



**CRD 2007-09**

**Task 145.012: Single and Multiple Releases**

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# Current certification system



# Current certification system

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Current Part-145 requirements for certification of aircraft maintenance:

145.A.50(a): "A certificate of release to service shall be issued by appropriately authorised certifying staff on behalf of the organisation when it has been verified that ....."

145.A.50(b): "A certificate of release to service shall be issued before flight at the completion of any maintenance".



# Current certification system

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This wording has led to 2 possible interpretations:

**Interpretation 1:** There must be a single CRS covering all the maintenance performed before flight.

145.A.50(a): “**A** certificate of release to service shall be issued by appropriately authorised certifying staff on behalf of the organisation when it has been verified that ....”

**Interpretation 2:** The maintenance performed before flight can be divided in as many maintenance items as desired and for each one of those items a CRS is issued.

145.A.50(b): “A certificate of release to service shall be issued before flight at the completion of **any** maintenance”.



# Current certification system

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This ambiguity of the regulation has originated different methods of releasing maintenance, including:

- Single Release
- Multiple Release
- Variations/combinations of the above.



# Current certification system

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## Single release system:

### ➤ Advantages:

- ✦ The pilot receives a single release which tells him/her that all the maintenance ordered by the operator has been completed.
- ✦ If properly implemented, it should ensure that all the maintenance actions have been properly coordinated.



# Current certification system

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## Single release system:

### ➤ Disadvantages:

- ✦ Implies that the person signing the single the release (and his/her organisation) must have in the scope of work/authorisation all the tasks covered by the release.
- ✦ The full responsibility for all the maintenance actions falls on that person.
- ✦ Very difficult to implement when several maintenance organisations are involved.



# Current certification system

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## Multiple release system:

### ➤ Advantages:

- ✦ Each organisation and each certifying staff take responsibility only for the maintenance tasks they have performed and certified.





# Current certification system

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## Multiple release system:

### ➤ Disadvantages:

- ✦ The pilot receives several releases, making more difficult to verify that all the maintenance ordered by the operator has been completed.
- ✦ They may not clearly address the coordination activities needed between the different certifying staff or between different organisations



# Task 145.012



## Task 145.012

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As a consequence, a task was created (145.012) with the following Terms of Reference (agreed with AGNA and SSCC):

- “In Europe two systems of release to service coexist: single release and multiple releases. This can lead to misunderstandings and possibly to safety issues. It was therefore requested by industry and National Aviation Authorities to clarify this issue so that only one system remains, **if possible**.”
- Taking into account draft JAA TGL 41, support the development of an Opinion to amend Part-145 and associated AMC/GM material. Furthermore, Part-M and Part-66 need to be reviewed to ensure that these provisions are included.”



## Task 145.012

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- A working group was created, with members from Industry, NAA's and EASA.
- Rulemaking action would affect only Part-145 organisations. Subpart-F environment requires a much lower level of coordination (more simple maintenance requirements & fewer contracted organisations)
- Rulemaking action would affect aircraft maintenance (not component maintenance).



# Task 145.012

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- NPA2007-07 was issued in June 2007.
  
- Comments received through the external consultation showed significant concern from NAAs and Industry mainly in relation to:
  - ✦ Complexity of the proposed system (3 certificates) and its implications on training and human factors
  - ✦ Introduction of the PMO (Primary Maintenance Organisation)
  - ✦ Implications on harmonisation with foreign requirements
  - ✦ Need to amend the Technical Log



## Task 145.012

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- In order to address the comments, a Review Group was created, composed of:
  - ✦ The members of the Working Group which drafted the NPA.
  - ✦ One additional person from EASA (Standardisation Department).
  - ✦ One expert from Industry who had heavily opposed to the NPA (a person representing the European Regional Airlines).
  
- After several meetings, the Review Group agreed on a text that simplified significantly the concept proposed in the NPA while maintaining the objectives of the task.
  
- The CRD proposal was agreed by all the members who participated in the Review Group.



## Main changes in relation to the NPA

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- Elimination of the MRC (Maintenance Release Certificate) and BMRC (Base Maintenance Release Certificate). Each organisation will release (with one/several CRS) the maintenance they have performed and a final CRS is issued before flight.
- Elimination of the PMO concept. Clearly stated that the CAMO is responsible for coordination.
- Elimination of the changes proposed for Technical Records.
- 1 year transition period to reduce the impact on training and to allow the use of existing stock of Technical Logs.



## Proposed text of the CRD





# Responsibilities of the CAMO

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➤ M.A.708(b)7 amended:

*"ensure that maintenance activities are properly coordinated and that a Part-145 maintenance organisation is designated to issue the final CRS"*



# Responsibilities of the CAMO

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➤ AMC M.A.708(b)7 (new):

The CAMO should create procedures to ensure proper coordination, including:

- ✦ Communication system between CAMO and Part-145 organisations (especially if they work in the same area/system).
- ✦ How to avoid conflict between maintenance activities.
- ✦ Which Part-145 organisation will issue the final CRS.
- ✦ Communication between CAMO and the organisation issuing the final CRS to ensure that all discrepancies have been addressed or properly deferred.
- ✦ Under which conditions the Part-145 organisation can issue the final CRS (whether they need final authorisation from CAMO or not).



# Responsibilities of the CAMO

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➤ AMC M.A.306(a)3 (new):

- ✦ The issuance by a Part-145 organisation of a final CRS certifies that all the maintenance ordered by the CAMO has been performed or properly deferred.
- ✦ The coordination of such maintenance is guaranteed by the procedures established by the CAMO (M.A.708(b)7).
- ✦ **This does not necessarily mean that the aircraft is airworthy at that moment.** This is the responsibility of the CAMO, who must issue the maintenance statement required in M.A.306(a)3). This can be delegated, under appropriate procedures, to the Part-145 organisation issuing the final CRS.



# Release of maintenance

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- Certificates of Release to Service (145.A.50(b)1)
  - ✦ Issued by each Part-145 organisation (by certifying staff with the appropriate licence category and rating).
  - ✦ The CAMO may decide whether it prefers to have a Technical Log where each task is released or a Technical Log where tasks are signed-off and then they are released as a block of tasks (see AMC 145.A.50(b)1, par.4 and AMC M.A.306(a)).
  - ✦ Can be issued even if non-compliances are found (i.e. after NDT) or if the aircraft is left in a non-airworthy configuration (i.e. removing engines for preservation) as long as this is recorded in the CRS and notified to the CAMO (see AMC 145.A.50(b)1). Eventually, they will have to be rectified or deferred with the corresponding CRS.
  - ✦ Certifying staff take full responsibility for the maintenance and deferred items covered by the CRS they have issued.



# Release of maintenance

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- Final Certificate of Release to Service (145.A.50(b)2)
  - ✦ Issued by the Part-145 organisation designated by the CAMO to do so (see M.A.708(b)7 and Appendix II to AMC M.A.708(c), item 2.20).
  - ✦ Its purpose is to certify and notify to the pilot that all maintenance ordered by the CAMO has been completed or properly deferred. However, it does not act as certification of the maintenance performed or of those items deferred (this is done through those CRS issued iaw 145.A.50(b)1).
  - ✦ The Part-145 organisation issuing the final CRS relies on:
    - The CRS issued by each Part-145 organisation.
    - The coordination performed iaw the procedures of the CAMO.
    - The conditions of the contract between the CAMO and the Part-145 organisation.



# Technical Log

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- Examples of Technical Logs are provided in:
  - ✦ AMC M.A.306 (a): For the Technical Log of the operator.
  - ✦ AMC 145.A.50: For the Part-145 organisation in order to fill the examples provided in AMC M.A.306(a).



# Certifying staff

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➤ For the CRS described in 145.A.50(b)1:

✦ Line Maintenance:

- ➔ A, B1 or B2 depending of the scope of tasks.
- ➔ NDT certifying staff (for D1 rated organisations).

✦ Base Maintenance:

- ➔ C (except for aircraft other than large when B1 or B2 may be acceptable).

**NOTE:** Organisations working in a Base Maintenance event under a line maintenance approval may use A, B1 or B2 as appropriate (see AMC 145.A.50(b)1, par.3)



# Certifying staff

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- For the final CRS described in 145.A.50(b)2:
  - ✦ B1, B2 or C independently of the scope of tasks (the type rating is still necessary) (see AMC 145.A.50(b)2).
  - ✦ Category A only if all the tasks covered by the final CRS have been performed and released by this person.





# Impacts and compensating measures



# Safety impact

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- More clear line of responsibilities.
- In all cases the pilot receives a final CRS certifying that all maintenance has been completed or properly deferred.
- More guidance and emphasis on the coordination activities.



# Economic impact

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- Operators will need to modify the Technical Log. Nevertheless, many operators already revise their Technical Logs periodically to adapt to new regulations or because of internal requests from their operational departments.

COMPENSATING MEASURE: Entry into force 1 year after publication, to allow operators to use their stock of Technical Logs.



# Economic impact

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- Operators and Part-145 organisations will need to modify the procedures for maintenance certification and provide training to their personnel. Nevertheless, the concept finally proposed in this CRD is not so different from the current rule and the Agency does not anticipate a large impact. As a matter of fact, some organisations are already using a similar system.

COMPENSATING MEASURE: Entry into force 1 year after publication, to allow organisations to change their procedures and provide training to the affected personnel.



# Economic impact

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- Some organisations (those currently using the Multiple Release System) will have to add a signature for the final CRS.
- Category A certifying staff will not be able to issue the final CRS if there were other persons involved in the maintenance event. This affects those organisations which are currently using the Multiple Release system.



# Social impact

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- Positive impact because of the more clear line of responsibilities. Certifying staff will have a more clear view of what they are accountable for.
- However, category A certifying staff will not be able to issue the final CRS if there were other persons involved in the maintenance event. This affects those organisations which are currently using the Multiple Release system.



# Impact on other regulatory systems

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- No impact is anticipated on FAA or Canadian repair stations with EASA Part-145 approval because:
  - ✦ the certification statements remain unchanged,
  - ✦ it is still possible to use certifying staff with local licence (instead of Part-66 licence) outside the EU,
  - ✦ the changes do not affect component maintenance (they are still released under FAA 8130-3 or TCCA Form One, with dual release).
  - ✦ The proposed systems is already used by some Part-145 organisations.



# Impact on equity and fairness

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- The changes affect Part-145 organisations but not Subpart F maintenance organisations. However, the Agency believes that this is reasonable because Subpart F maintenance organisations work in a much simpler environment, with lower coordination requirements.





# Conclusions



# Conclusions

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- The proposed systems takes on board the benefits of both systems.
- Clear notification to the pilot that all maintenance has been completed (typical of a Single Release System).
- Clear line of responsibilities, not requiring to assume the responsibility for the work performed by other organisations or other maintenance personnel (typical of a Multiple Release System).
- It provides flexibility to the operators and maintenance organisations. Still the possibility to have “sign-offs” and issue the CRS for a combination of tasks.



# Conclusions

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- Clear requirements and guidance regarding the coordination of maintenance and the responsibilities of the CAMO.
- Transition phase (1 year) introduced in order to reduce the impact.
- The proposed system is already used by certain organisations.