



EASA AD writing instructions

Doc #

WI.CAP.00002-003

Approval Date

08/11/2017

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WI.CAP.00002-003

	Name	Validation	Date
Prepared by:	Catrinel COTORANU	Validated	06/11/2017
Verified by:	Alain LEROY	Validated	07/11/2017
Reviewed by:	Dominique PERRON	Validated	08/11/2017
Approved by:	Alain LEROY	Validated	08/11/2017



**DOCUMENT CONTROL SHEET****Reference documents****a) Procedures**

PR.CAP.00001 – Continuing airworthiness of type design

b) Internal documents

TE.CAP.00110 – Airworthiness Directive

TE.CAP.00111 – Emergency Airworthiness Directive

TE.CAP.00112 – Notification of a Proposal to issue/cancel an Airworthiness Directive

TE.CAP.00115 – Comment Response Document to PAD

TE.CAP.00116 – Airworthiness Directive Cancellation Notice

TE.CAP.00119 – Emergency Conformity Information

Abbreviations

a/c	Aircraft
AD	Airworthiness Directive
AFM	Aircraft Flight Manual
ALI	Airworthiness Limitation Item
ALS	Airworthiness Limitation Section
AMC	Acceptable Means of Compliance
AMOC	Alternative Method of Compliance
ATA	Air Transport Association
caa	Civil Airworthiness Authority (non-EU)
CAP	Continuing Airworthiness of Type Design
CRD	Comment Response Document
DAH	Design Approval Holder
DDP	Declaration of Design and Performance
EAD	Emergency AD
EASA	European Aviation Safety Agency
EC	European Community
ETSOA	European Technical Standard Order Authorisation
ETSOAH	European Technical Standard Order Authorisation Holder
EU	European Union
GM	Guidance Material
ICAO	International Civil Aviation Organisation
ICAO SARP	ICAO Standard and Recommended Practice
JAR	Joint Aviation Requirements





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MCAI	Mandatory Continuing Airworthiness Information
MS	Member State
MSN	Manufacturer Serial Number
NAA	National Aviation Authority of EU Member State
N/A	Not applicable
PAD	Proposed AD
PCA	Primary Certifying Authority (State of Design; EASA for EU products)
PCM P&A	Project Certification Manager Parts and Appliances
PCM	Project Certification Manager (EASA staff or staff from NAA under contractual arrangements)
P/N	Part Number
RTC	Restricted Type Certificate
SAS	Specific Airworthiness Specifications
SIB	Safety Information Bulletin
S/N	Serial Number
SoD	State of Design
SoR	State of Registry
STC	Supplemental Type Certificate
TBD	To be defined
TC	Type Certificate
TCDS	Type Certificate Data Sheet

Log of issues		
Issue	Issue date	Change description
001	14/06/2010	First issue. Replaces Annex IV to Continuing Airworthiness Procedure (CAP) issue 2 dated 02.02.2006
002	01/09/2014	Second issue, migration of WI.CAP.00002-001 in compliance with convergence project.
003	08/11/2017	Third issue, full revision. Main changes: 1. Section 3.13.1: Introduction of a guidance for ADs applicable to parts, which are affected by an unsafe condition. The recommendation aims to achieve AD wording preventing introduction of an unsafe condition on aircrafts, engine, propellers otherwise not affected by the unsafe condition. For that purpose, it is recommended to make this kind of ADs applicable to 'all' aircraft serial numbers on which the affected part is eligible for installation. In these ADs the mandated action (for example inspection) is applicable only to those aircraft which incorporate the affected part. However, the paragraph dealing with part installation (prohibition or restriction or requiring actions before installation or before release to service of the aircraft after installation)





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		<p>is applicable for all aircrafts (all serial numbers) for which the installation of that affected part is eligible.</p> <ol style="list-style-type: none">2. Section 3.15.1: Introduction of a guidance about provisions when under which condition should an AD incorporate provisions about 'pilot-owner maintenance', 'limited certifying staff authorisation according to Part 145 or Subpart F of Part M.3. Section 3.15.3: Update of inspection methods referred in the ADs. Particularly, replacement of Detailed Visual Inspection by Detailed Inspection bringing the manual content in line with ATA MSG 3 document.4. Section 3.15.5: Introduction of a concept of 'Required for Compliance' allowing to operators to identify which part of the referenced service bulleting must be followed to show compliance with the AD requirements and which part can be accomplished using equivalent procedures.5. Introduction of updated guidance how to use Tables in ADs.
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1. Introduction

The aim of this document is to provide guidance for the drafting of Airworthiness Directives (AD), Emergency ADs (EAD) and Proposed ADs (PAD) to AD technical writers and Project Certification Managers.


Reference is made to the EASA Procedure "Continuing airworthiness of type design (CAP)" and to Part 21.A.3B of Regulation (EU) No. 748/2012 for the conditions qualifying the issuance of an AD.

A generic AD template is used to explain all the AD template sections, but the same applies to other AD forms with the appropriate differences, as explained below.

The paragraph numbers in the AD template correspond (with hyperlinks) to the relevant paragraphs of Chapter 3. "Writing Guidelines" of this document, where detailed explanations on each section of the AD template are provided.

2. AD template overview

EASA AD No.: YYYY-XXXX

 **Airworthiness Directive**

3.1 AD No.: YYYY-XXXX

3.2 Issued: dd Month YYYY

3.2 Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, (a) persons may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EC) 216/2008, Article 14(4) exemption].

3.4 Design (Change) Approval Holder's Name: [text] **3.5 Type/Model designation(s):** [text]

3.6 Effective Date: [TBD - standard: 14 days after AD issue date]

3.7 TCDS Number(s): [or alternative approval (e.g. STC, ETSOA) number(s)]

3.8 Foreign AD: [as appropriate]

3.9 Superseded: [as appropriate]

3.10 ATA [nr.] – 3.11 ATA Chapter Name – System / Part Name – Required Action(s)

3.12 Manufacturer(s):
[List all names of companies that are known to have manufactured the product(s), part(s) or appliance(s) to which the AD applies. For detailed instructions and guidance, refer to the EASA AD Writing Manual]

3.13 Applicability:
[Identify all product(s), part(s) or appliance(s) to which the AD applies. For detailed instructions and guidance, refer to the EASA AD Writing Manual]

3.14 Reason:
[Describe the unsafe condition that is the reason for the issuance of the AD. For detailed instructions and guidance, refer to the EASA AD Writing Manual]

3.15 Required Action(s) and 3.16 Compliance Time(s):
Required as indicated, unless accomplished previously:

[Describe the required action(s) and the compliance time(s) within which the action(s) must be accomplished. For detailed instructions and guidance, refer to the EASA AD Writing Manual]

Inspection(s):
(1) Within xx flight hours (FH) or xx flight cycles (FC), whichever occurs first since....etc.


Commented [vBP1]: Note: If an STC holder, remove the (brackets); if not, delete (Change)

Commented [vBP2]: Note: If STC, replace text above with "Modification(s)" and describe the modification

Commented [vBP3]: When AD applies to a non-EASA product, part or appliance, state "Non-EASA" or refer to the existing (not adopted) Foreign AD – in all other cases, state "Not applicable"

Commented [vBP4]: Or "Revision", as appropriate

Commented [vBP5]: These "headings" (many others could be used, those in this document are not listed exhaustively) are to be applied, as appropriate, grouping certain similar actions together; i.e. one heading may be for more than one paragraph

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EASA AD No.: YYYY-XXXX

Corrective Action(s):

- (2) If, during any inspection as required by paragraph (1) of this AD, discrepancies are detected, before next flight,etc.

Credit:

(3)

Terminating Action:

(4) None

Parts Installation:

- (5) From the effective date of this AD, it is allowed to install xxx, provided that....etc.

Commented [v0P6]: Or 'do not install' as appropriate to the case

3.17 Ref. Publications:

[List each publication that contains instructions to accomplish the action(s) required by this directive]

The use of later approved revisions of this document [or these documents, if more than 1] is acceptable for compliance with the requirements of this AD.

3.18 Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. Select text [a] or [b], as appropriate:
 - a. [Final AD with Request for Comments] Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication.
 - b. [following PAD consultation] This AD was posted on dd Month YYYY as PAD YY-XXX for consultation until dd Month YYYY.In case of [b], select either [1] or [2], as appropriate:

[1] No comments were received during the consultation period.
[2] The Comment Response Document can be found in the [EASA Safety Publications Tool](#), in the compressed (zipped) file attached to the record for this AD.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADS@easa.europa.eu.
4. For any question concerning the technical content of the requirements in this AD, please contact: [Approval holder address details]



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3. Writing guidelines

3.1. AD Number

Year in full, a dash, followed by four digits (progressive number assigned by Safety Information Section), e.g. 2009-0015.

In case of a revised AD, add without space “R1”, “R2”, as appropriate, after the AD number. e.g. 2009-0100R2.

In case of an Emergency AD (ref. EASA Emergency AD template), the AD number will be followed by the suffix “-E”: e.g. 2008-0016-E. When there is a need for a revision (if comments and/or amendments as appropriate have to be incorporated after publication), the suffix “-E” will be removed and replaced by the revision number.

The PAD (ref. EASA PAD template) number is not the same as the AD number. A PAD number will be a two digits number indicating the year (08 = 2008) plus an incremented number. e.g. 08-186, also assigned by the Safety Information Section.

Corrections have to show in brackets the date of publication of the correction: e.g. [Corrected: dd month yyyy].

3.2. Issue date

Date format (applicable to all other sections of the AD as well) is e.g. 09 November 2008. Two digits for the day, 4 digits for the year. The month has to be written in letters.

3.3. Note / Standard text

The basic text on the AD templates reflects the relevant articles of EU Regulations pertaining to airworthiness directives, to show ICAO contracting states, EU NAAs and operators that EASA has issued the AD acting on behalf of the State of Design (SoD) for EU products or of the State of Registry (SoR) for non-EU products.

As the acronym (P/E)AD for (proposed/emergency) airworthiness directive is shown in the note of the relevant AD template, such acronym can be used in the body of the AD.

3.4. Design (Change) Approval Holder’s Name

Name of the current holder of design approval of the affected product, part or appliance (type-certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, ETSO Authorisation or any other relevant approval issued or deemed to have been issued by the Agency under the Regulation (EU) No. 748/2012. The entire company name has to be written in capital letters (e.g. AIRBUS HELICOPTERS DEUTSCHLAND), except for information on the company nature (e.g. GmbH) and has to correspond to the denomination as quoted in the TCDS. An AD could be affecting more than a single approval holder. In such a case, change the text to ‘Holders’.

In addition, in some cases it may be prudent to add the name of the most recent previous (S/R)TC or ETSO-Authorisation approval holder, e.g. 328 SUPPORT SERVICES GmbH (Formerly Dornier Luftfahrt GmbH).





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Table 1 – Determining the AD Applicability and Recipient

When ...	And the part /appliance is installed on ...	Then the EASA Section ...	Issues the AD against...	Addressed to
The unsafe condition exists in a part/appliance having its own approval (e.g. ETSO articles or EPA marked parts approved under an STC or as a minor change)	Many aircraft models (we cannot identify all of them) or it is impractical to issue an AD against all of the models	With certification responsibility for the part/appliance	The part, installed on, but not limited to, XX Model XX aircraft	The part/appliance design holder
The unsafe condition results from a faulty installation of the part/appliance on a particular aircraft model.	Certain aircraft models only	With certification responsibility for the affected aircraft models	The aircraft model(s)	The TC/RTC/STC holder

In case of orphan aircraft (no TC/STC/RTC holder) or for certain aircraft approved under Specific Airworthiness Specifications (SAS), the AD can be addressed to the SAS holder.

3.5. Type/Model designation(s)

This is not the applicability but a quick-reference field only. An all-encompassing type-designation should be given but avoiding terms like “series”, which might be misleading (e.g. DR 400 aeroplanes, A340 aeroplanes, Jetstream 3100 aeroplanes, etc.) even though not all the models of the type are affected. Model designations can be used in this field if it helps to identify the affected aircraft (e.g. model MBB-BK 117 C-2 instead of type MBB-BK 117 if only this model is affected).

Note that the AD product taxonomy may differ from the published (master) list of products for the purpose of clarity (e.g. Airbus Helicopters Deutschland type EC 135 includes model EC 635, which is listed as a dedicated type in the AD taxonomy).

The detailed applicability is to be given in the ‘Applicability’ section of the AD, see under (3.13). As ADs may apply to more than a single type, or possibly to a single model only, common sense should determine the content of this field.

The following terms should be used, as appropriate:

- Aeroplanes
- Helicopters
- Powered sailplanes
- Sailplanes
- Engines





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- Propellers
- Auxiliary Power Units
- Balloons
- Airships
- Seats
- Restraint Systems
- Transponders
- Transceivers
- Cargo Restraint Nets
- Life Rafts
- Emergency Locator Transmitters
- Tyres
- Emergency Parachutes
- Etc.

Please also see paragraph 9.2. Practical Examples and Guidelines, in particular Table 7 - Terminology of Product Designations.

3.6. Effective date

The rules for determining the effective date of an AD are to be found within the EASA Procedure “Continuing airworthiness of type design (CAP)”.

3.7. TCDS [or RTC / STC or ETSO] Number(s)

List the applicable design approval number (TC, RTC, STC, ETSOA, major repair design approval, or any other relevant design approval number). For the number, consult the applicable approval certificate or its data sheet (TCDS) or, if only a numbered Data Sheet or Specification was issued, use this number including the document identification (DS, Spec., etc.). If TC number and TCDS number are not identical, state both. It is recommended to always use the State of Design (S/R)TC number(s), unless not available. Where the TCDS is not issued by EASA, mention also the name of the issuing authority and the number (e.g.: FAA No. A6WE).

When EASA has already issued (a) corresponding approval(s), both the EASA and the original PCA approval(s) should be listed.

3.8. Foreign AD Number

When the AD is issued by EASA acting on behalf of the EU State of Design, state “Not applicable”. In all other cases, make clear reference to the corresponding or related Foreign AD number and the State of Design Authority that issued it.

In this box it must be indicated if this AD supersedes a third country AD on a third country product issued by the SoD or if the AD is in addition to the ADs issued by the SoD.





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This box, together with the following one (Supersedure) will highlight any deviation from a foreign State of Design AD (e.g. partial adoption). The reason for the deviation will be given in detail in the AD "Reason" section (refer also to paragraph 3.14).

3.9. Supersedure / Revision

When an AD is revised or superseded (for guidance on when to issue revisions vs. supersedures refer to the EASA procedure "Continuing Airworthiness of Type Design (CAP)"), the new publication either "revises" or "supersedes" the previous one. For this reason, when appropriate, clearly list the issuing Authority, number(s) and date(s) of issue of the superseded AD(s). See also items 3.1. and 3.13. Examples:

- This AD revises EASA AD 2008-1234 dated 21 October 2008.
- This AD supersedes EASA AD 2008-5678 dated 31 October 2008.

When no revision or supersedure is applicable, "None" should be shown in this field.

3.10. ATA [Nr.]

Insert the number of the relevant ATA chapter.

If several ATA chapters are affected by the AD, it is recommended to list each ATA number in this box using commas as separator.

Note: there is no ATA code for Aircraft Flight Manuals and balloons and the use of words in the AD title is adequate.

3.11. ATA Chapter Name – Part / System Name – Required Action(s)

Clearly name the appropriate ATA Chapter name and the name of the affected part/system. If deemed necessary to better explain the AD subject, the ATA sub-chapter may be used instead.

To distinguish between the three parts of the Title, it is recommended to put a hyphen between the parts and a slash between words belonging to the same part. Example:

- Power Plant - Engine Cowlings – Replacement.

When several ATA chapters/parts/systems are affected by the AD, it is recommended to list all the affected ATA chapters' names and to choose and identify the predominant part/system for the single-line text title. Where this is not possible, list more than one "title" (example as shown above) beneath each other.

The types of "Required Action(s)" have been inspired by current use of such terms by several authorities and by the EASA Form 1 (Block 12 - Status/Work). The proposed terms do not constitute a comprehensive list but should be used as guidance only:

- Inspection
- Test
- Overhaul
- Replacement
- Removal
- Repair





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- Rework
- Modification
- Identification
- Reinforcement
- Revision
- Implementation
- Amendment
- Operational Limitation
- Functional Check
- Operational Check

Obviously, the “action” part in the title may include a combination of the items listed above. Example:

- Power Plant - Engine Cowlings –Inspection / Repair / Replacement.

3.12. Manufacturers

All the names, past and present, of the companies that have manufactured the affected product(s), part(s) or appliance(s), listed in reverse chronological order (i.e. starting from the most recent). A reliable source for the identification of all the manufacturers is the Type Certificate Data Sheet (TCDS), STC data sheet, Declaration of Design and Performance (DDP) or the official list of ETSO Authorisations published on the EASA web. In special cases further checks might be necessary (e.g. enquiries to the (former) PCA or specialised publications).

With all the TC transfers of the last few years, in some cases this may be a considerable list. The main reason for this item is the fact that in National Aircraft Registers around the world, the manufacturer of the individual aircraft is always listed, whereas the current TC-holder is usually not. This means some aircraft may only be sufficiently identified by listing both the names of the current TC-holder and manufacturer.

3.13. Applicability

In combination with the previous item (3.12.), list all the affected Type and Model designations, serial numbers, part numbers and manufacturing dates, as appropriate, to identify the affected products, parts or appliances. Where possible, these should correspond directly with those listed in the applicable design approval and/or associated data sheet (the TCDS, STC data sheet, the Declaration of Design and Performance (DDP) etc). If the applicability statement exceeds 15 lines, it could be better to refer directly to the relevant paragraph of the service publication (e.g. a specific paragraph of a Service Bulletin) or to an appendix to the AD.

3.13.1. General

This is the place for the full designation. Serial numbers may be added if appropriate and useful. If the AD addresses an unsafe condition that exists in engines, propellers, parts or appliances, it is applicable to all aircraft on which the individual products (i.e. engine or propeller), parts or appliances listed in the applicability paragraph are installed. At least one aircraft where the product is installed has to be mentioned, with the statement: “*known to be installed on, but not limited to....*”. Examples:

- *Model TB 9, TB 10, TB 20 and TB 21 aeroplanes, all serial numbers.*
- *Airbus A340-211, A340-212, A340-213, A340-311, A340-312 and A340-313 aeroplanes, manufacturer serial numbers from 122 up to 189 inclusive.*





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- *Model ARRIEL 2B1 engines, all serial numbers.*
These engines are known to be installed on, but not limited to, [TBD]
- *Hartzell Propeller Inc. model HC-E4A-3()/E10950() propellers.*
These propellers are installed on, but not limited to, [TBD] aeroplanes.
- *Note: The parentheses appearing in the propeller model number indicate that the AD is applicable to the basic propeller model. This AD still applies regardless of whether there are additional letters in the propeller model designation.*
- *Model XYZ seats, part number [...], all serial numbers.*
These seats are known to be installed on, but not limited, to [TBD]

It is recommended NOT to list parts (identified by P/N), affected by the actions required by an AD, in the Applicability section of that AD. Instead, whenever there is a requirement (e.g. to inspect), the affected part(s) should be identified in the Required Actions section (usually by P/N) either in a Note to clarify what is an 'affected part', or in the first paragraph that contains that requirement. The benefit (AD = applicable to ALL products for which the affected part is eligible, including those may NOT have an affected part installed) is that the AD can also include (e.g.) a prohibition to install an affected part, or allow installation, provided (e.g.) that the part is inspected or corrected.

The main reason for this recommendation is that the alternative, inserting the affected part(s) by P/N into the Applicability section (i.e. if installed), means that ALL the required actions, including any provision for inspection before installation or installation prohibition, will NOT be applicable to products that do not have affected part(s) installed. This creates the risk that operators of aircraft WITHOUT an affected part may record the AD as 'not applicable' and file/archive it as such. In future, it may inadvertently be concluded that the affected ("faulty") part is unconditionally eligible for installation.

3.13.2. Series / All certified models

The term "series" should not be used to denote similar models of a product. The term shall be used with an extreme caution because it directly affects AD applicability; inconsistent usage is a constant source of problems. In fact, "Airbus A340-200 series" would identify a group of similar models. The AD would therefore be applicable to Airbus model A340-211, A340-212 and A340-213 aeroplanes, but could be interpreted to be applicable also to future models not yet certified at the time the AD is issued. Similarly the wording "*all certified models*" for products still in production could raise the question whether only the certified models at the time the AD is issued are to be taken into consideration or all models certified also after the AD issuance.

Therefore it is better to list all the models/variants to which the AD is applicable as per TCDS, to make sure that the AD is applicable only to those models. List for example: "*Airbus A318-111, A318-112, A318-121, A318-122, A319-111, A319-112, A319-113, A319-114, A319-115 aeroplanes, all serial numbers*".

An exemption from this generic guidance is when the AD affected type is definitely out of production. In such a case the wording "*all certified models*" may be used.

3.13.3. Supplemental Type-Certificated Products

An AD issued to correct an unsafe condition resulting from Supplemental Type Certificate (STC) alteration of one or more different models of aeroplane, helicopter, engine, or propeller must identify types and models of the Type/Restricted Type-Certificated products to which the STC is applicable in the Applicability paragraph of the AD. Supplemental Type-Certificated products must be identified by the name of the current STC holder followed, if applicable, by the name(s) of previous holders of that STC.





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Example:

- Applicability: *CTT Systems AB Zonal Drying System P/N 1000-001, 2000-000, 2000-005, 2001-001, 2001-006, 3000-000 Rev.A, 3000-001, 3000-002 Rev.A and 3000-002 Rev.D, known to be installed in, but not limited to, Airbus A330-243 and A330-322; Boeing 737-700, 737-800, 747-400, and 767-300 series; Bombardier CL-600-2B19; and McDonnell Douglas MD-11 series aeroplanes.*

The following STCs have been identified as being affected by the requirements of this AD:[....]

An alternative is to issue a separate AD for each Type/Restricted Type-Certificated product series affected by the STC alteration.

3.13.4. Parts and Appliances

Parts and appliances, including ETSO articles or European Part Approval (EPA) marked parts, to which the AD is applicable must be identified by the manufacturer's name and model and/or part number.

3.13.5. Use of Product Serial Numbers / Manufacturer Serial Numbers

In addition to model designations, product serial numbers may be used to further identify products affected by an AD. Extreme caution should be used when this procedure is initiated. Errors can occur during the original selection of affected aircraft, the manner in which the serial numbers are listed, and in the typing of documents. The following should also be considered:

- Avoid using the phrase "*serial number 1234 and up*" since this phrase will render the AD applicable to future production aircraft. When the product currently is in production, work with the manufacturer to determine when that production run will end or when a product improvement will eliminate the unsafe condition cited by the AD, then state the complete serial number range. Care must be exercised to ensure that the production run ends as represented by the manufacturer.
- When citing several serial numbers in sequence, e.g., "*S/N 12340 up to S/N 12345 inclusive*" it has to be made sure that a true sequence exists. Any serial number excluded from applicability has to be clearly stated. The basic structure of the serial numbers for a product may vary such that a reference to a number sequence is confusing to the reader, e.g., "*S/N 123 through XYZ-1357*."

3.13.6. Excluding certain products from the Applicability

When the exclusion of some products is mentioned in the Applicability paragraph, then the AD for those products will be logged as "Not applicable".

- For products having already accomplished the required corrective action in production (e.g. through a modification embodied in production, except when rotatable parts are affected), it is more appropriate to exclude those products from the AD applicability.
- *Applicability with mod number "[...], except if modification (MOD) N. is embodied*

For products having already embodied in service the required corrective action, e.g. through the accomplishment of one or more service bulletins, it is preferable to retain these products in the AD applicability; in such case the AD will be logged as applicable but already complied with. In fact, the standard wording "*Required as indicated, unless accomplished previously*" which is used for the AD "Required Action and Compliance Time" section (see paragraph 3.15), gives credits for the previous accomplishment of a Service Bulletin, i.e. before the AD effective date.





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3.14. Reason

A descriptive text to identify the unsafe condition. The REASON field should identify precisely:

3.14.1. The Precipitating Event

and also how the problem was detected, such as in service reports, testing, analysis etc. Example: *Reports of cracks in the fuselage at FR 68....*

3.14.2. The Results of the Investigation

(if appropriate), the suspected or known cause(s) of the problem, e.g. stress, corrosion, fatigue (design related causes) or a quality control problem (manufacturing/maintenance non-conformity related causes) etc.

3.14.3. The Description of the Unsafe Condition

A description of how the problem could affect the overall airworthiness of the aircraft, clearly describing the ultimate consequences if the unsafe condition remains uncorrected.

For examples please refer to section 10. Annex I.

3.14.4. The Description of Actions taken by the Design Approval Holder

Describe actions taken by the design approval holder including publication of a service instruction containing corrective actions.

3.14.5. The AD Intent and Summary of Required Actions

When an AD requires an inspection for, e.g., fatigue cracking, and conditional repair (if cracking is found), the *intent* of the AD is not to “prevent” the fatigue cracking, but to “detect and correct” it. The inspections will detect the crack; the repair will correct it. Therefore, in the REASON section, explanation of the AD requirements, and lead-in to the AD body on these types of ADs, indicate that the actions specified by the AD are intended to “detect and correct fatigue cracking” (not to prevent it).

On the other hand, if the AD requires a modification that will strengthen the area where fatigue cracking has occurred (and thus eliminate the environment where fatigue cracks could originate), then it could be appropriate saying that the intent of the AD is to “prevent” fatigue cracking.

When a terminating action has not yet been developed, the following wording might be appropriate: “*This AD is considered as an interim action and further AD action may follow.*”





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Table 2 – Detect and Correct vs. Prevent.

Use this table to determine whether the AD is intended to “detect and correct” the unsafe condition” or to “prevent” it.

If the AD requires:	The intent is to:
Inspection + corrective action	“detect and correct”
Modification only	“prevent”
Inspection + required modification	“detect, correct and prevent”
Inspection + optional modification	“detect and correct”
Inspection + optional modification, later superseded by inspection + required mod	Change “detect and correct” into “prevent” in the supersedure

3.14.6. Non-Compliance with applicable Airworthiness Requirements

Sometimes an unsafe condition exists because a part or product does not meet the required criteria of the applicable airworthiness requirements. Non-compliance with applicable airworthiness requirements is generally considered as an unsafe condition, unless it is shown that possible events resulting from this non-compliance do not constitute an unsafe condition; the unsafe condition must be in any case described, not only the non-compliance with the applicable airworthiness requirements.

3.14.7. Similar Condition exists on other Types / Models

When the AD applies to other types and/or models than the one on which the precipitating event occurred, a sentence should be added to explain that since the models or types are of similar type design, the unsafe condition also could exist on the model or type addressed in the AD.

3.14.8. When the root cause of the unsafe condition is not known

For example: *“This AD also requires reporting the results of the inspections to [DAH Name]. Because the cause of the [unsafe condition] is not known, these required inspection reports will help determine the extent of the [unsafe condition] in the affected fleet. Based on the results of these reports, further corrective action might be warranted”.*

For example: *“Given that the unsafe condition addressed by this AD is likely due to a manufacturing or maintenance non-conformity problem, a reporting requirement is instrumental in ensuring that as much information as possible regarding the extent and nature of the non-conformity or breakdown can be gathered, especially where that data may not be available through other established means. This information is necessary to ensure that proper corrective action will be taken”.*

3.14.9. If the Airworthiness Directive is a correction / revision / supersedure

to a previous Airworthiness Directive, state the reason for this correction/revision/supersedure.





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3.14.10. Statement on the requirements of the AD

This statement is a high level overview/description of actions required by the AD without quoting particularities, for example: *"For the reasons described above, this AD requires repetitive inspections of [the affected parts] and their repair or replacement, as necessary."*

1. If the AD retains requirements or superseded AD:

In case the AD supersedes a previously issued AD, in the statement on the requirements of the AD state:
"For the reasons described above, this AD retains the requirements of EASA AD 2015-XXXX, which is superseded, and requires..."

2. If the AD does not retain any requirement of previous AD: there are possibilities, either use a sentence

a) For the reasons described above, this AD supersedes EASA AD 2015-XXXX and requires..."

3.15. Required action(s) & Compliance time(s)]

Where appropriate, divide the actions into several paragraphs, so as to achieve a compliance period per action item. Preference is given to a descriptive paragraph, whereby the compliance period is given for each required action, including a direct reference (as applicable) to the related service publication. The compliance paragraph must include the description of each corrective action required, and the associated compliance time or period:

Description of the Required Corrective Actions

Every AD should contain a clear and concise statement of corrective measures or limitations required, including the method of accomplishment. Every effort should be made to provide corrective action that will terminate the need for repetitive inspections or special operating procedures.

3.15.1. Terminology: Inspections vs. Checks

Use "Check" only as a noun and when the meaning is: 'the procedure accomplished to make sure something operates properly.' Most of the time, the check will be either operational or functional, the difference is defined hereafter:

Operational Check: A task to determine that an item is fulfilling its intended purpose. The task does not require quantitative tolerances. This is a fault finding task.

Functional Check: A quantitative check to determine, if one or more functions of an item performs within specified limits.

For example, the extension/retraction of the flaps system can be tested. The operational check will verify that the flaps travel down and up as commanded. The functional check will verify that the time duration, to extend (or retract) the flaps, is within the acceptable limits.

Do not use "Check" as a verb when the meaning is "Examine", "Measure" or "Make sure" but say e.g. *"Examine the turnbuckle for corrosion [...]", "Measure the distance between the oxygen line and the fuselage frame [...]", "Accomplish a leakage check of the steering actuator [...]", or "Make sure that the handle is pulled out before re-energizing [...]"*.





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Use "Inspect" when the meaning is 'the examination of an item against a specific standard'. Refer also to section 3.15.3. "Inspection Methods".

For further terminology guidelines, please refer to section 9. "AD Language Rules".

In the Required Action and Compliance Time section use an expression "... *during the inspection*", when it refers to a one-time inspection and use "... *during ANY inspection*", when it refers to repetitive inspection.

Note: Part M and Part 145 stipulate that an AD action can be accomplished only by an appropriately authorised certifying staff (Part 66) on behalf of the approved maintenance organisation, except of non-complex maintenance task where the task can be certified by a holder of Part 66 license, or, under certain conditions in accordance with M.A.803 by a pilot owner.

Part 145 and Part M Subpart F organisations:

Part 145 applies for maintenance of large aircraft, aircraft used for commercial air transport and components attached thereof.

Part M Subpart F applies for maintenance of aircraft and components attached thereof which are not required to be maintained by Part 145 organisation.

In case of commercial operations, the Part 145 or Part M Subpart F organisation may use a flight crew in a role of authorised certifying staff, not holding a Part 66 license, to accomplish a repetitive pre-flight airworthiness directive which specifically states that the flight crew may carry out such an airworthiness directive. In this case the organisation shall issue a limited certifying staff authorisation to the aircraft commander and/or flight engineer on the basis of the flight crew licence held, provided that the organisation ensures that sufficient practical training has been carried out to ensure that such person can accomplish the airworthiness directive to the required standard.

Note: Non pre-flight simple visual inspections required by ADs are usually considered as an ordinary "maintenance" and, therefore, have to be authorised by appropriate certifying staff (either acting on behalf of an approved maintenance organisation, or holder of a Part 66 license for non-complex maintenance task).

Pilot owner maintenance:

To qualify as a pilot-owner, the person must hold a valid pilot licence (or equivalent) issued or validated by a Member State for the aircraft type or class rating and own the aircraft, either as sole or joint owner.

Part M.803(b) allows, for any privately operated non-complex motor-powered aircraft of 2 730 kg MTOM and below, sailplane, powered sailplane or balloon, the pilot-owner to issue a certificate of release to service after limited pilot-owner maintenance. That limited pilot-owner maintenance consists of simple visual inspections or operations to check for general condition and obvious damage and normal operation of the airframe, engines, systems and components only. Maintenance tasks shall not be carried out by the Pilot-owner when the task is carried out in compliance with an Airworthiness Directive or an Airworthiness Limitation Item, unless specifically allowed in the AD or the Airworthiness Limitation Item document.

For the reasons described above consider introducing into AD a provision allowing accomplishment of the task required by the AD for these two options:

1. When flight crew authorisation can be used (the AD is applicable for aircraft for which the maintenance has to be accomplished by Part 145 or Subpart F approved maintenance organisation):





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"Repetitive pre-flight inspections, as required by paragraph (X) of this AD, can be accomplished by appropriately authorised flight crew in accordance with provisions of Commission Regulation (EU) 1321/2014 Part 145 or Part M Subpart F."

2. When pilot owner authorisation can be used (the AD is applicable for privately operated non-complex motor-powered aircraft of 2 730 kg MTOM and below, sailplane, powered sailplane or balloon):

For example: "Inspection/check/etc., as required by paragraph (X) of this AD, can be accomplished by the pilot owner in accordance with provisions of Commission Regulation (EU) 1321/2014 Part M."

3.15.2. Areas or Parts to be inspected

Where inspections are required, the area of the product or the specific parts to be inspected must be defined. The AD must not necessarily state whether it is necessary to disassemble, remove bolts, etc., to accomplish the inspection. More simply, reference can be made to the accomplishment instruction of the relevant Service Bulletin. Example:

- *Accomplish an ultrasonic inspection of the MLG side brace lower arm in accordance with the instructions of [Design Approval Holder] SB No xxx.*

Sometimes, instead of inspecting the part or component, a review of the aeroplane maintenance records along with any other applicable data is acceptable if the P/N of the part / component can be positively determined from that review or if it can be positively determined that the [component] is not installed on the aeroplane. Examples:

- *"A review of the [product] maintenance records is acceptable in lieu of the inspection as specified in the applicable [Design Approval Holder] SB, provided that the [product] configuration can be conclusively determined from that review."*

3.15.3. Inspection method(s)

The inspection method(s) should be defined, i.e., dye-penetrant, x-ray, High Frequency Eddy Current etc., and provisions must be made for an approved equivalent method, if acceptable. If specific procedures for accomplishment of the required action are contained in a Service Bulletin or document, the AD should refer to that bulletin or document for those procedures. It is not sufficient to refer to a Service Bulletin alone (i.e., "Accomplish the Service Bulletin."); if required procedures are lengthy or complex, it is better, however, referring to the portion of the Service Bulletin where the procedures can be found, rather than repeating the procedures in the text of the AD (i.e., "Accomplish the x-ray inspection of Body Station XYZ in accordance with the Instructions of the Service Bulletin.")

As an option, when it is not clear from the DAH technical publication what the required inspection means or when the type of inspection is not clearly defined, it could be wise introducing a note giving a definition of the required type of inspection. Examples:

General Visual Inspection (GVI):

- *A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to ensure visual access to all surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or droplight and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked.*





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Detailed Inspection (DET):

- *An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required.*
- *Note: Do not use an expression Detailed “Visual” Inspection (DVI), as it was removed from ATA Maintenance Steering Group 3 Manual.*

Special Detailed Inspection (SDI):

An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. The examination is likely to make extensive use of specialized inspection techniques and/or equipment. Intricate cleaning and substantial access or disassembly procedure may be required.

3.15.4. Flexibility provisions

The requirement to complete all steps of the SB strictly in accordance with the SB when all of the instructions are not related to correcting the unsafe condition creates unnecessary questions of AD compliance. Operators and maintenance providers often have their own acceptable procedures that can be used to accomplish some of the SB actions. Some confusion and unnecessary AMOCs may be avoided by ensuring that AD specify which procedures must be followed exactly and which can be accomplished using an air carrier’s equivalent procedures. Therefore, to distinguish between actions which have to be followed and those which are recommended use:

- The phrase “in accordance with” to identify procedures that must be followed;
- The phrase “refer to...as an accepted procedure” to identify procedures that can be used, but for which an operator or maintenance provider may use their own accepted methods, techniques, and practices.

3.15.5. Required for Compliance

When appropriate: Verify in the SB which parts of the service instruction must be followed exactly and which can be accomplished using an equivalent procedures. Whenever it is appropriate and identified in the referenced service instruction or SB, refer to SB (or other service instruction) paragraph which is unnecessarily and appropriate to achieve required compliance with the safety intent of the AD.

For example as usual, in the Airbus SB’s paragraphs 3.C and 3.D are identified as “required for compliance”.

3.15.6. Cracks

While good engineering judgment usually does not allow aircraft operation to continue if cracks are found, continued operation is allowed in some cases. The decision to allow operation with known cracks should only be taken in exceptional circumstances and only when all reasonable alternative solutions have been shown to be impractical. The amount of flights in such a state shall be minimised.

While the following general criteria provide guidance only, a case by case evaluation is required, also in accordance with GM 21A.3B(b) and GM 21A.3B(d)(4) of AMC & GM to Part 21.

Permitting continued revenue flight is usually dependent upon whether the cracking meets certain criteria like:

- the crack is not part of multi-site damage,
- the crack growth is easily detectable and measurable, and





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- the crack growth is slow, and
- the established inspection procedures would detect cracked structure at intervals that would permit repairs to be accomplished before the structure's strength falls below ultimate load carrying capability.

In such cases, the AD might permit continued operation with cracks provided that, however, the conditions for operation continuation [e.g. cracking must be within specified limits and must be repetitively inspected at specific intervals] are clearly indicated either in the AD or in the relevant SB. Approval of such an AD requires the involvement of an EASA structures expert.

3.15.7. One-time actions

Whenever possible consider accomplishment of the corrective action within the compliance time required for the inspection – i.e. not necessarily require accomplishment of the corrective action “before next flight”.

3.15.8. Initial inspection / Repetitive inspection(s) / Corrective actions

Whenever it is possible, the first paragraph of the Required Action and Compliance Time (RACT) section should address the initial and repetitive AD actions (e.g. inspections/ checks etc.) clearly identifying the compliance times (inspection threshold and the repeat interval) avoiding any possibility of misunderstanding or leaving any space to interpretation.

Inspection threshold: Period [expressed in flight hours, flight cycles or calendar time, as appropriate] since the start of service-life or effective date of the AD or any other decisive event and the first accomplishment of the required inspection.

Repeat Interval: The interval between successive accomplishment of a specific maintenance task.

Example: “Within the compliance time defined in Appendix 1 of this AD (Table 1, Table 2 or Table 3, as applicable to aeroplane model and utilisation), and, thereafter, at intervals not to exceed the value defined in Appendix 1 of this AD (Table 1, Table 2 or Table 3, as applicable to aeroplane model and utilisation), accomplish a torque check of forward engine mount bolts (4 positions/engine) on both engines, in accordance with the instructions of Airbus SB A3XX-XXXX Revision XX.”

The paragraph(s) introducing an initial and repetitive AD actions, as applicable, should be followed by paragraph(s) addressing the corrective action(s) necessary to restore the product airworthiness or serviceability, as applicable. It is important to always require a compliance time also for the follow on action

“If, during any inspection [check, review etc.] required by paragraph (X) of this AD any failure/ discrepancy etc./ is detected, as defined in [DAH] SB XXXXX, before next flight accomplish the applicable corrective action in accordance with...”

The following terms, instead, must not be used in the AD "Required Action and Compliance Time" section:

“Accomplish the corrective action if/as necessary”. The use of these terms would leave the determination to operator discretion as to whether an action is required.

*“If any crack is detected **as a result of** the inspection required by this paragraph . . .”* This indicates that the inspection itself might have caused the cracking.

See also section 9.2. "Practical Examples and Guidelines".





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Examples:

If required action is to contact the DAH for corrective action, following statement can be used to require the accomplishment of the corrective actions provided by the DAH:

“Before next flight contact [DAH] to obtain approved [repair/maintenance] instructions and accomplish those instructions accordingly.”

In fact, directing operators only to *“Contact [DAH name]”* they could simply contact the DAH and resume flight without first accomplishing the relevant corrective actions.

3.15.9. Reporting Requirements

It is preferable not to include reporting requirements in ADs unless the information is deemed necessary for the DAH to further assess the unsafe condition. Therefore an AD is sometimes issued against a deficiency for which data collection is still needed to enable the DAH to obtain better insight into the nature, cause and extent of the unsafe condition and to develop an appropriate corrective action. Only in very limited circumstances should the reporting become part of the AD requirements.

The following questions should be considered as guidelines to identify the real need of including such requirement in the AD:

- Is there a need of additional information to develop a corrective action?
- Does the unsafe condition result from manufacturing quality control problems?
- What is the potential consequence of not collecting additional information?
- Is there any other way to get the information?

As a result of the reporting, further mandatory actions might also be later considered.

The standard period to submit reports to the DAH is 30 days. Example:

“(X) Within 30 days after the [or each] inspection, as required by paragraph (X) of this AD report the inspection results, including no findings to [DAH] [if appropriate add: in accordance with the instructions of [DOH] SB XXXXXX].”

The report might include the inspection results, a description of any discrepancies found, the product serial number, and the number of flight cycles and flight hours on the product or any other information deemed necessary by the DAH.

3.15.10. Parts Replacement and Spare Parts

“Remove [the part] and replace with a new or serviceable part” should be the standard wording. *“Remove and discard the part”* or *“Remove and scrap the part”* should not be used, because an EASA AD cannot require an operator to “discard” or “scrap” an unserviceable part, but can only prohibit its installation on an aircraft. The AD cannot likewise require inspecting, repairing or modifying a “spare part”. By using the following language, however, it can be ensured that any spare part is inspected, repaired or modified before it is installed on an aircraft:

Requiring corrective action on a part level may be appropriate for AD issued against parts and appliances [ETSO or equivalent].





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Example for installation provision:

*“From the effective date of this AD [or A PERIOD OF TIME after the effective date of this AD], installation of a [spare part name], part number **, on any aircraft, is allowed, provided the part has been inspected/modified/repared in accordance with service bulletin N. XYZ [or in compliance with the requirements of this AD].”*

Except in the circumstances where an immediate grounding is required, the availability of replacement parts should be considered and the parts identified by part number. State which parts are acceptable equivalents, if any.

In some cases installation prohibition of the faulty part may be appropriate. The language recommended, as applicable, for such an action:

- (X) Do not install on any aeroplane a MLG hinged fairing attachment bracket P/N AAAAA, as required by paragraph (X.1) or (X.2) of this AD, as applicable.
 - (X.1) For an aeroplane that, on the effective date of this AD, has P/N AAAAA MLG hinged fairing attachment brackets installed: After modification of the aeroplane as required by paragraph (A) of this AD.
 - (X.2) For an aeroplane that, on the effective date of this AD, does not have P/N AAAAA MLG hinged fairing attachment brackets installed: From the effective date of this AD.

To avoid AD revisions whenever new part [especially software versions] is developed and eligible for installation on a product to eliminate the unsafe condition addressed by that AD the AD may grant a credit for installation for such a part not available at the time of AD development.

Following wording may be appropriate:

- (X) Installation of [description of a part] having a P/N approved after the effective date of this AD is equal to compliance with the requirements of paragraph (Y) and/or (Z) of this AD, as applicable, provided the conditions as specified in paragraphs (X.1) and (X.2) of this AD are met.
 - (X.1) The [description of a part] P/N must be approved by EASA, or approved under [DAH] DOA; and
 - (X.2) The installation must be accomplished in accordance with aeroplane modification instructions approved by EASA, or approved under [DAH] DOA.

3.15.11. Terminating Action

Long-term continuing airworthiness can be better ensured by design changes removing the source of the problem, rather than by repetitive inspections. Long-term repetitive inspections may not provide the necessary degree of safety. This, coupled with a better understanding of the human factors associated with numerous repetitive inspections, has led to placing less emphasis on special procedures and more emphasis on design improvements. Mandating a modification to terminate repetitive inspection requirements is consistent with these considerations.

Despite that, if a design change (modification) exists that can be done to positively address the problem; it is allowable to continue the repetitive inspections, provided that the following criteria do not apply:

- 1) The affected area is hard to reach, making detection of fatigue cracking or corrosion difficult or unreliable; or
- 2) The detection method is handicapped by intervening structure or is otherwise unreliable in this case; or





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- 3) The sheer size of the area covered, or the physical demands on the inspector, make detection unreliable;
or
- 4) Consequences of the cracking are likely to be catastrophic.

Wording proposed to raise awareness to continue accomplishing AD action(s) when return from configuration for which the AD actions are terminated to the configuration for which the AD action(s) are required, is still allowed.

- (X) Modification of an aeroplane in accordance with the instructions of [DAH] SB-XXXX (installation of improved P/N XXXXXX) constitutes terminating action for the repetitive inspections required by paragraph (Y) of this AD for that aeroplane, unless after that installation, a P/N ZZZZZZ is (re)introduced on that aeroplane.

3.15.12. Concurrent Requirements

Any prerequisite or concurrent requirement (e.g. an SB that has to be accomplished before or concurrently to the accomplishment of a mandatory modification addressed by the primary SB referred to in the AD) has to be explicitly quoted/referenced in the "Required Action and Compliance Time" Section of the AD.

Example: Prior to or concurrent with modification of an aeroplane, as required by paragraph (X) of this AD, accomplish additional modification(s) in accordance with [DAH] SB XXXX on that aeroplane.

3.15.13. Vendor Service Bulletin

If a primary SB is referred to in the AD and the Accomplishment Instructions of the primary service bulletin refer to another SB (e.g., a "vendor" SB) for accomplishment of an action or as a source of other information (e.g., a list of subject part numbers), then a note (not a paragraph) should be included in the AD to reference the secondary SB. Refer to the paragraph "Use of Notes" for further details.

Example:

Note: "For detailed accomplishment instructions on the requirements of paragraph [X] of this AD refer also to Rolls Royce Service Bulletin XYZ Revision 0."

3.15.14. Credit for Maintenance Accomplished

Any EASA AD gives credit for action already accomplished as required by the AD.

At the beginning of the RACT section is a standard sentence:

Required as indicated unless accomplished previously:

Credit for previously accomplished maintenance may also be limited if warranted by the circumstances of the unsafe condition, i.e. if a recent inspection would suffice, but not an inspection done one year before. Example:

- *Required within the next [100] flight hours after the effective date of this AD, unless already accomplished within the last [50] flight hours.*

Also, it may apply that a previous revision of the SB referred to in the AD is acceptable to comply with the requirements of the AD. In such a case a paragraph has to be added explicitly mentioning that actions done according to previous issues of the referenced SB are acceptable to comply with the requirements of the AD.





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Example:

- *"Inspections accomplished on an aeroplane, before the effective date of this AD in accordance with the instructions of [DAH] Service Bulletin XXY (previous) Revision X or Y are acceptable to comply with the requirements of paragraphs X. and Y. of this AD for that aeroplane."*
- *"An aeroplane on which modification (mod.) XXXX has been embodied in production is not affected by the requirements of paragraph (1) of this AD, provided it is determined that no affected (part) has been installed on that aeroplane after the date of delivery."*

3.15.15. Life-Limited Parts

Here below is an example of standard wording to address life-limited parts:

- *"Before exceeding XX FH/FC [the established life limit], or within YY FH/FC after the effective date of this AD, whichever occurs later, and thereafter, at intervals not to exceed XX FH/FC [the established life limit] replace each part [define P/N] with a new or serviceable part in accordance with the instructions of [DAH] SB ZZZZ."*
- *"whichever occurs later..." is appropriate for situation when an affected part is close to or has exceeded the new or reduced life limit(s).*

See also section 4.1.

3.16. Compliance time(s)

3.16.1. General

The following considerations are for generic reference only.

More detailed considerations can be found in **AMC & GM** for **PART 21 SECTION A/Subpart A, GM 21A.3B(d)(4)**.

In determining compliance times for ADs, usually two types of analyses are necessary:

1. A compliance "threshold" must be established, based on an engineering assessment of when action should be taken to detect, prevent or correct the unsafe condition. For example, if service experience indicates that fatigue cracking has been detected on aeroplanes with design life limit of 10 000 total flight cycles, the engineer might determine that repetitive inspections should be initiated before the accumulation of 5 000 total flight cycles. For some types of unsafe conditions, such as computer software errors or certain manufacturing defects, the unsafe condition may exist on new products. In these cases, the required corrective action would be immediately applicable (typically through an Emergency AD).
2. For those products that are close to or have already exceeded the threshold, a so-called "grace period" (preferably not to be defined as such in the AD text) might be found appropriate to preclude products from being grounded unnecessarily. Refer to Part 21 guidance material GM 21.A.3B(d)(4) "Defect correction-Sufficiency of the proposed corrective action".

A typical compliance time provision might state:

"Before exceeding 5 000 flight cycles (FC) since aeroplane first flight, or within 1 000 FC after the effective date of this AD, whichever occurs later; and thereafter at intervals not to exceed 2 000 FC, inspect..."





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3.16.2. Compliance time wording

The term *“since aircraft first flight”* is acceptable for use in ADs whenever there is sufficient evidence that the DAH provides accurate information to operators regarding flight cycles/flight hours accumulated before delivery of the aircraft.

In all other cases it can be appropriate setting the start of the “compliance clock” from the *“date of issuance of the original certificate of airworthiness or date of issuance of the original export certificate of airworthiness, whichever occurs first.”*

Terms like, *“date of delivery”* or *“since new”* in AD compliance times should be avoided as potentially causing confusion/uncertainty to AD recipients. For the same reason it is not acceptable the use of terms like *“For aircraft that are close to the threshold”* or *“For aircraft that are nearing the threshold...”*.

The term *“[DAH] date of manufacture”* should be used only when sufficient evidence exists that this date is accessible to current or future operators.

The phrase *“before exceeding”* is used as part of a compliance time expression that defines a threshold in terms of total flight cycles or flight hours. It is used when measuring the compliance time as a function of flight cycles and/or flight hours. Using that phrase means up to, and including XX cycles/hours. The threshold should be used in conjunction with a grace period. (Generally, fatigue is expressed in terms of flight cycles or flight hours.)

“Whichever occurs later” is used when there are two choices of times; *“whichever occurs latest”* (or *“last”*) is used appropriately when there are three or more choices.

Any difference from the relevant DAH Service Bulletin does not need to be explained/justified in the AD, as the AD is the only “regulatory” document. On the other hand such differences should be avoided as far as possible in order to avoid unnecessary confusion or additional burden to operators.

3.16.3. Flight Hours

The simplest expression of compliance time is in terms of a specific number of hours of operation at which compliance is required for all affected products, that is, flight hours (FH). Using the phrase *“within [X] flight hours”* means up to and including [X] hours. The phrase *“before exceeding [X] total flight hours”* means up to and including [X] hours. Examples:

- *Within [100] flight hours (FH) after the effective date of this AD.*
- *Within [300] flight hours (FH) after the effective date of this AD, or before exceeding [5 000 s] total FH, whichever occurs [first/later].*

When the compliance times relate to flight hours and are complex, the statement *“within the compliance time defined in Table 1 / Appendix 1 of this AD”* can be used and the actual compliance times given in the body of the AD, possibly in the form of a Table

3.16.4. Flight Cycles

The Flight Cycles may be used to express compliance time if the problem is related to cycles such as in landing gear, flaps, or fatigue aggravated by landing, or if the problem is related to pressurisation, such as fatigue cracking. Example:

- *Within XXX flight cycles after the effective date of this AD....*





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3.16.5. Engine (Flight) Cycles

For ADs affecting engines, the compliance time may be expressed in engine flight cycles. The use of engine flight cycles in an AD compliance requirement should be in accordance with the standard cycle definition and cycle counting methodology specified in the approved service document for the applicable engine model. For the purposes of an AD, when the cycle definition or counting methodology requested to be used differs from that prescribed in the applicable approved service documents, the cycle definition or the cycle counting methodology should be included in the body of the AD.

3.16.6. Calendar Times

(e.g., “*within six months after the effective date of this AD*”) Calendar times may be used to express compliance times when a direct relationship between calendar time and airworthiness (including corrosion) can be established; a product’s utilisation rate varies greatly throughout the fleet; or logistical support considerations (parts availability, repair facility availability) dictate that compliance be accomplished on an attrition basis with a calendar deadline established to minimise impact on operators (that is, avoid unnecessary grounding of products).

Where compliance times are specified as a period of time after the effective date, the time is measured from the effective date. For example, if the compliance time is “*within 12 months after the effective date*” and the effective date is 15 January 2008, the deadline for compliance is 15 January 2009.

Where compliance times are specified as a number of calendar months after the effective date, the time is measured from the end of the month during which the AD becomes effective. For example, if the compliance time is “*within 12 calendar months after the effective date*” and the effective date is 15 January 2008, the deadline for compliance is 31 January 2009. However, usage of expression of “calendar months” should be avoided and used only in a substantiated cases.

3.16.7. Calendar Dates

(e.g., “*before 01 January 2016*”) Compliance thresholds are usually a function of utilisation, which is relatively independent of calendar dates. Grace periods are a function of the amount of time necessary after the effective date to accomplish the required actions. During the period of time that an AD is being developed (most ADs are published as a proposal for consultation first), effective dates cannot usually be determined with any precision. Therefore, citing a calendar date is not usually an appropriate method of specifying a grace period.

Calendar dates should be used to express compliance times only when engineering analysis establishes a direct relationship between the date and either the compliance “threshold” or the “grace period.” In most cases, this relationship does not exist. In some cases, however, as for example, for software issues, a direct analytical relationship can be established and it is appropriate to use calendar dates.

It is recommended to transform compliance time expressed in a calendar date into expression of a calendar time unless there is direct relation between the unsafe condition and the calendar date.

3.16.8. Components

If compliance times relate to the flight hours of a component, the following statement may be used:

- *Before exceeding [1 000] flight hours (FH) since first installation [torque links, P/N 13579] on an aeroplane, or within [100] flight hours after the effective date of this AD, whichever occurs later...*





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In the event that an operator is unable to establish the accumulated hours on a given [component] installed on an aircraft, the flight hours / flight cycles accumulated on the aircraft may be used in the determination of the inspection time for the [component], when acceptable.

Example:

- *Operators that do not have records of flight hours on individual [torque links] might/can substitute aircraft flight hours in lieu thereof.*

3.16.9. Inspection and Repair

When a required inspection may result in a repair or replacement, the AD must clearly state the compliance time for both the inspection and the repair or replacement. Example of an inspection compliance time:

- *Within [100] flight hours after the effective date of this AD, inspect the [internal structure at Wing Station 12] in accordance with the instructions of [paragraph (a) of [DAH] Service Bulletin No. 25 Revision XX].*

Note: Revision level is not indicated unless a previous Revision is not acceptable for compliance.

Example of repair or replacement that must be accomplished at the time of inspection:

- *If a crack is found, [before next flight] repair/replace with new or serviceable part, in accordance with the instructions of [paragraph (B) of [DAH] Service Bulletin No. 25 Revision XX].*

Example of repair or replacement that has a compliance time that is different from the inspection compliance time:

- *If a crack is found, repair/replace with new or serviceable part [within the next 50 flight hours after the inspection required by paragraph (a) of this AD] in accordance with the instructions of [paragraph (b) of [DAH] Service Bulletin No. 25, Revision XX].*

3.16.10. Interim Action

In the event that an interim action is required before accomplishment of a repair or replacement (such as the installation of an operating limitations placard), statements such as the following may be used:

- *Within [10] flight hours after the effective date of this AD, install a placard....*
- *Within [500] flight hours after the effective date of this AD, modify [the wing panel] in accordance with....*

After modification of an aircraft as required by paragraph (x) of this AD the placard installed as required by paragraph (a) of this AD may be removed from that aircraft.

3.16.11. Repetitive Compliance Time

When an initial inspection is followed by repetitive inspections at periodic intervals, the following statement may be used, but it should be included in the instruction itself, not as a separate compliance paragraph:

- *Within 25 flight hours (FH) after the effective date of this AD, unless already accomplished within the last 75 FH, and thereafter at intervals not to exceed 100 FH, inspect...., instead use*
- *Within 25 flight hours (FH) after the effective date of this AD, or within 100 FH since the last inspection, whichever occurs later, and thereafter at intervals not to exceed 100 FH, inspect....,*

“Repetitive” is an adjective, e.g., “repetitive inspections.” Use “repeat” as a verb, e.g., “Repeat the inspection” “Repeat inspections” is not appropriate terminology.





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The wording “ *at intervals not to exceed ...*” is standard compliance terminology for repetitive inspections. Stating, for example, “*Repeat the inspection every XX flight cycles*” could be misinterpreted by operators to mean that they ought to repeat at exactly that number of flight cycles, when they can actually repeat the inspection earlier, if applicable. In some cases, especially when the AD addresses inspection requirements to detect fatigue or environmental deteriorations, which cannot be effectively identified if the inspection is accomplished well before the required threshold or interval, it may be appropriate to introduce a wording specifying the allowable range within which the maintenance action required by the AD must be accomplished:

“Before exceeding 3 000 flight cycles (FC) since first flight of the aeroplane, but not before exceeding 1 000 FC and thereafter at intervals not to exceed 100 FC, but not before 80 FC since the last inspection...”

If the compliance time for the initial inspection is the same as that for the repetitive intervals, the following statement may be used:

- *Within 25 flight hours (FH) after the effective date of this AD and, thereafter, at intervals not to exceed 25 FH, inspect*

Whenever it is applicable a statement in a form of a “Note” can be added introducing an allowance of application of a tolerance to the compliance time for a maintenance action required by the AD:

3.16.12. Compliance before next flight and Permit to Fly

When compliance with an AD is required before next flight (or if the compliance time is so short that further flight is not practical), but the aeroplane/helicopter may be flown safely to a location where the AD can be accomplished, include a provision for single flight allowance. Example:

“Single ferry flight to a location where the [inspection/repair/modification] can be accomplished is allowed, [provided with conditions, if relevant].”

3.16.13. Compliance Times and Scheduled Maintenance

Compliance times cannot be based on indefinite or non-specific intervals. Do not use compliance statements such as “At the next convenient maintenance opportunity” or “At the next ‘C’ check”. The former leaves room to subjective interpretation about the compliance time, and the latter is not to be used because maintenance schedules vary from an operator to another, and there can be no assurance that the action will be done within the timeframe for safe operation of the product.

It is preferable to define any compliance time in “countable” terms (flight hours, flight cycles etc.)

For engines, propellers and APUs it may be acceptable to refer to “shop visit”, provided that “shop visit” is defined in the AD as in the following examples:

Note: For the purpose of this AD, an “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of any major mating engine flange aft of the “B” flange, except that the separation of engine flanges solely for the purpose of transportation without subsequent engine maintenance does not constitute an engine shop visit.





3.16.14. Use of Compliance Time Tolerance

Normally the compliance time required by the AD is based on the risk assessment and reflects the campaign program during which the airworthiness risk level is although increased but still within the target level defined by GM 21A.3B(d)(4). Therefore, it is not appropriate to apply any tolerance of compliance time calculated based on

risk assessment. However, when the DAH demonstrates that allowance of an AD compliance time tolerance still ensures that the increased airworthiness risk level being still within the constraint of maximum level of risk which a product design must comply with, the AD can introduce a not cumulative tolerance to the compliance time required by the AD. Usually the tolerance has to be "non-cumulative" to achieve the established airworthiness risk level. Such a tolerance is usually introduced through a "Note". Example of wording:

Note: A non-cumulative tolerance of 10% may be applied to the compliance times specified in paragraph (1) of this AD to allow synchronization of the required inspections with other maintenance tasks for which a non-cumulative tolerance is already granted in the applicable Engine Maintenance Manual.

3.16.15. Use of tables

In case of particularly complex combinations of required actions and compliance times (due, for instance, to many aircraft/engines/propellers models subject to different corrective actions/thresholds, or to different part-numbers each one requiring specific corrective actions), tables might be used. Whenever the table is properly built in the relevant DAH technical publication (e.g. Service Bulletin) there is no need to copy the table into the AD. It is sufficient to quote and refer to it in the AD "Required action and Compliance time" section; otherwise the table has to be part of the AD. Example:

Table 3 – Use of Tables within the Compliance paragraph

<i>For engine models:</i>	<i>Install improved HPT containment hardware:</i>
<i>JT8D-217C and -219.</i>	<i>Before next flight.</i>
<i>JT8D-209, -217, and -217A.</i>	<i>At the next engine shop visit after the effective date of this AD, but no later than 31 December 2009.</i>

For the purpose of this AD, an engine shop visit is defined as engine maintenance that involves the separation of the J and K flanges.

When Tables are properly built in the applicable service information, they become compatible with ADs through a direct reference to the SB for compliance times, thus reducing the AD complexity and minimizing errors.

The Basic table format should be used as a reference for:

- One product configuration, or
- Multiple configurations with the same actions and associated compliance times.

The Complex/multiple table(s) format should be used as a reference for:

- Multiple products configurations, or
- Multiple actions, or





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- Multiple compliance times.

Tables have always to be numbered (even if there is only one), and the product configuration to which a certain compliance time or repetitive inspection interval applies should be easy to find.

Tables should also have a table title including the following information:

- Required action
- Part/area of the product on which the action is to be done

If no information is needed in a cell, insert "N/A", do not leave the cell blank.

Use standard columns to provide the following information in each table:

- Configuration/Condition: Affected product configuration or the condition found.

Actions:

All required and on-condition (corrective) actions.

Ensure that the required actions do not conflict with the actions presented in other parts of the AD Required actions and Compliance time.

Compliance Times:

Include a compliance time for each action, including on-condition actions

Express always compliance times using terms that can be used in ADs (see Work Instruction).

Repetitive Interval: Inspection interval(s), if applicable

Footnote rows:

- Use footnotes to provide additional information that may be helpful to the operators, e.g., optional requirements, such as a reference to an optional terminating action.
- For enforceability reasons, don't use footnotes to present requirements, compliance times, or repetitive intervals.
 - Specify "how" the operator must accomplish the required actions by referring to appropriate service information such as DAH SB, manuals, drawings, vendor SBs, etc.
 - Specify all required actions.
 - Specify all on-condition (corrective) actions for each condition found.
 - Identify the specific type of special detailed inspections required (e.g., eddy current, ultrasonic, etc.).
 - Do not use terms such as "examine," "assess," "look for," "make sure," etc., in lieu of giving the specific inspection type.
 - If the action is to identify a part number, no inspection type need be given; the term "inspect" should be used.

3.17. Reference Publication(s)

As applicable, clearly state the relevant design approval holder's documentation for continuing airworthiness.

Types of material. Referenced material may include documents like Certification Maintenance Requirements (CMR) document, Service Bulletin, Manual Change (Temporary Revision (T/R), etc. which are clearly identified by a reference





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and a revision number if appropriate. When revisions of the relevant document are approved under EASA DOA procedures, any later approved revision is acceptable to comply with the AD requirements.

“The use of later approved revisions of this (these) document(s) is acceptable for compliance with the requirements of this AD”.

When revisions of the relevant document are not approved under EASA DOA procedures, any later approved revision may be acceptable to comply with the AD requirements through an AMOC approval.

Delete the standard wording *“The use of later approved revisions of this (these) document(s) is acceptable for compliance with the requirements of this AD”.*

3.18. Remarks

Standard text plus any additional remark deemed necessary.

Paragraph 1 - Standard text to be used:

1. *If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.*

Paragraph 2 – select text per publication type:

- For Emergency ADs:
2. *The safety assessment has requested not to implement the full consultation process and an immediate publication and notification.*
- For Final ADs with Request for Comments:
2. *The required actions and the risk allowance have warranted the issuance of a Final AD with Request for Comments, postponing the public consultation process after publication*
- After consultation as Proposed AD:
2. *This AD was posted on dd Month YYYY as PAD YY-XXX for consultation until dd Month YYYY. No comments were received during the consultation period.*
Or:
2. *This AD was posted on dd Month YYYY as PAD YY-XXX for consultation until dd Month YYYY. The Comment Response Document can be found at <http://ad.easa.europa.eu>.*

Paragraph 3 - Standard text to be used:

3. *Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.*

Paragraph 4 - Standard text and approval holder contact details to be added:

4. *For any questions concerning the technical content of the requirements in this AD, please contact:*

[Approval holder name, address details, telephone & facsimile number(s), e-mail address and website (if available) to enable operators & airworthiness authorities to directly obtain copies, as required].





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4. Writing guidelines

4.1. AD requiring revisions of the ALS or CMR Document

As aircraft gain service experience, or as the result of post-certification testing and/or evaluation, it may become necessary to revise the existing instructions for continuing airworthiness, e.g.:

- Maintenance requirements like, but not limited to, inspections or other mandatory periodic tasks such as Certification Maintenance Requirements (CMR), and
- Airworthiness limitations (life limitation, thresholds, intervals, etc.), and
- Critical Design Configuration Control Limitations (CDCCL - Fuel Tank Safety).

The objective is to ensure the continued [structural integrity or operational safety] of the aircraft. To fulfil this objective, design approval holders may decide to revise the Airworthiness Limitations Section (or equivalent approved document, such as CMR document) to introduce new or more restrictive requirements.

As per the definition of the requirements contained in the ALS, failure to comply with an ALS revision that introduces new or more restrictive requirements would in general lead to an unsafe condition likely to exist or develop on all products of the same type design (refer also to the EASA Work Instruction "Revision to the Airworthiness Limitations Section (ALS) versus Airworthiness Directive (AD) Issuance").

In such cases, an AD should be issued to require compliance with the applicable changes to the ALS.

For the latest ALS AD standard contact the Safety Information Section via airworthiness.directives@easa.europa.eu.

4.2. Fuel Tank Safety AD

Prompted by an accident of a Boeing 747-131 (flight TWA800), the FAA published Special Federal Aviation Regulation (SFAR) 88, the Joint Aviation Authorities (JAA) published Interim Policy INT/POL/25/12 and later EASA addressed the fuel tank safety issue in CS 25. The Fuel Airworthiness Limitations, which are approved by EASA, are defined and usually published in Airworthiness Limitations Section (ALS) documents known. Failure to comply with these instructions could create an ignition source in a fuel tank vapour space, possibly resulting in a fuel tank explosion and consequent loss of the aeroplane.

For the latest Fuel Airworthiness Limitations AD standard contact the Safety Information Section via airworthiness.directives@easa.europa.eu.

4.3. AD revising Flight Manuals

An AD can also be used to mandate a change to an Aircraft Flight Manual (AFM).

Paragraph 4.a. of Annex IV of Basic Regulation requires that *"An aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation, as the case may be. The flight manual or equivalent documentation must be available to the crew and kept up to date for each aircraft."*

The wording kept up to date implies that the affected AFM has to include the most recent information or limitations. However, there is not any regulatory provision identifying within which timeframe the operator is required to comply with that requirement.





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Whenever the AFM introduces more stringent or new limitations it is appropriate to mandate incorporation of those more stringent or new limitations into the affected AFM as an AFM amendment, unless either failure to comply with the AFM amendment does not result in a potential unsafe condition or an AD that adequately addresses all the new or more restrictive limitations raised in the AFM has already been issued prior to the AFM amendment.

Examples:

- *“Required as indicated, unless accomplished previously:
Within XX days after the effective date of this AD, amend the Aircraft Flight Manual, Section 4 Pre-Flight*

- Check, by inserting page 6 or 7, as applicable to aeroplane/helicopter model, of [DAH] SB XXX-YYY-ZZZ into the AFM and operate the aeroplane/helicopter accordingly.”*

- *“Within 14 days after 30 November 2008 (the effective date of AD 2008-XXXX), revise the Operating Limitations, Normal Procedures, Emergency Procedures, and the Approach and Landing sections of the AFM to include the information contained in the temporary revisions (TR) identified in Table 1 of this AD, as applicable, except as required by paragraph 2.1 of this AD. These TR provide limitations and procedures for operating in icing conditions, for operating with anti-ice systems selected "on" independent of icing conditions, and for recognizing and recovering from inadvertent stall. Operate the aeroplane according to the limitations and procedures in the applicable TR. Note 1: This may be done by inserting a copy of the applicable TR into the applicable AFM. When these TR have been included in the general revisions of the AFM, the general revisions may be inserted into the AFM (in lieu of the applicable TR), provided the relevant information in the general revision is identical to that in the applicable TR.”*

5. Comment Response Document (CRD) to PAD

5.1. How to address Comments

When addressing comments to Proposed AD, the answer has to justify why a specific comment is:

- **Accepted** – The comment is agreed by the Agency and any proposed amendment is transferred to the revised text in its entirety.
- **Partially Accepted** – Either the comment is only agreed in part by the Agency, or the comment is agreed by the Agency but any proposed amendment is partially transferred to the revised text.
- **Noted** – The comment is acknowledged by the Agency but no change to the existing text is considered necessary.
- **Not Accepted** – The comment or proposed amendment is not shared by the Agency

and in the former cases (“Accepted” and “Partially Accepted”) what are the consequences on the proposed PAD text which was commented. Commenters often argue that the proposed compliance time is too short and request an extension of the compliance time. Here below some examples of possible answers when the request is not agreed. Examples:

“Comment not agreed. The compliance time of 24 months has been determined by EASA on the basis of a risk assessment provided by the design approval holder. No changes have been made to the Final AD in response to this comment.”

Here below an example of possible answer when the comment is accepted.





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“Comment accepted. Paragraph (4) of the Final AD has been amended to clarify that ‘release to service’ is related to engines that come out of a shop, having been reassembled, not to complete engines held as spare that are ready for installation on an aeroplane.”

6. Use of Notes

Notes used in the text of an AD must be limited to information and Service Bulletin citations not required by the AD itself but that may be helpful to the operator in complying with the AD.

An informational reference to a Service Bulletin through a note does not constitute a regulatory requirement. It is only auxiliary information to enhance the operators understanding or to ease the AD accomplishment.

7. Additional considerations about revisions and corrections

Revision bars on the left-hand side of the AD have to be used to highlight all the sections, paragraphs or words of the AD which are different from the previous issue.

A justification for the AD revision/correction has to be provided in the "Reason" section of the AD.

8. AD Cancellation Notice

Airworthiness Directives that are no longer necessary should be re-issued in the form of Cancellation Notices. Cancellation Notices (EASA AD Cancellation Notice) have the suffix “-CN” after the number. AD cancellation may be an appropriate action if the information the AD was based on is found to be in error. Keep the following in mind when cancelling an AD:

1. Check whether the AD being removed mentions, affects or is in any way related to another AD in the system which remains active. In such a case evaluate the opportunity to amend the active AD.
2. Be sure that the AD cancellation will not leave an unsafe condition unresolved.
3. The fact that an AD has been complied with by all owners/operators does not automatically make the AD (the change in type design) unnecessary. Therefore, an AD should preferably not be withdrawn based only on the representation of a manufacturer that all affected aircraft are in compliance with the AD, or the information that there are no affected aircraft left on the EU member states registries.
4. The standard procedure for AD cancellations is to issue the proposed removal as a PAD and solicit public comment to ensure that the removal will not cause unanticipated problems.





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9. AD language rules

9.1. General guidelines

The language for AD is English. Here below there are some (non-exhaustive) guidelines for selecting the more appropriate wording for ADs, which should, whenever possible, use the simplest, most straightforward way of expressing an idea.

- The wording of the AD should be clear, simple, concise and unambiguous. Avoid unnecessary abbreviations and excessively long sentences.
- The various provisions of the AD should be consistent with each other. Use the same terms consistently throughout the document to express a given concept.
- Essential information should be set out in a way that allows a reasonably informed reader to understand, on the first reading, what needs to be done as intended by the Agency.
- Precision, accuracy and completeness of the message has to be ensured.
- Legal enforceability should be maintained while communicating concisely, effectively, and unambiguously in language readily understood by most readers, thereby removing barriers to communication and making ADs more accessible.

It has to be kept in mind that the AD addressees consist of a number of different audiences that include, among others:

- The users of the information (operators, engineers, mechanics, etc.)
- Those who are involved with the enforcement of ADs' requirements (national airworthiness authorities' representatives, attorneys, judges, etc.)
- The general public

9.1.1. Basic Principles

The use of the spelling check tool of Microsoft Word (set to "English (U.K.)") is recommended to minimise the number of spelling mistakes.

One sentence should not be longer than 30-35 words.

Use upper case and lower case letters consistently throughout the documents (Permit to Fly vs. permit to fly). In some cases there is only one correct way of writing, e.g. Basic Regulation (not basic regulation).

Avoid noun strings / noun clusters (e.g., *the left and right main exit door escape slide hatch covers*). Try to limit the string to 4 words (e.g.: *high pressure (HP) hydraulic line*).

9.1.2. Acronyms

Before using an abbreviation or acronym for the first time it should be spelled out completely and then the abbreviation or acronym introduced in brackets. Example:

- *"Airworthiness Directive (AD).*

After the introduction the abbreviation/acronym can be used throughout the document.





If the acronym is pronounced as a word, such as EASA, then use the article that would be appropriate if it were indeed a word. Example:

- *An EASA requirement.*

If the acronym is pronounced as individual letters, such as CRD, then use the article that would be appropriate when pronouncing the first letter. Example:

- *A CRD publication*”.

9.1.3. “Would” vs. “Could”

For the purposes of AD writing, the distinction between would and could is the difference between certainty and possibility, respectively. Example:

- *This condition (A), if not corrected could result in condition (B)...*
- *This condition (A), if not corrected would result in condition (B)...*

Use “would result” if the presence of Condition A will always lead to Condition B. Use “could result” if Condition A can be present without Condition B necessarily occurring. If the engineering assessment cannot precisely determine it, “could” is always a safe choice. Most of the time, it is therefore preferable using “could.”

9.1.4. Avoid using “shall”

Table 4 – Shall

DO NOT USE	USE	FOR
shall	must	an obligation
	may	a permission
	would	a possibility
	could	a possibility
	do not	a prohibition
	will	a future event

9.1.5. Paragraphs and Numbering

Keep paragraphs short and clearly separate them from one another.

In the AD “Required action and Compliance Time” section, paragraphs should be numbered as much as possible to allow easy referencing of any mandatory requirement, both internal and external (see also chapter 9.3. of this manual). Bulleting should be avoided.

When existing ADs are revised the numbering convention used in the initial issue should be followed. Revised ADs should retain their original paragraph designations because maintenance record entries that refer to specific paragraphs will be incorrect if the information is moved or replaced. A change in the designation of a paragraph that contains a requirement results in the issuance of a superseding AD.

Numbers expressing thousands have to be written with a space every three digits. Example:

- *1 000 FH*





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as per part 6.5 of the **EU Interinstitutional Style Guide**.

9.1.6. Parenthetical Phrases

Parenthetical phrases are like “internal notes” within a paragraph of an AD. Use a parenthetical phrase to provide examples or explanations. Example:

- “Inspect for discrepancies (cracking, corrosion, loose bolts).”

Never use a parenthetical phrase to break up a long sentence or to add a requirement on top of one that is already in the paragraph. Example:

- “Inspect the leading edge of the wing (and inspect the flaps) ...”

The action shown in parentheses is an additional inspection requirement.

9.2. Practical Examples and Guidelines

Table 5 - Principles

Principle	To be avoided	To be preferred
Write with the reader in mind when choosing vocabulary. Consider the non-native English speaker-reader; when a word has more than one meaning or usage, consider using a different word.	N/A	N/A
British English should be used in ADs except if making a direct quote from e.g. an FAA document; in such a case the American English spelling should be kept.	<i>authorization</i> <i>standardization</i> <i>organization</i> <i>programs</i> <i>center</i>	<i>authorisation</i> <i>standardisation</i> <i>organisation</i> <i>programmes</i> <i>centre</i>
Use a point to separate whole number from decimals. Use a space to indicate thousands in whole numbers (not a comma). For more information see part 6.5 of the EU Interinstitutional Style Guide.	<i>3^{1/2} years</i> <i>15.000 flight cycles</i>	<i>3.5 years</i> <i>15 500 flight cycles</i>
Be consistent. Use the same term for the same thing throughout an AD. If there are conflicting terms in the service information and/or foreign AD, pick one term and use it consistently. You may add (parenthetically) the lesser-used term after the first instance in the Reason section to let the reader know these terms are synonymous.	<i>This AD applies to certain aeroplanes. These aircraft are also subject to fatigue cracking.</i>	<i>This AD applies to certain aeroplanes. These aeroplanes are also subject to fatigue cracking.</i> <i>(Or, obviously, This AD applies to aeroplanes that are also subject to fatigue cracking.)</i>





Principle	To be avoided	To be preferred
Avoid multiple negatives or use of “negative” words.	<i>The inspection methods were not without fault.</i>	<i>The inspection methods were subject to individual interpretation. The inspection methods have shown not to be adequate for the detection of the unsafe condition.</i>
	<i>It has been determined that it is not impracticable to require the inspection at monthly intervals.</i>	<i>It has been determined that monthly inspections can be done with minimal burden on the operators.</i>
Avoid compound prepositions.	<i>as a means of doing</i>	<i>to do</i>
	<i>during the period from</i>	<i>from</i>
	<i>in the absence of</i>	<i>without</i>
	<i>with the exception of</i>	<i>except for</i>
Avoid gender-specific words (he/she or his/her) and ensure subject-verb agreement.		
Write headings that concisely summarise the content that follows.	<i>Repetitive Ultrasonic and High Frequency Eddy Current Inspections and Corrective Actions If Necessary</i>	<i>Repetitive Inspections and Corrective Actions</i>
Avoid starting a sentence with <i>there is</i> or <i>there are</i> .	<i>There are about 8 helicopters that are affected by this AD.</i>	<i>8 helicopters are affected by this AD. Or, even better: This AD affects 8 helicopters.</i>
Avoid nominalisations.	<i>Install a modification of the wing</i>	<i>Modify the wing</i>
	<i>This AD requires an inspection of the wing.</i>	<i>This AD requires inspecting the wing.</i>
	<i>The requirements of this AD are to inspect the wing.</i>	<i>This AD requires inspecting the wing.</i>





Principle		To be avoided	To be preferred
Avoid wordiness	Wordy phrases and unnecessary words	<i>with regard to</i>	<i>about</i>
		<i>by means of</i>	<i>by</i>
		<i>in the event that</i>	<i>If</i>
		<i>until such time as</i>	<i>until</i>
	Doublets, triplets	<i>any and all cracking</i>	<i>any cracks</i>
Avoid words that add wordiness without content or substance.	Diminishers	<i>The aeroplane is rather old.</i>	<i>The aeroplane was manufactured in 1985.</i>
		<i>The rudder was slightly askew.</i>	<i>The rudder's range of deflection was ...</i>
	Intensifiers	<i>really, even, big, a lot</i>	Use specific measurable quantities.
		<i>The wings were actually quite strong but not very efficient.</i>	<i>The wings met tolerance standards but could not keep the aeroplane aloft.</i>
Use strong verbs.		<i>Failure to fix the engines at the prescribed time could result in loss of one or both engines during flight.</i>	<i>If the engines are not fixed at the prescribed time, an engine could shutdown in flight.</i>
Do not use impact as a verb, unless you are writing about a collision. And consider it carefully as a noun; effect is usually better.		<i>This modification impacts the Main Landing Gear Bogie Beam....</i>	<i>This modification has an effect on the Main Landing Gear Bogie Beam...</i> <i>This spoiler might detach in flight and impact against the aeroplane structure or hit persons on the ground.</i>





Table 6 – Terminology Guidelines

DO NOT USE	USE
1-10	1 up to 10 inclusive 1 through 10, inclusive
crash	accident
	actions: accomplish the actions required by this AD
AD's (plural of AD)	ADs
	Aeroplane Flight Manual (AFM) (title) aeroplane flight manual (AFM) (generic)
accomplish the requirements of paragraph 1.	always add "of this AD" in this context: accomplish the requirements of paragraph 1. of this AD
effectivity of this AD	applicability of this AD
applicability of the service bulletin	effectivity of the service bulletin
applicability statement/paragraph of this AD	applicability section of this AD
as appropriate or if necessary (In the Required action and Compliance Time section leave room for operator discretion)	as applicable (in the Reason section)
prior to	before
concurs to	concurs that concurs with
SN	constructor's numbers (for BAe ATP aeroplanes), or serial numbers (s/n), or manufacturer serial numbers (MSN)
crew member	crewmember(s)
data is	data are
AD N. 2006-0140, Revision 3 (or anything else—unless AD specifies "Revision 3")	AD 2006-0140R3 (exactly as the AD title)
death	fatal injury or fatality
flightcrew	flight crew
FCs	flight cycles (FC)
flights	flight cycles or landings





DO NOT USE	USE
flightdeck	flight deck
FHs or hours T-I-S or hours TIS	flight hours (FH)
flightpath	flight path
heavy landing	hard or high-impact landing
kn, Kn	knot, knots
left hand	left-hand (adj.)
beyond the limits	outside the limits
PN	part number (P/N)
references (as in “the AD references...”)	refers to (as in “the AD refers to...”)
repeat inspections	repeat the inspection
periodic inspections	repetitive inspections
repetitive inspection	repetitive inspections
the test indicated ...	results of the test indicated ...
right hand (adj.)	right-hand (adj.)
“other significant actions”	“other specified actions”
Shutdown or shut down	shut-down (noun) Shut down (verb)
test (verb) “Test the system for leaks”	test (noun) “Accomplish the leak test for the system” or “Accomplish a test for leaks in the system”
takeoff, take off	take-off
accidental	uncommanded

Table 7 – Terminology of Product Designations

DO NOT USE	USE
airplane/aircraft	aeroplane
rotorcraft	helicopter
(motor) glider	(powered) sailplane





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10. Annex I – Examples of Statements of Unsafe Conditions

The following statements of unsafe conditions are provided as examples from individual ADs. These statements are not standard for every AD, but demonstrate how to provide language that will be meaningful to the public—i.e., the statements indicate why a problem is unsafe and the possible results/ultimate consequences if the unsafe condition is not corrected.

When writing the Reason for the AD, one of the following phrases should be used when appropriate to describe the possible consequences.

LANDING:

... which could result in the collapse of a MLG.

(Example: ... failure of the shear pins in the trunnion assemblies of the MLGs, which could result in the collapse of a MLG.)

... which could adversely affect the aircraft's continued safe flight and landing.

(Example: ... failure of the lower panel of the MLG door, the lower panel's departure from the aeroplane, and consequent damage to aeroplane structure, which could adversely affect the aeroplane's continued safe flight and landing.)

... and consequent collapse of the landing gear during ground manoeuvres or upon landing.

(Example: ... failure of the NLG or MLG due to corroded or missing bolts, which could cause loss of connection pins, and consequent collapse of the landing gear during ground manoeuvres or upon landing.)

FLIGHT CONTROLS:

... resulting in loss of control of the aircraft.

(Example: ... structural failure of the HSAA, which could result in possible loss of control of the aeroplane.)

(Example: ... ice accumulation on the lateral flight control cables and/or components due to water entering the wheel well of the MLG and freezing, which could restrict or jam control cable movement, resulting in loss of control of the aeroplane.)

(Example: ... discrepancies of the bulkhead structure, which could result in failure of the structure to carry flight loads of the horizontal stabilizer, and consequent loss of control of the aeroplane.)

... which could lead to reduced control of the aircraft

(Example: ... separation of the balance weights of the aileron, which could result in jamming of the pilot's aileron control system, subsequent loss of aileron control, and consequent reduced control of the aeroplane.)

(Example: ... discrepancies, which could result in cracking of the slats, subsequent separation of the cove skin, structural damage or loss of the trailing edge wedge, and consequent reduced control of the aeroplane.)





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(Example: ... failure of the bolt and bushing that attach the hinge fitting to the flap, which could result in loss of the flap and consequent reduced control of the aeroplane.)

(Example: ... decreased structural integrity of the two half fittings and loss of the RAT during extension, which could lead to reduced control of the aeroplane in the event of a dual engine failure, or in the event of loss of two or all hydraulic systems.)

(Example: ... damage to the elevator trailing edge due to a broken or missing elevator stop bumper, which could result in jamming of the spring tab and consequent reduced control of the aeroplane.)

... which could reduce the ability of the flight crew to maintain the safe flight and landing of the aircraft.

(Example: ... loss of positioning data and a display of incorrect attitude data, which could reduce the ability of the flight crew to maintain the safe flight and landing of the aeroplane/helicopter.)

FUEL FIRES:

... could result in fuel leaking onto an engine and a consequent fire.

(Example: ... fatigue cracking of the front spar web, which could result in fuel leaking onto an engine and a consequent fire.)

... could result in a potential source of ignition in a fuel tank and consequent fire or explosion.

(Example: ... heated localized temperatures within the fuel boost/transfer pumps due to frictional heating, which could result in a potential source of ignition in a fuel tank and consequent fire or explosion.)

Example for Fuel Tank Safety unsafe condition: This condition, if not corrected, could create an ignition source in a fuel tank vapour space, possibly resulting in a fuel tank explosion and consequent loss of the aeroplane.

FIRES:

... which could result in the inability to extinguish a fire in an engine or in the APU.

(Example: ... failure of the fire extinguishers to fire discharge cartridges, which could result in the inability to put out a fire in an engine or in the APU.)

... which could result in smoke and/or fire in the flight compartment.

(Example: ... overheating and internal component failure of the dimmer control unit of the overhead instrument lighting, which could result in smoke and/or fire in the flight compartment.)

(Example: ... internal overheating and arcing of circuit breakers and aeroplane/helicopter wiring due to long-term use and breakdown of internal components of the circuit breakers, which could result in smoke and fire in the flight compartment and cabin.)

... could result in an uncontained engine strut fire.





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(Example: ... leaking fuel line couplings, chafed fuel lines, restricted or clogged strut drain lines, migrating fluids or vapours toward ignition sources, and flashback of external flame into the strut; these conditions could result in an uncontained engine strut fire.)

... could result in fuel leakage into the area of the inboard engines, and consequent increased risk of a fire.

(Example: ... fatigue cracking between the seal ribs of the front spar web of the wing and outboard of the outboard seal rib to FSSI 711, which could result in fuel leakage into the area of the inboard engines, and consequent increased risk of a fire.)

FALSE SMOKE ALARMS:

(Example: A false smoke warning prompts the flight crew to discharge fire extinguisher bottles, leaving those bottles depleted in the event of an actual fire. Repeated false smoke warnings create uncertainty as to whether an emergency landing and emergency evacuation of passengers and flight crew is warranted.)

ELECTRICAL:

... which could result in an in-flight fire and/or loss of electrical power.

(Example: ... electrical arcing between the IDG cables and the firewall separators due to chafing, which could result in an in-flight fire and/or loss of electrical power.)

... which could result in an electrical short and potential loss of several functions essential for safe flight.

(Example: ... chafing of a wire bundle, which could result in an electrical short and potential loss of several functions essential for safe flight.)

CRACKS--GENERAL:

... and consequent loss of the windshield during flight.

(Example: ... failure of both structural plies of the windshield caused by overheating of the power lead wire, which could cause reduced structural integrity of the windshield assembly, and consequent loss of the windshield during flight.)

FATIGUE CRACKING:

... such fatigue cracking could adversely affect the structural integrity of these aircraft.

(Example: ... ensure that fatigue cracking of various PSEs is detected and corrected; such fatigue cracking could adversely affect the structural integrity of these aeroplanes/helicopters.)

... and consequent reduced structural integrity of the strut.

(Example: ... fatigue cracking in primary strut structure and consequent reduced structural integrity of the strut.)

... could result in structural failure of the wings.

(Example: ... fatigue cracking, which could result in structural failure of the wings.)





... could adversely affect the structural integrity of the aircraft.

(Example: ... fatigue cracking of certain safe-life structure and certain PSEs, which could adversely affect the structural integrity of the aeroplane/helicopter.)

PART SEPARATION:

... could result in damage to the aircraft and hazards to persons or property on the ground.

(Example: ... separation of the engine fan cowl door from the aeroplane in flight, which could result in damage to the aeroplane and hazards to persons or property on the ground.)

(Example: ... moisture ingress and delamination of the cockpit lateral fixed windows, which could result in the loss of the outer glass ply, and consequent damage to the aeroplane/helicopter and injury to people or damage to property on the ground.)

... and subsequent damage to the aircraft in flight.

(Example: ... the loss of an inboard trailing edge foreflap during flight, and subsequent damage to the aeroplane in flight.)

THRUST REVERSER:

... could result in loss of control of the aircraft.

(Example: ... an inadvertent deployment of a thrust reverser during flight, which could result in loss of control of the aeroplane.)

STRUT/ENGINES:

...possible separation of a strut and engine from the aeroplane during flight.

(Example: ... cracking or other damage to the upper or lower surface of the forward lower spar and any loose or damaged fasteners, which could result in reduced structural capability of nacelle struts one through four, and possible separation of a strut and engine from the aeroplane during flight.)





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Approval Date

08/11/2017

RECORDS

Records as per the Continuing Airworthiness of Type Design Procedure.

