

# Part-26

## Ageing Aircraft Structures

### TC Holder Info Session

12 April 2021

**Your safety is our mission.**

# Content

- Objectives of the regulation
- Background
- Definitions
- The regulation
- Focus on requirements for TCHs
- Submittal and approval of data

# 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**

# Objectives

## 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

# Objectives

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.

# Objectives

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.

# Objectives

## 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

# Objectives

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.

# Objectives

## 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

# Objectives

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.

# Objectives

## 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.

# Objectives

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.

# Objectives

**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.

# Objectives

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.

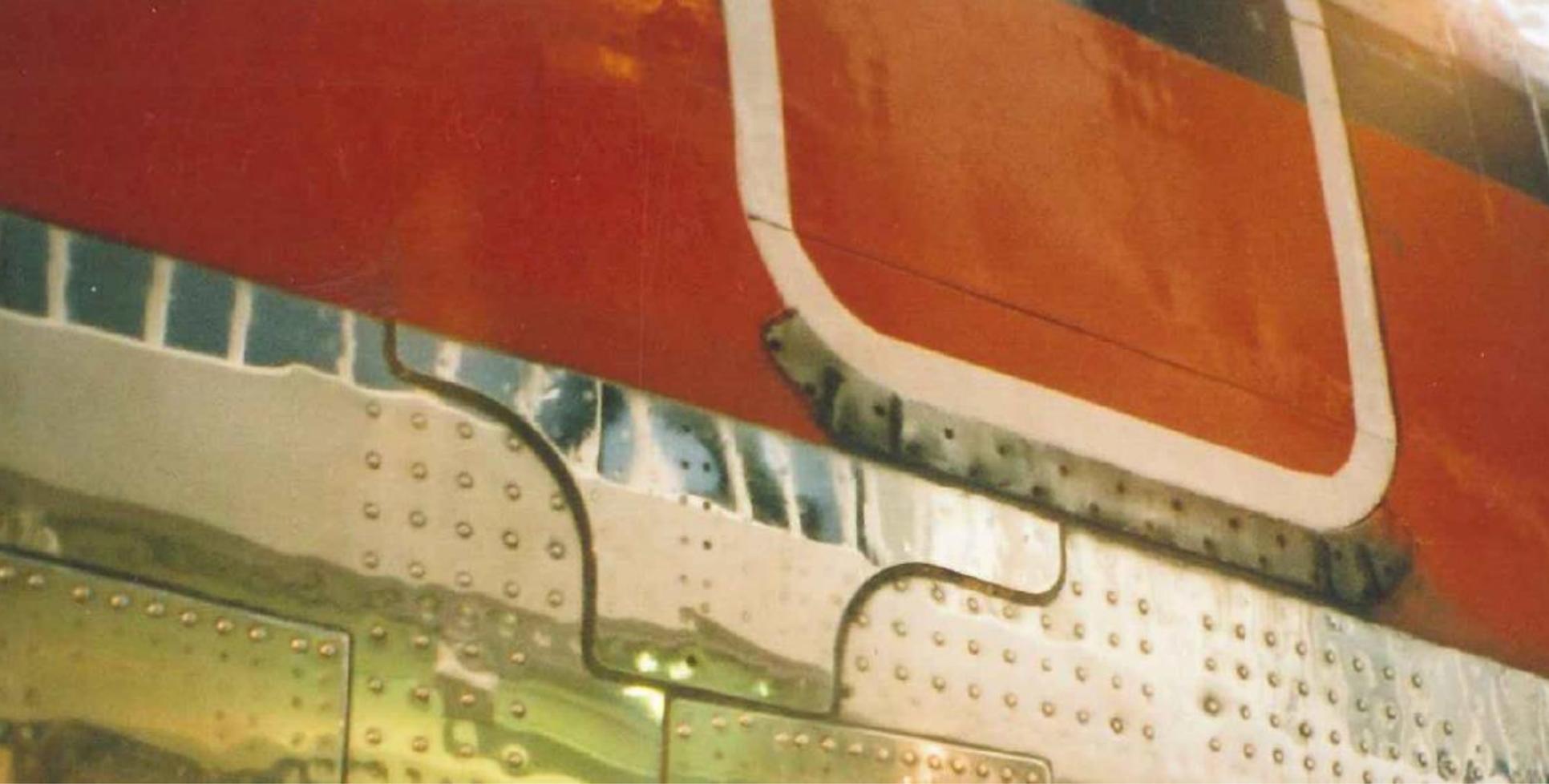
# Background

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# 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.
- 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

## → 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.

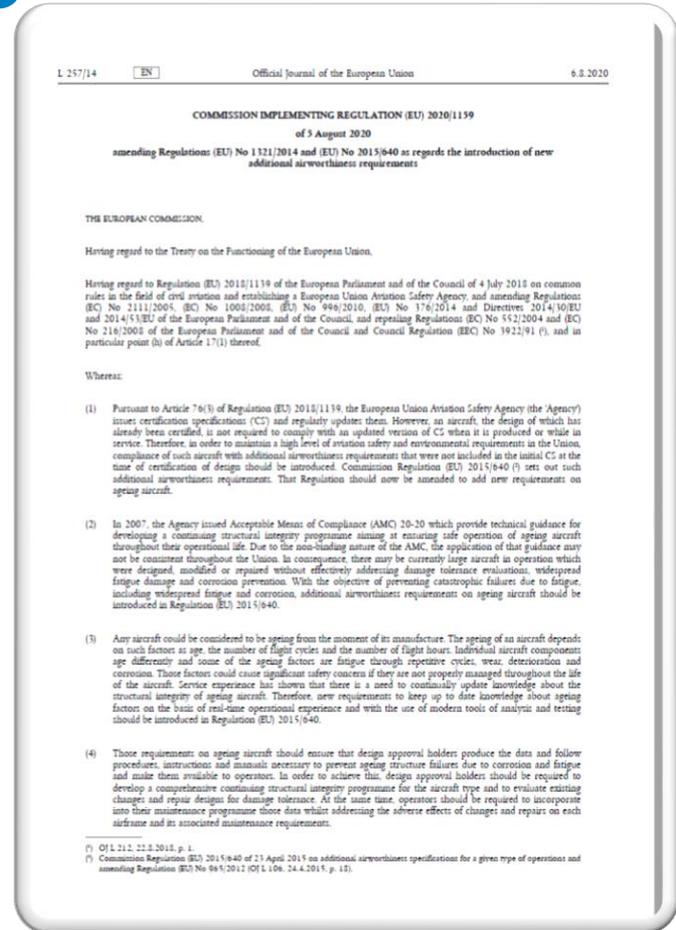
# Commission Implementing Regulation (EU) 2020/1159 amending Regulation (EU) 2015/640 and (EU) 1321/2014

## 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
  - Became applicable .....
  - for ageing aircraft on **26 February 2021**
  - and becomes applicable for conv. Class D compartments on 26 August 2023



# 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



**NO IMPACT** on rights and obligations of the regulated entities

# 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



TC holders: establish a continuing structural integrity programme



TC/STC holder: Damage Tolerance Evaluation of existing changes and published repairs to FCS



Part 26 & Part M

Operators: incorporate ageing aircraft related tasks/actions in the AMP, including plan to address the adverse effects of repairs and modifications



TC/STC applicants: mandatory compliance with ageing aircraft structures requirements for future changes/repairs

Part 21

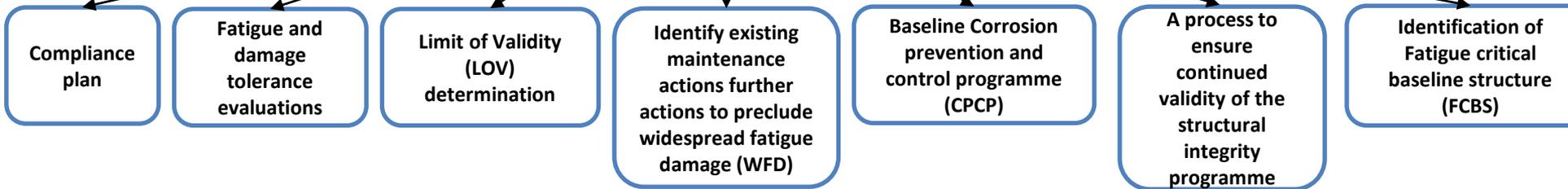
coming soon

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

Who ?

(R)TCHs

What ?

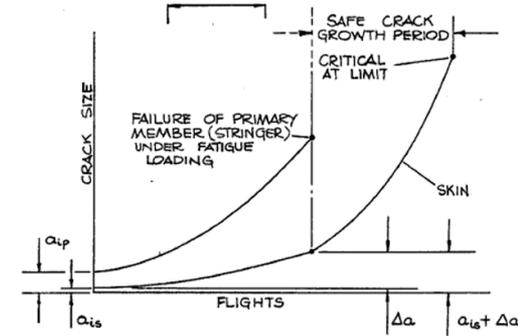


**Compliance time:** specific for each point, ranging from 3 to 60 months from applicability.

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

Who ?

(R)TCH



What ?

Compliance plan  
(in point 26.301)

Identify all changes that  
affect FCBS  
List FCMS

Perform DTE  
and develop DTI

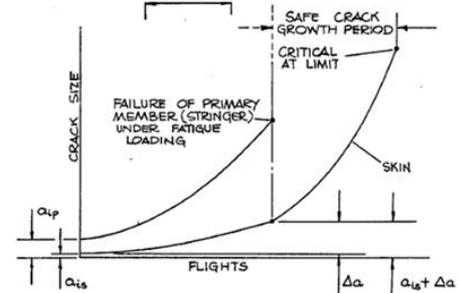
Establish an implementation  
schedule that provides timelines  
for conducting aircraft surveys, DTI  
and incorporate this in  
maintenance programme

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

# 26.330->26.334 Damage tolerance data for existing STCs, other existing major changes and existing repairs affecting those changes or STCs

Who ?

STCH



What ?

Compliance plan

Review the changes and identify those that affect FCBS  
List changes affecting FCBS  
List FCMS

Perform DTE and develop DTI

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



Who ?

Operator / Owner

What ?

Include in the AMP an approved damage tolerance-based inspection programme.

Address adverse effects of repairs and modifications on fatigue-critical structure and on inspections

CPCP

Limitations on the use of the maintenance programme (e.g. LOV)

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



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...**

→ 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

REMiNDER



# CS-26

REMiNDER



- 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

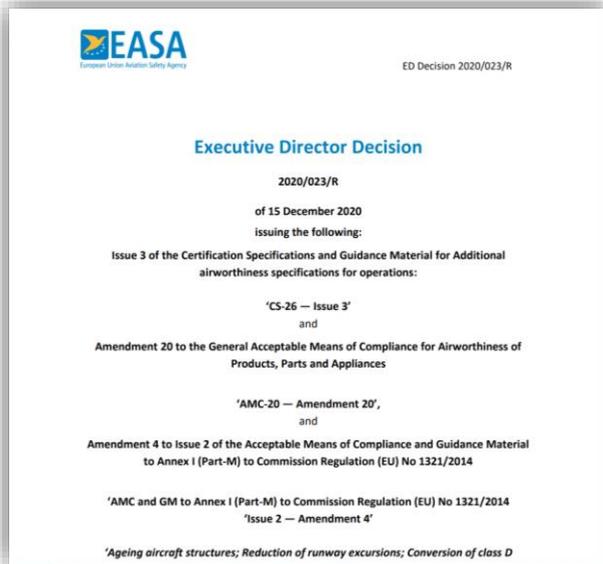


## → Guidance Material (GM)

- 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*

# Part-M

## → 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 Obligations 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 type-certificate 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

- 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.”

# Focus on TCH requirements

# List of TCH requirements

- 26.300 Continuing structural integrity programme for ageing aeroplanes structures – general requirements – includes requirements for exceptions to the applicability
- 26.301 Compliance Plan
- 26.302 Fatigue and damage tolerance evaluation
- 26.303 Limit of Validity and maintenance actions
- 26.304 Corrosion prevention and control programme
- 26.305 Validity of the continuing structural integrity programme
- 26.306 Fatigue critical baseline structure
- 26.307 Damage tolerance data for existing changes to fatigue critical structure
- 26.308 Damage tolerance data for existing repairs to fatigue critical structure
- 26.309 Repair evaluation guidelines

# Applicability

- Ageing aircraft rule applies only to **large aeroplanes** (MTOM>5700 kg).
- Each requirement has its own specific applicability.
- Following aeroplanes models are eligible for exclusion (TCHs to provide a justified declaration to EASA):
  - ✓ not operated after 26 Feb 2021
  - ✓ not certified to conduct civil ops with pax or payload
  - ✓ RTC provided that they are not operated beyond 75% of design service goal
  - ✓ RTC certified primarily for firefighting
- Some aeroplanes are excluded (=> nothing to do by TCHs), ref Table A.1 of Appendix 1 to Part-26.

# List of aeroplanes not subject to 1 or more requirement

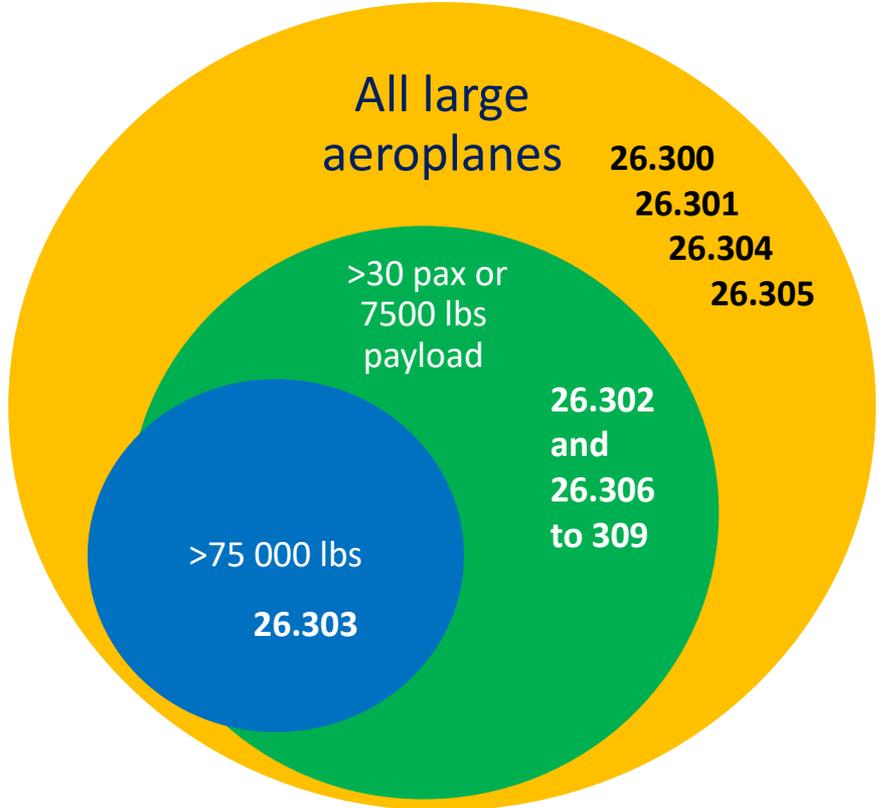
| TC Holder                    | Type                         | Models   | Not applicable Part-26 points |
|------------------------------|------------------------------|--|-------------------------------|
| The Boeing Company           | 707                          | All  | 26.301 to 26.334              |
| The Boeing Company           | 720                          | All  | 26.301 to 26.334              |
| The Boeing Company           | DC-10                        | DC-10-10, DC-10-30, DC-10-30F  | 26.301 to 26.334              |
| The Boeing Company           | DC-8                         | All  | 26.301 to 26.334              |
| The Boeing Company           | DC-9                         | DC-9-11, DC-9-12, DC-9-13, DC-9-14,DC-9-15, DC-9-15F, DC-9-21, DC-9-31,DC-9-32, DC-9-32 (VC-9C), DC-9-32F,DC-9-32F (C-9A, C-9B), DC-9-33F, DC-9-34, DC-9-34F, DC-9-41, DC-9-51 | 26.301 to 26.334              |
| The Boeing Company           | MD-90                        | MD-90-30   | 26.301 to 26.334              |
| FOKKER SERVICES B.V.         | F27                          | Mark 100, 200, 300, 400, 500, 600, 700   | 26.301 to 26.334              |
| FOKKER SERVICES B.V.         | F28                          | Mark 1000, 1000C, 2000, 3000, 3000C, 3000R, 3000RC, 4000   | 26.301 to 26.334              |
| GULFSTREAM AEROSPACE CORP.   | G-159                        | G-159 (Gulfstream I)   | 26.301 to 26.334              |
| GULFSTREAM AEROSPACE CORP.   | G-II_III_IV_V                | G-1159A (GIII), G-1159B (GIIB), G-1159 (GII)   | 26.301 to 26.334              |
| KELOWNA FLIGHTCRAFT LTD.     | CONVAIR 340/440              | 440  | 26.301 to 26.334              |
| LEARJET INC.                 | Learjet 24/25/31/36/35/55/60 | 24,24A,24B,24B-A,24D, 24D-A,24F,24F A,25,25B,25C,25D,25F   | 26.301 to 26.334              |
| LOCKHEED MARTIN CORPORATION  | 1329                         | All  | 26.301 to 26.334              |
| LOCKHEED MARTIN CORPORATION  | 188                          | All  | 26.301 to 26.334              |
| LOCKHEED MARTIN CORPORATION  | 382                          | 382, 382B, 382E, 382E, 382F, 382G  | 26.301 to 26.334              |
| LOCKHEED MARTIN CORPORATION  | L-1011                       | All  | 26.301 to 26.334              |
| PT. DIRGANTARA INDONESIA     | CN-235                       | All  | 26.301 to 26.334              |
| SABRELINER CORPORATION       | NA-265                       | NA-265-65  | 26.301 to 26.334              |
| VIKING AIR LIMITED           | SD3                          | SD3-30, Sherpa, SD3 Sherpa   | 26.301 to 26.334              |
| VIKING AIR LIMITED           | DHC-7                        | All  | 26.301 to 26.334              |
| TUPOLEV PUBLIC STOCK COMPANY | TU-204                       | 204-120CE  | 26.301 to 26.334              |

# Applicability

## Exception if not operated after 26 Feb 2021

- CS-26 Book 2 - GM1 26.300(b) and 26.330(b) Guidance on applicability
- Any product for which the TC has been surrendered is not subject to points 26.300 to 26.334 of Part-26.
- For aeroplane models with an EASA TC 'not operated any more' means that no aeroplanes of that model are operated anywhere in the world after 26 February 2021.
  - Provide evidence that all the examples of that aeroplane model have been scrapped;
  - Provide evidence that all the remaining examples of that aeroplane model are no longer in airworthy condition and are not expected to return to service in the future (e.g. permanent storage for the purpose of being transferred to a museum or scrapped).
- Submit justification by 27 May 2021

# Applicability of each TCH requirement



# Applicability

## Additional exceptions for repairs and changes

- Evidence that the change or repair is only incorporated into aeroplanes not in operation
  - Change or repair will not be incorporated into any other aeroplanes
  - No available kits for such changes or repairs; or
  - if kits are available, they will not be sold; or
  - ensuring that no future production of such change/repair kits is permitted; or
  - limiting the applicability of the changes and repairs by updating the associated instructions for continued airworthiness.
- Submit justification by 26 Feb 2022

# Compliance plan

- Project schedule identifying all the major milestones for meeting the compliance dates as specified in points 26.302 to 26.309 of Part-26, as applicable;
- Proposed means of compliance with the applicable requirements as specified in points 26.302 to 26.309 of Part-26
- When using existing data approved according to existing similar requirements, make clear how the data satisfies the Part-26 requirement
- A plan for submitting a draft of all the required compliance items for review by EASA not less than 60 days before the applicable compliance date
- Submit by 27<sup>th</sup> May 2021

# Means of compliance and guidance material

→ CS-26

→ **CS 26.1 Purpose and scope**

→ This CS is the standard means to show compliance of products with the requirements of Annex I (Part-26) to Commission Regulation (EU) 2015/640.

→ Book 1 specifies means of compliance

→ GM (Guidance Material) is found in Book 2

# DT of baseline structure and CPCP

- Data is generally already approved (see CS-26 for acceptable approvals)
- If approved the data does not need to be resubmitted (see regulation)
- Refer to existing approved docs in CP For types currently without a CPCP e.g. some business jets, existing maintenance programme content can be used as a basis for the CPCP provided the proposed CPCP has:
  - Adequate coverage of and access to primary structure
  - Appropriate corrosion level definitions
  - Instructions for dealing with corrosion findings
  - Reporting requirements
  - Incorporated maintenance actions to address previous adverse service experience

# LoV and maintenance actions

- Data is generally available except for a few types not addressed under CFR14 §26.21
- Follow CS 26.303(a) and (c) and Paragraph 8 of Appendix 2 to AMC 20-20A.
- Deliverables are:
  - ALS with LOV incorporated (existing LOV may appear centric to a non-EU requirement and this should be corrected)
  - Binding schedule
- For non-EU TCHs, even if delegation of compliance finding or approval is given to AA of SoD, EASA requires a copy of the WFD evaluation methodology document for information, in addition to the binding schedule, to support CAW activities.

# Continued validity of structural integrity programme

- All TCHs need to provide a summary report of their process that ensures the continued validity of the programme
- Follow CS 26.305(a) and (c)
- Some important aspects are:
  - verification of programme assumptions based on service findings and other available data
  - criteria for implementation of modification rather than continuing with inspections
  - plan to audit and report to EASA the effectiveness of the continuing structural integrity programme, including the continuing validity of the assumptions upon which it is based, prior to reaching any significant point in the life of the aeroplane
  - “sunset criteria” may reduce scope of some elements of process

# Repairs and changes – FCS and DT data

- Most affected types are DT by certification or through application of CFR14 Part 26 or equivalent
- EASA still needs to approve this data as compliant with Part-26
- Unlike 302 and 304 there is no provision for not submitting the data in the regulation
- A copy of the FCS lists must be submitted
- In the CP, make reference to all the documents that contain DT data and describe how the DT data is or will be compliant with Part-26
- The extent of EASA's review of the DT data will depend on the current approval status of the data, EASA's experience with the applicant and for non-EU TCHs the applicable TIP or working arrangements

# Repairs and changes - REG

REGs must include:

- a process for conducting surveys of affected aircraft that will enable identification and documentation of all existing repairs that affect fatigue-critical baseline structure;
- a process for obtaining DTI for repairs affecting FCBS that are identified during an aircraft survey; and
- an implementation schedule that provides timelines for:
  - (1) conducting aircraft surveys,
  - (2) obtaining DTI, and
  - (3) incorporating DTI into the operator's maintenance programme.

# Repairs and changes - REG

- Existing REGs and other documents may need revision for references to Part-26
- REG survey schedule may need updating depending on fleet age and operator implementation status. See AMC 20-20A Appendix 3 section 3.13.1.
- A copy of the REG must be submitted (info for EASA to support operator and NAAs)
- Frequent dialogue with operators is recommended

# Using existing CFR14 Part 26 compliance data to support compliance

| Part-26                                | CFR 14 § ?                              | Explanation   | Comment on use of CFR 14 data or other existing data   |
|--|---|---|--|
| 26.300(a)                              |   | Generic compliance requirement  |  |
| 26.300(b)                              |   | Exceptions for aeroplanes specific to Part-26                           |  |
| 26.300(c)                              |   | Exceptions for changes specific to Part-26                              |  |
| 26.301(a) and (b). TCH Compliance plan | Some equivalent paragraphs require a CP | CP must address Part-26   | Many methodologies, documents and data from AASR and §26.21 and CP for §26.21(d) and §26.49(d) can be used to help with 26.301 CPs |
| 26.302                                 |   | Cert basis or SID AD used directly by FAA to support 121.1109 / 129.109 | Existing EASA approved ALS/SSID can be used in most cases. CP should specify documents.  |
| 26.303                                 | 26.21                                   | The same technical requirements   | Different compliance dates lead to a need to clarify what structural configurations the LOV applies to in CP.                      |
| 26.303(a)(i)                           | 26.21(b)(1)                             | LoV   | Existing data can be used.<br>EASA requirement reference needed in ALS.  |
| 26.303(a)(ii)                          | 26.21(b)(2)                             | Maintenance actions and binding schedule.                               | Same schedule can be used as a basis.  |

# Using existing CFR14 Part 26 compliance data to support compliance

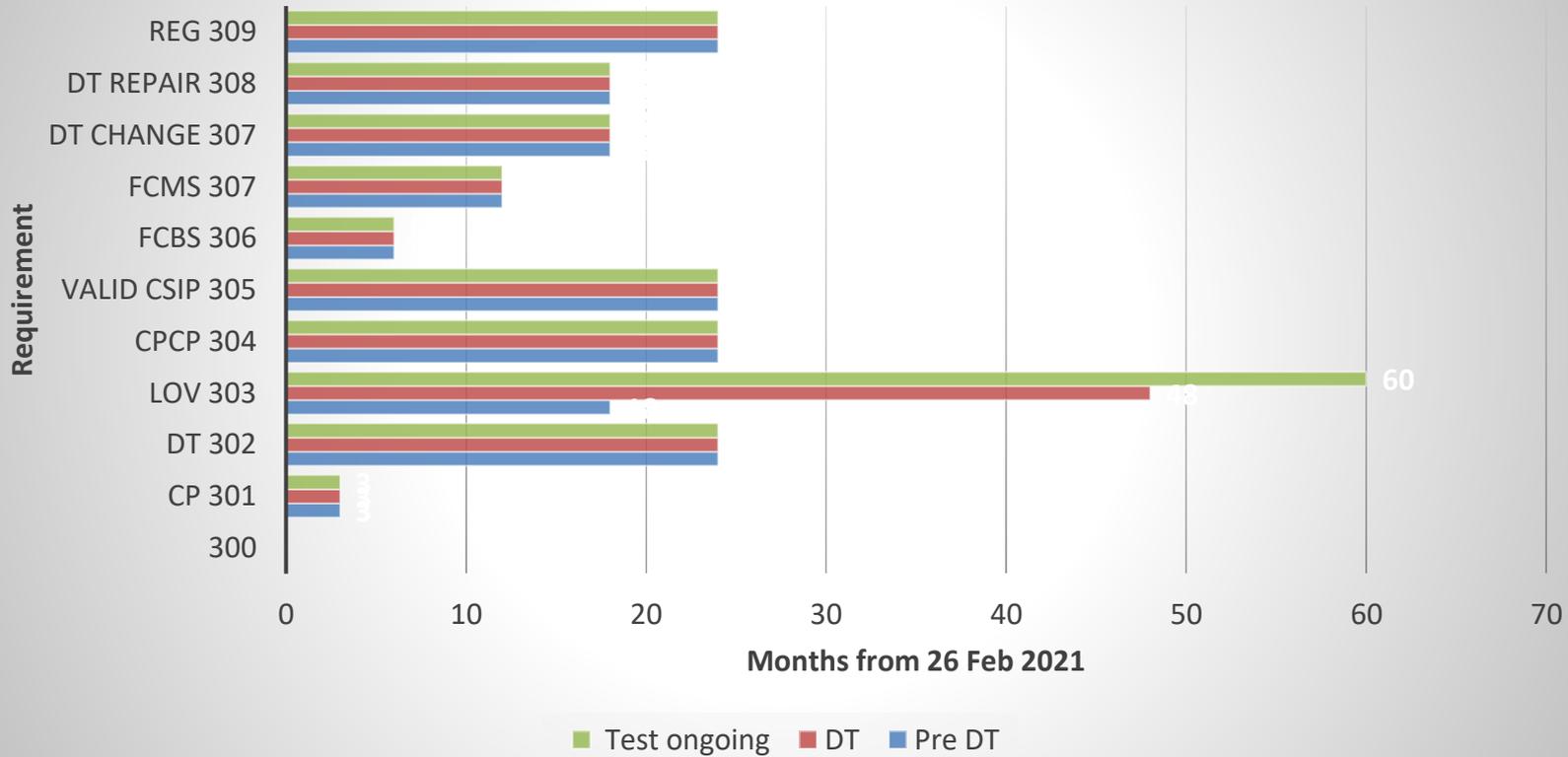
| Part-26        | CFR 14 § ?            | Explanation   | Comment on use of CFR 14 data or other existing data  |
|----------------|-----------------------|---|---|
| 26.304         |                       | CPCP covered by AD or MRBR for FAA.                   | Existing CPCP complies if EASA approved. CP should reference the CPCP document.   |
| 26.305         |                       | No direct equivalent for FAA                          |   |
| 26.306(a)      | 26.43(b)              | FCBS list.  | Although there may be minor differences in interpretation the lists can be accepted.  |
| 26.307(a)(ii)  | 26.45(b)              | FCMS/FCAS   | Although there may be minor differences in interpretation the lists can be accepted.  |
| 26.307(a)(iii) | 26.45(c)              | DT data for changes/alterations                       | DT Data can be used directly to support compliance.   |
| 26.308(a)      | 26.43(c) and 26.45(d) | DT data for published repairs affecting FCBS and FCMS | DT Data can be used directly to support compliance.   |
| 26.309         | 26.43(e)              | REG   | REG can be used to show compliance with inclusion of appropriate references to EU Regs. May need survey schedule to be revised. |

# Using existing CFR14 Part 26 compliance data to support compliance

| Part-26 | CFR 14 § ? | Explanation   | Comment on use of CFR 14 data  |
|---------|------------|---|--|
| 26.330  | N/A        | Generic compliance requirement                                  |  |
| 26.331  | 26.49      | Same intent for CP  | CP can refer to compliance with 26.47 for DTE.   |
| 26.332  | 26.47(b)   | FCMS/FCAS<br>Same intent for existing STCs only.                | Where approved FCAS exists it can be used directly to support compliance.<br>For STCs approved by FAA after 11 Jan 2008 no FCAS list was required by 26.47.<br>For compliance with 26.332 these STCs will need FCMS lists. |
| 26.333  | 26.47(c)   | DT data for STCs EASA approved 1 Sept 2003 onward               | FAA approved DT Data can be used directly to support compliance.   |
| 26.333  | 26.47(d)   | DT data for published repairs to STCs approved Sept 2003 onward | FAA approved DT Data can be used directly to support compliance.   |
| 26.334  | 26.47(c)   | DT data for STCs approved before Sept 2003                      | FAA approved DT Data can be used directly to support compliance.   |
| 26.334  | 26.47(d)   | DT data for published repairs to pre-Sept 2003 STCs             | FAA approved DT Data can be used directly to support compliance.   |

# Submittal and Approval of data

# Time lines for data submittal



# Submittal and approval of data

- One standard major change application per type accompanied by compliance plan which is due 27<sup>th</sup> May 2021
- Use of existing data is expected to support compliance demonstration wherever possible
  - Need to ensure it is clear to operators that final approved data complies with Part-26
- EASA will amend TCDS to include each applicable point of Part-26 when the compliance demonstration is complete
- TCDS provides additional visibility to operator that compliance has been shown
- Early submittal of data is encouraged to help operator compliance

# Approval of data - non-EU TCH

- EASA will engage the support of non-EU AAs
- Intent is to maximise AA assistance with compliance findings, recommendations of approval or (potentially) AA approval to EASA requirement where experience of a similar requirement exists - TIP dependent
- In addition, EASA will give credit to existing AA approved data for similar requirements to expedite EASA approval

# Next steps

- Refer to Web Page for updates of general interest
- <https://www.easa.europa.eu/domains/aircraft-products/ageing-aircraft-structure-rule>
- EASA is and will continue to conduct meetings with TCHs on their specific points of interest
- Please send general queries to EASA ageing aircraft mail box
- [ageing-aircraft@easa.europa.eu](mailto:ageing-aircraft@easa.europa.eu)
- EASA will collate and summarise Q and As from this session and make them available

# Thank you for your attention

[easa.europa.eu/connect](https://easa.europa.eu/connect)



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