

# **INTRODUCTION OF PART M REQUIREMENTS**



**TO NON-COMMERCIAL AIR TRANSPORT**

# PURPOSE OF THIS PRESENTATION

- **overview**
- **to inform**
- **to prepare**

5 SEPTEMBER 2007

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AIRWORTHINESS SECTION

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# CONTENT OF THIS PRESENTATION

- **DEFINITIONS**
- **EASA AND THE RULEMAKING PROCESS**
- **EUROPEAN AVIATION REGULATIONS**
- **PART M FOR NON-COMMERCIAL AIR TRANSPORT:**
  - **CONTINUING AIRWORTHINESS Vs MAINTENANCE**
  - **PART M OVERVIEW**
- **CURRENT AND FUTURE DEVELOPMENTS**
- **CONCLUSIONS**

# DEFINITIONS

## Commercial air transport:

**“An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire”**

*ICAO Annex 6*

# DEFINITIONS

## Commercial activity:

“a remunerated aeronautical activity covered by a contract between the operator and a customer where the customer is not an owner of the aircraft used for the purpose of this contract and the operator is not an employee of the customer”

*EASA (A-NPA 14-2006)*

# DEFINITIONS

## Aerial Work:

“An aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.”

*ICAO Annex 6*

# DEFINITIONS

## General Aviation operation:

“An aircraft operation other than a commercial air transport operation or an aerial work operation”

*ICAO Annex 6*

### Examples:

- Private aviation
- Flight schools
- Business travel

# DEFINITIONS

**Small aircraft:**

- **MTOW below 5700kgs**

**Large aircraft:**

- **MTOW above 5700kgs**

*ICAO Annex 6*

**(MTOW: Maximum Take-Off Weight)**



# EASA

## EUROPEAN AVIATION SAFETY AGENCY

- **MISSION**: To promote the highest common standards of safety and environmental protection in civil aviation.
  - Develops common safety and environmental rules at the European level,
  - monitors the implementation of standards through inspections in the Member States, and
  - provides the necessary technical expertise, training and research.

*[http://www.easa.eu.int/home/aboutus\\_en.html](http://www.easa.eu.int/home/aboutus_en.html)*

# EASA

## What areas does EASA cover?

- Currently: airworthiness and environmental compatibility of products
- Very soon: air operations and flight crew licensing
- In future: airport operations and air traffic control services

# **RULEMAKING PROCESS**

## **EASA Management Board Decision 08-2007 “Rulemaking Procedure”**

- 1. Initiation by EASA Executive Director**
- 2. Drafting – Group – Notice of Proposed Amendment (NPA)**
- 3. Consultation – comments on NPA**
- 4. Review of comments – Comment Response Document (CRD)**
- 5. Adoption and publication**

***[http://www.easa.eu.int/home/rulemaking\\_en.html](http://www.easa.eu.int/home/rulemaking_en.html)***

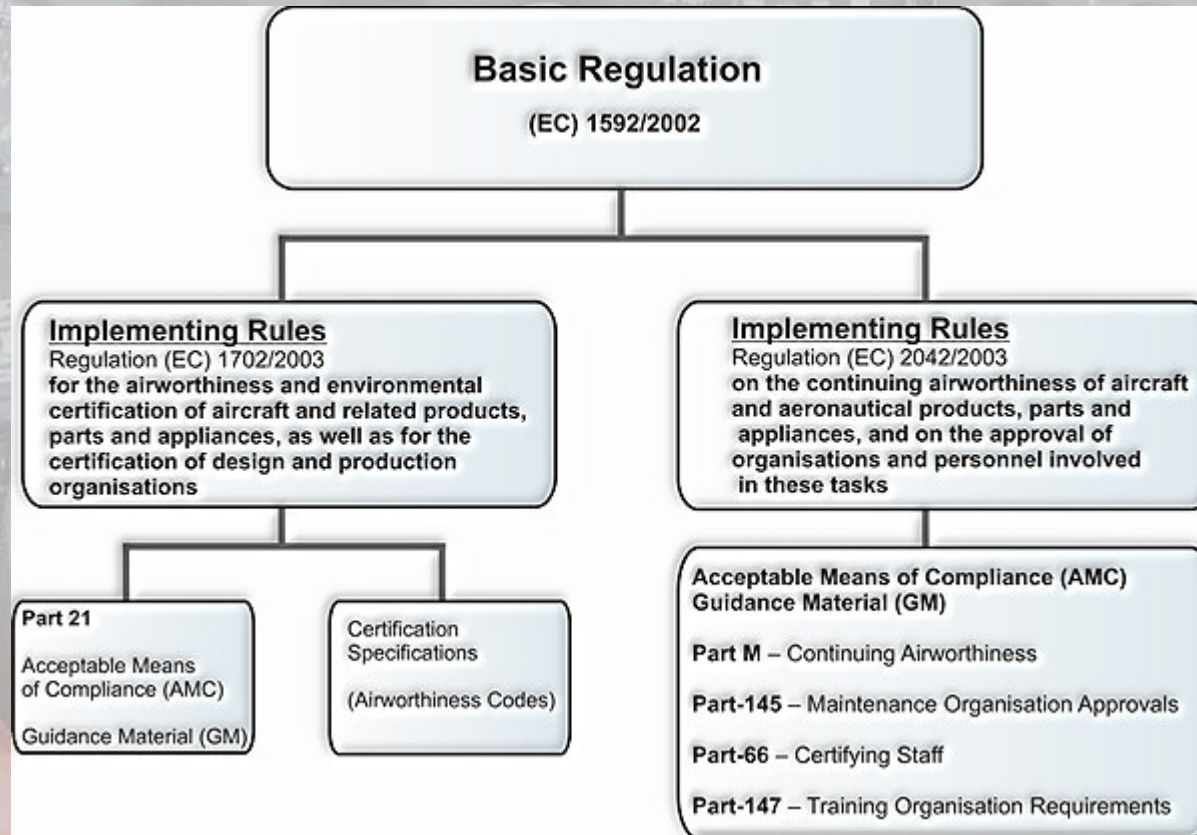
# **RULEMAKING PROCESS**

**EASA Comment Response Tool:**

***<http://hub.easa.europa.eu/crt/>***

**Register – Login – Comment**

# EASA: REGULATIONS



*Can be downloaded from:*  
[http://www.easa.eu.int/home/regul\\_en.html](http://www.easa.eu.int/home/regul_en.html)

# EASA: REGULATIONS

## **(EC) 1592 of 2002**

- **Basic Regulation, establishes EASA and common rules**
- **Annex I: Essential Requirements for Airworthiness**
- **Annex II: Excluded Aircraft**

**Amended by:**

**(EC) 334 of 2007**

**(EC) 1701 of 2003**

**(EC) 1643 of 2003**

# **EASA: REGULATIONS**

## **(EC) 1702 of 2003**

### **➤ Airworthiness and Environmental Certification**

#### **➤ Annex: Part 21**

#### **Amended by:**

**(EC) 375 of 2007**

**(EC) 335 of 2007**

**(EC) 706 of 2006**

**(EC) 381 of 2005**

# EASA: REGULATIONS

**(EC) 2042 of 2003**

- **Continuing Airworthiness**
  - **Annex I: Part M**
  - **Annex II: Part 145**
  - **Annex III: Part 66**
  - **Annex IV: Part 147**

**Amended by:**

**(EC) 376 of 2007**

**(EC) 707 of 2006**



COMMISSION REGULATION (EC) No 2042/2003  
of 20 November 2003

on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks

*Article 7*

**Entry into force**

1. This Regulation shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.
2. By way of derogation from paragraph 1 the provisions of Annex I, except for M.A.201(h)(2) and M.A.708(c) shall apply as from 28 September 2005.
3. By way of derogation from paragraph 1 and 2, **Member States may elect not to apply:**
  - (a) **the provisions of Annex I to aircraft not involved in commercial air transport, until 28 September 2008;**

II. Commission Regulation (EC) No 2042/2003 – Notification up to 05/02/2007 (ref)

Member States	Derogation possibility								
	Art. 7.3 (a)	Art. 7.3 (b)	Art. 7.3 (c) 1st	Art. 7.3 (c) 2nd	Art. 7.3 (c) 3rd	Art. 7.3 (c) 4th	Art. 7.3 (c) 5th	Art. 7.3 (d) 1st	Art. 7.3 (d)
Austria	YES	YES	YES	YES	YES	YES	YES	YES	YES
Belgium	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bulgaria	YES	NO	NO	NO	NO	NO	NO	YES	YES
Cyprus	YES	YES	YES	YES	YES	YES	YES	YES	YES
Czech Republic	YES	YES	YES	YES	YES	YES	YES	YES	YES
Denmark	YES	YES	YES	YES	YES	YES	YES	YES	YES
Estonia	NO	NO	YES	YES	YES	YES	YES	YES	YES
Finland	YES	YES*	YES	YES	YES	YES	YES	YES	YES
France	YES	YES	YES	YES	YES	YES	YES	YES	YES
Germany	YES	YES	YES	YES	YES	YES	YES	YES	YES
Greece	YES	YES	YES	YES	YES	YES	YES	YES	YES
Hungary	YES	YES	YES	YES	YES	YES	YES	YES	YES
Iceland	YES	YES	YES	YES	YES	YES	YES	YES	YES
Ireland	YES	YES	YES	YES	YES	YES	YES	YES	YES
Italy	YES	YES	YES	YES	YES	YES	YES	YES	YES
Latvia	YES	YES	YES	YES	YES	YES	YES	YES	YES
Lithuania	YES	YES	YES	YES	YES	YES	YES	YES	YES
Luxembourg	YES	YES	YES	YES	YES	YES	YES	YES	YES
Malta	YES	YES	YES	YES	NO	NO	NO	YES	YES
Netherlands	YES	YES	YES	YES	YES	YES	YES	YES	YES
Norway	YES	YES	YES	YES	YES	YES	YES	YES	YES
Poland	YES	YES	YES	YES	YES	YES	YES	YES	YES

# CONTINUING AIRWORTHINESS Vs MAINTENANCE

## Continuing Airworthiness

**“All of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness requirements in force and is in a condition for safe operation”**

*(EC) Regulation 2042 of 2003*

- **Scheduled maintenance**
- **Defect rectification, repairs**
- **Airworthiness Directives**
- **Modifications**

# CONTINUING AIRWORTHINESS Vs MAINTENANCE

## Maintenance

“Any one or combination of overhaul, repair, inspection, replacement, modification or defect rectification of an aircraft or component, with the exception of pre-flight inspection”

*(EC) Regulation 2042 of 2003*

- Hands-on work and inspections on the aircraft

# **CONTINUING AIRWORTHINESS Vs MAINTENANCE**

## **Part M (Continuing Airworthiness):**

- **Subpart B: Accountability**
- **Subpart C: Continuing Airworthiness**

## **Part M (Maintenance of small or non-commercial aircraft):**

- **Subpart B: Accountability**
- **Subpart D: Maintenance standards**
- **Subpart E: Components**
- **Subpart H: Certificate of Release to Service (CRS)**

# **PART M**

## **Subpart B: Accountability**

### **Owner responsibility:**

**The owner is responsible for the continuing airworthiness of his aircraft**

**and shall ensure that no flight takes place unless:**

- The aircraft is maintained in an airworthy condition and as per the approved maintenance program**
- Any operational and emergency equipment fitted is correctly installed and serviceable or clearly identified as unserviceable**
- The airworthiness certificate remains valid**

# **PART M**

## **Subpart B: Accountability**

### **Mechanic responsibility:**

**Any person or organisation performing maintenance shall be responsible for the tasks performed**

### **Owner and mechanic responsibility:**

- **Give access to DCA for inspections**
- **Occurrence reporting (see also AIC C03/2003)**
  - **Any condition that seriously hazards flight safety**
  - **Within 72hrs**
  - **To DCA and aircraft manufacturer**
  - **DCA contacts:**
  - **Fax:22304708**
  - **Tel: 22404127**

# PART M

## Subpart C: Continuing Airworthiness

### Continuing Airworthiness Tasks:

- **Pre-flight check**
  - **Pilot**
- **Defect – damage rectification**
  - **To an officially recognised standard**
- **Maintenance as per the maintenance programme:**
  - **Contains all maintenance (what? – when?)**
  - **Approved by DCA**
  - **Comply with**
    - **Manufacturer's instructions**
    - **DCA instructions**
    - **Owner's instructions**



# PART M

## Subpart C: Continuing Airworthiness

### Continuing Airworthiness Tasks:

- **Airworthiness Directives and other EASA and DCA requirements**
  - **Mandatory**
- **Modifications and Repairs**
  - **In accordance with EASA Part 21**
- **Record keeping**
  - **Maintenance to be entered in the records**
    - **ASAP – maximum 30 days after maintenance**
  - **What records should be kept**
  - **For how long**

# **PART M**

## **Subpart D: Maintenance Standards**

- **Maintenance data**
  - **Regulations, aircraft manuals, instructions**
  - **Applicable and current**
  - **Work cards with reference to data**
- **Performance of maintenance**
  - **By qualified personnel...**
  - **... following applicable and current instructions..**
  - **.. using tools and equipment specified in data**
  - **Bad weather or lengthy maintenance:**
    - **Proper facilities shall be used (hangar)**

# **PART M**

## **Subpart D: Maintenance Standards**

- **Aircraft defects**
  - **Only certifying mechanic can classify defects and decide on action to be taken**
  - **Defects affecting safety:**
    - **Must be rectified before next flight**
  - **Defects not affecting safety:**
    - **Must be rectified as soon as practicable**
    - **Must be entered in aircraft records**
    - **Pilot must be informed before flight**

# **PART M**

## **Subpart E: Components**

- **Certifying mechanic must check the aircraft part (condition and documentation) before fitment**
- **Components must only be fitted to aircraft if the certifying mechanic is satisfied that Part M standards are met**
- **Components:**
  - **Aircraft parts**
  - **Standard parts**
  - **Consumables**
  - **Raw material**

# **PART M**

## **Subpart E: Components**

- **Aircraft parts**
  - **Must be specified in maintenance data**
  - **Must comply with Airworthiness Directive standards**
  - **Must be released by an approved manufacturer or maintenance organisation**
  - **Must be accompanied by an EASA Form 1 or equivalent release document**

# **PART M**

## **Subpart E: Components**

- **Standard parts**
  - **Must be specified in maintenance data**
  - **Must have a Certificate of Conformity (to a recognised specification)**
- **Same for raw material – consumables**
- **Certain components are subject to special conditions:**
  - **Storage**
    - **Temperature**
    - **Humidity**
  - **Shelf life – service life limitations**
- **Manufacturer's instructions must be followed**

# **PART M**

## **Subpart E: Components**

- **Component maintenance**
  - **By Part 145 of Part M (Subpart F) approved organisations**
  - **By the certifying mechanic but only if this is allowed by the aircraft maintenance manual**
- **Control of unserviceable components**
  - **Must be identified as unserviceable**
  - **Sent to an approved organisation**
  - **Unsalvageable (non-repairable) must not be permitted to re-enter the component supply system**

# PART M

## Subpart H: Release to Service

- **Certificate of Release to Service (CRS):**
  - A statement testifying that maintenance has been carried out in accordance with EASA Part M standards and that the aircraft is now ready for release to service
  - Is issued before flight, at the completion of any maintenance
- **A CRS contains:**
  - Basic details of the maintenance
  - Date the maintenance was completed
  - Identity and signature of the certifying mechanic

*For the specific CRS wording refer to AMC M.A.801(d)*



# **PART M**

## **Subpart H: Release to Service**

### **AIRCRAFT MAINTENANCE: WHO CAN SIGN WHAT?**

- **Pilot/owner**
- **EASA Part 66 certifying mechanic**
- **Part M (Subpart F) and Part 145 approved maintenance organisations**

# **PART M**

## **Subpart H: Release to Service**

### **PILOT/OWNER AUTHORISATION:**

- **Privately owned aircraft with MTOW below 2730kgs**
- **Only for the limited maintenance tasks, as listed in Part M , Appendix VIII**
- **Pilot/owner should hold a valid pilot license for the specific aircraft type**
- **Pilot/owner must demonstrate competence to carry out such tasks**
- **These tasks must then be defined in the aircraft approved maintenance program**
- **A CRS must be issued and signed by the pilot/owner**

## Appendix VIII

### Limited Pilot Owner Maintenance

The following constitutes the limited pilot maintenance referred to in M.A.803 provided it does not involve complex maintenance tasks and is carried out in accordance with M.A.402:

1. Removal, installation of wheels.
2. Replacing elastic shock absorber cords on landing gear.
3. Servicing landing gear shock struts by adding oil, air, or both.
4. Servicing landing gear wheel bearings, such as cleaning and greasing.
5. Replacing defective safety wiring or cotter keys.
6. Lubrication not requiring disassembly other than removal of non-structural items such as cover plates, cowlings, and fairings.
7. Making simple fabric patches not requiring rib stitching or the removal of structural parts or control surfaces. In the case of balloons, the making of small fabric repairs to envelopes (as defined in, and in accordance with, the balloon manufacturers' instructions) not requiring load tape repair or replacement.
8. Replenishing hydraulic fluid in the hydraulic reservoir.
9. Refinishing decorative coating of fuselage, balloon baskets, wings, tail group surfaces (excluding balanced control

**A total of 33 tasks, applicable to various types of aircraft**

# **PART M**

## **Subpart H: Release to Service**

### **EASA Part 66 CERTIFYING MECHANIC:**

- **Can only certify the accomplishment of non-complex maintenance tasks**
- **Non-complex tasks are those not listed in Part M, Appendix VII**
  - **Mainly not the modification or repair of the aircraft structure**

### **PART M (SUBPART F) AND PART 145 APPROVED MAINTENANCE ORGANISATIONS:**

- **Certifying mechanics working under the approval of such organisations can certify ALL maintenance, including complex tasks**

## Appendix VII

### Complex Maintenance Tasks

The following constitutes the complex maintenance tasks referred to in M.A.801(b), 2

1. The modification, repair or replacement by riveting, bonding, laminating, or welding of any of the following airframe parts:
  - (a) a box beam;
  - (b) a wing stringer or chord member;
  - (c) a spar;
  - (d) a spar flange;
  - (e) a member of a truss-type beam;
  - (f) the web of a beam;
  - (g) a keel or chine member of a flying boat hull or a float;
  - (h) a corrugated sheet compression member in a wing or tail surface;
    - (i) a wing main rib;
    - (j) a wing or tail surface brace strut;
  - (k) an engine mount;
  - (l) a fuselage longeron or frame;
  - (m) a member of a side truss, horizontal truss or bulkhead;
  - (n) a seat support brace or bracket;
  - (o) a seat rail replacement;
  - (p) a landing gear strut or brace strut;
  - (q) an axle;
  - (r) a wheel; and
  - (s) a ski or ski pedestal, excluding the replacement of a low-friction coating.
2. The modification or repair of any of the following parts:
  - (a) aircraft skin, or the skin of an aircraft float, if the work requires the use of a support, jig or fixture;
  - (b) aircraft skin that is subject to pressurization loads, if the damage to the skin measures more than 15 cm (6 inches) in any direction;
  - (c) a load-bearing part of a control system, including a control column, pedal, shaft, quadrant, bell crank, torque tube, control horn and forged or cast bracket, but excluding
    - (i) the swaging of a repair splice or cable fitting, and
    - (ii) the replacement of a push-pull tube end fitting that is attached by riveting; and
  - (d) any other structure, not listed in (1), that a manufacturer has identified as primary structure in its maintenance manual, structural repair manual or instructions for continuing airworthiness.

# AIRWORTHINESS CERTIFICATION

- **Airworthiness certification becomes completely separated from the operation of the aircraft**
  - **The Certificate of Airworthiness (C of A) category does not reflect it's operation**
    - **No more 'Private', 'Public Transport', 'Aerial Work' C of A categories since 28 September 2004**
- **Certificates of Airworthiness are issued to aircraft that conform to a Type Certificate**
  - **C of A category is that stated on the Type Certificate**
    - **'Normal', 'Utility', 'Aerobatic', 'Small Rotorcraft' etc**
- **Certificates of Airworthiness become non-expiring**
- **C of A will remain valid as long as the Airworthiness Review Certificate is valid**

# AIRWORTHINESS CERTIFICATION

## AIRWORTHINESS REVIEW CERTIFICATE

- The DCA will carry out an airworthiness review:
  - Survey of the aircraft
  - Review of the aircraft records (documents)
- The DCA will issue an Airworthiness Review Certificate (ARC) upon satisfactory completion of the Airworthiness Review
- The ARC validates the Certificate of Airworthiness
- The ARC has a validity of one year
- The aircraft 'must not fly' if the ARC becomes invalid
  - Airworthiness Reviews start from 28 September 2007
  - All aircraft must have an ARC by 28 September 2008

# PART M AND THE RESPONSIBILITIES OF THE DCA

## For the purposes of Part M:

- The DCA is the Authority designated by the Republic of Cyprus “*with allocated responsibilities for the:*
  - *issuance, continuation, change,*
  - *suspension or revocation of certificates*
  - *and for the oversight of continuing airworthiness”.*
- The DCA is responsible for conducting inspections and investigations in order to verify that the requirements of Part M are complied with
- The DCA shall suspend, revoke or limit any certificate or approval it has issued in case of a potential safety threat or when the provisions of Part M are not complied with



# CURRENT AND FUTURE DEVELOPMENTS

- After Part M evaluation and industry reaction
- Two working groups were formed:
  - M.017: Revised Part-M requirements for aircraft not used in Commercial Air Transport
  - M.005: Pilot owner maintenance
- Their work led to NPA 2007-08
  - Introduces new paragraphs '*...for aircraft not involved in commercial air transport...*'
  - Most important is the change to Appendix VIII "Limited Pilot Owner Maintenance"
- NPA 2007-08 was published in June 2007 and the deadline for comments is 13 October 2007
- Regulation amending Part M expected by June 2008

# CURRENT AND FUTURE DEVELOPMENTS

## Ongoing work:

- A sub-group from M.017 is examining the possibility to create a new aircraft maintenance license specific for general aviation
- Working groups comprising MDM.032 are looking into the Regulation of light, non-commercial aircraft in the fields of Air Operations and Pilot Licensing (in addition to continuing airworthiness)
- NPA have not been issued yet for the above tasks

## Activity status on EASA website

- Link: <http://www.easa.eu.int/home/index.html>

# CONCLUSIONS

- **By law:**
  - **The aircraft owner is responsible for the Continuing Airworthiness of his aircraft**
  - **The person performing maintenance is responsible for the tasks performed**
  - **The DCA is responsible for monitoring and enforcing Part M requirements**
- **This is the first time in Cyprus that non-commercial air transport will be regulated to such detail**
- **A great deal of effort is required by all for a smooth transition to Part M**
  - **Entry into force: 28<sup>th</sup> of September 2008**

# **INTRODUCTION OF PART M REQUIREMENTS TO NON-COMMERCIAL AIR TRANSPORT**



**THANKS FOR YOUR ATTENTION**



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5 SEPTEMBER 2007

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