



Bermuda DCA Seminar

April 2009

Module 1

Approval of Organisations for the Management of Continued Airworthiness



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Module 1

These modules regarding the implementation of OTAR 39 are presented by AVISA Aviation Safety Systems



Introductions

- My background
 - Over 40 years in industry! I started as a 3 year old!
 - Airline and MRO background
 - UK CAA Surveyor, JAA and EASA experience
 - Head of Section – Requirements and Policy
 - International MRB working Group
 - B777 Type Certification
 - International Fuel Tank System Safety team
 - AVISA aviation consultant





Schedule

- Airworthiness Management Principles
- Maintenance Programs
- Fuel Tank System Safety
- Ageing Aircraft Wiring issues
- Wide Spread Fatigue Damage & Aircraft repairs and assessment programs
- Software Management
- Flight Data Recorders



Continuing Airworthiness Management

*OTAR Part 39 is Titled **Continued
Airworthiness Requirements***

What is continued airworthiness?



Continuing Airworthiness Management

- How do we CONTINUE the airworthiness process?
- What keeps an aircraft or aircraft component airworthy?

Lets consider this question



Continuing Airworthiness Management

British Airways Trident

Was this airplane airworthy?

In compliance with the
requirements
in force?





Continuing Airworthiness Management

Air France Concorde

Was this aircraft
airworthy?

In compliance with the
requirements in
force?





Continuing Airworthiness Management

Air New Zealand DC 10
crash in Antarctica –
Mount Erebus

Was this airplane
airworthy?

In compliance with the
requirements in
force?



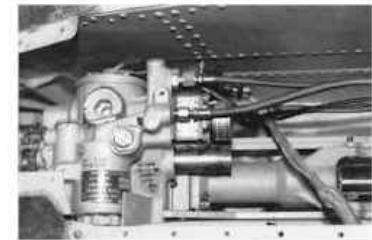


Continuing Airworthiness Management

Pittsburgh – B737 Rudder malfunction

Was this airplane
airworthy?

In compliance with the
requirements in
force?



The B-737's main rudder power control unit (right) contains several subassemblies, including a servo valve (cut open for display purposes, left) that directs hydraulic fluid to the rudder actuators.



Continuing Airworthiness Management

UK Register B737
accident -
Kegworth

Was this airplane
airworthy?

In compliance with the
requirements in
force?





Continuing Airworthiness Management

UK Register B737
In-flight Galley
Ceiling
Fire

Was this airplane
Airworthy?

In compliance with
the requirements in
force?





Continuing Airworthiness Management

Each of the in-service incidents and accidents resulted from failures of the aviation safety system

It is important to learn from the systemic failures in order to develop a more rigorous safety system – this is one of the functions of Airworthiness Management.



Continuing Airworthiness Management

What are the processes that contribute to airworthiness then?



Continuing Airworthiness

“covers all of the processes ensuring that at any time in their operating life, all aircraft comply with the airworthiness requirements in force and are in a condition for safe operation.”

EC Regulation 2042/2003



Continuing Airworthiness Management

- AD
- Flight Manual
- Modifications
- Repairs
- MMEL
- Life Limits
- Airworthiness Limitations
- C of A
- Occurrence Reporting
- Records
- Maintenance Programme
- Maintenance Standards
- Reliability Programme
- Certification Maintenance Requirements
- Weight & Balance



Continuing Airworthiness Management

If all of these processes are continued airworthiness processes then we need an organisation to manage them in a coordinated way – especially where a large transport airplane is being operated!



Continuing Airworthiness Management

Is OTAR 39 unique?

What do other States do?



FAA – FAR 121.363

(a) Each certificate holder is primarily responsible for

(1) The airworthiness of its aircraft including its airframes, aircraft engines, propellers, appliances and parts thereof.



Continuing Airworthiness Management

EC Regulation 2042/2003 – Part M

SUBPART B ACCOUNTABILITY

M.A.201 Responsibilities

(a) The owner is responsible for the continuing airworthiness of an aircraft and shall ensure that no flight takes place

unless:

1. the aircraft is maintained in an airworthy condition, and;
2. any operational and emergency equipment fitted is correctly installed and serviceable or clearly identified as unserviceable, and;
3. the airworthiness certificate remains valid, and;
4. the maintenance of the aircraft is performed in accordance with the approved maintenance programme as specified in M.A.302.



Continuing Airworthiness Management

EC Regulation 2042/2003 – Part M

M.A.201 Responsibilities

(b) When the aircraft is leased, the responsibilities of the owner are transferred to the lessee if:

1. the lessee is stipulated on the registration document, or;
2. detailed in the leasing contract.

When reference is made in this Part to the 'owner', the term owner covers the owner or the lessee, as applicable.



Continuing Airworthiness Management

So, OTAR 39 is not unique!

*What will OTAR 39 require of the operator of
a leased airplane?*



Air Safety Support International (ASSI) Issue
5.4 Overseas Territories Aviation
Requirements

Subpart B — Maintenance Management

39.51 Management personnel



Continuing Airworthiness Management

(c) Each holder of a foreign air operator's certificate operating Territory registered aircraft under the provisions of an ICAO Article 83 bis agreement shall appoint a post-holder to establish and maintain arrangements for the continued airworthiness management of the operator's aircraft as required by this OTAR Part.



Continuing Airworthiness Management

(d) The senior person identified in 39.51(c) shall ensure that suitable arrangements for continued airworthiness management are in place by way of holding an appropriate approval, or by contract with an organisation holding an approval, granted by the Governor under Subpart F of this Part.



39.55 Management responsibilities

The person identified in paragraph 39.51 is responsible for ensuring the certificate of airworthiness continues to remain valid by suitable arrangements identified in paragraph 39.53 that also ensures:

(a) the aircraft, including its airframe, engine(s), propellers, appliances, emergency equipment and operational equipment, is maintained in an airworthy condition;



39.59 Maintenance control manual

(a) The maintenance control manual shall form the basis for an approval prescribed in Subpart E of this Part, the content of which shall be representative of the organisation and be acceptable to the Governor.



39.59 Maintenance control manual

(d) The maintenance control manual shall contain the necessary procedures for applicable continued airworthiness management functions prescribed in paragraph 39.55 and 39.57 to ensure the continued airworthiness of the operating aircraft and ensure the continued validity of the Certificates of Airworthiness.



39.59 Maintenance control manual

(f) The maintenance control manual shall contain details of the available facilities, personnel including their responsibilities and data to be utilised for the purpose of continued airworthiness management.



Continuing Airworthiness Management

- *Nominated Post Holder*
- *Suitable arrangements*
- *Approval*
- *Maintenance Control Manual*
- *Procedures*
- ³⁰ *Responsibilities*
- *Facilities & personnel*

All of this then combines to make an organisation approved for the management of continued airworthiness!



Subpart F — Continued airworthiness management approval in association with an ICAO Article 83 *bis* agreement



39.103 Applicability

(a) Organisations that undertake continued airworthiness management of aircraft registered in the Territory and operated under an ICAO Article 83bis agreement shall hold an appropriate approval granted by the Governor under the requirements of this Subpart.



39.103 Applicability

(b) Such organisations may be:

(1) holders of a foreign air operator's certificate which operate Territory registered aircraft under an ICAO Article 83bis agreement; or

(2) organisations that are contracted to perform the functions of continued airworthiness management by an air operator certificate holder under an Article 83bis agreement with the Territory.



39.103 Applicability

(b) Such organisations may be:

- (1) holders of a foreign air operator's certificate which operate Territory registered aircraft under an ICAO Article 83bis agreement; or*
- (2) organisations that are contracted to perform the functions of continued airworthiness management by an air operator certificate holder under an Article 83bis agreement with the Territory.*

The operator can obtain the approval or contract out the continuing airworthiness management tasks!



39.105 Standards

(a) Foreign air operator certificate holders referred to in paragraph 39.103(b)(1) seeking approval under this Subpart shall comply with the requirements of EASA Part M Subpart G as varied by paragraph 39.105(d).



39.105 Standards

(a) Foreign air operator certificate holders referred to in paragraph 39.103(b)(1) seeking approval under this Subpart shall comply with the requirements of EASA Part M Subpart G as varied by paragraph 39.105(d).

Even if contracting out, the operator must still comply with EASA Part M sub-Part G!



39.105 Standards

(b) Organisations referred to in paragraph 39.103(b)(2) that hold an approval under EASA Part M Subpart G shall comply with the requirements of that approval and the applicable requirements of Subparts B and C of this OTAR Part.

An organisation currently approved in accordance with EASA Part M needs to adapt its procedures before obtaining Bermuda DCA Approval



39.105 Standards

(c) Organisations referred to in paragraph 39.103(b)(2) seeking approval under this Subpart but which do not hold an approval under EASA Part M Subpart G shall comply with the requirements of EASA Part M Subpart G as varied by paragraph 39.105(d).



39.105 Standards

(c) Organisations referred to in paragraph 39.103(b)(2) seeking approval under this Subpart but which do not hold an approval under EASA Part M Subpart G shall comply with the requirements of EASA Part M Subpart G as varied by paragraph 39.105(d).

An operator which carries out all of the airworthiness management tasks will be required to comply with EASA Part M sub-Part G!



Continuing Airworthiness Management

39.105 Standards

- (d) The following variations to the requirements of EASA Part M Subpart G shall apply to those organisations referred to in paragraph 39.105(a) and (c):*
- (1) any reference to a competent authority shall be read as a reference to the Governor of the Territory in which the aircraft is registered; and*
 - (2) any reference to the owner shall be read as a reference to the operator; and*
 - (3) Subpart I is not applicable; and*
 - (4) Paragraph M.A.715 is not applicable and the requirements of OTAR Part 39.11 shall apply instead; and*



39.105 Standards

*(5) Paragraph M.A.711(a)(3) and (b) are not applicable;
and*

*(6) Paragraph M.A.803 Pilot Owner Authorisation is not
applicable.*



Continuing Airworthiness Management

- *Sub-Part I is not applicable?*
- *M.A. 715 is not applicable?*
- *M.A.711(a)(3) & (b) are not applicable?*



SUBPART I

AIRWORTHINESS REVIEW CERTIFICATE

M.A.901 Aircraft airworthiness review

To ensure the validity of the aircraft airworthiness certificate an airworthiness review of the aircraft and its continuing airworthiness records must be carried out periodically.



Continuing Airworthiness Management

SUBPART I

AIRWORTHINESS REVIEW CERTIFICATE

M.A.901 Aircraft airworthiness review

To ensure the validity of the aircraft airworthiness certificate an airworthiness review of the aircraft and its continuing airworthiness records must be carried out periodically.

EASA Part M and Part 21 require a C of A to be issued without a defined expiry period and continuing validity to be certified by the issue of an Airworthiness Review Certificate: this process will not be adopted by OTAR



Continuing Airworthiness Management

M.A.711 Privileges of the organisation

(a) An approved continuing airworthiness management organisation, may:

3. arrange to carry out any task of continuing airworthiness within the limitation of its approval with another organisation that is working under its quality system.

(b) An approved continuing airworthiness management organisation, may additionally be approved to:

- 1. issue an airworthiness review certificate, or;*
- 2. make a recommendation for the airworthiness review to a Member State of Registry.*



Continuing Airworthiness Management

M.A.715 Continued validity of approval

(a) An approval shall be issued for an unlimited duration. It shall remain valid subject to:

- 1. the organisation remaining in compliance with this Part, in accordance with the provisions related to the handling of findings as specified under M.B.705 and;*
- 2. the competent authority being granted access to the organisation to determine continued compliance with this Part, and;*
- 3. the approval not being surrendered or revoked.*

(b) Upon surrender or revocation, the approval certificate shall be returned to the competent authority.



M.A.715 Continued validity of approval

(a) An approval shall be issued for an unlimited duration. It shall remain valid subject to:

1. the organisation remaining in compliance with this Part, in accordance with the provisions related to the handling

of findings as specified under M.B.705 and;

2. the competent authority being granted access to the organisation to determine continued compliance with this

Part, and;

3. the approval not being surrendered or revoked.

(b) Upon surrender or revocation, the approval certificate shall be returned to the competent authority.

OTAR Approvals will be required to be renewed on a continuing basis!



Continuing Airworthiness Management

*Is this the only change brought about by
OTAR 39?*

No: we also have to consider:

- *Continuing Airworthiness Improvements – 39.61 (f) & 39.70*
 - *Supplemental Structural Inspection Document*
 - *Fuel Tank Safety*
 - *Ageing Aircraft*
 - *Widespread Fatigue Damage*

Plus

- *Software Management – 39.55 – Management Responsibilities 39.55.(n)*



Continuing Airworthiness Management

*The Continuing Airworthiness Improvements
and Software Management topics are
dealt with by separate modules.*