“What” are Instructions for Continued Airworthiness, ICA?

Rulemaking Workshop, Cologne, January 2010
“What” are Instructions for Continued Airworthiness?

**Content**

- Background
- Legal Context/Requirements
- Compliance Documents
- Items for Consideration
- Summary, Terms of Reference (TOR)

**Open Discussion**
Background

2008/2009 - FAA and EASA conducted independent ICA compliance surveys mainly on “Large Aeroplanes” products

ICA definition and availability, expectations...

- Have evolved over time
- Wide variations on “what” is considered ICA by Design Approval Holders, DAHs and Authorities
- Special concern on CMMs being declared ICA (business impact)
- Presently are not applied in a standardized manner by DAHs, FAA and EASA
  - 2005 – First publication of FAA “ICA” Order 8110.54
  - 2009/2010 – Drafting of a EASA check list to support current ICA compliance finding. Planned to be published for public consultation as Certification Memorandum, 1Q 2010
Legal Context/Requirements

“What” are Instructions for Continued Airworthiness?

- ICA are provided as compliance documents during certification activities
- ICA are prepared in accordance with the applicable type-certification basis, specification
- ICA ensure type certification airworthiness standard is maintained throughout the operational life
- ICA form the basis for the operators’ approved maintenance data
- ICA enable inspection, adjustment, lubrication, removal or replacement of parts and appliances
Legal Context/Requirements

- Basic regulation (EC) No 216/2008, ANNEX I "Essential requirements for airworthiness referred to in Article 5"
- Basic regulation (EC) No 216/2008 ANNEX IV "Essential requirements for air operations referred to in Article 8"
- CS 22.1529, CS 23.1529, CS 25.1529*, CS 27.1529, CS 29.1529, CS 31HB.82*, CS-E 25, CS-P 40, CS-APU 30, CS-VLA 1529, CS-VLR 1529

and their related Appendices, AMC material and other requirements (Part M and 145)
Compliance Documents

CS 31HB.82 Instructions for Continued Airworthiness

(d)(1) “...description balloon components, systems and installations...”  ➤ MM*
(d)(2) “...handling instructions...”  ➤ MM
(d)(3) “...control and operating information...”  ➤ MM
(d)(4) “...servicing information...”  ➤ MM
(d)(5) “...maintenance schedule...”  ➤ MM
(d)(6) “...maintenance instructions...”  ➤ MM
(d)(7) “...repair instructions...”  ➤ MM
(d)(8) “...trouble-shooting information...”  ➤ MM
(d)(9) “...airworthiness limitations...”  ➤ MM

*Maintenance Manual is sometimes integrated as part of a Flight Instruction Manual
Compliance Documents

CS 25, Appendix H, Instructions for Continued Airworthiness

H25.3 (a) "...aeroplane maintenance manual...”  ➔ AMM, (CMM)...
H25.3(b)(1) "... scheduling information...”  ➔ MP (MRBR), (CMM), CMP, CPCP...
H25.3(b)(2) "... troubleshooting information...”  ➔ AMM, TSM, FIM, (CMM)...
H25.3(b)(3) "... removing and replacing...”  ➔ AMM, (IPC), PBM, SPM...
H25.3(b)(4) "... other...”  ➔ AMM, WBM...
H25.3(c) "... information needed to gain access...”  ➔ AMM, SRM...
H25.3(d) "... special inspection techniques...”  ➔ NDT, (CMM)...
H25.3(e) "... protective treatments...”  ➔ AMM, SRM...
H25.3(f) "... structural fasteners...”  ➔ AMM, SRM...
H25.3(g) "... special tools...”  ➔ GEM, TEM...
H25.4 "... airworthiness limitations section...”  ➔ ALS, ALI, SLI, LLP,(CMR),...
H25.5 "... EWIS...”  ➔ EZAP, Load Data, WDM, ESPM...
Compliance Documents

Manuals, of course, are not produced solely for compliance with the applicable ICA requirement, but for numerous other certification requirements (CS 25 as an example):

- CS25.571 “Damage-tolerance and fatigue evaluation of structure”
- CS25.603 “Materials”
- CS25.611 “Accessibility provisions”
- CS25.671 “Control systems, general”
- CS25.933 “Reversing systems”
- CS25.981 “Fuel tank ignition prevention”
- CS25.1155 “Reverse thrust and propeller pitch settings”
- CS25.1309 “Equipment, systems and installations”
- CS25.1519 “Weight, centre of gravity and weight distribution”
- CS25.1719 “Accessibility Provisions; EWIS”
- CS25.1729 “Instructions for Continued Airworthiness; EWIS”
- ...
European Aviation Safety Agency

Items for Consideration

✈ ICA as a mean to keep a product “airworthy”

่า Aspect of “safety”

่า Aspect of “keeping the design standard”

▪ Basic regulation (EC) No 216/2008, ANNEX I “Essential requirements for airworthiness referred to in Article 5” and 21A.183 “Issue of certificates of airworthiness”
  – An aircraft is considered airworthy, if it conforms to an approved design, conforms to a certificate that has been issued in accordance with the relevant certification basis

่า Aspect of “responsibility”
Items for Consideration

❖ CS 22.1529 CS 23.1529, ..., CS-VLR 1529 and their related Appendices, AMC material provide details what should be contained in the ICA

❖ Distinguish “non-mandatory” information, manuals and “mandatory” approved information, Airworthiness Limitations. Refer also to agenda item “Approval status of ICA- Level of Agency verification/approval ?”

❖ However leaves room for individual interpretation on the extent when the ICA can be considered “complete”

❖ “what” are ICA cannot be a simple tick list of manuals to be produced

❖ Apart from manuals/sections which are defined by regulation, like the “Airworthiness Limitations”, DAH organize individually their range of manuals.
  - DAH may decide to segregate information dedicated to a specific subject from a principle manual or may have integrated certain information in a principle manual
For different Certification Specifications, the amount of technical publication produced by DAHs deviates significantly in accordance with the technical complexity but also due to different “expectations”

- ICA, technical publications produced for STCs are also of interest
- however, regulatory requirements are very similar

Status of “voluntarily” produced Manuals

- ICA status required?
- “Simple” task may have an airworthiness impact (if incorrectly done), e.g. cleaning tasks
- May a Manual contain both ICA and not ICA related information?
Items for Consideration

Operational requirements in relation to maintenance data versus ICA

refer also to agenda item "Use of ICAs and other maintenance data by operators / MROs"

- Certification and operational requirements must fit together
  ▪ maintenance data = ICA or approved data or acceptable data (by administrator)?
- "Component maintenance" M.A.502
- Regulatory differences with the FAA rules

What are the consequences of Manuals considered not being ICA?

- 21A.61 "ICA need to be made available"
  ▪ refer also to agenda item "When do ICA need to be available? To whom should ICA be made available?"
- What are the operational consequences?
  ▪ refer also to agenda item "Use of ICAs and other maintenance data by operators / MROs"
Items for Consideration

How can, on operational side, an ICA be identified?

- No consistent identification (to the operator/MRO) is currently used
  - Use of the TCDS “Service Documentation”
  - Use of the statement: “The technical content of this document is approved under the authority of DOA nr. [EASA]. J. [xyz].”
    - refer also to agenda item “Role of DOA and AP-DOA: privileges for ICAs issuance and approval”
  - Other possibilities to provide a means of ICA identification (to the operational world)?
    - “ICA Marker”/ statement / Publications Index

- “Authorized/Unauthorized” supplier publications
  - see also next topic
Items for Consideration

Technical documentation provided by suppliers for an appliance (without an individual design approval)

- Responsibility of the technical content
- Authorization/acknowledgement of these documents
  - Currently not recognized as ICA by DAH
  - ICA status required? Refer also to agenda item "Use of ICAs and other maintenance data by operators / MROs"?
  - Which information from the Suppliers is considered ICA and how is it supplied?
    - FAA order 8110.54 and EASA draft ICA checklist state:
      - ICA: by reference in “top-level” ICA of the DAH
      - Non-ICA: if “top-level” ICA contain discard/replacement action, only, but can they then be used for component maintenance, are they maintenance data?
    - Is it then integrated in the DAH ICA or directly supplied by Supplier documentation (as for e.g. in CMM and VSB)?
Items for Consideration

Use of Service documentation (e.g. SB) as ICA or to make ICA available
- DAH can use their customer service documents as a method of making changes to ICA available and to deliver them in a timely manner
- Some are used to raise the awareness and summarize/highlight procedures from other manuals, ICA not a “source document”

Consideration for harmonization with other regulations, e.g. FAR
Refer also to agenda item “Coordination / cooperation with other authorities”
- Differences should be minimized where possible
- DAH has to satisfy different “national” regulations
- Economic impact for the industry, but also for the Authorities
- Most restrictive regulation has usually to be applied
Items for Consideration

Specific Items:

- The advanced use of electronic data modules which can not necessarily be associated to a “manual organization”
- Use of Standard Practice Manuals (SPM) as a general answer to comply with the requirements in relation to ICA
  - Inappropriate use of SPM procedures where not applicable and appropriate
  - Room for operators’ interpretation
- The situation of manuals like IPC or IPL part of the ICA
- Maintenance Planning Document (MPD) and Task Card or Job Instruction Cards (JIC)
  - Are usually generated to provide customized information
  - Usually summarize procedures from other manuals, ICA
    - (not a “source document”)

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“What” are Instructions for Continued Airworthiness?
What is the content of ICA?

- Is the definition included in appendix H? Are all definitions provided in regulations consistent?
- Does it include CMMs? IPC? Wiring diagram? SB, etc?
- How far do ICAs need to be controlled by TC holder/STC holder/TSO holder. Case of the supplier (link with DOA privilege?)
- What is the status of maintenance data which is not ICA?
Open Discussion

Thank you for your attention,

please place your comments and questions!