

COMMENT RESPONSE DOCUMENT

EASA PAD No. 20-164

[Published on 12 October 2020 and officially closed for comments on 26 October 2020]

Commenter 1: easyJet – Ivan Kovachev – 13/10/2020

Comment # 1

EasyJet would like to urge EASA to reconsider the suggested deadline for A320FAM operators of 4 months (after the effective date of the AD). Since EZY has grounded all its aircraft during the pandemic lockdown, the big majority of EZY's main batteries are affected by the requirements of the PAD. (approx. QTY.800-900).

The suggested 4 months deadline will put enormous pressure on operations and will create huge logistical complications, not to mention the limited shop capabilities that are currently crippled due to the outbreak.

EZY would like to urge EASA to allow at least additional 4 MO extension on the 4 MO that are already considered. That request was backed-up by several airlines during the webinar organised by Airbus on AOT A24N006-20 topic in late September.

EASA response:

Comment noted. During the period that an aircraft is out of service or grounded, the requirements of applicable ADs do not need to be complied with. By the time the aircraft is (about to be) returned to service, all applicable ADs need to be reviewed and all required actions that are due or overdue must be complied with, before release to service. The replacement of the Ni-Cd required by paragraph (1) is due either within 4 months or before return to service of an aeroplane, whichever occurs later. In case of gradual return of aeroplanes into service, which is expected, the logistical complications can be minimised.

However, it is the intent of the AD that operators start applying the preservation procedures for all batteries as soon as possible, since the use of preservation procedures avoids future or further unsafe conditions. Since these procedures involve off-aircraft action(s), or actions on aircraft that are not in service (i.e. C-of-A invalid), they cannot be required by an AD at aircraft-level.

No changes have been made to the Final AD in response to this comment.



Commenter 2: Azul Linhas Aéreas Brasileiras – Ronaldo Sérgio Lucas Ferreira – 13/10/2020
Comment # 2

The A320 Fleet is bigger than A330 and A380, why the compliance time is 4 months? It is necessary to review this compliance time to 6 month as the others fleets.

EASA response:

Comment not agreed. The compliance time, applicable to replacement of Ni-Cd batteries (having more than 4 reconnection cycles) on A320 family fleet, was determined based on assumptions to maintain the A320 fleet level of safety. The compliance time is also different for the various types because the needs in terms of battery capacity are different for each type.

No changes have been made to the Final AD in response to this comment.

Commenter 3: LATAM Airlines – Gabriela Quijada Melo – 13/10/2020
Comment # 3

[Ref. 1] EASA PAD 20-164; [Ref. 2] AOT A24N006-20 Rev 01; Below our comments:

- A. We have installed in our aircrafts many batteries which have been subject to repetitive disconnections and connections more than 4 times. For A320FAM airplanes, Could you consider extending the compliance time up to 6 months in order to minimize the logistic impact?
- B. We have in our A320FAM Fleet some aircrafts which are fitted with PMA Battery PN AD-2758. This Battery PN is not a SAFT Part Number and is not validated in Airbus documentation, as a consequence, is not covered by AOT applicability. However, this PN is subject by the same capacity loss phenomenon. Could you evaluate the possibility of including Battery PN AD-2758 as an affected part for A320FAM airplanes?
- C. For batteries installed on Group 2 airplanes, when the new on-wing preservation procedure as detailed in Appendix 02 of AOT A24N006-20 is applied, the AOT indicates that these batteries must be sent to an approved battery shop for a battery regular check every six months during the aircraft parking period. Is the replacement of these batteries not required?

EASA response:

A. Comment not agreed. See EASA answers to Comment #1 and Comment #2 above.



- B. Comment not agreed. Installation of PMA batteries P/N PN AD-2758 on A320 fleet is based on combined design and production approval issued by the FAA for modification and replacement parts and is not part of the Airbus type designs to which this AD applies. Consequently, EASA does not represent the State of Design for the (US-designed and -manufactured) PMA batteries P/N PN AD-2758. The assessment whether these batteries are subject to the same kind of degradation should be accomplished by the PMA approval holder and (if so) mandatory action taken by the FAA. EASA recommend to contact the PMA approval holder for continuing airworthiness instructions.**
- C. Comment not agreed. The alternative procedures, defined as on-wing or off-wing procedures, referenced in paragraph (2) of the AD are applicable to all batteries. EASA encourages (see Note 1 and Note 2 of the AD) such actions to avoid the unsafe condition. It should be clear that the application of the preservation procedures avoids the development of the unsafe condition, but does not restore anything when the battery is already damaged. If the alternative procedures detailed in the AOT A24N006-20 are used, the 6 months interval sending the battery into shop must be part of that procedure. Replacement of a battery, or reinstalling the same battery after shop visit is at operator's discretion.**

No changes have been made to the Final AD in response to this comment.

Commenter 4: Emirates – Randy G. Gamboa – 14/10/2020

Comment # 4

A.

EASA PAD 20-164	A380 AOT A24R009-20	REMARKS/COMMENTS
Group 1: Group 1 aeroplanes are those which have an affected part installed, which has more than 4 reconnection cycles.	Group A: Ni-Cd batteries (PN 505CH2) which have been disconnected, kept (on aircraft) and reconnected on aircraft more than 4 times during an aircraft parking period since last battery periodical check, battery regular check or battery general overhaul, and which are still installed on aircraft, at the effectivity date of this AOT.	<p>Different Group names.</p> <p>Different Descriptions but technically mean the same.</p> <p>Although they technically mean the same, can the Group Names and Description please be made consistent?</p>



B.

Group 2: Group 2 aeroplanes are those which have an affected part installed, which has 4 or less reconnection cycles; or have a serviceable part installed.	Group B: All other Ni-Cd batteries (PN 505CH2) not identified in group A.	Different Group names. Different Descriptions but technically mean the same. Although they technically mean the same, can the Group Names and Description please be made consistent?
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C.

Group 1: Battery Replacement: Initial Compliance: Within 6 months after the AD Effective Date. Repeat Compliance: Thereafter, before each release to service.	Group A: Battery periodic check or regular check or general overhaul per ref 12 in an approved battery shop: Initial Compliance: within 6 months after the AOT Effective Date or prior to next flight, whichever occurs latest. Repeat Compliance: Thereafter, every 6 months during parking period.	Different Descriptions but technically mean the same. PAD is fixed to 6 months after Effectivity Date while AOT takes into consideration the next flight. PAD requires repeat replacement before each release to service (we understand that this means before release to service of each parked aircraft). AOT requires replacement every 6 months during parking. Can these significant differences please be clarified?
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D.

PAD has the following statement: "...except when the disconnection and subsequent connection of the battery has been accomplished using the on-wing battery		The on-wing battery preservation procedure does not require disconnection of the batteries. Can this please be clarified?
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preservation procedures as defined in the applicable AOT.”			
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C.EASA response:

- A. Comment not agreed. The EASA AD is an aircraft-level AD and therefore defines Groups (1 and 2) of aeroplanes, while the A380 AOT A24R009-20 defines Groups of batteries. The AD applies to A320, A330, A340 and A380 aeroplanes and not necessarily follows the wording and concept of the referenced service informations.**
- B. See EASA answer to Point A. above.**
- C. Comment not agreed. The AD requires accomplishment of the initial battery replacement for A380 Group 1 aeroplanes within 6 months after the effective date of the AD. In case the aeroplane is parked, or is in storage, during this period, the replacement becomes naturally due before release to service of the aeroplane after parking or storage. See also EASA answers to Comments #1, #2 and #3 Point C. above.**
- D. Comment partially agreed. The on-wing preservation procedures detailed in the A380 AOT-A24R009-20 includes a maintenance task – battery regular check in shop – during which the battery is disconnected and/or connected. The AD wording excludes this kind of reconnection cycle from the count. The definition of ‘Reconnection cycle’ has been amended for clarification.**

No changes have been made to the Final AD in response to points A, B and C of this comment.

Commenter 5: KLM – Frank Stuijt – 14/10/2020

Comment # 5

Context: A330, AOT A24L007-20.

NOTE 1 states: After replacement of a battery on an aeroplane as required by paragraph (1) of this AD, the aeroplane becomes Group 2 aeroplane, until the battery reconnection cycles (as defined in this AD) becomes more than 4 times.

- A. PAD 20-164 still allows battery reconnection (as defined in the AD) as an acceptable procedure for future parking/storage cases. Please confirm.**
- B. If battery reconnection is still an acceptable procedure during for future parking/storage cases and the battery is reconnected more than 4 times, does the 6 month replacement limit then start from battery installation date?**



Alternative Method – Preservation: (2) For Group 2 (see Note 2 of this AD) aeroplanes: From the effective of this AD, provided that the preservation procedures (off-wing or on-wing, as applicable) are accomplished on an aeroplane in accordance with the instructions of the applicable AOT, no replacements of affected parts in accordance with the requirements of paragraph (1) of this AD are required (anymore) for that aeroplane.

C. In AOT A24L007, par 5.2 B – On-Wing Battery Preservation states that when this procedure is applied the batteries must be sent to an approved shop for battery regular check, every six months during aircraft parking period. This requirement is in our view not reflected in PAD 20-164. Does PAD 20-164 require this six month periodic replacement during aircraft parking?

PAD 20-164 main concern is that a battery fails to supply the minimum essential electrical power during abnormal or emergency conditions after parking/storage RTS, when battery was reconnected more than 4 times during the parking/storage period. Table 2 able only shows a 6 month limit.

D. AOT A24L007-20 Figure 1, example 3 reflects the scenario of an aircraft parking/storage period more than 6 months and battery reconnected more than 4 times. A “next flight” limit is given in this scenario. Can PAD 20-164 Table 2 compliance time for A330/A340 be altered to show “Within 6 months or next flight, whichever occurs later”?

EASA response:

- A. Comment not agreed. This AD does not mandate new parking/storage procedures but ensures that the aeroplane returns to service with serviceable battery. For reference see also EASA answers to Comments #1, #2 and #3 Point C. above.**
- B. Comment not agreed. The 6 months replacement limit starts from the effective date of the AD only. After the 6 months expires, the battery replacement must be accomplished before release to service of an aeroplane after parking or storage, if during this period the reconnection cycles became more than 4. However, note EASA answers to Comments #1, #2 and #3 Point C. above.**
- C. Comment noted. Correct, the AD does not mandate on-wing or off-wing battery preservation maintenance task. The AD only gives credit for these tasks to be an alternative to replacement required by paragraph (1) of the AD. If replacement is the chosen action, then only a battery that is a serviceable part (as defined in the AD) can be installed. Sending a battery into shop (off-aircraft action) is at operator’s discretion and not part of the AD requirements. However, if the operator wants to benefit from application of on-wing battery preservation procedures, all the on-wing preservation procedure needs to be accomplished, including the 6 months periodic battery shop visits during aeroplane parking as detailed in the applicable AOT.**
- D. Comment noted: Correct. In case the operator does not replace the battery during the 6 months period after the effective date of the AD (due to long grounding) the replacement task becomes due before release to service of the aeroplane after that grounding. Adding the “before next flight” criterion does not alter effectively the AD instruction.**

No changes have been made to the Final AD in response to this comment.



Commenter 6: United Air Lines – Jeff Shrader – 19/10/2020**Comment # 6**

- A. Regarding the subject line AOT and PAD, UAL would like clarification/definition within the AOT's Accomplishment Timescale (RC) paragraph 4.1.1., and within the PAD's Replacement (1) paragraph. As stated in the AOT, "Within 4 months after the AOT effectivity date or prior to next flight, whichever occurs latest." Please explain what types of flights would be deemed "flight" in this context. For instance, maintenance flight, ferry flight, revenue flight, etc.
- B. As stated in the PAD, "For Group 1 aeroplanes: Within the compliance time defined in Table 2 of this AD and thereafter before each release to service of an aeroplane (see also Notes 2 and 3 of this AD), replace each affected part with a serviceable part in accordance with the instructions of the applicable AOT." Similar to A. above, please explain what types of flights would be deemed "release to service of an aeroplane" in this context.
- C. Regarding the effective date: For interpretation on the PAD's Effective Date. Will the AD issue date and the effective date be different? Will the AD's effective date be different than the AOT's 9/9/2020?

EASA response:

- A. Comment noted. The compliance with the requirements of this AD is for in-service aeroplanes that have a valid Certificate of Airworthiness, and any reference to flights is to those during which the continuing airworthiness and the serviceability of operational and emergency equipment is ensured by regulation.**
- B. Comment noted. See EASA answer to Point A. above.**
- C. Comment noted. The issue date and the effective date of EASA ADs are different. EASA standard (as indicated in the PAD) is that the effective date of the AD is 14 days after its issue date.**

No changes have been made to the Final AD in response to this comment.

Commenter 7: Singapore Airlines – Douglas Ho – 20/10/2020**Comment # 7**

With reference to PAD 20-164 which was published to address the concern of batteries capacity reduction due to repetitive disconnection and reconnection during aeroplane parking or storage, I would like to seek your clarification on the following:



- A. With reference to the exception statement mentioned in the definition for the Serviceable Part in the PAD, it seem like the serviceable part includes affected parts that have not accomplished fully (re) charged in an approved battery shop at constant current and may have been previously installed on aircraft where the disconnection and connection of the battery has accomplished using the preservation procedures defined in the AOT. Would appreciate your advice on my understanding of the exception statement for the Serviceable part definition is correct.
- B. According to the reference AOT A24L007-20 and A24N006-20 paragraph 5.2 B, when the on-wing preservation procedure detailed in appendix 2 of the AOT is applied, batteries must be sent to an approved battery shop for a battery regular check as per reference CMM mentioned in the AOT, every six months during the aircraft parking period. However, this requirement mentioned in the AOT was not mention in the PAD. Will EASA includes this requirement in the AD?

EASA response:

- A. Comment noted. The exception statement mentioned in the definition of the serviceable part refers to batteries, which were, prior installation, fully (re)charged in an approved battery shop at constant current, afterwards installed on an aeroplane parked or stored for more than 2 days and which were disconnected and reconnected using the preservation procedures as defined in the applicable Airbus AOT. Applying the disconnection and reconnection procedures for batteries (previously fully (re)charged in an approved battery shop) on parked/stored aeroplanes ensures the serviceability of those batteries. Recharging could have occurred long before the parking period started, which is a pre-condition that EASA consider all batteries, installed in airplanes, fulfil, provided no disconnect/re-connect actions have been applied since start of the parking or storage period. For reference see also EASA answers to Comments #1, #2 and #3 Point C. above.**
- B. Comment noted. See EASA answer to Comment #5 Point C above. For reference see also EASA answers to Comments #1, #2 and #3 Point C. above. No changes have been made to the Final AD in response to this comment.**

Commenter 8: Cathay Pacific – Emmajame Tordera Sola – 20/10/2020

Comment # 8

We kindly request EASA to review the table below with our remarks/ recommendations regarding the PAD.

Reference	PAD 20-164	AOT A24N006-20 Rev 01 dated 12 Oct 20	AOT A24L007-20 Rev 00 dated 23 Sep 20	Remarks/ Recommendation



Applicability	A320/A321/A330	Ni-Cd Batteries on A320/A321 aircraft	Ni-Cd Batteries on A330 aircraft	<p>A. There are several batteries per aircraft and any unscheduled battery replacements can result in a mix of A and B batteries, which is simultaneously both Groups 1 and 2. EASA to review PAD Group definition to take into account possible mix of group A and B batteries on aircraft per AOT.</p> <p>B. EASA to please consider that it is impractical for operator to manage different procedure requirements for the different Groups during a parking period, as the Group A/B (or Group 1/2) status can change (e.g. unscheduled replacements), and the frontline has no practical way to determine, when performing the parking periodic checks.</p>
Groups	Group 1 and Group 2 defined at Aircraft Level	Group A and Group B defined at Component level	Group A and Group B defined at Component level	
Affected Period	<ul style="list-style-type: none"> • A320/A321- Parking Periods • A330 – Parking or Storage Periods 	Parking Periods only	Parking and Storage Periods	<p>C. EASA to please provide requirements/ advise applicability for A320/A321 aircraft that are currently stored. Will there be any AD violations once these aircraft will be parked after compliance time defined in PAD Table 2?</p>
Effective Date	TBD – standard: 14 days after AD issue date	9 September 2020	23 September 2020	<p>D. Pending availability of new A330 AMM procedures, EASA to consider if operator should be able to replace</p>



Compliance Time	<ul style="list-style-type: none"> • A320 and A321 (Group 1 airplanes) – within 4 months from effectivity date AD • A330 (Group 1 airplanes) – within 6 months from effectivity date of AD • Thereafter before each release to service of an airplane (for all fleet) 	Within 4 months from AOT effectivity date or prior to next flight, whichever occurs latest.	Within 6 months after the AOT effectivity date or prior to next flight, whichever occurs latest.	<p>batteries at parking RTS, as an optional alternative (refer to attached Airbus TR Dossier 80838697).</p> <p>E. As AOT is referring to AD for the mandated accomplishment timescale, EASA to please confirm if only AD timescale will be followed and AOT effective date/ timescale will be disregarded (not required).</p> <p>F. Per PAD note 1, Group 1 airplanes become group 2 after replacement of battery. Per PAD note 2, in case these Group 2 airplanes will return to Group 1 (due preservation procedures per AOT are not accomplished) after the compliance time defined in Table 2, EASA to please advise if this will result to violation of PAD Paragraph (1).</p> <p>G. Ref attached ISI 24.00.00046, EASA to please kindly confirm that battery replacement per applicable MPD is an acceptable compliance for Para (1) of this PAD.</p>
Applicable Documents	<ul style="list-style-type: none"> • AOT A24N006-20 • AOT A24L007-20 	<ul style="list-style-type: none"> • AD • ISI 24.00.00046 • AMM advance copy available since 29 Sep 2020 	<ul style="list-style-type: none"> • AD • ISI 24.00.00046 • AMM advance copy NOT available until 19 Nov 2020 	

EASA response:

A. The aim of the AD is to ensure that all the affected batteries which were exposed to more than 4 reconnection cycles during parking or storage are replaced by serviceable batteries as defined in the AD (see the Definition section). See EASA answer to Comment #1 above.



- B. See EASA answer to Point A. above.*
- C. Comment noted. See EASA answer to Comment #1 above.*
- D. Comment not agreed. It should be noted that the AD does not require any action on parked or stored aeroplanes. See also EASA answers to Comments #1, #2 and #3 Point C and #5 Point C. above.*
- E. Comment noted. For regulatory and enforcement purposes, the compliance times as indicated in the AD apply.*
- F. Comment noted. It is not a violation of the AD to become Group 1 aeroplane. Once the aeroplane becomes Group 1 aeroplane, requirements of paragraph (1) of the AD becomes applicable to that aeroplane.*
- G. Comment noted. The currently acceptable method to accomplish the battery replacement is that in accordance with the instructions of the AOT. All other approved replacement methods providing an equivalent level of safety can be accepted by submitting an AMOC application (Form 42), to be approved as acceptable alternative to comply with the requirements of the AD.*
- No changes have been made to the Final AD in response to this comment.*

Commenter 9: Singapore Airlines – Abel Li – 20/10/2020

Comment # 9

- A. There is differing language between what PAD (more restrictive) says versus what AOT A24R009-20 (conditional whichever occurs later) says. In the PAD, the language may be interpreted as requiring replacement of affected batteries within 6 months of compliance time (for e.g. on A330 and A380), thereafter to replace the batteries again on each aircraft **Returned To Service (RTS)**.



EASA PAD No.: 20-164

Replacement:

- (1) For Group 1 aeroplanes: Within the compliance time defined in Table 2 of this AD and thereafter before each release to service of an aeroplane (see also Notes 2 and 3 of this AD), replace each affected part with a serviceable part in accordance with the instructions of the applicable AOT.

Table 1 – Affected P/N

Aeroplane Type(s)	P/N
A318, A319, A320 and A321	2758 or 416526
A330 and A340	4059, 405CH or 505CH
A380	505CH2

Table 2 – Battery Replacement

Aeroplane Type(s)	Compliance Time (after the effective date of this AD)
A318, A319, A320 and A321	Within 4 months
A330 and A340	Within 6 months
A380	Within 6 months

Note 1: After replacement of a battery on an aeroplane as required by paragraph (1) of this AD, the aeroplane becomes Group 2 aeroplane, until the battery reconnection cycles (as defined in this AD) becomes more than 4.

4.1.1 ACCOMPLISHMENT TIMESCALE (RC)

The compliance time for this AOT is defined as follows:

Within 6 months after the AOT effective date or prior to next flight, whichever occurs latest.

For additional information, refer to appendix 1 of this AOT.

4.1.2 MANPOWER

N/A

4.2 DESCRIPTION**4.2.1 APPLICABILITY****Group A**

This AOT is applicable to Ni-Cd batteries (PN 505CH2) which have been disconnected, kept (on aircraft) and reconnected on aircraft per ref 2 and ref 3 more than 4 times during an aircraft parking period since last battery periodical check, battery regular check or battery general overhaul per ref 12, and which are still installed on aircraft, at the effectivity date of this AOT.

Refer to § 4.2.2 and § 4.2.3.1 of this AOT for the accomplishment of the required actions.

Group B

This AOT is also applicable to all other Ni-Cd batteries (PN 505CH2) not identified in group A.

Refer to § 4.2.3.2 of this AOT for the accomplishment of the required actions.

- B. After restoration of battery capacity/ replacement, the AOT is deemed terminated per Para 4.2.2, before off-wing or on-wing preservation commences. However, the PAD is not explicit in the provision of terminating actions.
- C. As a suggestion, would EASA consider aligning the definitions of Group 1 & 2 (PAD) airplanes with Group A & B (AOT) airplanes?
- D. The PAD does not mention applicability to A350, is there any intent where the A350 fleet is impacted (ref OIT 999.0061/20 dated 23 Sep 2020)?
- E. Given the unprecedented worldwide grounding, Operators may face challenges in global supply chain and OEM shops experience resource/parts shortages to cope with the restart in operations, when the time comes. Furthermore, in some cases like the A380 fleet which may not be operated for revenue service in the near term, it is both costly and inefficient to perform the task until the time needed to reactivate the aircraft to an airworthy condition for flight.

EASA response:

- A. Comment partially agreed. Although different wording is used, the AD requires replacement of batteries on in service A380 Group 1 aeroplanes (those which are not parked or stored) within 6 months after the effective date of the AD and thereafter before each release to service after**



parking and/or storage whenever the aeroplane becomes Group 1 aeroplane, i.e. that on those A380 aeroplanes equipped with affected batteries exposed to more than 4 reconnection cycles (as defined in the AD) accomplished during parking or storage of the aeroplane.

- B. Comment not agreed. The AD does not include any terminating action and requires battery replacement within the compliance time defined in paragraph (1) of the AD whenever the aeroplane becomes a Group 1 aeroplane, which may happen also after accomplishment of paragraph Para 4.2.2 of the AOT A24R009-20.*
- C. Comment not agreed. The AD concept is different from the AOT concept and addresses the unsafe condition at aeroplane level of A318/319/320/321, A330, A340 and A380 aeroplanes.*
- D. Comment noted. EASA decided not to make this AD applicable to Airbus A350 aeroplanes.*
- E. Comment not agreed. During the period that an aircraft is out of service or grounded, the requirements of applicable ADs do not need to be complied with. This gives an operator ample time to plan future action(s). By the time the aircraft is (about to be) returned to service, all applicable ADs need to be reviewed and all required actions that are due or overdue must be complied with, before release to service. No unnecessary AOG is anticipated as a result of this AD.*

No changes have been made to the Final AD in response to this comment.

Commenter 10: HNA Technic – York Xu – 21/10/2020

Comment # 10

Subject: Query in EASA PAD 20-164 from HNA Technic.

References:

- Ref 1: A32 AMM Task in AMM PB 10-10-00 (Parking and storage procedure)
- Ref 2: A32 AMM Task in AMM PB 10-11-00 (Parking periodic ground checks)
- Ref 3: A32 AMM Task in AMM PB 10-30-00 (Return to operation after a parking period)
- Ref 4: A33 AMM Task in AMM PB 10-10-00 (Parking and storage procedure)
- Ref 5: A33 AMM Task in AMM PB 10-11-00 (Parking periodic ground checks)
- Ref 6: A33 AMM Task in AMM PB 10-12-00 (Storage periodic ground checks)
- Ref 7: A33 AMM Task in AMM PB 10-30-00 (Return to service)



Description& Desired action:

- A. There are A320 family and A330 family in our fleet. As for Definitions “Serviceable part” and “Reconnection cycle” stated in the PAD, we think that the parking (parked) and storage (stored) is refer to ref 1, 2, 3 (for A320) tasks and ref 4, 5, 6, 7 (for A330) tasks. Is it correct?
- B. The following description in paragraph (1) of the PAD is not very clear. “Within the compliance time and thereafter before each release to service of an aeroplane”. Could you explain which understanding is correct?
1. Within the compliance time or prior to next flight, whichever occurs latest.
 2. Within the compliance time or prior to next flight, whichever occurs first.
 3. Within the compliance time and each release to service of group 1 aircraft(repeat requirement), whichever occurs first.
 4. Within the compliance time replace the part. After replace if the aircraft become group 1, replace affected part before each release to service of an aeroplane.

EASA response:

- A. Comment noted. It should be noted that the Airbus ‘storage’ procedures do not allow in principle reconnection cycles for A320, nor for A330, but cases have been reported to EASA of A330 operators doing so during storage, and maybe the storage documentation for A330 is not fully clear. The wording “parking periods” is applicable to A320 aeroplanes and the wording “parking and storage periods” is applicable to A330 and A340 aeroplanes, as defined in the applicable instructions for continuing airworthiness of the affected aeroplanes. The instructions referenced by the commenter as Ref. 2, 3 and 4 of the AOT A24N006-020 and A24L007-20 are modified by Appendix 2 of these AOTs.**
- B. Comment noted. The AD states “Within the compliance time defined in Table 2 of this AD and thereafter before each release to service of an aeroplane”, which means the AD requires initial replacement of the batteries on Group 1 aeroplanes within the compliance time defined in Table 2 of the AD, and thereafter those batteries must be replaced each time before release to service of the aeroplane, whenever the aeroplane becomes Group 1 aeroplane. Understanding ‘4.’ is correct.**

No changes have been made to the Final AD in response to this comment.



Commenter 11: AMAC Aerospace Switzerland – Marek Polician – 21/10/2020**Comment # 11**

Compliance Time in Table 2 is based on effective date of this AD. I understand that this AD will require repetitive assessment of reconnection cycles of installed batteries as off-wing preservation procedure will be still possible and used by some operators in future (especially in extreme cold areas), therefore as defined by Note 1 of this AD some Group 2 aeroplanes might become Group 1 aeroplanes even in 2021 or 2022. Therefore definition of Compliance Time should not be based on effective date of this AD, as per my opinion Date of battery installation/shop visit should be considered.

EASA response:

Comment noted but not agreed. Reconnection cycles are to be counted ONLY when no preservation procedures are applied. The compliance time defined in Table 2 of the AD is applicable for the initial replacement of the affected batteries which experienced more than 4 reconnection cycles, as defined in the AD. The follow-on replacement(s) are due before release to service of the aeroplane whenever the aeroplane becomes Group 1 aeroplane.

No changes have been made to the Final AD in response to this comment.

Commenter 12: United Air Lines – Jeff Shrader – 23/10/2020**Comment # 12**

Regarding the subject line AOT, UAL would like clarification within the AOT's paragraph 5.2, B, On-Wing Battery Preservation.

- A. What determined the six month battery replacement interval during a parked/stored scenario when the new on-wing preservation AMM procedures are practiced?
- B. If an operator chooses not to accomplish the terminating action on batteries installed on parked/stored airplanes, and only accomplishes the terminating action before further flight, would this be non-compliant to the AD since the compliance time within the AOT is, within 4 months after the AOT effectivity date or prior to next flight, whichever occurs latest?

EASA response:

- A. Comment not agreed. The repetitive six months replacement period referenced in paragraph 5.2 of the AOT A24N006-020 is not subject of the AD action, but can be used as an alternative method, provided the on-wing preservation maintenance actions defined in the applicable AOT are used to maintain the aeroplane within Group 2.**
- B. Comment not agreed. There is no real terminating action, only a 'conditional' one; when the preservation procedures are continuously being applied, no reconnection cycles are applied and none to be counted, so no repeat replacement would be required (anymore) by the AD. The AD does not mandate the on-wing battery preservation actions defined in the AOT A24N006-020. It provides only, under certain condition, a credit for those maintenance actions to be an alternative to battery replacement required by paragraph (1) of the AD.**

No changes have been made to the Final AD in response to this comment.

Commenter 13: China Eastern Airline – Xu Chao – 24/10/2020

Comment # 13

- A. The definition of parking or storage periods is not well clarified. Please see quote from A320FAM AMM TASK 10-10-00-550-801-A.

/quote/

NOTE: An aircraft in heavy maintenance (e.g. scheduled check, working party or repair after an incident) is not in parked or stored condition. It is necessary to define and apply an adapted preservation procedure.

/unquote/

In accordance with this NOTE, CES suggests that in the purpose of this AD, aircraft with the above conditions should not be classified as "parked or storage condition". Please confirm this and we also want a clear definition of parking or storage condition(ie: for how many days lasts that can count as parking.

- B. What happens if the battery have more than 4 reconnection cycles during a short time(like one day)? Does it needs to be replaced with a serviceable one?
- C. Airbus issued an advance copy of new AMM task 24-38-00-550-801-A. This AMM procedure gives the instructions necessary to do the on-wing preservation of the batteries for a parking period for more than 2 days. We suggest for the on-wing preservation, EASA AD also allow operator to use this AMM procedure.

EASA response:



- A. Comment noted. If an aeroplane is in heavy maintenance checks (e.g. scheduled check, working party or repair or trouble-shooting after an incident), it is the responsibility of the operator to apply the relevant instructions provided in AMM Chapter 10-11-00 Parking & Storage. In that context, it might be necessary for the operator to apply the batteries preservation procedures.**
- B. Comment noted. In case 4 reconnections happened during parking or storage (as defined in Definition section of the AD, see the Reconnection cycle) the aeroplane becomes Group 1 aeroplane and for this aeroplane paragraph (1) of the AD applies. For the reported specific case the operator may contact Airbus for advice.**
- C. Comment not agreed. The currently acceptable method to accomplish the battery replacement is that in accordance with the instructions of the AOT. All other approved replacement methods providing an equivalent level of safety can be accepted by submitting an AMOC application (Form 42), to be approved as acceptable alternative to comply with the requirements of the AD.**

No changes have been made to the Final AD in response to this comment.

Commenter 14: Eastern Airlines Technic – Liu Wei – 24/10/2020

Comment # 14

- A. The definition of parking or storage periods is not well clarified. Please see quote from A330 AMM TASK 10-10-00-555-801-A.**
 /quote start/
 NOTE: An aircraft in heavy maintenance (e.g. scheduled check, working party or repair after an incident) is not in parked or stored condition. It is necessary to define and apply an adapted preservation procedure.
 /quote end/
 In accordance with this NOTE, CES suggests that in the purpose of this AD, aircraft with the above conditions should not be classified as "parked or storage condition". please confirm this and we also want a clear definition of parking or storage condition(i.e.: for how many days lasts that can count as parking)
- B. Why in the Reconnection cycle of definitions, only A330/340 have storage periods? According to the storage procedure in AMM TASK 10-10-00-555-801A., the battery has been requested to be removed from the aircraft.**
 /quote start/
 If the storage period is more than 2 days: Remove APU battery 2PB3 [and] Remove batteries 2PB1 and 2PB2
 /quote end/



- C. What happens if the battery have more than 4 reconnection cycles during a short time(like one day)? Does it needs to be replaced with a serviceable one?
- D. According to the requirements in replacement (1) in PAD,
/quote start/
Within the compliance time defined in Table 2 of this AD and thereafter before each release to service of an aeroplane (see also Notes 2 and 3 of this AD),replace each affected part with a serviceable part in accordance with the instructions of the applicable AOT.
/quote end/
If one airplane replace each affected part with a serviceable part Within the compliance time defined in Table 2 of this AD, then this airplane return to service. After a few days, this airplane perform parking procedures for a few days(less than 7 or 15 days), before this airplane return to service, is it necessary to replace the battery again? Can you define the “each release to service of an aeroplane”?
- E. Can EASA meet the requirements of this AD by revising the battery overhaul threshold in the A330 MPD, that is, requiring the battery to be overhaul every 6 months?

EASA response:

- A. Comment noted but not agreed. See answer #13 Point A above.***
- B. Comment noted but not agreed. In the previous version of the A330/A340 AMM it was requested to disconnect the batteries from the aeroplane but it was not required to remove them.***
- C. See EASA answer to Comment #13, Point B. above.***
- D. Repetitive replacement of the batteries before release to service of the aeroplane is required whenever the aeroplane becomes Group 1 aeroplane. Alternatively, if the preservation procedures are continuously applied as intended, a Group 2 aeroplane will never become a Group 1 aeroplane.***
- E. Comment noted. Currently, EASA have no plans to do so. However, for the purpose of this AD, which is the restoration of the full capacity of the battery in shop, the regular check of the battery is as good as the overhaul. The current way to meet the AD requirement is to comply with paragraph (1) of the AD. See also EASA answer to Comment #8, Point G. above.***
- No changes have been made to the Final AD in response to this comment.***



Commenter 15: Air Canada – Jacques MARCOUX – 26/10/2020

Comment # 15

In AOT A24N006-20, it is mentioned that the compliance is “Within 4 months after the AOT effectivity date or prior to next flight, whichever occurs latest.” In the compliance table of the PAD, there is no reference to “prior next flight, whichever occurs latest”. Is the “prior next flight, whichever occurs last” an omission in the PAD or was it intentionally removed.

EASA response:

Comment noted. The AD requires accomplishment of the battery replacement on Group 1 aeroplanes within 4 months after the effective date of the AD. In case an aircraft does not comply with the replacement requirement (e.g. because still being stored/parked) within those 4 months, thereafter (compliance time expired) the ‘before next flight’ threshold applies automatically.

No changes have been made to the Final AD in response to this comment.

Commenter 16: Scandinavian Airlines System – Vladimir Dodic M.Sc – 17/11/2020

Comment # 16

Regarding PAD 20-164 which was issued on 12th Oct 2020 we have sent questions regarding technical content to Airbus as instructed in remarks of PAD. Airbus replied that PAD will be revised to reflect issues that we have expressed (mainly about compliance time which is not clearly aligned between PAD and AOT). It’s been a while and new PAD is not released neither as AD. According to instructions of PAD and AOT we will be removing huge amount of batteries on our fleet and we wouldn’t want to have too short timeframe to perform this task. When can we expect revised PAD and AD to be released?

EASA response:

Comment noted. The AD will be released on the date of publication through EASA Safety Publication Tool.

No changes have been made to the Final AD in response to this comment.

