

EASA Changes to the Requirements for Continuing Airworthiness Records (CAW)

Effective 24 March 2020 Regulation (EU) 2020/270 amending Regulation (EU) No 1321/2014

GM M.A.305 Aircraft continuing airworthiness record system

The aircraft continuing airworthiness records are the means to assess the airworthiness status of a product and its components.

An aircraft continuing airworthiness record system includes the processes to keep and manage those records and should be proportionate to the subject aircraft. Aircraft continuing airworthiness records should provide the owner/CAO/CAMO of an aircraft with the information needed:

- (1) to demonstrate that the aircraft is in compliance with the applicable airworthiness requirements; and
- (2) to schedule all future maintenance as required by the aircraft maintenance programme based, if any, on the last accomplishment of the specific maintenance as recorded in the aircraft continuing airworthiness records.

Definitions

‘Applicable airworthiness limitation parameter’ and ‘applicable parameter’ refer to ‘flight hours’ and/or ‘flight cycles’ and/or ‘landings’ and/or ‘calendar time’, and/or any other applicable utilisation measurement unit, as appropriate.

A **‘life-limited part’** is a part for which the maintenance schedule of the aircraft maintenance programme requires the permanent removal from service when, or before, the specified mandatory life limitation in accordance with Commission Regulation (EU) No 748/2012 if any of the applicable parameters is reached.

The ‘current status’ when referring to components of life-limited parts should indicate, for each affected part, the life limitation, the total life accumulated in any applicable parameter (as appropriate) and the remaining life in any applicable parameter before the life limitation is reached.

The term ‘time-controlled components’ embraces any component for which the maintenance schedule of the aircraft maintenance programme requires periodically the removal for maintenance to be performed in an appropriate approved organisation for maintenance in components (workshop) to return the component to a specified standard, the replacement of sub-components of the assembly by new ones, or the inspection or test

of component's performance, after a service period controlled at component level in accordance with the specified airworthiness limitation defined in accordance with Commission Regulation (EU) No 784/2012, in any of the applicable parameters.

The 'current status' when referring to time-controlled components refers to the current status of compliance with the required periodic maintenance task(s) from the maintenance schedule of the aircraft maintenance programme specific to the time-controlled components. It should include the life accumulated by the affected components in the applicable parameter, as appropriate, since the last accomplishment of scheduled maintenance specified in the maintenance schedule of the aircraft maintenance programme.

Any action that alters the periodicity of the maintenance task(s) or changes the parameter of this periodicity should be recorded.

'Detailed maintenance records' in this part refers to those records required to be kept by the person or organisation responsible for the aircraft continuing airworthiness in accordance with M.A.201 in order that they may be able to fulfil their obligations under Part M.

'Other maintenance required for continuing airworthiness' refers to unscheduled or out-of-phase maintenance due to abnormal or particular conditions or events with an impact on the continuing airworthiness of the aircraft at the time of its return to service.

It is **NOT** intended to request every single condition described in the maintenance data, e.g. Aircraft Maintenance Manual Chapter 5, but just those that cannot be captured by other means; for example, when they are not included in the records for repairs.

Some abnormal or particular conditions or events that could be kept under this requirement could be lightning strikes, hard landings, long-term storage, propeller or rotor over-speed, over-torque, impact on a main rotor blade, etc.

The term 'in-service history record' embraces records from which the current status of life-limited parts can be determined.

The 'in-service history record' template could be adjusted to the relevant characteristics of the life-limited part, e.g. an engine disk being different from a fire extinguisher squib or landing gear sliding tube.

Such records document each time a life-limited part is placed in service or removed from service. They should clearly:

- (1) identify the part by its part number and serial number,
- (2) show the date of installation and removal (i.e. date on/date off),
- (3) show the details of the installation and removal (i.e. type, serial number, weight variant, thrust rating, as appropriate, of the aircraft, engine, engine module, or propeller) at

installation and removal of the part when this is necessary to appropriately control the life limitation.

(4) Show the total in-service life accumulated in any applicable parameter, as appropriate, corresponding to the dates of installation and removal of the part.

The term '**permanently withdrawn from service**' refers to moving the aircraft or component to a location that is not used for storage and/or future return to service.

The term 'current status' refers to the data which accurately establishes the level of compliance of an aircraft, engine, propeller or component thereof, with a requirement. Each status should:

- (1) identify the aircraft, the engine, the propeller or the component it applies to;
- (2) be dated; and
- (3) include the relevant total in-service life accumulated in the applicable parameter on the date of the status.

Concerning Detailed Maintenance Records

These are only a part of the detailed maintenance records required to be kept by a maintenance organisation under M.A.614, CAO.A.090(a) or 145.A.55(c).

Maintenance organisations are required to retain all detailed records to demonstrate that they worked in compliance with their respective requirements and quality procedures.

Not all records need to be transferred from the maintenance organisation to the person or organisation responsible for the aircraft continuing airworthiness in accordance with M.A.201 unless they specifically contain information relevant to aircraft configuration and future maintenance.

Records Retention Guidance for CAMO's

Thus, incoming certificates of conformity, batch number references and individual task card sign-offs verified by and/or generated by the maintenance organisation are not required to be retained by the person or organisation responsible in accordance with M.A.201.

However, dimensional information contained in the task card sign-off or work pack may be requested by the owner/CAO/CAMO in order to verify and demonstrate the effectiveness of the aircraft maintenance programme.

Information relevant to future maintenance may be contained in specific documents related to:

- Modifications;

- Airworthiness directives;
- Repaired and non-repaired damage;
- Components referred in M.A.305(d); and
- Measurements relating to defects.

Concerning Airworthiness Limitations

An airworthiness limitation is a boundary beyond which an aircraft or a component thereof must not be operated unless the instruction(s) associated with this airworthiness limitation is (are) complied with.

Any other events that would affect the life limitation, such as an embodied modification (in accordance with airworthiness directives, service bulletins or any product improvements) that affects the life limitation or changes the limitation parameter, should also be included in the in-service history record.

Not all modifications would necessarily be pertinent to the life limitation of the component. Additionally, if a parameter is not relevant to the life of the part, then that parameter does not need to be recorded.

Authors comment – In the grey area where it “may be” but is not! then the analysis should be shown together with Not Applicable “NA” – Why ? – because otherwise it may be challenged multiple times in the future particularly during Airworthiness Reviews (ARC’s) by treating it in this way it will reduce considerably the potential for issues in the future.

AMC M.A.305(a) Certificate of Release to Service

The inclusion of the certificate of release to service in the aircraft continuing airworthiness record system means that the date and/or any applicable parameter at which the maintenance was performed, including a unique reference to the certificate of release to service, should be processed in the record system.

For components with airworthiness limitations, this information should be found on the authorised release certificate (EASA Form 1 or equivalent).

For life-limited parts, some relevant information required by M.A.305 may need to be introduced in the in-service history records.

AMC M.A.305(b)1 In-Service Life for Engines, Propellers & APU’s

Some gas turbine engines and propellers are assembled from modules and the total life accumulated in service for the complete engine or propeller may not be kept.

When owners and operators wish to take advantage of the modular design, then the total life accumulated in service for each module, as well as in-service history if applicable, and detailed maintenance records for each module, should be maintained.

The continuing airworthiness records as specified should be kept with the module and should show compliance with any mandatory requirements pertaining to that module.

Note - The recording of in-service life accumulation may be necessary also in other measurement units to ensure the continuing airworthiness of the aircraft.

For example, a mandatory life limitation measured in cycles of auxiliary power unit (APU) usage may apply to some rotating parts. In such a case, APU cycles need to be recorded.

AMC M.A.305(c)1 Airworthiness Directives

The current status of ADs, and measures mandated by the competent authority in immediate reaction to a safety problem, should identify the product/component, the applicable ADs including revision or amendment numbers and the date on which the status was updated.

For the purpose of assessing the AD status, there is no need to list those ADs which are superseded or cancelled.

If the AD is generally applicable to the aircraft or component type but is not applicable to the particular aircraft, engine, propeller or component, then this should be identified with the reason why it is not applicable.

Authors Comment – For the same reason as shown above related to the need to enable *Airworthiness Reviews (ARC's)* again it will reduce considerably the potential for issues in the future.

The current status of ADs should include the release to service date on which the AD or measure was accomplished (the date the certificate of release to service was issued), and where the AD or measure is controlled by flight hours and/or flight cycles and/or landings and/or any other applicable parameter, as appropriate, it should include the corresponding total life on that parameter accumulated in service on the date when the AD or measure was accomplished and/or the due limit in the appropriate parameter.

For repetitive ADs or measures, only the last and next applications with the reference to the applicable parameter should be recorded in the current status.

The status should also specify the method of compliance and which part of a multi-part AD or measure has been accomplished, where a choice is available in the AD or measure.

The current status of AD should be sufficiently detailed to identify any loadable software aircraft part which is used for operating or controlling the aircraft.

When the AD is multi-part or requests assessments of certain inspections, this information should be shown as well.

AMC M.A.305(c)2 Modifications & Repairs

Status of current modifications and repairs means a list compiled at aircraft level of modifications and repairs currently embodied.

It should include the identification of the aircraft, engine(s) or propeller(s), as appropriate, and the date of the certificate of release to service when the modification or repair was accomplished.

Where a modification or repair creates the need for the accomplishment of scheduled maintenance tasks, the reference to the applicable tasks should be added to the aircraft maintenance programme.

The status should include the reference to the data in accordance with M.A.304 that provides the accomplishment procedure for the modification or repair. It should also specify which part of a multi-part modification or repair has been accomplished and the method of compliance, where a choice is available in the data.

In addition to the previous applicable information, in respect to structure, the status of the current repairs should contain the description of the repair (e.g. doubler, blend, crack, dent, etc.), its location (e.g. reference to stringers, frames, etc.) and the dimensions. In the case of blend-out repairs, the remaining material should be recorded too.

The status of modifications should be sufficiently detailed to identify any installed loadable software aircraft part used for operating or controlling the aircraft, the part number of which evolves independently of its associated aircraft hardware component, as identified in the maintenance data of the relevant design approval holders.

Other loadable software parts, such as navigational databases or entertainment systems, are not considered under this recording requirement.

For the purpose of this paragraph, a component replaced by a fully interchangeable alternate component is not considered a modification if this condition is published by the design approval holder.

The status of modifications and repairs should include engine(s), propeller(s) and components subject to mandatory instructions and associated airworthiness limitations, and it is not intended that it should be retained for other components.

GM M.A.305(c)(2) Impact of Modifications and Repairs

The status of modifications and repairs may include the impact of a specific modification or repair in:

(1) embodiment instructions;

- (2) mass and balance change data;
- (3) maintenance and repair manual supplements;
- (4) maintenance programme changes and instructions for continuing airworthiness; and/or
- (5) aircraft flight manual supplements.

Note - When aircraft require a specific loadable software aircraft part configuration in order to operate correctly, a specific listing with this information may be necessary too.

AMC M.A.305(c)3 Aircraft Maintenance Program

The current status of compliance with the aircraft maintenance programme means the last and next accomplishment data (referring to the applicable parameter) for the tasks specified in the maintenance schedule of the aircraft maintenance programme.

It should include:

- (1) an identifier specific enough to allow easy and accurate identification of the task to be carried out, such as a task reference combined with a task title or short description of the work to be performed;
- (2) the engine, propeller or component identification when the task is controlled at engine, propeller, or component level; and
- (3) the date when the task was accomplished (i.e. the date the certificate of release to service was issued) and for repetitive tasks when it is next due time, as well as when the terminating action is performed.

Where the task is controlled by flight hours and/or flight cycles and/or landings and/or calendar time and/or any other applicable parameter, the total in-service life accumulated by the aircraft, engine, propeller or component (as appropriate) in the suitable parameter(s) should also be included.

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