AIRWORTHINESS REVIEW IN FRENCH STATE AVIATION

Military Airworthiness Conference 2019 Vilnius

FRENCH STATE AVIATION AUTHORITY

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Why a briefing on airworthiness reviews?

Brief recall on airworthiness reviews rules & principles.

The French way to perform airworthiness reviews.

Results, figures & lessons learned.

Conclusions.
Why a briefing on this topic?

• A topic rarely discussed & first time in MAC.
• An essential tool for airworthiness surveillance.
• A rich & deep experience in France.
• Different ways to perform it from one NMAA to the other.
• An opportunity to debate, exchange & share good practices.
What is an airworthiness review?

Somehow a deep medical check up...
Principles & method

Reference: EMAR M

- **MA 710** Airworthiness Review.
- **MA 707** Airworthiness Review Staff.
- **MB 902** Airworthiness Review by the NMAA.
- **MB 903** Aircraft Findings.
- **AMC MA 707** Airworthiness Review Staff
- **AMC MA710** Airworthiness Review
- **AMC MA 901** Aircraft Airworthiness Review.
- **AMC MA 904** Airworthiness Review of an Aircraft imported into the EU.
- **GM MA 905** Aircraft findings by the NMAA
- **AMC MB 902** Airworthiness Review by the NMAA.
The French Model:

- Fully compliant with EMARs
- All the airworthiness reviews are performed by the authority.
- No ACAM
- Mostly ordinary CAMO & Few CAMO+ (G+I)
- Airworthiness review main DSAE activity.
- Around 560 audits per year including 400 airworthiness reviews.
- Airworthiness review are performed on ready to fly aircraft.
- Airworthiness review are performed by airworthiness inspectors.
Principles & method

TYPE CERTIFICATE + AW DATA SHEET

REGULATION

AW inspector’s database

Mandatory A/C documents

EMAR MA 710...
Principles & method

**Airworthiness review** = main activity of the DSAÉ inspector

On Desk review (documentation check) ≈ 80 %
On the field review (Aircraft physical check) ≈ 20 %

Airworthiness review = a snapshot of the Aircraft technical situation.

Inspector’s database = inspector’s principal tool & reference
Principles & method

**DOCUMENTARY REVIEW CHECK**
- Records
- Flight manual
- Maintenance
- Defects
- Modifications
- AD: applied and registered
- Components: identification
- Life limits...
- Weight and balance
- Compliance with the approved type design

**PHYSICAL SURVEY CHECK**
- Markings and placards
- Compliance with A/C flight manual
- Compliance with approved data
- No evident defect
- No inconsistencies with review of records

**DOCUMENTARY REVIEW**
10 POINTS

**PHYSICAL SURVEY**
5 POINTS
Timeline

AW review’s yearly planning
CAMO / DSAÉ

Issue a recommendation for AW review
- Form 181n
  AW review application
- Form 153
  Aircraft states

Acceptance of the AW review’s launch file
- Form 10a
  notification

AW review
START

AW review
: from 1 to 2 weeks

Confirmation of the review’s date

AW review
END

Form 156b
AW review report

Taking into account the Lev.2 findings + observations
- Form 15a
  ARC
  Valid for 1 Year
- Form 5b
  CoR
  Permanent documents
- Form 25
  CoA

Lev.1 findings resolution

Decision:
- : unsatisfactory
- : satisfactory

Rejection of the request

CAMO / DSAÉ central entity
DSAE inspecto
Finding criteria & categories

LEVEL 1 = Direct impact on safety.
LEVEL 2 = Potential impact on safety.
OBSERVATIONS = Areas of improvement.
Finding criteria & categories

**LEVEL 1**
- AD not applied,
- mandatory modification not applied,
- life limit exceeded,
- maintenance task due,
- defect out of limit...

**LEVEL 2**
- AD applied but not registered,
- modification applied but not registered,
- life limit not properly scheduled but not exceeded,
- error about scheduled maintenance
- defect acceptable but not carried forward in a controlled manner.
Inspector’s good practices

- Don’t think that... report only facts based information not who but what
- Don’t do CAMO’s job...
- Don’t perform the review without a CAMO’s representative
- The A/C surroundings don’t matter
- You can’t check everything...
- Don’t expect too much...
Results

2018 global results.

394 AR*

393 A/C Certified (MARC issued)

All level 1 solved during AR.

LEVEL 2

LEVEL 1

MAINTENANCE & REPAIR

AD & MOD

* AR = airworthiness review
2018 global results.

Σ findings
airworthiness review
≈ 9

1 level 1
6 level 2
2 obs.
Learnings

Airworthiness review results are depending on:

- Airworthiness systems’ maturity.
- Aircraft & system complexity & maturity.
- Aircraft age.
- CAMO & AMO maturity.
- Industrial support efficiency.
- Certification basis civil / military.
Airworthiness review results

Same trends year after year.
Most of level 1 can be solved quickly.
Most of level 1 can be solved before the end of the review.
The big majority of AR leads to certification delivery.
No A/C is grounded after an AR.
Ideal tool to prepare & step into RBO
Ideal tool to control technical healthiness of the State aviation.
Learnings

In fact, looking at a tree’s fruit is the best way to tell

So, looking at the A/C is also the best way to tell
FRENCH STATE AVIATION
AUTHORITY

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