraft repair or modification. A dedicated preservation regime shall be defined in line with the maintenance activity requirements (for example, the need to keep batteries connected), based upon the applicable AMM parking and storage procedures. If a battery meets the definition of a “serviceable part” as specified in paragraphs (g)(2) and (3) of this AD, then the requirement to replace after “parking and storage” does not apply because it is not an affected part. However, if the battery meets the definition of an “affected part” as specified in paragraph (g)(1) of this AD, the requirement to replace after “parking and storage” does apply.

Request for One AD in the Future

UAL requested that in the future an attempt is made to include PMA parts during “initial release” as opposed to having two ADs (UAL stated “no change to this AD”).

The FAA recognizes the efficiency of a single AD, but in the future, may or may not issue separate ADs when PMA parts and non-PMA parts (*i.e.*, original equipment manufacturer (OEM) parts) are involved, depending on potential implementation issues and what is in the best interest of safety.

Comment on Duplicative Applicability

UAL stated that Docket FAA-2024-0029 indicated it applied to the PMA batteries, as does the NPRM.

The FAA acknowledges that the NPRM that published in the **Federal Register** on January 22, 2024 ([89 FR 3897](#)), for Docket FAA-2024-0029, inadvertently referred to PMA batteries. However, in the final rule, AD 2024-08-08, Amendment 39-22741 ([89 FR 35695](#), May 2, 2024) (AD 2024-08-08), the FAA removed references to PMA batteries. Only this AD is applicable to PMA batteries.

Updated Reference to Related AD

Note 1 to paragraph (h) of the proposed AD specifies that airplanes on which a battery is replaced with a serviceable non-PMA Ni-Cd battery are affected by AD 2021-20-08, Amendment 39-21746 ([86 FR 57025](#), October 14, 2021), which provides requirements for non-PMA Ni-Cd batteries. However, the FAA has superseded AD 2021-20-08 with AD 2024-08-08. AD 2024-08-08 adds airplanes to the applicability and requires replacement of certain affected parts (*i.e.*, certain non-PMA Ni-Cd batteries) with serviceable parts as a precondition for return to service of airplanes from storage or parking, as specified in European Union Aviation Safety Agency (EASA) AD 2023-0196, dated November 10, 2023. You may examine the AD docket for AD 2024-08-08 at *regulations.gov* under Docket No. FAA-2024-0029. The FAA has added a reference to AD 2024-08-08 to Note 1 to paragraph (h) of this AD.

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. Except for minor editorial changes, and any other changes

described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Costs of Compliance

The FAA estimates that this AD affects 1,814 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated Costs for Required Actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replacements	5 work-hours × \$85 per hour = \$425	\$0	\$425	\$770,950

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:

- a. Removing Airworthiness Directive (AD) 2021-21-02, Amendment 39-21762 ([86 FR 62898](#), November 15, 2021); and
- b. Adding the following new AD:

2024-11-01 Airbus SAS: Amendment 39-22762; Docket No. FAA-2024-0221; Project Identifier AD-2023-01233-T.

(a) Effective Date

This airworthiness directive (AD) is effective July 3, 2024.

(b) Affected ADs

This AD replaces AD 2021-21-02, Amendment 39-21762 ([86 FR 62898](#), November 15, 2021) (AD 2021-21-02).

(c) Applicability

This AD applies to Airbus SAS airplanes identified in paragraphs (c)(1) through (14) of this AD, certificated in any category, equipped with any parts manufacturer approval (PMA) part approved for the type design nickel cadmium (Ni-Cd) batteries having a part number identified in Figure 1 to the introductory text of paragraph (c) of this AD.

Figure 1 to the introductory text of paragraph (c) – Ni-Cd battery

Airplane Model	Battery Part Number	Time Limits (months)
A318, A319, A320, and A321	2758 or 416526 (equivalent to 285CH)	6
A330 and A340	4059, 405CH, or 505CH	6
A350	505CH2	12
A380	505CH2	12
A300, A300-600, A310, and A300F4-608ST	2520	6

- (1) Model A300 B4-2C, B4-102, B4-103, B4-120, B4-203, and B4-220 airplanes.
- (2) Model A300 B4-601, B4-603, B4-620, and B4-622 airplanes.
- (3) Model A300 B4-605R and B4-622R airplanes.
- (4) Model A300 C4-203, C4-605R variant F, and C4-620 airplanes.
- (5) Model A300 F4-203, F4-605R, F4-608ST, and F4-622R airplanes.
- (6) Model A310-203, -203C, -204, -221, -222, -304, -308, -322, -324, and -325 airplanes.
- (7) Model A318-111, -112, -121, and -122 airplanes.
- (8) Model A319-111, -112, -113, -114, -115, -131, -132, -133, -151N, -153N, and -171N airplanes.
- (9) Model A320-211, -212, -214, -215, -216, -231, -232, -233, -251N, -252N, -253N, -271N, -272N, and -273N airplanes.
- (10) Model A321-111, -112, -131, -211, -212, -213, -231, -232, -251N, -251NX, -252N, -252NX, -253N, -253NX, -271N, -271NX, -272N, and -272NX airplanes.
- (11) Model A330-201, -202, -203, -223, -223F, -243, -243F, -301, -302, -303, -321, -322, -323, -341, -342, -343, -743L, -841, and -941 airplanes.
- (12) Model A340-211, -212, -213, -311, -312, -313, -541, -542, -642, and -643 airplanes.
- (13) Model A350-941 and A350-1041 airplanes.
- (14) Model A380-841, -842, and -861 airplanes.

(d) Subject

Air Transport Association (ATA) of America Code 24, Electrical Power.

(e) Unsafe Condition

This AD was prompted by a report that repetitive disconnection and reconnection of certain Ni-Cd batteries during airplane parking or storage could lead to a reduction in capacity of those batteries. The unsafe condition, if not addressed, could lead to reduced battery endurance performance and

possibly result in failure to supply the minimum essential electrical power during abnormal or emergency conditions.

(f) Compliance

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

(g) Definitions

(1) For the purposes of this AD, an “affected PMA Ni-Cd battery” is defined as any PMA Ni-Cd battery approved for a Ni-Cd battery identified in Figure 1 to the introductory text of paragraph (c) of this AD, all serial numbers, except those which are a serviceable PMA Ni-Cd battery as defined in paragraph (g) (2) of this AD.

(2) For the purposes of this AD, a “serviceable PMA Ni-Cd battery” is defined as a PMA Ni-Cd battery approved for a Ni-Cd battery identified in Figure 1 to the introductory text of paragraph (c) of this AD, all serial numbers, which was fully (re)charged at constant current and, after (re)charging, was not stored on wing during a period exceeding the applicable “Time Limit” specified in Figure 1 to the introductory text of paragraph (c) of this AD. Periodical, regular, and overhaul checks of a PMA Ni-Cd battery that include the battery (re)charge at constant current are acceptable methods to demonstrate that the battery was (re)charged.

(3) For the purposes of this AD, a “serviceable non-PMA Ni-Cd battery” is defined as a type design Ni-Cd battery having a part number identified in Figure 1 to the introductory text of paragraph (c) of this AD, all serial numbers, which was fully (re)charged at constant current and, after (re)charging, was not stored on wing during a period exceeding the applicable “Time Limit” specified in Figure 1 to the introductory text of paragraph (c) of this AD. Periodical, regular, and overhaul checks of a non-PMA Ni-Cd battery that include the battery (re)charge at constant current are acceptable methods to demonstrate that the battery was (re)charged.

(h) Replacement

Before release to service of an airplane after a storage or parking period, as applicable, replace each affected PMA Ni-Cd battery with a serviceable PMA Ni-Cd battery or a serviceable non-PMA Ni-Cd battery.

Note 1 to paragraph (h): Airplanes on which a battery is replaced with a serviceable non-PMA Ni-Cd battery are affected by AD 2024-08-08, Amendment 39-22741 ([89 FR 35695](#), May 2, 2024), which provides requirements for non-PMA Ni-Cd batteries.

(i) Parts Installation Limitation

As of the effective date of this AD, release to service of an airplane is allowed, provided all PMA Ni-Cd batteries approved for a Ni-Cd battery identified in Figure 1 to the introductory text of paragraph (c) of this AD that are installed on that airplane are fully (re)charged at constant current and, after (re)charging, were not stored on wing during a period exceeding the applicable “Time Limit” specified in Figure 1 to the introductory text of paragraph (c) of this AD.

(j) Alternative Methods of Compliance (AMOCs)

The Manager, International Validation 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 responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(k) Related Information

For more information about this AD, contact Dan Rodina, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 206-231-3225; email dan.rodina@faa.gov.

(l) Material Incorporated by Reference

None.

Issued on May 21, 2024.

Suzanne Masterson,

Deputy Director, Integrated Certificate Management Division, Aircraft Certification Service.

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