

**Regulatory Impact Assessment of Annex 1 (part-M) to Regulation (EC) No  
2042/2003 2004/S 122-102598**

Air EuroSafe Final Report



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## **FINAL REPORT:**

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## **Objective:**

This document is the final report and describes the work carried out under the Air Eurosafe contract with EASA. It aims to satisfy the requirements of Technical Proposal No 2042/2003 2004/S 122-102598. The report is structured to give EASA the information needed to comply with Commission Regulation (EC) No 2042/2003 article 7.

## **Scope:**

The scope of this report covers an evaluation of the implication of the provisions of Part M Subparts I, H, F, G and E to enable EASA to submit an opinion to the commission. It describes the methodology used to assess the comments made by both authorities and industry from a representative sample of Member States. It also includes recommended amendments to Part M and a summary of the safety, economic, social and any other effect implementing Part M may have on civil aviation other than commercial air transport.

## **Introduction:**

The Regulatory Impact Assessment contract was awarded to Air EuroSafe on 21 September 2004 and an initial meeting to agree the scope, structure and contents of the work required took place in Cologne on 22 October 2004 between EASA and the Air EuroSafe team. A second meeting to agree the contents of the final report was held in Cologne on 5 January 2005.

Specifications attached to the invitation to tender EASA/2004/OP/01, require a final report consisting of a:

- Presentation of both the positive and negative impacts of implementing Part M.
- Presentation of the impact for competent authorities.
- Presentation of the impact for owners in terms of the continuous airworthiness of their aircraft including any additional constraints and costs.
- Presentation of the impact for organisations and persons involved in the continuing airworthiness of aircraft.
- An assessment of the variation to the requirements for transferring aircraft within the EU and importing /exporting aircraft outside the EU.
- A general comparison of FAR 43 and Part M together with an assessment of the differences.

All of the comments made have been assessed and categorised for impact considering the safety, economic, social, and other aspects in the aviation field.

The above presentations, assessments and recommendations are contained in a consolidated report as appendix I and consists as 5 separate subparts together with a consolidated list of recommendations.

A general summary of the safety, economic, social and other impact of Part M can be found in appendix II, III, IV and V.

Finally appendix VI contains a general comparison of FAR 43 and Part M.



## Methodology used

An interim report was produced and sent to EASA on the 16 November with two further monthly progress reports sent on 20 December 2004 and 21 January 2005.

Interim report IR 001 gave details of the methodology used to complete phase 1 (collection of national regulations and selection of countries retained for the RIA study), phase 2 (identify the elements impacted) and phase 3 (evaluation of differences).

This final report completes phase 4 of technical proposal No 2042/2003 2004/S 122-102598 and is in addition to Interim Report reference IR 001 dated 16 November 2004.

This final report will not repeat the methodology, which has been used for the selection of the 6 Member States of the EU retained for the study.

It will develop the methodology used for the assessment of the comments raised both by the authority and industry of each Member State selected in phase 1.

All 25 Member State authorities were sent an initial questionnaire to enable Air EuroSafe (AES) to collect general data from EU members. Answers from 18 out of 25 Member States were received and made possible the selection of the 6 most representative Member States; France, Germany, Italy, Sweden, Poland and the United Kingdom. (This process is described in the interim report. Answers from Belgium to the initial questionnaire were received after phase 1 was completed).

The six selected Member States were then sent a second more detailed questionnaire for use in a discussion forum together with industry representatives from organisations including air club associations, aerial work associations, glider and balloon associations, pilot and owner associations and union representatives within their State.

Each of the selected Member States were then asked to arrange a meeting (forum) which was attended by two of the AES team (technical and economic). This was to gather all of their comments together with supporting data to enable an assessment of the impact Part M will have on each section of the aviation industry.

The meetings/forums took place through December 2004 and January 2005 and produced approximately 400 comments, each comment was analysed and assessed for impact. Details of the circumstances of how each of the first five forums took place can be found as appendixes to the monthly reports.

The latest meeting, held in Poland on 25th of January and so not summarised in the latest monthly report, joined together Airworthiness Responsibilities from the Polish Authority and representatives from industry. The meeting allowed the Air Eurosafe team to assess the impact of the Part M regulation and its introduction into Poland and comments from this meeting are collected in annex I to this report.

Assessment meetings attended by all four members of the AES team where held on 2, 3 and 4 February in Marseilles and 9, 10 and 11 February in the UK.

The assessment meetings enabled the AES team to consider each comment against current national regulations, compliance with ICAO and categorise the comments as either safety, economic, social or other.



The assessment made by the AES team aimed to:

- put aside any comment which seemed not to be in compliance with the purpose of the Part M,
- evaluate the content of the remarks raised by the authorities and by the industry,
- retain the comments considered positive for the revision of the regulation,
- determine the impact on the authority and industry in terms of safety, economic, social and others,
- when appropriate, make a recommendation for a modification of the regulation which takes consideration of the impacts determined and which seemed the most appropriate for a reasonable change in the text.

Consistency with the rest of the regulation has been considered.

As defined in the scope above, all assessments of the comments made were limited to the impact on aviation other than commercial air transport.



## **APPENDIX I: CONSOLIDATED REPORT**

### **(Comments, Assessment and Recommendations)**

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## APPENDIX II: SAFETY SUMMARY

### GENERAL

In general the main safety concern was the lack of explanatory material either as AMC or guidance material. This was evident by the many interpretations given by both the authorities and industry, which led to a lack of understanding of the rule. Many of our recommendations are to add AMC and guidance material.

### Subpart E Components.:

Concerns have been expressed from the authorities and the industry on:

- Migration of parts, inability to obtain parts for old aircraft, standard parts, parts no longer supported by the OEM and mutilation of parts.

Most of these concerns have been answered by the fact that the control of these parts is subject to Part 21 more than the Part M.

Most Subpart E concerns regarding safety are of a minor impact.

Some of them have led to a proposal to modify Part M as an amendment to AMC M.A.501(c), requiring a revision to clarify the term standard parts. Also an amendment to AMC M.A.502, which would benefit from additional material and identify an acceptable source of used components for older aircraft, balloons and gliders.

The term “components” could be more clearly defined within (EC) N° 2042/2003.

Finally a recommendation to amend M.A.504 (b) to read “Unserviceable components to be identified and stored in a secure location segregated from serviceable items”.

### Subpart F - Maintenance organisation:

Some concerns have been expressed from the authorities about the use and acceptance of an EASA Form 1.

A recommendation has been made regarding the completion of the EASA Form1 by the Subpart F organisations as an amendment to Appendix II of the rule.

There is a concern regarding standard parts installed on aircraft, which do not require an EASA form1. Therefore a recommendation has been proposed for AMC M.A.501(c) to include portable equipment as standard parts.

Remarks on safety were also raised on the need for an organisational review of a subpart F organisation. This was assessed as having little impact and therefore no proposal to modify the rule has been made.

This subpart has been subject of minimal concerns in terms of safety.

### Subpart G – CAMO

Comments were made by the French authority regarding difficulties in managing the continuing airworthiness of aircraft registered in the EU but operated by non-EU operators. This concern appeared to be restricted to France due to the fact that such aircraft are considered as general aviation even though they are operated on an AOC. This concern does not affect other Member States.



Many concerns were expressed by industry and authorities, which are the result of a misunderstanding Part 66, e.g. regarding the need to hold a Part 66 license to carry out the airworthiness review of gliders.

Some fears were expressed by the ENAC regarding their fear that some subpart G organisation may carry out ENAC's current duties of validating a C of A in an inappropriate way, as this activity has always been carried out by ENAC and this new activity is now being handed over to industry.

ENAC required a modification to the regulation in order to reinforce their power in the survey and oversight of this new approval. This fear is probably shared by other Member States, however they did not express this view during this RIA.

AES members have estimated that there will be a transition period during which there will be a risk, which would be reduced when the authority gain experience in the oversight of these organisations.

Positive safety impacts were identified during this RIA by the fact that in some Member States the regulation sets more stringent constraints on industry e.g. the approval of all maintenance programmes for all aircraft that was not systematic in some Member States.

Another aspect of the safety impact is the requirement expressed by some Member States to set a European equivalent of AC 43-13, in order to ease the design of standard repairs. This is agreed and recommended by AES.

The requirement in M.A.709 for owners to hold the data required by M.A.401 was raised as a concern, especially on aircraft not supported by a TC holder and on some vintage aircraft. This concern will last if the AMC is not modified as proposed accordingly.

Some concerns were raised by Poland about former Russian designed aircraft, which create difficulty due to the fact that the type design is not known and accepted by EASA. This is a Part 21 issue but has an impact on the continued validity of the C of A for these aircraft.

The remark that possibility few subpart G organisation may cover the validity of the C of A for vintage aircraft has been raised. This risk will exist and there is no insurance that it would be reduced or fixed in the future.

Some economic concerns had an impact on safety e.g. some organisations that have privileges for issuing or recommending an ARC in M.A. 711 (b) are required to have a formal quality system. This led to the claim that for aircraft below 2730 Kg MTOM not operated for commercial air transport, this quality system should be replaced by an organisational review. The AES team evaluated this proposal as acceptable.

The risk of poor communications between an owner/operator and a subpart G organisation has been assessed as real e.g. the G organisation not being aware of the latest flying hour status of the aircraft, which could affect AD compliance.

An amendment to appendix 1 of the rule has been proposed to reduce this risk.



In conclusion to the subpart G evaluation, an important number of impacts and risks have been identified during this RIA, which have all been assessed and recommendations to clarify the text made.

### **Subpart H – Certificate of Release to Service**

A remark has been raised that pilots are permitted to certify for a significant number of maintenance tasks without establishing that they are competent to do so. A recommendation is made on how to ensure that a pilot owner has received the appropriate training.

In addition a recommendation has made to carry out a re-evaluation of appendix VIII to:

- Separate safety items from the list (e.g. items 16 and 22)
- Separately identify glider and balloon maintenance activities from other aircraft
- Remove operational activities (e.g. item 32) from appendix VIII,

This should be an appropriate answer to the remark from industry and to remove the risk on safety maintenance tasks being in the hand of pilot owners.

Industry has commented that M.A 607 is related to the case of an unserviceable aircraft at locations outside of Member States and is better placed in subpart H. It is also seen as too restrictive for light aviation. An amendment to the Subpart H text has been recommended, which simplifies the text and keeps the level of safety.

Apart from these items reported in the RIA, the subpart H is not considered as exposed to any other safety issues.

### **Subpart I – AIRWORTHINESS REVIEW CERTIFICATE**

Some authorities regarding the ability of a new Subpart G organisation to carry out airworthiness reviews have expressed a concern that there may be a safety risk during the transition. This concern varies between Member States depending on their current practises. The Air Eurosafe team assessed the concern as being a risk during the initial transition period.

No major concern on safety was raised on this subpart.



## APPENDIX III: ECONOMIC SUMMARY

### General comment

Broadly speaking, the impact of the introduction of Part M on civil aviation other than commercial air transport will be to transfer responsibility for certain aspects of the control of airworthiness from the national regulator (the civil aviation authority of each member state of the European Union) to other bodies. Such a transfer does not necessarily give rise to any increase in the economic cost of carrying out the activities concerned. However, there are some sectors of the industry where costs may be increased as result of the creation of additional responsibilities or an administrative burden beyond what is currently required.

### Need for clarification

The extent of this burden has been somewhat misunderstood by the industry at large. Examples of such misunderstandings include:

- Regulation M.A. 609, which refers to AMC 401(c), risks the incorrect interpretation that the regulatory authorities may impose a requirement for tasks cards for all maintenance. This rule requires clarification through AMC M.A. 401.
- There is some misunderstanding regarding what is required in the preparation of an organisational review.
- In some cases, Regulation M.A.704 has been misunderstood. The owner is not required to hold his own approved data unless he is managing his own aircraft airworthiness.
- There are many misunderstandings regarding the requirements of Subpart G. Although the impact of such misunderstandings has not been assessed, it is recommended that guidance material be produced.

In other cases such misunderstandings can be largely mitigated within the framework of the regulations, as they currently exist. For instance, Part M, as it now stands would permit representative organisations, such as the national balloon or glider associations, to establish themselves as subpart G organisations. It would also be possible under Part M for one-man organisations to be registered as both a Subpart F and a subpart G organisation. In some cases there needs to be a minor change to the wording of the regulation, to the Acceptable Means of Compliance or to an Appendix to the regulation (e.g. Appendix VIII in the case of pilot owner operations) for this to be made clear, and such recommendations are made in the consolidated report against the relevant paragraph of the regulation.

### Assessment

A separate assessment has been made of the economic impact of individual paragraphs of Part M on aviation other than commercial air transport. This is presented as part of the consolidated report, taking care not to include the effect of securing compliance with ICAO requirements where this is not currently the case. (Changes in operating and other practices to make them ICAO compliant cannot be attributed to the introduction of Part M).



Any recommendations for changes to the regulation are outlined at the end of each main section of the report. When assessing the impact of a particular paragraph of the regulations, the assumption has been throughout made that minor changes will be made to clarify the meaning of particular paragraphs of the regulation where these have been misunderstood (see above).

## **Limitations on the assessment**

Since the introduction of Part M has only just begun to be fully considered and planned for by those likely to be affected, this assessment can only provide an indication of the size of its impact. In many cases, those likely to be affected have not yet considered the ways in which they will respond. Some who could potentially benefit from the business opportunities offered by a subpart G organisation have not yet decided whether to do so or not. In such circumstances, the assessment can only give a broad indication of the likely impact.

Both as part of the questionnaire survey, and during the Forum sessions conducted with the regulator and representatives of industry in the six countries selected to represent the non commercial aviation sector within the European Union, it was stressed that for issues to be fully considered by the Air Eurosafe team, representations regarding any need for change to the regulation would have to be supported by factual evidence of the likely impact of the regulation as it now stands. However, in general, very little evidence of this nature was provided.

Nevertheless, some broad conclusions are possible, particularly regarding some sectors where there may be some difficulty in satisfying the requirements of the regulations as they are currently formulated. Those mainly affected are owners and operators of balloons, gliders and other individual pilot owners. Here, factual information was provided by several contributors, supporting the conclusion that these are the main sectors where more substantive amendments to Part M may be required in order to accommodate the specific characteristics of these operations.

### **Summary of main impacts**

#### **Impact on the small aviation sector (gliders, balloons, pilot owners in general)**

The likely impact of the regulation on pilot owners has been somewhat misunderstood, and the consequences of implementation overestimated by the industry. Nevertheless, recommendations have been made in this report to remove misunderstandings and clarify the regulation where necessary, primarily through changes to the Acceptable Means of Compliance.

#### **Sub Part: F MAINTENANCE ORGANISATION**

Paragraph Reference: M.A.601 - Scope, M.A.603 - Extent of Approval & M.A.605 - Facilities

Subpart F (Regulations M.A 601, M.A.603 and M.A.605 in particular) is seen by the industry as having a potentially severe economic impact on one man operations, particularly in the gliding and ballooning sectors. It is feared that what are seen as



the limitations of Part M Subpart F and Part 66 will lead to organisations having to close down their operations. Although one-man organisations can still exist under the provisions of Subpart F, a recommendation for a change to the regulation is made to address the particular concerns of these sectors, including a provision that 'Gliders, balloons and airships may be inspected at a location other than a hangar'. An indication of the impact of this regulation can be gauged from the numbers of aircraft affected. According to Air Eurosafe estimates there are around 22,000 balloons, airships and gliders (excluding self-launching gliders) across the European Union. There are an estimated 9,000 in Germany, 3,600 in the UK (gliders are non-ICAO compliant), 2,800 in France, 1,000 in Poland, 800 in Sweden and 500 in Italy.

#### **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

##### **Paragraph Reference: M.A.707 - Airworthiness Review Staff**

The impact of M.A. 707 on owners/operators of balloons and gliders seems to be excessive, giving rise to an increase in staff costs to the industry. It is believed that aviation activities such as balloons and gliders do not require responsible persons to hold the level of experience and qualifications specified in this regulation. A recommendation is made for it to be changed.

#### **Sub Part: H CERTIFICATES OF RELEASE TO SERVICE**

##### **Paragraph Reference: M.A.803 - Pilot-Owner Authorisation**

Appendix VIII does not take full account of the fact that pilot owners need to carry out the 50/100 hours check. This will lead to a significant economic impact on this sector represented by the cost of sending an aircraft to an organisation as opposed to the pilot doing the checks himself. Hourly rates for this work vary widely across the EU, but will probably average in excess of 30 Euros per hour.

Europe Air Sports estimates the additional annual costs of maintenance by a commercial organisation compared with maintenance by club members as ranging from around 900 to 1,000 Euros for aircraft with an annual utilisation of 100 hours to around 3,600 – 4,000 Euros for those with an annual utilisation of 400 hours. These estimates relate to both small aircraft and touring motor gliders under 2,250 kgs. The numbers of such aircraft across the European Union are estimated to total around 44,000, of which some 10,700 are in Germany, 8,800 in the UK, 8,000 in France, 1,800 in Sweden, 1,600 in Italy and 1,000 in Poland. It is recommended that the basic 50 hour task for privately operated aircraft of simple design with a MTOM of <2730kg should be included in the Appendix. Further AMC material should be developed to give a method of compliance (e.g. pilot/owner competence) with M.A.803 for the tasks listed in this Appendix.

#### **Sub Part: I AIRWORTHINESS REVIEW CERTIFICATES**

##### **Paragraph Reference: M.A.901 - Aircraft Airworthiness Review**

The requirement under M.A 901 to renew the C of A annually will have some impact on aircraft owners in the small aviation sector. It will bring about an increase in fees since, typically in the past, they have not needed to renew as frequently. This will depend on each authority dividing the 3 year fee and charging an annual fee which should not change the total. However the main increase will be from having to take an aircraft to a Subpart G organisation annually.



## **Impact of other personnel issues**

### **Sub Part: F MAINTENANCE ORGANISATION**

#### **Paragraph Reference: M.A.606 - Personnel Requirements**

The key issue under M.A. 606 relates to the ability of a subpart F organisation to enter into contract arrangements on a permanent basis, with a potential economic impact. Although this is permissible under the regulation, clarification under AMC M.A. 606 (d) is recommended.

### **Sub Part: F MAINTENANCE ORGANISATION**

#### **Paragraph Reference: M.A.607 - Certifying Staff**

M.A. 607 (b) is seen as having an economic impact through the imposition of unduly onerous restrictions relating to the need for certifying staff in the situation where an aircraft is grounded at a location other than its main base. Although in many cases affecting the gliding sector, where national rules for aircraft maintenance licenses may apply, it is recommended that this rule be replaced by a new rule under M.A. 801 (c).

### **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

#### **Paragraph Reference: M.A.706 - Personnel Requirements**

M.A 706 would have a minimal economic impact in that most of the activities are being carried out today by existing personnel. However some additional personnel may be need to be employed.

## **Other administrative impacts**

### **Sub Part: F MAINTENANCE ORGANISATION**

#### **Paragraph Reference: M.A.604 - Maintenance Organisation Manual**

This regulation will increase costs to industry attributable to the costs of producing a maintenance organisation manual. However, this initial increase in cost to the industry may be offset in the long run by a more efficient organisation and increase in the scope of work, although such increases are likely to be passed on to the aircraft owner. The time taken to produce such a manual has been estimated at around 70 – 100 hours. Hourly rates for this work are likely to vary widely across the EU, but on the assumption of an average rate of 15 – 20 Euros per hour this would produce an estimated cost of between 1,000 Euros and 2,000 Euros per manual. This estimate relates to powered aircraft. For gliders the set up costs are estimated at around 100 Euros per manual.

### **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

#### **Paragraph Reference: M.A.703 - Extent of Approval**

There is an increased cost and administrative burden involved in obtaining a Subpart G approval, together with privileges of the organisation under M.A. 711 (b). Where the MA 703 extent of approval does not include aircraft used for commercial air transport or aircraft above 2730kg MTOW, it is recommended that the required quality system can be replaced by the performance of organisational reviews on a regular basis.



### **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

#### **Paragraph Reference: M.A.708 - Continuing Airworthiness Management**

This regulation will have an economic impact on the maintenance and repair of simple design aircraft. There is a need for the development of a European generic maintenance programme or acceptance of manufacturers recommended maintenance schedule for such aircraft. We are unable to estimate the additional cost to each authority of approving a maintenance programme for every aircraft.

### **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

#### **Paragraph Reference: M.A.711 – Privileges of the Organisation**

There will be cost and administrative burden involved in securing a Subpart G approval, together with privileges of the organisation under M.A. 711 (b). (See recommendation under M.A.703)

### **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

#### **Paragraph Reference: M.A.712 - Quality System**

In respect of aircraft below 2730 kgs there would be a significant economic impact on organisations that have privileges for ARC in M.A. 711 (b) if they were required to have a formal quality system. (See recommendation under M.A.703)

### **Transfer of aircraft**

### **Sub Part: I AIRWORTHINESS REVIEW CERTIFICATES**

**Paragraph Reference: M.A.903 - Transfer of Aircraft Within the EU &**

**Paragraph Reference: M.A.904 – Airworthiness Review of Aircraft Imported into the EU**

The economic impact of these regulations will be broadly positive.

### **Impact on industry of regulator and other charges**

### **Sub Part: F MAINTENANCE ORGANISATION**

#### **Paragraph Reference: M.A.602 - Application**

Regulation M.A 602 affects charges made by the regulators. There will be an additional charge for an F + G approval, since additional man hours will be required to approve the organisation compared with the charges made under the current system.

### **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

#### **Paragraph Reference: M.A.702 - Application**

The provisions of this regulation will give rise to an additional charge on aircraft owners. Although current practice is to include this work as part of a maintenance service carried out by a maintenance organisation, with the cost covered within the charge for carrying out maintenance, the two charges may now be separate and transparent but with overall costs likely to rise estimated to be in the region of 20% based on industry comments.





## **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

### **Paragraph Reference: M.A.710 - Airworthiness Review**

The impact of the cost of an airworthiness review on aircraft owners cannot be assessed at present, since the likely charges to be levied by both regulator and industry are unknown. This impact could be reduced if the current associations representing gliders and balloons were to be accepted as Subpart G organisations.

## **Impact of Part M on the regulators**

The economic impact of Part M on the regulator is brought about by a switch from payment of charges to the regulator to payment of charges to another organisation. Because decisions have in many cases still to be reached regarding the organisational and charging regime to be adopted by the regulators to match the Part M requirement, it has not been possible to quantify in detail the impact of this new regime on them. However, there seems to be no reason to believe that the impact will be other than broadly neutral. If levels of activity in the authorities are reduced and resources are also reduced in line with the new requirements, the economic and financial impact of these changes should be minimal, although there are likely to be transitional problems of adjustment. There may also be a social impact if, for instance, the current levels of employment cannot be sustained, and staff redundancies have to be implemented. In some Member States (Italy) the authority costs are subsidised. If this does not continue then costs to owners and operators may rise substantially.

## **Sub Part: F MAINTENANCE ORGANISATION**

### **Paragraph Reference: M.A.618 - Continued Validity of Approval**

The regulation relating to continued validity of approval (M.A. 618) will have an economic impact in terms of the need for some authorities to change their procedures, but no rule change is necessary.

## **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

### **Paragraph Reference: M.B.701 – Application**

This regulation places an obligation on regulators across the EU to administer this approval. This will have a negative resource impact on them, which will be offset by industry taking over the ARC activity.

## **Sub Part: G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

### **Paragraph Reference: M.A.715 - Continued Validity of Approval**

Similarly, this regulation will have an initial economic impact in terms of the need for some authorities to change their procedures, but no rule change is necessary.

## **Sub Part: H CERTIFICATES OF RELEASE TO SERVICE**

### **Paragraph Reference: M.A.801 - Aircraft Certificate of Release to Service**

There is a concern that the level of qualification requested for a Part 66 License is too high for the small aviation sector, and that Part 147 organisations may have little interest in the development of type training qualification for small aircraft, so that the authority will need to create a system of examination. If this were the case, there would be cost and resource implications. However, this is considered to be a Part 66, not a Part M issue.



### **Sub Part: I AIRWORTHINESS REVIEW CERTIFICATE**

#### **Paragraph Reference: M.B.901 – Assessment of Recommendations**

This regulation will have a cost impact on regulators that is likely to be offset by a reduction in activity caused by the delegation of renewal of the ARC to industry.

### **Issues relating to former Eastern Bloc countries**

#### **Sub Part: E COMPONENTS**

##### **Paragraph Reference: M.A.501 - Installation**

Regulation M.A.501 a) will have an economic impact on the industry in former Soviet bloc countries. For instance, in Poland, for components that were maintained under the previous Soviet system and considered airworthy, but which have been stored for months/years and needing a Form 1, it will be very expensive to issue form 1 before installation. This is considered an assimilation problem applicable to all accession states and will need resolving by EASA outside of this RIA.

#### **Sub Part: E COMPONENTS**

##### **Paragraph Reference: M.A.502 - Component Maintenance**

This regulation could lead to aircraft being grounded. For instance, Poland has only 16 JAR 145 organisations, only 3 of which can maintain components. This is considered an assimilation problem applicable to all accession states and will need resolving by EASA outside of this RIA.



## **APPENDIX IV: SOCIAL SUMMARY**

### **GENERAL**

Major social impacts of the introduction of Part M Regulation concerns new requirements for national maintenance organisations, including personnel requirements (specially in Italy) and the loss of privileges for some individuals, such as licensed engineers performing maintenance in UK, or recommending airworthiness certificate renewal in Sweden.

#### **Subpart E - Components:**

Today, in some countries, national regulations allow licensed individuals to perform maintenance on components (BCAR "D" license in UK may overhaul engines), which will not be possible under Part M. This will create a social impact, as these individuals will have to set-up an organisation approved under Subpart F. There are not too many people identified as affected, but they will experience difficulties since they are not used to working in a formal organisational environment overseen by the authority.

#### **Subpart F - Maintenance organisation:**

Since national regulations addressing maintenance organisations have different requirements than those required in Subpart F, setting up these new organisations will create new problems. UK CAA believes that some small maintenance organisations could consolidate into larger groups or even not apply for the new approval at all. One-man organisation feasibility is questioned as well by French SNPACM and pan-European EGU. Transition to compliance with certifying staff requirements is considered as a major social problem in Italy, since certifying staff will have to upgrade to Part 66 category B license to perform the same privileges they have today. For EAS, there is a fear that there could be a lack of Part 66 certifying staff for certain types of aircraft maintained due to the stricter certifying staff requirements.

It is felt in some countries that the more difficult certifying staff Part 66 compliance requirements are a major concern.

#### **Subpart G – Continuing Airworthiness Management Organisation:**

Authorities see the introduction of Continuing Airworthiness Management Organisation as an extra-workload increase during a transition period (UK CAA, ENAC). An extra-workload for the authority could result from a lack of Subpart G organisations applying for specific types of aircraft approvals (French DGAC, UK CAA). Also the task of approving maintenance programmes for each aircraft is seen as additional workload for authorities. ENAC see advantages for those organisations applying for both F and G approvals.

SCAA current system for recommending renewal of airworthiness certificates is less stringent and today allows licensed engineers to made declarations for the renewal of the Certificate of Airworthiness.

SCAA current system for recommending renewal of airworthiness certificates is less stringent and today allows licensed engineers to made declarations for the renewal of the Certificate of Airworthiness.



In order to reduce the impact of Part M requirements for small Subpart G organisations, Air Eurosafe has made a recommendation in paragraph M.A.712 regarding the need for a full quality system.

Many European organisation representatives fear that there could be a lack of personnel with the necessary license, experience and proper training required to become airworthiness review staff, especially for gliders and balloons and in remote areas. Air Eurosafe has made a recommendation to relax requirements in this case. DGAC and Eurosafe has made a recommendation to relax requirements in this case. DGAC and CAO question how they will get the proper experienced airworthiness review staff in organisations since currently the authorities perform the airworthiness reviews.

The word “registered” in paragraph M.A.711 (c) precludes people established under UK legislations as “sole-traders” to become Subpart G approved. Air Eurosafe proposes the word to be changed from “registered” to “located”.

The requirement of a quality system for Subpart G may imply additional needs in terms of staff for these organisations and may be considered too demanding for gliders and balloons (FFA, UK CAA). Air Eurosafe proposes relaxing the requirements for the acceptance of organisational reviews instead of a quality system or admitting external quality audits for small organisations.

#### **Subpart H – CRS:**

DGAC and LBA fear the impact of the new requirements in M.A.801 (b) 2 (Part 66 compliance, experience required) for licensed engineers working as individuals compared with today’s national requirements. ENAC has some concern about people working as individuals since this is not the case according to current Italian regulations.

#### **Subpart I – ARC:**

DGAC feels that Subpart G organisations with M.A.711 (b) additional privilege may cripple Subpart G organisations without that privilege. As a consequence, for some specific aircraft, which may be considered as non-profitable for these organisations, there may not be enough Subpart G organisations and this lack of competition may create additional expenses for owners. Air EuroSafe have recommended relaxing the requirement to become Subpart G with M.A.711 (b) additional privilege, without the need to directly employ an independent quality auditor, and allowing one-man organisations to recommend the issuance of ARC, as it is today in Sweden.

EU stakeholders are in favour of the introduction of M.A.903 concerning the transfer of aircraft between EU countries.



## **APPENDIX V: SUMMARY OF OTHER ASPECTS IN THE AVIATION FIELD**

### **General**

The other aspects in the aviation field mainly cover the editorial clarity of Part M rule and its supporting acceptable means of compliance material.

In general the main concern was the lack of explanatory material either as AMC or guidance material. This was evident by the many interpretations given by both the six authorities and industry, which led to a lack of understanding of the rule. Many of our recommendations are to add AMC and guidance material.

### **Subpart E Components:**

There were many comments received from industry regarding the source of components for aircraft that are either not supported by a type certificate holder or parts are difficult to obtain. This is a particular problem for the accession states operating older aircraft and aircraft built in the Soviet Union.

The problem was seen as more acute for gliders and balloons that use many portable components from a commercial source.

The above relates to the need to comply with M.A.501 (a), requiring an EASA form 1.

Most of the concerns can be resolved without a rule change but this Subpart needs more clarification in the AMC material to explain how this rule can be implemented.

M.A.504 attracted many comments mostly to do with property law i.e. an organisation having to retain or militate life expired components and possible disagreements with the owner. However this legal concern was believed to be outside of the RIA.

### **Subpart F - Maintenance organisation:**

Three issues were of concern to the UK and French authorities resulting in a recommendation for more AMC material:-

1. More guidance material on how to establish Subpart F certifying staff competency for complex tasks.
2. More guidance material on the contents of a maintenance organisation manual.
3. An explanation of the use of an 'organisational review'.

The gliding community are also very concerned with what they see as a severe tightening of regulations for their industry.

The AES team again saw this as an extreme interpretation of the rule as the effect could be greatly reduced if the associations became approved as Subpart F organisations.

Poland and it is expected other accession states will have a problem with converting their Part 66 licenses by the dates foreseen in the regulation that may affect their implementation of Subpart F.

This was considered to be a Part 66 issue and not addressed by this RIA.



### **Subpart G – CAMO**

As this is a new requirement in the majority of Member States and the means of compliance is not readily understood as it has been given many interpretations. This Subpart would benefit from guidance material on the CAME document, airworthiness review staff, the contents of an airworthiness review and the privileges of the approval.

The requirements for airworthiness review staff in the gliding and balloon community has been assessed as excessive and a rule change is recommended.

### **Subpart H – Certificates of Release to Service**

This Subpart generated many comments regarding pilot-owner maintenance and the competency of pilots to perform and certify for maintenance tasks listed in appendix VIII of the rule.

It has been recommended that AMC material is developed to show how pilots can demonstrate competency.

Also it is recommended that appendix VIII is completely revised to separate the actions carried out by glider and balloon operators from general aircraft operators. This is because the appendix mixes operational activities (assembly and removal of glider wings) with maintenance tasks. Other recommendations have also been made to capture all of the maintenance currently allowed for gliders and balloons.

### **Subpart I – Airworthiness Review Certificates**

The use of an Airworthiness Review Certificate to validate a non-expiring Certificate of Airworthiness is a new concept for most of the Member States and will create an initial impact when implemented. However the greatest concern was identified as the change from a 3-year term for this activity by the authority to a 1-year term carried out by industry. The requirements of an airworthiness review were not new but the need to have it performed by an approved organisation is. Therefore recommendations have been made for the full review to be performed every 3 years and confirmed every year by appropriate licensed engineers.

There were also concerns by some authorities that the issue of an ARC could only be carried out by a Subpart G organisation. The rule allows an authority to carry out this airworthiness review and issue an ARC when it decides (M.B.902), but some authorities consider it is not clear if this applies when importing an aircraft into the EU (M.A.904 (a)).

## **APPENDIX VI: COMPARISON OF FAR 43 AND PART M**

### **1. FAR 43.1**

FAR 43 is applicable to the rules governing Maintenance, Preventative Maintenance, Rebuilding & Alteration of any US registered aircraft and its components.

#### **Commission Regulation (EC) No 2042/2003 Article 3**

Part M defines the Continuing Airworthiness including maintenance of EASA Type Certificated aircraft.

#### **ASSESSMENT**

FAR 43 relates to rules applicable to aircraft, persons working on aircraft and records. While Part M covers a much larger scope of activities including standards and requirements for approved organisations involved in the performance and management of aircraft maintenance.

### **2. FAR 43.2 RECORDS OF OVERHAUL & REBUILDING**

**FAR 43.2** - Describes the maintenance entry requirements for an overhauled or rebuilding of an aircraft or component. This must be maintained in accordance with approved standards and technical data documented by the Holder of the Type Certificates.

#### **Part M.A.401 Maintenance Data**

**M.A.401 / M.A.402** states that the person or organisation maintaining an aircraft shall have access to and use only applicable current maintenance data issued by the Type Certificate Holder.

#### **ASSESSMENT**

Part M is more detailed, but requires the same data and records to be used as FAR 43. Part M is not considered more restrictive than FAR 43, apart from the fact, that applicable requirements considered in Part M extend to any maintenance, rather than overhaul and rebuilding, as required by FAR 43.

### **3. FAR 43.3 PERSONS AUTHORISED TO PERFORM MAINTENANCE**

**FAR 43.3** – The holder of mechanic or repairman certificates or a 145-repair station certificate, and a person working under the direct supervision of a repairman or mechanic may perform maintenance.



Pilots may perform preventive maintenance on any aircraft owned or operated by the pilot (preventative maintenance is simple or minor prevention operations and replacement of small standard parts) and minor maintenance if he/she has satisfactorily completed an approved training program.

## **Part M.A.402 Performance of Maintenance**

### **Part M - M.A.402**

Qualified personnel using methods, techniques, standards and instructions specified in M.A.401 shall perform all maintenance.

### **Part M - AMC M.A.402**

When working outside of an approved organisation, non-authorised persons must be working under the supervision of certifying personnel.

### **Part M - M.A.502 Component maintenance**

(a) The maintenance of components shall be performed by appropriately approved Subpart F or Part-145 maintenance organisations.

### **Part M - M.A.803 - Pilot-owner authorisation**

Any privately operated aircraft of simple design with a MTOW<2730kg the pilot may issue a CRS after limited pilot owner maintenance listed in Appendix VIII.

## **ASSESSMENT**

**FAR 43** mechanics are not required to work in a maintenance organisation to perform maintenance on components. Apart from this fact, Part M is not considered more restrictive than FAR 43 in this case.

## **4. FAR 43.5 APPROVAL FOR RETURN TO SERVICE**

**FAR 43.5 – No person may approve for Return to Service an aircraft or component unless a FAR 43.9 or 43.11 maintenance records have been made.**

### **Part M - M.A.612 Aircraft certificate of release to service**

At the completion of all required aircraft maintenance in accordance with this Subpart an aircraft certificate of release to service shall be issued ...

### **Part M – M.A.613**

At the completion of all required component maintenance in accordance with this Subpart a component certificate of release to service shall be issued

### **Part M – M.A.801 (b)**

A certificate of release to service shall be issued before flight at the completion of any maintenance. When satisfied that all maintenance required has been properly carried out, a certificate of release to service shall be issued.

### **Part M – M.A.802 (b)**

A certificate of release to service shall be issued at the completion of any maintenance on an aircraft component whilst off the aircraft.





## ASSESSMENT

This chapter describes when the approval for return to service may be issued. FAR 43 requires that formal entries are required after maintenance or inspections have been carried out by the maintenance staff performing maintenance and before issuance of the approval to return to service. Part M requires that all maintenance required has been properly carried out before the issuance of approval to return to service. These two requirements are very similar and neither is considered more restrictive

### 5. FAR 43.7 PERSONS AUTHORISED TO ISSUE CERTIFICATE OF RELEASE TO SERVICE

**FAR 43.7** - The holder of a mechanic certificate, inspection authorisation, repair station certificate (FAR 145), air carrier operating certificate or operating certificate iaw Part 121 or 135 may approve an aircraft or component for return to service.

**FAR 43.7(f)** - A person holding a private pilot certificate may approve an aircraft for return to service after preventative maintenance.

#### Part M.A.801 - Aircraft Certificate of Release to Service

**M.A.801 (a)** – An appropriately approved Part 145 organisation can release an aircraft or component to service.

**M.A.801 (b)** – A certificate of release to service shall be issued after maintenance by appropriate Subpart F certifying staff; or Part 66 certifying staff (non complex); or by M.A.803 pilot owners.

#### Part M.A.803 – Pilot- owner authorisations

The pilot owner must hold a valid pilot licence with the appropriate rating and the authorisation is valid for privately operated aircraft of simple design with MTWA <2730kg after maintenance listed in Appendix VIII.

## ASSESSMENT

The requirements for pilot maintenance are similar as preventative maintenance is defined by the FAA means “simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations”. Whereas the Part M rule is more specific listing the maintenance tasks that could be released.

To summarise the FAR CRS signatories this includes both individual licensed mechanics and certifying staff within approved organisations (operators and maintainers).

This is similar to Part M CRS signatories, which includes Part 66 individual licensed engineers and certifying staff authorised within a Subpart F or Part 145 organisations but differs as operators are not given CRS privileges as part of their operating approval. Individual mechanics are not allowed to issue CRS on components under Part M, while they are allowed, to some extent, in FAR 43



## **6. FAR 43.9 CONTENT, FORM, AND DISPOSITION OF MAINTENANCE RECORDS.**

**FAR 43.9 (a)** Persons performing maintenance shall enter the following information in the maintenance records: a description of the work, date of completion, signature and certificate number of the person approving the work.

**FAR 43.9(b)** Part 121 and Part 135 operators shall make a record in accordance with the provisions of Part 121 or Part 135 as applicable.

### **Part M - M.A.305 Aircraft continuing airworthiness record system.**

At the completion of any maintenance a CRS shall be entered in the aircraft continuing airworthiness records.

### **Part M - M.A.801 (b) Aircraft certificate of release to service.**

A CRS shall contain details of the maintenance carried out, date of completion, the identity of the certifier and Sub part F approval reference or the identity and license number of the certifier.

## **ASSESSMENT**

The aircraft record requirements are very similar both in content and method. Part M states clearly who and how to manage these records. This is more specific than the requirements of FAR 43.

## **7. FAR 43.10 Disposition of life limited aircraft parts**

**FAR 43.10 (c)** Each person who removes a life limited part must ensure the part is controlled. The method of control must deter the installation of the part after it has reached its life limit.

The acceptable methods include; a record keeping system, a tag attached to the part, non-permanent and permanent marking, segregation and mutilation.

### **Part M - M.A.504 Control of unserviceable components**

**M.A.504(c).** Components, which have reached their certified life limit, shall be classified as unsalvageable and shall not be allowed to re-enter the component supply system. These components shall be retained in a secure location or be mutilated.

## **ASSESSMENT**

Part M is more restrictive than FAR 43.10 in this case, requiring tighter controls for life-limited parts after having reached their life limit.

### **Part M subpart F:**

There is no similar requirement in FAR 43. Such requirements are found in FAR 145, which shows how to obtain a repair station certificate.



### **ASSESSMENT:**

When comparing Part M and FAR 43, the requirements for maintenance organisations required by the subpart F should be compared to the requirements in the FAR 145. Therefore none of them is more restrictive.

### **8. FAR 43.11 CONTENT, FORM AND DISPOSITION OF RECORDS FOR INSPECTIONS UNDER PARTS 91, 125 AND 135 AND FAR 43.15 ADDITIONAL PERFORMING RULES FOR INSPECTIONS.**

**FAR 43.11 (a)** Inspection allows the person to determine whether the aircraft or component is in an airworthy condition. Inspection shall be properly recorded (extent, date, inspector details...). The inspection shall check if the item requires maintenance and if it is in compliance with applicable specification and airworthiness directives, together with physical inspection. Annual and progressive inspections are carried out by mechanics with "inspection authorisation" (FAR 65.95).

**FAR 43.11 (b)** When the aircraft inspected is found to be unairworthy, the inspector must inform the owner. On those items permitted to be inoperative a placard shall be placed.

**FAR 43.15 (a)** Inspections to be carried out in accordance with an inspection program to determine whether the aircraft meets all applicable airworthiness requirements. Similar requirements are found in Part M subpart G paragraphs shown below.

#### **Part M - M.A.710 Airworthiness review**

Appropriately approved Part 66 staff on behalf of Subpart G organisations perform airworthiness reviews. They consist of a document review and a physical survey. The extent of the document review and physical survey are clearly stated.

#### **Part M - M.A.901 Aircraft airworthiness review**

Airworthiness reviews are performed annually (or in a three year basis) and it is required to ensure the validity of the Certificate of Airworthiness.

### **ASSESSMENT**

The continuing airworthiness of an aircraft is more precisely defined in Part M than FAR 43, stating the contents of document review and aircraft physical survey required. Inspections in FAR 43 are incorporated as part of maintenance programme. The requirement for an airworthiness review is not required by FAR 43, but a similar requirement to ensure that civil aircraft are in airworthy conditions is required by FAR 91.7 and its subpart E.

Specific organisations, similar to Part M Subpart G, to perform continuing airworthiness management tasks are not defined in FAR 43.

The main difference between FAR 43 and Part M is the existence of an approved organisation for the management of maintenance and the issuance of ARC's (Part M subpart G) in the EU. This is not considered more restrictive as it is only mandatory for large aircraft and commercial air transport.

Also the continuing airworthiness of aircraft is considered to be more precisely addressed in Part M.



**9. FAR 43.12 Maintenance records: falsification, reproduction or alteration.**  
Fraudulent or intentionally false use of a record is a basis for suspension or revocation of approval.

**ASSESSMENT:**

This topic is not specifically addressed in Part M. Nevertheless is treated in Part 66, limiting privileges for the persons involved.

**10. FAR 43.13 PERFORMANCE RULES**

**FAR 43.13 (a)** Maintenance shall be performed using methods, techniques and practices described in the current manufacturer's maintenance manual or acceptable to the Authority.

**FAR 43.13 (a)** Tools, equipment, and test apparatus in accordance with industry practices or recommended by manufacturer if special.

**FAR 43.13 (b)** Materials of a quality at least equal to its original condition.

**Part M - M.A.302 Maintenance programme**

Every aircraft shall be maintained in accordance with a maintenance programme approved by the competent authority...

**Part M - M.A.402 Performance of maintenance**

(a) All maintenance shall be performed by qualified personnel, following the methods, techniques, standards and instructions specified in the M.A.401 maintenance data (...).

(b) All maintenance shall be performed using the tools, equipment and material specified in the M.A.401 maintenance data (...). Where necessary, tools and equipment shall be controlled and calibrated to an officially recognised standard.

**ASSESSMENT**

Tools and equipment to be used and maintenance data to be considered seems to be more under control of the Authority in Part M than in FAR 43, which relies more on the manufacturer.

**11. FAR 43.15 ADDITIONAL PERFORMANCE RULES FOR INSPECTION**

**(a) General.** Each person performing an inspection required by FAR 91, (next FAR affect the commercial air transport), shall perform the inspection so as to determine whether the aircraft, or portion of aircraft under inspection meets all applicable airworthiness requirements. Inspections to be carried out in accordance with an inspection program to determine whether the aircraft meets all applicable airworthiness requirements.



### **Part M 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;

### **Part M - M.A.901 Aircraft airworthiness review**

Airworthiness reviews are performed annually (or in a three year basis) and it is required to ensure the validity of the Certificate of Airworthiness.

### **ASSESSMENT:**

Both requirements aim for the same airworthy condition of the aircraft. The difference is that Part M shows how to ensure this airworthy condition in a more precise manner, this not considered a more restrictive way. Inspections in FAR 43 are incorporated as part of maintenance programme.

### **12. FAR 43.16 AIRWORTHINESS LIMITATIONS**

Inspections or other maintenance to be performed in accordance with manufacturer's maintenance manual or in Instructions for Continued Airworthiness or in accordance with an inspection program.

### **Part M - M.A.302 Maintenance programme**

Every aircraft shall be maintained in accordance with a maintenance programme approved by the competent authority...

### **ASSESSMENT**

Both regulations are similar although again FAR 43 relies on manufacturer for maintenance programme acceptance. Part M requires the owner or operator of the aircraft to be responsible for the applicability of the maintenance programme.

### **13 FAR 43.17 MAINTENANCE PERFORMED BY CANADIAN PERSONS.**

### **ASSESSMENT:**

Not addressed.

### **CONCLUSION:**

FAR 43 is a document issued in 1964, revisions are spread from 1966 to 2004, but with few changes to its initial issue and it is limited in its scope.

FAR 43 provides general guidance on records, persons and methods for approval for return to service, life limited parts, airworthiness limitations, records, and performance rules for inspection. The guidance provided is not sufficient as it relies on many other requirements e.g. FAR 91, FAR 121 and FAR 135 etc, which have been developed over the years to account for different operating environments.



The Part M issued in 2003 establishes the measures to be taken to ensure that airworthiness is maintained, including maintenance. It also specifies the conditions to be met by the persons or organisations involved in such continuing airworthiness management.

The Part M has been developed as a self-supporting document that is part of an integrated maintenance system linking with Part 66 (licenses), Part 21 (certification), Part 147 (training) and Part 145 (maintenance organisations).

This general assessment does not consider that one regulation is more stringent than the other. Part M requires a more formal method for being approved as an organisation, e.g. the requirement for a manual, procedures and a formal management structure, but the aim of both regulations is similar. The method to obtain it is different.



## LIST OF ACRONYMS

A/C	Aircraft
AAR	Certificate of Airworthiness Extension
AC	Advisory Circular
AD	Airworthiness Directive
AEA	Type of Maintenance Organisation according to French Regulation
AES	Air Eurosafe
AMC	Acceptable Means of Compliance
AML	Aircraft Maintenance License
AMP	Aircraft Maintenance Programme
AOC	Air Operator Certificate
AOPA	Aircraft Owners and Pilot Association (from different countries)
APU	Auxiliary Power Unit
ARC	Airworthiness Review Certificate
ATC	Air Traffic Control
ATM	Air Traffic Management
AUB/RSC	Representatives of German General Aviation
BBAL	Representatives of German General Aviation
BBGA	British Business & General Aviation
BCAR	British Civil Aviation Regulation
CAA	UK Civil Aviation Authority
CAM	Continuing Airworthiness Management
CAME	Continuing Airworthiness Management Exposition
CAMO	Continuing Airworthiness Management Organisation
CAO	Polish NAA
CAT	Comercial Air Transport
CFDT	French Representative
CofA	Certificate of Airworthiness
CRS	Certificate of Return to Service
CS	Certification Specification
DGAC	Frech NAA
DME	Distance Measuring Equipment
EAS	Europe Air Sports
EASA	European Aviation Safety Agency
EC	European Comunity
EGU	European Gliding Union
EN4179	European Standard for NDT
ENAC	Italian NAA
EU	European Union
FAR	Federal Aviation Regulation
FCL	Flight Crew License
FFA	Fédération Française Aéronautique





FFVV	Fédération Française de Vol à Voile
GA	General Aviation
GPS	Global Position System
GSAC	Groupeement pour la Sécurité de l'Aviation Civile
iaw	in accordance with
IBAA	Italian Business Aviation Association
ICAO	International Civil Aviation Organisation
ISO	International Organisation for Standardisation
JAR	Joint Aviation Regulation
LAMS	Light Aircraft Maintenance Schedule
LBA	German NAA
LHT	Lufthansa Technik
LTB	Type of Maintenance Organisation according to German Regulation
M3	Type of Maintenance Organisation according to British Regulation
MOM	Maintenance Organisation Manual
MTOM or MTOW	Maximum Take Off Mass
NAA	National Aviation Authority
NAV	Circular issued by ENAC
NDI	Non destructive Inspection
NDT	Non destructive Testing
NGB	German Organisation
OEM	Original Equipment Manufacturer
OJT	On the job training
PFA	Popular Flying Association
POA	Production Organisation Approval
PPL	Private Pilot License
RAC	Royal Aeronautical Society
RIA	Regulatory Impact Assessment
RRG	Rolls-Royce Germany
SAOPA	Swedish Aircraft Owners and Pilot Association
SBA	Swedish Balloon Association
SCAA	Swedish Civil Aviation Authority
SNIPAG	Syndicat National des Industriels et Professionnels de l'Aviation Générale
SNPACM	Syndicat National des Personnels de l'Aviation Civile et de la Météorologie
STC	Supplemental Type Certificate
TBO	Time Between Overhauls
TC	Type Certificate
UEA	Type of Maintenance Organisation according to French Regulation
UK	United Kingdom
US	United States of America
VDS	Verband deutscher Segelflugzeughersteller, German Sailplane Manufacturers association