



## Ageing Aircraft Structures Info Session for Operators and CAMOs 19 April 2021



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### Agenda

 $\rightarrow$  Objective of the regulation

- → Background
- $\rightarrow$  Definitions
- $\rightarrow$  Regulation
- → Affected products and operators
- $\rightarrow$  How operators and CAMOs should comply
- $\rightarrow$  NAA oversight activities
- $\rightarrow$  General information on EASA's implementation of the rule





#### **Objectives of the Regulation**

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## **Objective of the regulation**

# Prevent the catastrophic failure of large ageing aeroplanes due to fatigue and corrosion



#### How is the objective met?

By setting specific objectives to address each of the following areas of risk:

- → Fatigue of the basic type design
- → Widespread fatigue damage (WFD)
- → Corrosion
- → Adverse effects of changes and repairs
- → Continued operation with unsafe levels of fatigue cracking





To **prevent catastrophic fatigue failure** of the basic type design

The TCH is required to perform a Fatigue and **Damage Tolerance Evaluation** (DTE) and include the results in the ALS or in a Supplemental Structural Inspection Programme (SSIP).

The operator includes these inspections in the AMP.





Rationale for damage tolerance evaluation and inspections:

Early fatigue requirements, such as 'fail safe' regulations, did not provide for timely inspection of an aircraft's critical structure to ensure that damaged or failed components could be dependably identified and then repaired or replaced before hazardous conditions developed.

Aeroplanes certificated to fatigue requirements pre JAR 25 Change 7 / FAR Amdt. 25-45, did not address damage tolerance and still operate in Europe.

Many TCHs have developed supplemental inspection programmes (SSIPs) based on damage tolerance for these older aeroplanes, but this is not the case for all large aeroplanes.



#### To prevent widespread fatigue damage

Certain TCHs are required to establish a **Limit of Validity (LoV)** of the Structural Maintenance Programme and establish maintenance actions based on a **WFD evaluation** of the type design.

The operator must include the LOV in the AMP and subsequently implement the maintenance actions



Rationale for LoV and WFD evaluation:

It was generally assumed when fatigue and fail-safe rules were first implemented that any cracking that occurs on an aircraft operated up to the DSG will occur in isolation, originating from a single source, such as a random manufacturing flaw or a local design detail.

WFD in a structure is characterised by the simultaneous presence of cracks at multiple structural details that are of sufficient size and density whereby the structure will no longer meet the applicable residual strength requirements.

The F&DT requirements (JAR 25.571 Change 7 and CFR 14 § 25.571 Amdt 45 onward) and associated inspections were intended by Authorities to find and correct all forms of fatigue damage before they become critical and a similar approach to F&DT was used as a basis for the SSIDs.

Nonetheless, it has become apparent that as aircraft have approached and exceeded their DSG not all maintenance programmes have adequately addressed WFD and subsequent voluntary action by some TCHs to address WFD did not result in a uniform application of state of the art WFD prevention principles described in AMC 20-20 and the risk presented by WFD remains.





#### To prevent structural failure due to corrosion

The TCH is required to develop a baseline corrosion prevention and control programme (CPCP).

The operator incorporates a CPCP in the AMP taking into account the baseline CPCP





Rationale for CPCP:

Typically, existing large aeroplane structures are vulnerable to corrosion and most, but not all are subject to a CPCP. A CPCP is a systematic approach to prevent and to control corrosion in the aircraft's structure.

The objective of a CPCP is to limit the deterioration due to corrosion to a level necessary to maintain airworthiness (typically Level 1 corrosion or better) and where necessary to restore the corrosion protection schemes for the structure.

An effective CPCP not only limits the direct effects of corrosion, but helps prevent fatigue failures initiated by corrosion and the detrimental effects of fatigue and corrosion in combination.



# To prevent structural fatigue failure due to the adverse effects of changes and repairs

Fatigue and damage tolerance evaluations (DTE) and associated damage tolerance based inspections (DTI) are required for existing repairs and changes.

This requires a coordinated effort between the design approval holders and the operators upon whose aircraft the repairs or changes are implemented, to ensure the continued structural integrity of all relevant modified and repaired structure, based on damage tolerance principles, consistent with the safety level provided by the SSID or ALS as applied to the baseline structure.



Rationale for DTE and DTI of repairs and changes:

Early fatigue or fail-safe requirements (pre-Amdt 45) did not necessarily provide for timely inspection of critical structure so that damaged or failed components could be dependably identified and repaired or replaced before a hazardous condition developed.

Repairs and changes can have an adverse effect on the fatigue and damage tolerance of the baseline structure of an aircraft by affecting fatigue cracking behaviour and the effectiveness of existing inspections.

SSIDs generally only addressed baseline structure. Furthermore, it is known that application of later fatigue and damage tolerance requirements to repairs and even some changes was not always fully implemented according to the relevant certification bases.

The DTE of repairs and changes is therefore required to maintain the level of safety intended by the implementation of SSIDs and ALS applicable to baseline structure.



# To reduce the probability of continued operation with unsafe levels of fatigue cracking

A process is required to be developed by TCHs that ensures the continued structural integrity programme remains valid and mandatory changes are implemented in cases where inspection alone is not reliable enough.



Rationale for reducing the probability of continued operation with unsafe levels of fatigue cracking:

Service experience has demonstrated that there is a need to have continuing updated knowledge concerning the structural integrity of aircraft, especially as they become older.

Although damage tolerance based inspections are the state of the art for setting up an effective maintenance programme to ensure continued safe operation, they are only reliable if the assumptions on which they are based remain valid.





#### Background

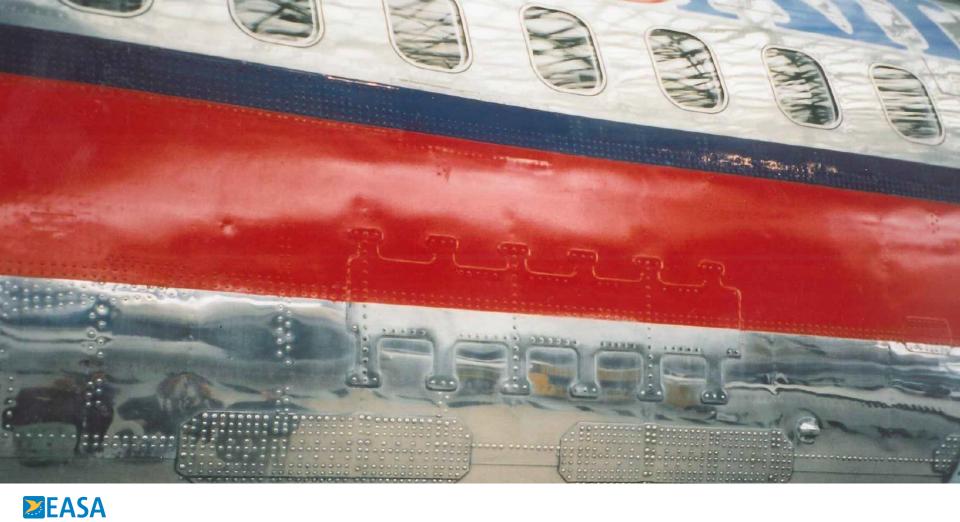
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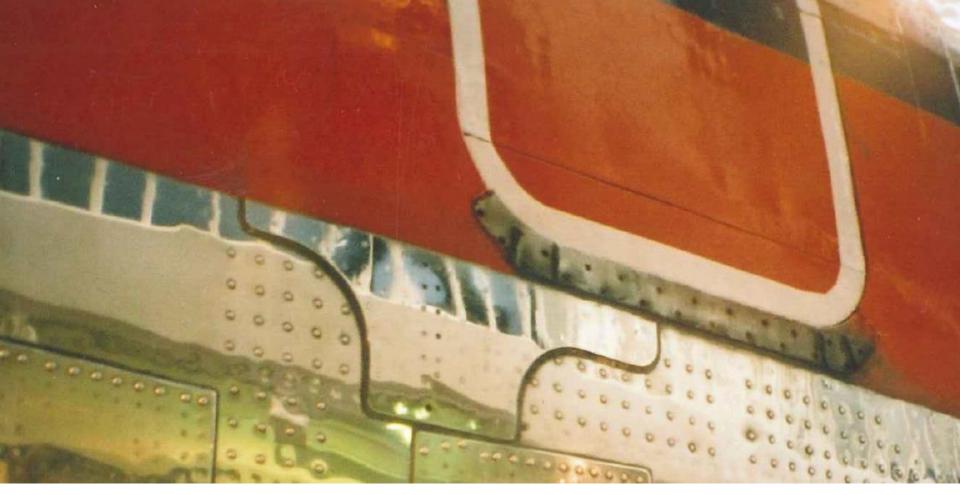
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#### **Background – influential accidents**

- → Comet DH-106 fuselage fatigue failures 1954
  - → Changes in requirements to fail-safe
- → B707 Lusaka tailplane failure 1977
  - → Changes in requirements to damage tolerance based inspections
- → B737 Aloha 1988
  - → Changes in requirements to better address WFD and corrosion









### **Background to the regulation**

- → In the EU, additional airworthiness requirements for operations started with JAR 26
- → However most of these requirements were simple, and sufficient approved design data was known to exist to support them
- → In the US, for more complex requirements such as occurred with SFAR 88 (Fuel Tank Safety) it was found that operators could fail to meet the requirements if not adequately supported by TCHs
- → Therefore the regulations for ageing aircraft structures were amended to place requirements on design approval holders in addition to operators to ensure timely compliance



### **Background to the regulation (2)**

- → In the US, additional airworthiness requirements for DAHs were introduced in CFR14 Part 26 in 2008 for repairs and alterations and 2011 for LOV and WFD evaluation similar to Part-26.
- $\rightarrow$  FAA used airworthiness directives for SSIDs and CPCPs
- → Part 121 was amended to require operators to implement the LOV and prior to that implement DTI programmes including means to address repairs and alterations





#### Definitions

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#### **Definitions**

#### $\rightarrow$ CS-Definitions

→ 'Large aeroplane' means an aeroplane of more than 5 700 kg (12 500 pounds) maximum certificated take-off weight. The category 'Large Aeroplane' does not include the commuter aeroplane category (For commuter aeroplane category, see CS 23.1 and CS 23.3).



#### **Definitions and abbreviations**

- ALS 'Airworthiness limitation section (ALS)' means a section in the instructions for continued airworthiness, as required by points 21.A.61, 21.A.107 and 21.A.120A of Annex I (Part 21) to Regulation (EU) No 748/2012, that contains airworthiness limitations that set out each mandatory replacement time, inspection interval and related inspection procedure.
- **Baseline Structure -** refers to the structure that is designed under the type certificate for that aeroplane model (that is, the 'as delivered aeroplane model configuration')
- **CPCP** 'Corrosion prevention and control programme (CPCP)' means a document reflecting a systematic approach to prevent and to control corrosion in an aeroplane's primary structure, consisting of basic corrosion tasks, including inspections, areas subject to those tasks, defined corrosion levels and compliance times (implementation thresholds and repeat intervals). A baseline CPCP is established by the type certificate holder, which can be adapted by operators to create a CPCP in their maintenance programme specific to their operations.
- **DTE** 'Damage tolerance evaluation (DTE)' is a process that leads to a determination of maintenance actions necessary to detect or preclude fatigue cracking that could contribute to a catastrophic failure. When applied to repairs and modifications, a DTE includes the evaluation of the repair or modification and the fatigue critical structure affected by the repair or modification.



#### **Definitions and abbreviations**

- DTI 'Damage tolerance inspections (DTIs)' means a documented inspection requirement or other maintenance action developed by holders of a type-certificate or restricted type-certificate as a result of a damage tolerance evaluation. A DTI includes the areas to be inspected, the inspection method, the inspection procedures (including the sequential inspection steps and acceptance and rejection criteria), the inspection threshold and any repetitive intervals associated with those inspections. DTIs may also specify maintenance actions such as replacement, repair or modification.
- **FCS** 'Fatigue-critical structure (FCS)' means a structure of an aeroplane that is susceptible to fatigue cracking that could lead to catastrophic failure.
- **FCBS** 'Fatigue-critical baseline structure (FCBS)' means the baseline structure of an aeroplane that is classified by the type certificate holder as a fatigue-critical structure.
- **FCMS** 'Fatigue-critical modified structure (FCMS)' means any fatigue critical structure of an aeroplane introduced or affected by a change to its type design and that is not already listed as part of the fatigue-critical baseline structure.
- **LOV** 'Limit of validity (LOV)' means, in the context of the engineering data that supports the structural maintenance programme, a period of time, stated as a number of total accumulated flight cycles or flight hours or both, during which it is demonstrated that widespread fatigue damage will not occur in the aeroplane.



#### **Definitions and abbreviations**

- **REG** 'Repair evaluation guideline (REG)' means a process established by the type certificate holder that guides operators to establish damage tolerance inspections for repairs that affect fatigue-critical structure to ensure the continued structural integrity of all relevant repairs.
- WFD 'Widespread fatigue damage (WFD)' means a simultaneous presence of cracks at multiple locations in the structure of an aeroplane that are of such size and number that the structure will no longer meet the fail-safe strength or residual strength used for certification of that structure.





#### Commission Implementing Regulation (EU) 2020/1159 amending Regulation (EU) 2015/640 and (EU) 1321/2014

**Ageing Aircraft Structures** 

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## **Regulation (EU) 2020/1159**

#### → amending Part M and Part-26

- → Adopted on 5 August 2020
- → Published in the OJ on 6 August 2020
- → Entered into force on 26 August 2020
- $\rightarrow$  Became applicable .....
  - $\rightarrow$  for ageing aircraft on 26 February 2021
  - → and becomes applicable for conv. Class D compartments on 26 August 2023

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a 2007, the Agency issued Acceptable Menas of Compliance (AMC) 20-20 which provide technical guidance for ferelogiag a containing structural integrity programme imming at ensuring isoft operation of ageing ascenti- tionydoot their operational life. Due to the non-bading names of the AMC, the application of that guidance may not be consistent throughout the Union. In consequence, there may be currently large ascent in operation which were designed, modellife or regular without effectively diversing dismage diseasce enablishing, which which right damage and coerosion pervention. With the objective of perventing custorophic failuers due to fisque, anduding which greater fisque and coerosion, additional airworthianes: requirements on ageing aircraft thould be streduced in Regulation (EU) 2015/640.
Any sincraft could be considered to be ageing from the moment of its manufacture. The ageing of an aircraft depends on such factors as age, the number of flight cycles and the number of flight hours. Individual aircraft components of differently and some of the ageing factors are flights through repetitive cycle, were, device the age of the arrowing. Those factors could cause ignificant airfly concern if they are not properly managed throughout the life of the aircraft. Service experiance has allown that there is a aged to complexify update individual split a tructural integrity of ageing aircraft. Therefore, new requirements to keep up to date knowledge about the stores on the basis of real-size operational experimes and with the use of modern tools of analysis and terting hould be introduced in Regulation (EU) 2015/640.
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## Opinion 12/2016 vs Reg. (EU) 2020/1159

→ Regulatory proposal compared to EASA Opinion 12/2016

Split into a delegated act and an implementing act to reflect the new delegation provisions in the basic Regulation 2018/1139

Restructured to improve legal clarity

Exclusion criteria encompassed directly in Part-26



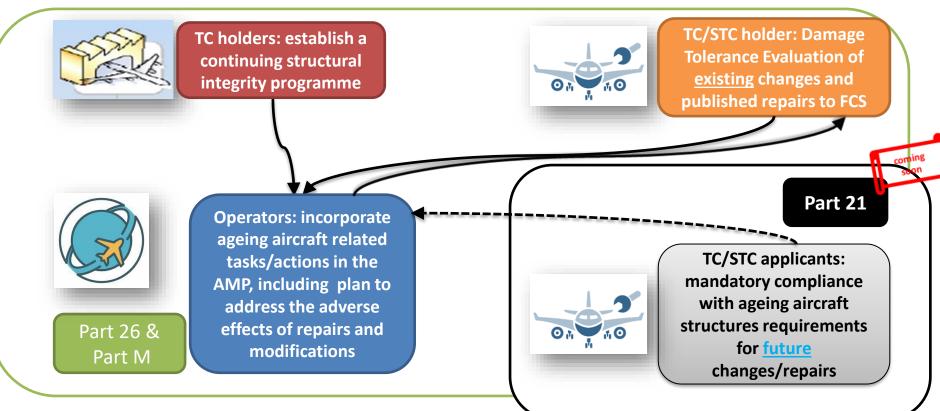


## Opinion 12/2016 vs Reg. (EU) 2020/1159

Opinion 12/2016	Reg. (EU) 2020/1159	Remarks
26.10	26.10	
26.30	26.30	
26.300	26.300, 26.301, 26.302, 26.303, 26.304, 26.305, 26.306	
26.300(f)	21.A.65	Delegated act for future applications
26.310	21.A.101(h) and 21.A.433(a)(5)	Delegated act for future applications
26.320	26.301, 26.307, 26.308, 26.309	
26.330	26.330, 26.331, 26.332, 26.333, 26.334	
26.350	21.A.101(h)	Delegated act for future applications
26.360	21.A.101(h) and 21.A.433(a)(5)	Delegated act for future applications
26.370	26.370	

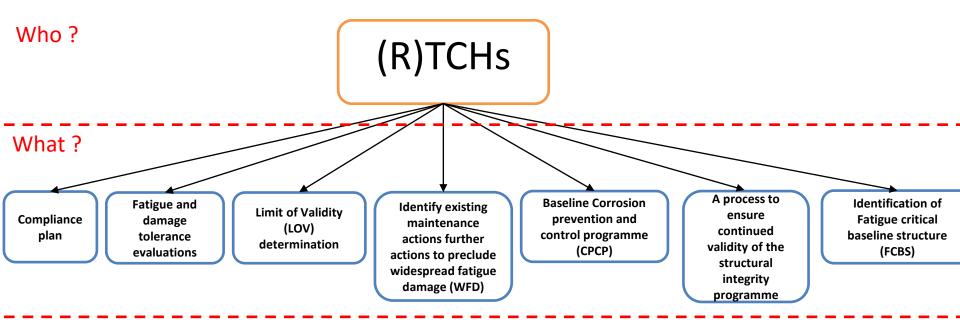


#### **Overall view**





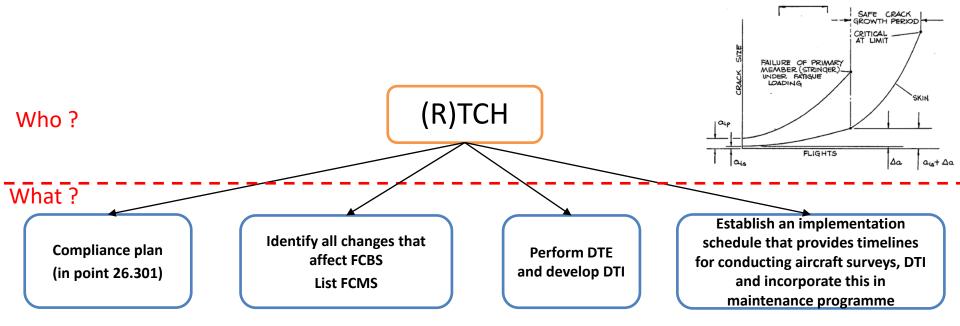
#### 26.300-> 26.306 Continuing Structural Integrity for ageing aircraft structures — General requirements



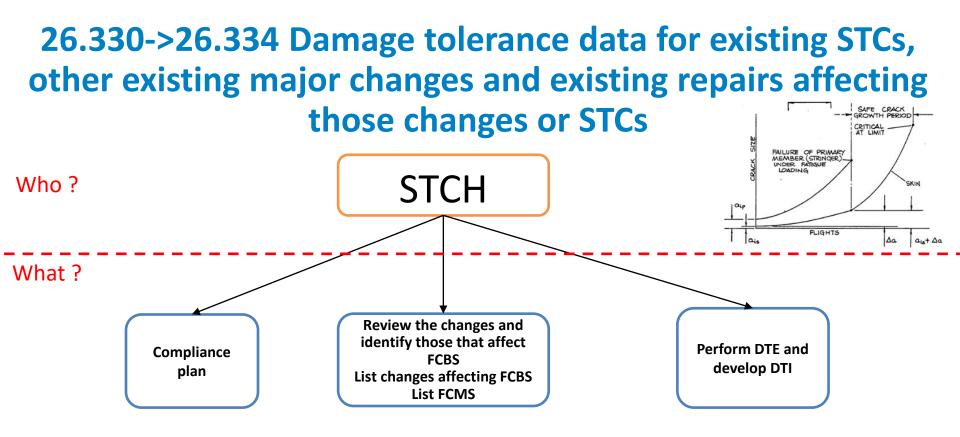
**Compliance time: specific for each point, ranging from 3 to 60 months from applicability.** 



# 26.307->26.309 Damage tolerance data for existing repairs and existing changes to fatigue-critical structure



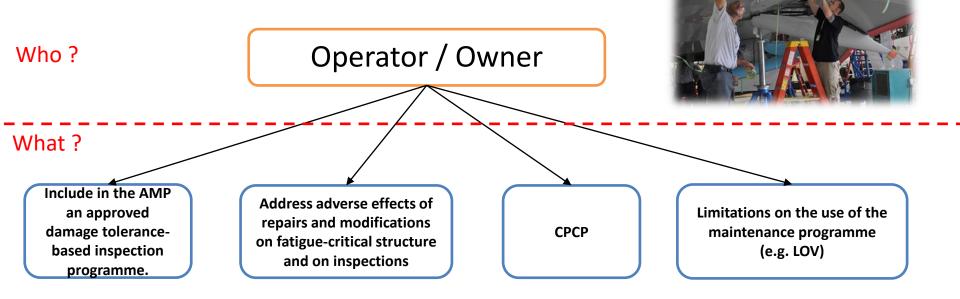
Compliance time: specific for each point, from 3 to 24 months



Compliance time: specific for each point, from 6 to 24 months

FCMS: fatigue-critical modified structure DTE: damage tolerance evaluation DTI: damage tolerance inspection

# 26.370 Continuing airworthiness tasks and aircraft maintenance programme



Compliance time: specific for each point, from 6 to 36 months **ZEASA** 

AMP: aircraft maintenance programme CPCP: corrosion prevention and control programme LOV: limit of validity

### **Material supporting implementation**

→ Part 26 is a Regulation of the EU, it contains the requirements to be complied with by regulated entities

Who has to do what and by when...



 $\rightarrow$  To support the application of this 'hard law', EASA develops

- Certification specifications (CS-26)
- Guidance Material (GM)

which can be used by regulated entities and competent authorities







- → CS-26 is the standard means to show compliance of product with the requirements of Part-26.
- → When CS-26 exists, regulated entities may follow it to demonstrate compliance with the related requirement of Part-26
- → When the contents of CS-26 is properly implemented by the regulated entity, the related requirements of Part-26 shall be considered as met (=> presumption of compliance).



#### **GM-26**

# REMINDER

#### → Guidance Material (GM)

- Illustrate the meaning of a Part-26 point
- Supports the interpretation of it (e.g. explanations, examples, background..)
- Has (differently from CS-26) no presumption of compliance



# ED Decision 2020/023/R

→ Amending CS-26, AMC-20 and AMC/GM to Part-M

- → Published on 15 December 2020
- → Entered into force on **17 December 2020**



- AMC-20 amended to introduce the latest available material and to align it with the new ageing aircraft requirements
- CS-26 amendment contains new GM-26



#### → Changes in Regulation (EU) 1321/2014

M.A.302 Aircraft Maintenance Programme (AMP)

• a new bullet point is added to clarify that the AMP must also establish compliance with the applicable provisions of Part 26.



## Next Step - Part 21

→ Expected changes in Regulation (EU) 748/2012

#### 21.A.44 Obbligations of the holder

amended to add reference to the new point 21.A.65

#### 21.A.65: Continuing structural integrity for aeroplanes structures

• New point requiring TCHs of large aeroplanes to ensure that the continuing structural integrity programme remains valid throughout the operational life of the aeroplane

#### 21.A.101 TC basis, OSD certification basis and EP requirements for a major change to a type-certificate

• new bullet has been added to ensure that the level of safety achieved by compliance with the ageing aircraft rule is maintained for future structural changes to the product (large aeroplanes only).

#### 21.A.433 Requirements for approval of a repair design

• new bullet has been added to ensure that the level of safety achieved by compliance with the ageing aircraft rule is maintained for future structural repairs to the product (large aeroplanes only).



# **Expected text of point 21.A.65**

- → "21.A.65 Continuing structural integrity for aeroplanes structures
- → The holder of the type-certificate or restricted type-certificate for a large aeroplane shall ensure that the continuing structural integrity programme remains valid throughout the operational life of the aeroplane, taking into account service experience and current operations"



# **Expected amendment of point 21.A.101**

- → "(b) Except as provided in point (h), by derogation from point (a), an earlier amendment to a certification specification referred to in point (a) and to any other certification specification which is directly related may be used in any of the following situations, unless the earlier amendment became applicable before the date at which the corresponding certification specifications incorporated by reference in the typecertificate became applicable:";
- → "(h) For large aeroplanes subject to point 26.300 of Annex I to Regulation (EU) 2015/640\*, the applicant shall comply with certification specifications that provide at least an equivalent level of safety to points 26.300, 26.320 and 26.330 of Annex I to Regulation (EU) 2015/640, except for applicants for supplemental type-certificates who are not required to take into account point 26.303."



# **Expected amendment of point 21.A.433**

- $\rightarrow$  in point 21.A.433(a) the following point (5) is added:
- → "5. when, for a repair to an aeroplane subject to point 26.302 of Annex I to Regulation (EU) 2015/640, it has been demonstrated that the structural integrity of the repair and affected structure is at least equivalent to the level of structural integrity established for the baseline structure by point 26.302 of Annex I to Regulation (EU) 2015/640."





#### Affected products and operators

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# **General applicability of 26.370(a)**

#### Operators

Aircraft registered in a Member State or registered in a third country and used by an operator established or residing in the European Union.



# Point 26.370

- (a) Operators or owners of turbine-powered large aeroplanes certified on or after 1 January 1958 shall ensure the continuing airworthiness of ageing aeroplanes structures by preparing the aircraft maintenance programme provided for in point M.A.302 of Annex I (Part-M) to Commission Regulation (EU) No 1321/2014 \*\* that shall include:
- → (i) for aeroplanes certified to carry 30 passengers or more, or with a payload capacity greater than 3 402 kg (7 500 lbs), an approved damage-tolerance-based inspection programme;
- → (ii) for aeroplanes operated in accordance with Annex IV (Part-CAT) to Regulation (EU) No 965/2012 and certified to carry 30 passengers or more or with a payload capacity greater than 3 402 kg (7 500 lbs), a means for addressing the adverse effects that repairs and modifications may have on fatigue-critical structure and on inspections provided for in point (a)(i);
- $\rightarrow$  (iii) for aeroplanes certified with a maximum take-off weight (MTOW) greater than 34 019 kg (75 000 lbs) an approved LOV;
- $\rightarrow$  (iv) a CPCP
- $\rightarrow$  (b) The following deadlines shall apply to the obligation referred to in paragraph (a):
- → (i) the aircraft maintenance programme shall be revised to address the requirements of points (a)(i), (a)(ii) and (a) (iv) before 26
  February 2024 or before operating the aeroplane, whichever occurs later;
- (ii) the aircraft maintenance programme shall be revised to address the requirements of point (a)(iii) before 26 August 2021, or 6 months after the publication of the LOV, or before operating the aeroplane, whichever occurs later;
- → (c) For an aeroplane model first certified before 26 February 2021 and: (i) that does not operate anymore after 26 February 2024 points (a)(i), (a)(ii) and (a)(iv) shall not apply; (ii) that does not operate anymore after 26 August 2021 point (a)(iii) shall not apply;



# **General product applicability of 26.370(a)**

→ Turbine-powered large aeroplanes certified on or after 1 January 1958





- → 26.370(a)(iv)
- $\rightarrow$  All large aeroplanes





#### → 26.370(a)(iii)

#### → Aeroplanes with MTOW 34019kg (75000lbs) and above



# **Damage tolerance based inspections**

- → 26.370(a)(i)
- → Certified with 30 pax or more or more than 3402kg payload



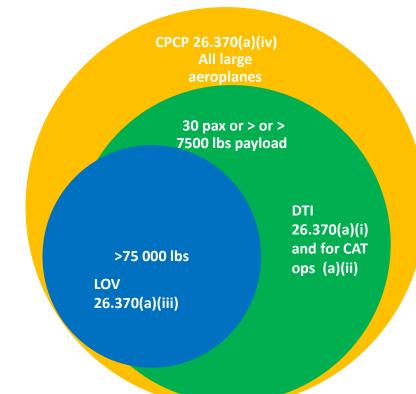
# **Adverse effects of repairs and modifications**

- → 26.370(a)(ii)
- → Operated in accordance with Annex IV (Part-CAT) to Regulation (EU) No 965/2012
- → Certified with 30 pax or more or more than 3402kg payload



# **Summary of applicability**

26.370







#### How operators and CAMOs should comply

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#### Damage tolerance based inspections 26.370(a)(i)

- → Use existing programmes ALS or mandated SSID
- → No changes or new approvals required of TCH data or operator's AMPs in majority of cases
- $\rightarrow$  If TCH makes new DTI available include it in the AMP



#### CPCP 26.370(a)(iv)

- $\rightarrow$  Some new approvals of TCH CPCP required for business jets
- → TCHs will make baseline CPCP available; no changes in most cases
- → Majority of fleet already have CPCP in AMP
- → Provided that the operator has an approved aircraft maintenance programme (AMP) that controls corrosion to Level 1 or better, the operator need not follow exactly the programme offered by the TCH. However, revisions to the TCH's approved programme should be considered by the operator for incorporation in the operator's AMP under the Part-M requirements.



#### LOV 26.370(a)(iii)

- → LOV (and sometimes a more restrictive limitation) will be provided by TCH in the ALS of the ICA
- → Include the LOV and any more restrictive limit in the AMP
- → Maintenance actions will be mandated by AD by EASA
  - → These include modifications and inspections



## Means to address the adverse effects of repairs and modifications 26.370(a)(ii)

Comprises

- $\rightarrow$  Incorporating available DTI in the AMP
- $\rightarrow$  Introducing a plan in the AMP
  - → to obtain DTI when it is currently missing for major modifications
  - → to ensure DTI for reinforcing repairs is obtained in a timely manner
  - → that includes a schedule for obtaining and implementing the DTI
  - $\rightarrow$  that takes into account the TCH REGs
- → See CS 26.370 Continuing airworthiness tasks and aircraft maintenance programme — Operators and organisations responsible for maintenance programmes for large aeroplanes under Part-M



#### Means to address the adverse effects of repairs and modifications 26.370(a)(ii)

Which repairs and modifications need to be addressed?

- → Major reinforcing repairs
- → major modifications implementing major changes/STCs that effect fatigue critical structure (FCS)

When do they need to be addressed by?

- → CS 26.370 describes a series of activities that operators should undertake to ensure compliance with point 26.370 of Part-26 by 26 Feb 2024
- → GM1 26.370(a)(ii) in CS-26 Book 2 provides further guidance



# **Changes that may adversely affect FCBS**

- $\rightarrow$  (1) Passenger-to-freighter conversions (including addition of main deck cargo doors).
- → (2) Gross weight increases (increased operating weights, increased zero fuel weights, increased landing weights, and increased maximum take-off weights).
- → (3) Installation of fuselage cut-outs (passenger entry doors, emergency exit doors or crew escape hatches, fuselage access doors, and cabin window relocations).
- $\rightarrow$  (4) Complete re-engine or pylon modifications.
- $\rightarrow$  (5) Engine hush kits.
- → (6) Wing modifications such as installing winglets or changes in flight control settings (flap droop), and modification of wing trailing edge structure.
- $\rightarrow$  (7) Modified skin splices.
- $\rightarrow$  (8) Antenna installations.
- $\rightarrow$  (9) Any modification that affects several stringer or frame bays.
- $\rightarrow$  (10) Any modification that covers structure requiring periodic inspection by the operator's maintenance programme.
- → (11) Any modification that results in operational mission change that significantly changes the manufacturer's load or stress spectrum (e.g. passenger-to-freighter conversion).
- → (12) Any modification that changes areas of the fuselage that prevents external visual inspection (e.g. installation of a large external fuselage doubler that results in hiding details beneath it).
- → (13) In general, attachment of interior monuments to FCS. Interior monuments include large items of mass such as galleys, closets, and lavatories.



# Means to address the adverse effects of repairs and modifications 26.370(a)(ii) cont.

- → For older aeroplanes in particular the main area of activity will be the plan for addressing the adverse affects of repairs and modifications
  - $\rightarrow$  Quality of aeroplane records is an important factor in the action taken
  - $\rightarrow$  An aeroplane survey may be required
  - $\rightarrow$  Schedule for aeroplane survey for repair should be based on REGs
  - → The timeline for surveys is based on agreements reached in international working groups of TCHs, Operators and Authorities
  - → Repairs need to be addressed as aircraft approach and exceed their DSG
  - → CS-26 and AMC 20-20A provide details



# Short term actions for operator

#### → Check available data

- $\rightarrow$  FCS lists
- $\rightarrow$  DTI for modifications and published repairs
- → REGs
- → Perform records review for major changes affecting FCBS
- → Establish if modifications have DTI if in doubt contact all DAHs
- $\rightarrow$  Request missing DTI from DAH
- → Start to develop plan for AMP for repair surveys and obtaining any DT data for modifications that will not be incorporated in the AMP by 26 Feb 2024



# Data made available to the operator by TCH

- → DTI programme for baseline structure ALS in general, or SSID by AD
- → DT data for all TCH changes affecting FCBS
- → DT data for all TCH published repairs (SRM, service bulletins etc.)
- → FCBS lists
- → FCMS lists (for TCH changes unless covered by FCBS)
- $\rightarrow$  REGs to point 26.309, except that
- → There will be no REGs for aeroplanes first certified 2009 or later
- → For these aircraft DT is fully implemented by TCHs for changes and repairs and only third party changes (STCs) and repairs need to be checked



#### Data made available to the operator by TCH

REGs include:

- → a process for conducting surveys of affected aircraft that will enable identification and documentation of all existing repairs that affect fatiguecritical baseline structure;
- → a process for obtaining DTI for repairs affecting FCBS that are identified during an aircraft survey; and
- $\rightarrow$  an implementation schedule that provides timelines for:

(1) conducting aircraft surveys,

(2) obtaining DTI, and

(3) incorporating DTI into the operator's maintenance programme.



#### Data made available to the operator by TCH

- → REGs already exist in many cases, but may not have been implemented by EU operators as the REGs were initially developed for compliance with CFR14 Part 121 requirements in the US
- → These REGs may need revising to update schedules for surveys before approval by EASA



# Data made available to the operator by STCH

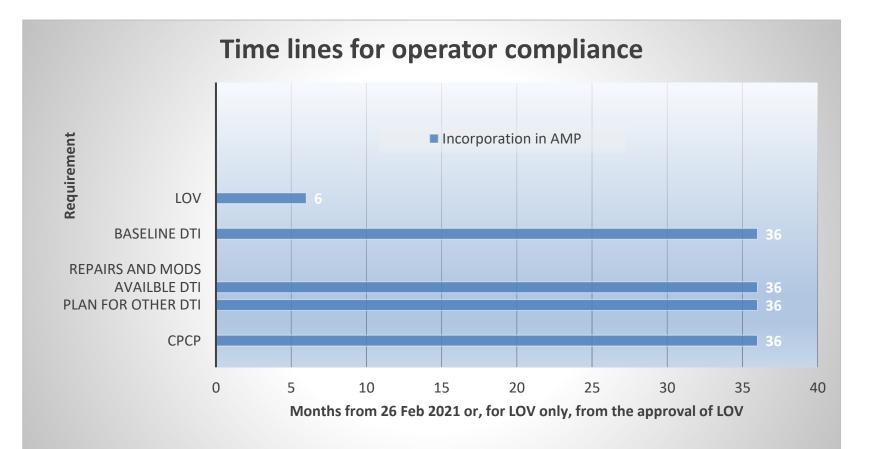
- $\rightarrow$  A list of changes that affect FCBS
- → A list of FCMS for those changes (upon request if change approval issued prior to Sept 2003)

Note: There may not be FCMS specified if the TCH FCBS list adequately includes or envelopes the structure introduced by the change

- → DT data for the STCH's changes that affect FCBS (upon request if change approval issued prior to Sept 2003)
- → DT data for all published repairs that affect those changes

See CS-26 and GM to 26.370 for more detail on how to engage with DAHs









# **NAA oversight activities**

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# **NAA** activity

#### THE COMPETENT AUTHORITY

- → The competent authority to which compliance with the requirements needs to be demonstrated by operators shall be the authority designated by the Member State in which the operator has its principal place of business.
- $\rightarrow$  i.e. NAA or sometimes the Agency under new BR
- → The competent authority to which compliance with the requirements needs to be demonstrated by holders of and applicants for type certificate, restricted type certificate, supplemental type certificate and repair design approvals shall be the Agency.



# **NAA** activity

#### **ROLE OF THE COMPETENT AUTHORITY – 26.370**

→ The competent authority's role is to verify that the AMP is in compliance with point 26.370 of Part-26 and ensure that their aircraft continuing airworthiness monitoring survey programme takes into account the risks associated with potential non-compliance of operators' or owners' AMPs with the requirements of point 26.370 of Part-26. (Ref. Part-M requirements for the Competent Authority (M.B.301 and 303)).





#### **Next Steps**

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#### Next steps

- → Refer to Ageing Aircraft Structure Web Page for updates
- → <u>https://www.easa.europa.eu/domains/aircraft-products/ageing-aircraft-structure-rule</u>

- $\rightarrow$  Please send queries to EASA ageing aircraft mail box
- $\rightarrow$  <u>ageing-aircraft@easa.europa.eu</u>

→ EASA will collate and summarise Q and As from this session and make them available





#### **Questions ?**

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# Thank you for your attention and participation



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