

***European Aviation Safety Agency***

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**DECISION NO. 2003/19/RM  
OF THE EXECUTIVE DIRECTOR OF THE AGENCY**

**of 28 November 2003**

**on acceptable means of compliance and guidance material to 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**

THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION SAFETY AGENCY,

Having regard to Regulation (EC) No 1592/2002 of the European Parliament and of the Council of 15 July 2002 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency<sup>1</sup> (hereinafter referred to as the “Basic Regulation”), and in particular Articles 13 and 14 thereof,

Having regard to the 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<sup>2</sup>,

Whereas:

- (1) The Agency should issue certification specifications, including airworthiness codes and acceptable means of compliance, as well as any guidance material for the application of the Basic Regulation and its implementing rules.
- (2) The Agency has, pursuant to Article 43 of the Basic Regulation, consulted widely interested parties on the matters which are subject to this Decision and following that consultation provided a written response to the comments received.

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<sup>1</sup> OJ L 240, 7.09.2002, p. 1.

<sup>2</sup> To be published.

HAS DECIDED AS FOLLOWS:

Article 1

The acceptable means of compliance and guidance material to be used for the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and for the approval of organisations and personnel involved in these tasks in accordance with Commission Regulation (EC) No 2042/2003 are those laid down in the Annexes to this Decision.

Article 2

This Decision shall enter into force on the day following its publication in the *Official Publication of the Agency*.

Done at Brussels, 28 November 2003

Patrick Goudou  
Executive Director

**Annex I Acceptable Means of Compliance to Part-M**

**Annex II Acceptable Means of Compliance to Part-145**

**Annex III Guidance Material to Part-145**

**Annex IV Acceptable Means of Compliance to Part-66**

**Annex V Guidance Material to Part-66**

**Annex VI Acceptable Means of Compliance to Part-147**

**Annex VII Guidance Material to Part-147**

**Annex I**  
**Acceptable Means of Compliance to Part-M**

**Section A Technical Requirements**

**Subpart A GENERAL**

## **Subpart B ACCOUNTABILITY**

### **AMC M.A.201 (h) Responsibilities**

1. Reference to aircraft includes the components fitted to or intended to be fitted to the aircraft
2. The performance of ground de-icing and anti-icing activities does not require a Part-145 approval.
3. The requirement means that the operator is responsible for determining what maintenance is required, when it has to be performed and by whom and to what standard, in order to ensure the continued airworthiness of the aircraft being operated.
4. An operator should therefore have adequate knowledge of the design status (type specification, customer options, airworthiness directives (AD), modifications, operational equipment) and required and performed maintenance. Status of aircraft design and maintenance should be adequately documented to support the performance of the quality system.
5. An operator should establish adequate co-ordination between flight operations and maintenance to ensure that both will receive all information on the condition of the aircraft necessary to enable both to perform their tasks.
6. The requirement does not mean that an operator himself performs the maintenance (this is to be done by a maintenance organisation approved under Part-145) but that the operator carries the responsibility for the airworthy condition of aircraft it operates and thus should be satisfied before the intended flight that all required maintenance has been properly carried out.
7. When an operator is not appropriately approved in accordance with Part-145, the operator should provide a clear work order to the maintenance contractor. The fact that an operator has contracted a maintenance organisation approved under Part-145 should not prevent it from checking at the maintenance facilities on any aspect of the contracted work if he wishes to do so to satisfy his responsibility for the airworthiness of the aircraft.

### **AMC M.A.201 (h) 1- Responsibilities**

1. An operator only needs to be approved for the management of the continuing airworthiness of the aircraft listed on its AOC. The approval to carry out airworthiness reviews is optional.
2. This approval does not prevent the operator subcontracting certain continuing airworthiness management tasks to competent persons or organisations. This activity is considered as an integral element of the operator's M.A. Subpart G approval. The regulatory monitoring is exercised through the operator's M.A. Subpart G. approval. The contracts should be acceptable to the competent authority.
3. The accomplishment of continuing airworthiness activities forms an important part of the operator's responsibility with the operator remaining accountable for satisfactory completion irrespective of any contract that may be established.
4. Part-M does not provide for organisations to be independently approved to perform continuing airworthiness management tasks on behalf of commercial air transport

operators. The approval of such activity is vested in the operator's air operator's certificate (AOC). The sub-contracted organisation is considered to perform the continuing airworthiness management tasks as an integral part of the operator's continuing airworthiness management system, irrespective of any other approval held by the subcontractor including a M.A. Subpart G approval.

5. The operator is ultimately responsible and therefore accountable for the airworthiness of its aircraft. To exercise this responsibility the operator should be satisfied that the actions taken by sub-contracted organisations meet the standards required by M.A. Subpart G. The operator's management of such activities should therefore be accomplished

- (a) by active control through direct involvement and/or
- (b) by endorsing the recommendations made by the sub-contracted organisation.

6. In order to retain ultimate responsibility the operator should limit sub-contracted tasks to the activities specified below:

- (a) airworthiness directive analysis and planning
- (b) service bulletin analysis
- (c) planning of maintenance
- (d) reliability monitoring, engine health monitoring
- (e) maintenance programme development and amendments
- (f) any other activities which do not limit the operators responsibilities as agreed by the competent authority.

7. The operator's management controls associated with sub-contracted continuing airworthiness management tasks should be reflected in the associated written contract and be in accordance with the operator's policy and procedures defined in his continuing airworthiness management exposition. When such tasks are sub-contracted the operator's continuing airworthiness management system is considered to be extended to the sub-contracted organisation.

8. With the exception of engines and auxiliary power units contracts would normally be limited to one organisation per aircraft type for any combination of the activities described in Appendix 2. Where arrangements are made with more than one organisation the operator should demonstrate adequate co-ordination controls are in place and that the individual responsibilities are clearly defined in related contracts.

9. Contracts should not authorise the sub-contracted organisation to sub-contract to other organisations elements of the continuing airworthiness management tasks.

10. The operator should ensure that any findings arising from the competent authority monitoring of the sub-contracted continuing airworthiness management tasks will be closed to the satisfaction of the competent authority. This provision should be included in the contract.

11. The sub-contracted organisation should agree to notify the respective operators of any changes affecting the contracts as soon as practical. The operator should then inform its competent authority. Failure to do so may invalidate the competent authority acceptance of the contract.

12. Appendix II provides information on the sub-contracting of continuing airworthiness management tasks.

13. The operator should only sub contract to organisations which are specified by the competent authority on the AOC or EASA Form 14 as applicable.

#### **AMC M.A.201 (h) 2- Responsibilities**

1. The requirement is intended to provide for the possibility of the following three alternative options:

(a) an operator to be approved in accordance with Part-145 to carry out all maintenance of the aircraft and components;

(b) an operator to be approved in accordance with Part-145 to carry out some of the maintenance of the aircraft and components. This, at minimum, could be limited line maintenance but may be considerably more but still short of option (a);

(c) An operator not approved in accordance with Part-145 to carry out any maintenance.

2. An operator or prospective operator may apply for any one of these options but it will be for the competent authority to determine which option may be accepted in each particular case.

2.1 To make this determination the competent authority will apply the primary criteria of relevant operator experience if carrying out some or all maintenance on comparable aircraft. Therefore where an operator applies for option (a) – all maintenance – the competent authority will need to be satisfied that the operator has sufficient experience of carrying out all maintenance on a comparable type. For example, assuming that the experience is judged satisfactory, then it is reasonable from the maintenance viewpoint to add a different wide bodied aircraft to an existing wide bodied fleet. If the experience is not satisfactory or too limited the competent authority may choose either to require more experienced management and/or more experienced release to service staff or may refuse to accept the new wide bodied aircraft if extra experienced staff cannot be found. Option (b) or (c) may be possible alternatives.

2.2 Where an operator applies for option (b) – some maintenance or the competent authority has been unable to accept an application for option (a) – then satisfactory experience is again the key but in this case the satisfactory experience is related to the reduced maintenance of this option. If the experience is not satisfactory or too limited the competent authority may choose to require more experienced staff or may refuse to accept the application if such staff cannot be found. Option (c) may be the possible alternative. Option (c) accepts that the operator either does not have satisfactory experience or has only limited experience of some maintenance.

2.3 The competent authority will require an operator to enter into a contract with an appropriately approved Part-145 organisation except in those cases where the competent authority believes that it is possible to obtain sufficient satisfactorily experienced staff to provide the minimal maintenance support for option (b), in which case option (b) would apply.

2.4 In respect of this paragraph, ‘experience’ means staff who have proven evidence that they were directly involved with at least line maintenance of similar aircraft types for not less than 12 months. Such experience should be demonstrated to be satisfactory. An operator is required to have enough personnel meeting the requirement of M.A.706 to manage the maintenance responsibility whichever option is used.

### **AMC M.A.202 (a) Occurrence reporting**

Accountable persons or organisations should ensure that the type certificate (TC) holder receives adequate reports of occurrences for that aircraft type, to enable it to issue appropriate service instructions and recommendations to all owners or operators.

Liaison with the TC holder is recommended to establish whether published or proposed service information will resolve the problem or to obtain a solution to a particular problem.

An approved continuing airworthiness management or maintenance organisation should assign responsibility for co-ordinating action on airworthiness occurrences and for initiating any necessary further investigation and follow-up activity to a suitably qualified person with clearly defined authority and status.

In respect of maintenance, reporting a condition that could seriously hazard the aircraft is normally limited to:

- serious cracks, permanent deformation, burning or serious corrosion of structure found during scheduled maintenance of the aircraft or component.
- failure of any emergency system during scheduled testing.

### **AMC M.A.202 (b) Occurrence reporting**

The reports may be transmitted by any method i.e. electronically, by post or by facsimile.

Each report should contain at least the following information:

- reporter or organisations name and approval reference if applicable,
- information necessary to identify the subject aircraft and or component,
- date and time relative to any life or overhaul limitation in terms of flying hours/cycles/landings etc. as appropriate,
- details of the occurrence.

## **Subpart C CONTINUING AIRWORTHINESS**

### **AMC M.A.301 -1- Continuing airworthiness tasks**

1. With regard to the pre-flight inspection it is intended to mean all of the actions necessary to ensure that the aircraft is fit to make the intended flight. These should typically include but are not necessarily limited to:

- (a) a walk-around type inspection of the aircraft and its emergency equipment for condition including, in particular, any obvious signs of wear, damage or leakage. In addition, the presence of all required equipment including emergency equipment should be established.
- (b) an inspection of the aircraft continuing airworthiness record system or the operators technical log as applicable to ensure that the intended flight is not adversely affected by any outstanding deferred defects and that no required maintenance action shown in the maintenance statement is overdue or will become due during the flight.
- (c) a control that consumable fluids, gases etc. uplifted prior to flight are of the correct specification, free from contamination, and correctly recorded.
- (d) a control that all doors are securely fastened.
- (e) a control that control surface and landing gear locks, pitot/static covers, restraint devices and engine/aperture blanks have been removed.
- (f) a control that all the aircraft's external surfaces and engines are free from ice, snow, sand, dust etc.

2. Tasks such as oil and hydraulic fluid uplift and tyre inflation may be considered as part of the pre-flight inspection. The related pre-flight inspection instructions should address the procedures to determine where the necessary uplift or inflation results from an abnormal consumption and possibly requires additional maintenance action by the approved maintenance organisation or certifying staff as appropriate.

3. In the case of commercial air transport, an operator should publish guidance to maintenance and flight personnel and any other personnel performing pre-flight inspection tasks, as appropriate, defining responsibilities for these actions and, where tasks are contracted to other organisations, how their accomplishment is subject to the quality system of M.A.712. It should be demonstrated to the competent authority that pre-flight inspection personnel have received appropriate training for the relevant pre-flight inspection tasks. The training standard for personnel performing the pre-flight inspection should be described in the operator's continuing airworthiness management exposition.

### **AMC M.A.301 - 2- Continuing airworthiness tasks**

In the case of commercial air transport the operator should have a system to ensure that all defects affecting the safe operation of the aircraft are rectified within the limits prescribed by the approved minimum equipment list (MEL) or configuration deviation list (CDL) as appropriate. Also that such defect rectification cannot be postponed unless agreed by the operator and in accordance with a procedure approved by the competent authority.

In the case of commercial air transport or large aircraft, a system of assessment should be in operation to support the continuing airworthiness of an aircraft and to provide a

continuous analysis of the effectiveness of the M.A. Subpart G approved continuing airworthiness management organisation's defect control system in use.

The system should provide for:

(a) significant incidents and defects: monitor incidents and defects that have occurred in flight and defects found during maintenance and overhaul, highlighting any that appear significant in their own right.

(b) repetitive incidents and defects: monitor on a continuous basis defects occurring in flight and defects found during maintenance and overhaul, highlighting any that are repetitive.

(c) deferred and carried forward defects: Monitor on a continuous basis deferred and carried forward defects. Deferred defects are defined as those defects reported in operational service which are deferred for later rectification. Carried forward defects are defined as those defects arising during maintenance which are carried forward for rectification at a later maintenance input.

(d) unscheduled removals and system performance: analyse unscheduled component removals and the performance of aircraft systems for use as part of the maintenance programme efficiency.

When deferring or carrying forward a defect the cumulative effect of a number of deferred or carried forward defects occurring on the same aircraft and any restrictions contained in the MEL should be considered. Whenever possible, deferred defects should be made known to the pilot/flight crew prior to their arrival at the aircraft.

### **AMC M.A.301 - 3- Continuing airworthiness tasks**

The owner or the M.A. Subpart G approved continuing airworthiness management organisation as applicable should have a system to ensure that all aircraft maintenance checks are performed within the limits prescribed by the approved aircraft maintenance programme and that, whenever a maintenance check cannot be performed within the required time limit, its postponement is allowed in accordance with a procedure agreed by the appropriate competent authority.

### **AMC M.A.301 - 4- Continuing airworthiness tasks**

The operator or the contracted M.A. Subpart G approved organisation as applicable should have a system to analyse the effectiveness of the maintenance programme, with regard to spares, established defects, malfunctions and damage, and to amend the maintenance programme accordingly.

### **AMC M.A.301 -5- Continuing Airworthiness Tasks**

Operational directives with a continuing airworthiness impact include operating rules such as extended twin-engine operations (ETOPS) / long range operations (LROPS), reduced vertical separation minima (RVSM), MNPS, all weather operations (AWOPS), RNAV, etc.

Any other continued airworthiness requirement made mandatory by the Agency includes TC related requirements such as: certification maintenance requirements (CMR), certification life limited parts, airworthiness limitations, etc.

### **AMC M.A.301 - 7- Continuing airworthiness tasks**

An operator or a contracted M.A. Subpart G approved organisation as applicable should establish and work to a policy, which assesses non-mandatory information related to the airworthiness of the aircraft. Non mandatory information such as service bulletins, service letters and other information is that produced for the aircraft and its components by an approved design organisation, the manufacturer, the competent authority or the Agency.

### **AMC M.A.302 Maintenance programme**

1. The term “maintenance programme” is intended to include scheduled maintenance tasks the associated procedures and standard maintenance practises. The term “maintenance schedule” is intended to embrace the scheduled maintenance tasks alone.
2. The aircraft should only be maintained to one approved maintenance programme at a given point in time. Where an owner or operator wishes to change from one approved programme to other, a transfer check or inspection may need to be performed in order to implement the change.
3. The maintenance programme details should be reviewed at least annually. As a minimum revisions of documents affecting the programme basis need to be considered by the owner or operator for inclusion in the maintenance programme during the annual review. Applicable mandatory requirements for compliance with Part-21 should be incorporated into the owner or operator’s maintenance programme as soon as possible
4. The aircraft maintenance programme should contain a preface which will define the maintenance programme contents, the inspection standards to be applied, permitted variations to task frequencies and where applicable, any procedure to manage the evolution of established check or inspection intervals.

Appendix 1 to AMC M.A.302 provides detailed information on the contents of an approved aircraft maintenance programme.

5. The approved aircraft maintenance programme should reflect applicable mandatory regulatory requirements addressed in documents issued by the TC holder to comply with Part-21.A.61
6. Repetitive maintenance tasks derived from modifications and repairs should be incorporated into the approved maintenance programme.

### **AMC M.A.302(c) Maintenance programme compliance**

1. An owner or operator’s maintenance programme should normally be based upon the maintenance review board (MRB) report where applicable, the maintenance planning document (MPD), the relevant chapters of the maintenance manual or any other maintenance data containing information on scheduling. Furthermore, an owner or operator’s maintenance programme should also take into account any maintenance data containing information on scheduling for components.

2. Instructions issued by the competent authority can encompass all types of instructions from a specific task for a particular aircraft to complete recommended maintenance schedules for certain aircraft types that can be used by the owner/operator directly.
3. Where an aircraft type has been subjected to the MRB report process, an operator should normally develop the initial operator's aircraft maintenance programme based upon the MRB report.
4. Where an aircraft is maintained in accordance with an aircraft maintenance programme based upon the MRB report process, any associated programme for the continuous surveillance of the reliability, or health monitoring of the aircraft should be considered as part of the aircraft maintenance programme.
5. Aircraft maintenance programmes for aircraft types subjected to the MRB report process should contain identification cross reference to the MRB report tasks such that it is always possible to relate such tasks to the current approved aircraft maintenance programme. This does not prevent the approved aircraft maintenance programme from being developed in the light of service experience to beyond the MRB report recommendations but will show the relationship to such recommendations
6. Some approved aircraft maintenance programmes, not developed from the MRB process, utilise reliability programmes. Such reliability programmes should be considered as a part of the approved maintenance programme.

**AMC M.A.302 (d) Maintenance programme - reliability programmes.**

1. Reliability programmes should be developed for aircraft maintenance programmes based upon maintenance steering group (MSG) logic or those that include condition monitored components or that do not contain overhaul time periods for all significant system components.
2. Reliability programmes need not be developed for aircraft not considered as large aircraft or that contain overhaul time periods for all significant aircraft system components.
3. The purpose of a reliability programme is to ensure that the aircraft maintenance programme tasks are effective and their periodicity is adequate.
4. The reliability programme may result in the escalation or deletion of a maintenance task, as well as the de-escalation or addition of a maintenance task
5. A reliability programme provides an appropriate means of monitoring the effectiveness of the maintenance programme.
6. Appendix 1 to AMC M.A.302 and M.B.301 (d) gives further guidance.

**AMC M.A.304 Data for modifications and repairs**

A person or organisation repairing an aircraft or component should assess the damage against published approved repair data and the action to be taken if the damage is beyond the limits or outside the scope of such data. This could involve any one or more of the following options; repair by replacement of damaged parts, requesting technical support from the type certificate holder or from an organisation approved in accordance with Part-21 and finally agency approval of the particular repair data.

### **AMC M.A.305 (d) Aircraft continuing airworthiness record system**

Information on times, dates, cycles etc. should give an overall picture on the state of maintenance of the aircraft and its components.

The current status of all service life-limited aircraft components should indicate the component life limitation, total number of hours, accumulated cycles or calendar time and the number of hours/cycles/time remaining before the required retirement time of the component is reached.

The current status of AD should identify the applicable AD including revision or amendment numbers. Where an AD is generally applicable to the aircraft or component type but is not applicable to the particular aircraft or component, then this should be identified. The AD status includes the date when the AD was accomplished, and where the AD is controlled by flight hours or flight cycles it should include the aircraft or engine or component total flight hours or cycles, as appropriate. For repetitive ADs, only the last application should be recorded in the AD status. The status should also specify which part of a multi-part directive has been accomplished and the method, where a choice is available in the AD.

The status of current modification and repairs means a list of embodied modification and repairs together with the substantiating data supporting compliance with the airworthiness requirements. This can be in the form of a Supplemental Type Certificate (STC), SB, Structural Repair Manual (SRM) or similar approved document.

The substantiating data may include:

- (a) compliance programme; and,
- (b) master drawing or drawing list, production drawings, and installation instructions; and,
- (c) engineering reports (static strength, fatigue, damage tolerance, fault analysis, etc.); and,
- (d) ground and flight test programme and results; and,
- (e) mass and balance change data; and,
- (f) maintenance and repair manual supplements; and,
- (g) maintenance programme changes and instructions for continuing airworthiness; and,
- (h) aircraft flight manual supplement.

Some gas turbine engines are assembled from modules and a true total time in service for a total engine is not kept. When owners and operators wish to take advantage of the modular design, then total time in service and maintenance records for each module is to be maintained. The continuing airworthiness records as specified are to be kept with the module and should show compliance with any mandatory requirements pertaining to that module.

### **AMC M.A.305 (h) Aircraft continuing airworthiness record system**

When an owner/operator arranges for the relevant maintenance organisation to retain copies of the continuing airworthiness records on their behalf, the owner/operator will continue to be responsible for the retention of records. If they cease to be the owner/operator of the aircraft, they also remain responsible for the transferring the records to any other person who becomes the owner/operator of the aircraft.

Keeping continuing airworthiness records in a form acceptable to the competent authority normally means in paper form or on a computer database or a combination of both methods. Records stored in microfilm or optical disc form are also acceptable. All records should remain legible throughout the required retention period.

Paper systems should use robust material, which can withstand normal handling and filing.

Computer systems should have at least one backup system, which should be updated at least within 24 hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorised personnel to alter the database.

Details of current modifications and repairs include the data supporting compliance with the airworthiness requirements. This can be in the form of a STC, SB, SRM or similar document.

Continuing airworthiness records should be stored in a safe way with regard to fire, flood, theft and alteration. Computer backup discs, tapes etc., should be stored in a different location from that containing the current working discs, tapes, etc. and in a safe environment. Reconstruction of lost or destroyed records can be done by reference to other records which reflect the time in service, research of records maintained by repair facilities and reference to records maintained by individual mechanics etc. When these things have been done and the record is still incomplete, the owner/operator may make a statement in the new record describing the loss and establishing the time in service based on the research and the best estimate of time in service. The reconstructed records should be submitted to the competent authority for acceptance.

NOTE: Additional maintenance may be required.

#### **AMC M.A.305 (h) 6- Aircraft continuing airworthiness record system**

For the purpose of this paragraph, a “component vital to flight safety” means a component that includes certified life limited parts or is subject to airworthiness limitations or a major component such as, undercarriage or flight controls.

#### **AMC M.A.306 (a) Operators technical log system**

For commercial air transport the operator’s aircraft technical log is a system for recording defects and malfunctions during the aircraft operation and for recording details of all maintenance carried out on an aircraft between scheduled base maintenance visits. In addition, it is used for recording flight safety and maintenance information the operating crew need to know.

Cabin or galley defects and malfunctions that affect the safe operation of the aircraft or the safety of its occupants are regarded as forming part of the aircraft log book where recorded by another means.

The operator’s aircraft technical log system may range from a simple single section document to a complex system containing many sections but in all cases it should include

the information specified for the example used here which happens to use a 5 section document / computer system:

**Section 1** should contain details of the registered name and address of the operator the aircraft type and the complete international registration marks of the aircraft.

**Section 2** should contain details of when the next scheduled maintenance is due, including, if relevant any out of phase component changes due before the next maintenance check. In addition this section should contain the current certificate of release to service (CRS), for the complete aircraft, issued normally at the end of the last maintenance check.

NOTE: The flight crew do not need to receive such details if the next scheduled maintenance is controlled by other means acceptable to the competent authority.

**Section 3** should contain details of all information considered necessary to ensure continued flight safety. Such information includes:

- i. the aircraft type and registration mark.
- ii. the date and place of take-off and landing.
- iii. the times at which the aircraft took off and landed.
- iv. the running total of flying hours, such that the hours to the next schedule maintenance can be determined. The flight crew does not need to receive such details if the next scheduled maintenance is controlled by other means acceptable to the competent authority.
- v. details of any failure, defect or malfunction to the aircraft affecting airworthiness or safe operation of the aircraft including emergency systems, and any failure, defect or malfunctions in the cabin or galleys that affect the safe operation of the aircraft or the safety of its occupants that are known to the commander. Provision should be made for the commander to date and sign such entries, including, where appropriate, the nil defect state for continuity of the record. Provision should be made for a CRS following rectification of a defect or any deferred defect or maintenance check carried out. Such a certificate appearing on each page of this section should readily identify the defect(s) to which it relates or the particular maintenance check as appropriate.
- vi. the quantity of fuel and oil uplifted and the quantity of fuel available in each tank, or combination of tanks, at the beginning and end of each flight; provision to show, in the same units of quantity, both the amount of fuel planned to be uplifted and the amount of fuel actually uplifted; provision for the time when ground de-icing and/or anti-icing was started and the type of fluid applied, including mixture ratio fluid/water.
- vii. the pre-flight inspection signature.

In addition to the above it may be necessary to record the following supplementary information: The time spent in particular engine power ranges where use of such engine power affects the life of the engine or engine module. These are two examples thereof:

- the number of landings where landings affect the life of an aircraft or aircraft component.
- flight cycles or flight pressure cycles where such cycles affect the life of an aircraft or aircraft component.

NOTE 1: Where Section 3 is of the multi-sector 'part removable' type then such 'part removable' sections should contain all of the foregoing information where appropriate.

NOTE 2: Section 3 should be designed such that one copy of each page may remain on the aircraft and one other copy may be retained on the ground until completion of the flight to which it relates.

NOTE 3: Section 3 lay-out should be divided to show clearly what is required to be completed after flight and what is required to be completed in preparation for the next flight.

**Section 4** should contain details of all deferred defects that affect or may affect the safe operation of the aircraft and should therefore be known to the aircraft commander. Each page of this section should be pre-printed with the operator's name and page serial number and make provision for recording the following:

- i. a cross reference for each deferred defect such that the original defect can be identified in the particular section 3 sector record page.
- ii. the original date of occurrence of the defect deferred.
- iii. brief details of the defect.
- iv. details of the eventual rectification carried out and its CRS or a clear cross-reference back to the document that contains details of the eventual rectification.

**Section 5** should contain any necessary maintenance support information that the aircraft commander needs to know. Such information would include data on how to contact maintenance engineering if problems arise whilst operating the routes etc.

#### **AMC M.A.306 (b) Operators technical log system**

The aircraft technical log system can be either a paper or computer system or any combination of both methods acceptable to the competent authority.

In case of a computer system, it should contain programme safeguards against the ability of unauthorised personnel to alter the database.

#### **AMC M.A.307 (a) Transfer of aircraft continuing airworthiness records**

Where an owner/operator terminates his operation, all retained continuing airworthiness records should be passed on to the new owner/operator or stored.

A "permanent transfer" does not generally include the dry lease-out of an aircraft when the duration of the lease agreement is less than 6 months. However the competent authority should be satisfied that all continuing airworthiness records necessary for the duration of the lease agreement are transferred to the lessee or made accessible to them.

## **Subpart D MAINTENANCE STANDARDS**

### **AMC M.A.401 (b) Maintenance data**

1. Except as specified in sub-paragraph 2, each person or organisation performing aircraft maintenance should have access to and use:
  - (a) all maintenance related Parts and associated AMC's, together with the maintenance related guidance material,
  - (b) all applicable maintenance requirements and notices such as competent authority standards and specifications that have not been superseded by a requirement, procedure or directive,
  - (c) all applicable airworthiness directives,
  - (d) the appropriate sections of the aircraft maintenance programme, aircraft maintenance manual, repair manual, supplementary structural inspection document, corrosion control document, service bulletins, service sheets modification leaflets, non destructive inspection manual, parts catalogue, type certificate data sheets as required for the work undertaken and any other specific document issued by the type certificate or supplementary type certificate holder's maintenance data, except that in the case of operator or customer provided maintenance data it is not necessary to hold such provided data when the work order is completed.
2. In addition to sub-paragraph 1, for components each organisation performing aircraft maintenance should hold and use the appropriate sections of the vendor maintenance and repair manual, service bulletins and service letters plus any document issued by the type certificate holder as maintenance data on whose product the component may be fitted when applicable, except that in the case of operator or customer provided maintenance data it is not necessary to hold such provided data when the work order is completed.

### **AMC M.A.401(c) Maintenance data**

1. Data being made available to personnel maintaining aircraft means that the data should be available in close proximity to the aircraft or component being maintained, for mechanics and certifying staff to perform maintenance.
2. Where computer systems are used, the number of computer terminals should be sufficient in relation to the size of the work programme to enable easy access, unless the computer system can produce paper copies. Where microfilm or microfiche readers/printers are used, a similar requirement is applicable.
3. Maintenance tasks should be transcribed onto the work cards or worksheets and subdivided into clear stages to ensure a record of the accomplishment of the maintenance task. Of particular importance is the need to differentiate and specify, when relevant, disassembly, accomplishment of task, reassembly and testing. In the case of a lengthy maintenance task involving a succession of personnel to complete such task, it may be necessary to use supplementary work cards or worksheets to indicate what was actually accomplished by each individual person. A worksheet or work card system should refer to particular maintenance tasks.

4. Maintenance data should be kept up to date by:
  - subscribing to the applicable amendment scheme,
  - checking that all amendments are being received,
  - monitoring the amendment status of all data.

#### **AMC M.A.402 (a) Performance of maintenance**

1. When working outside the scope of an approved maintenance organisation personnel not authorised to issue a CRS should work under the supervision of certifying personnel. They may only perform maintenance that their supervisor is authorised to release, if the supervisor personally observes the work being carried out to the extent necessary to ensure that it is being done properly and if the supervisor is readily available, in person, for consultation. In this case licensed engineers should ensure that each person maintaining an aircraft or component has had appropriate training or relevant previous experience and is capable of performing the task required, and that personnel who carry out specialised tasks such as welding are qualified in accordance with an officially recognised standard.

2. In the case of limited pilot owner maintenance as specified in M.A.803, any person maintaining an aircraft should have had appropriate training or relevant previous experience as accepted by the competent authority and be capable of performing the task required.

3. The general maintenance and inspection standards applied to individual maintenance tasks should meet the recommended standards and practises of the organisation responsible for the type design which are normally published in the maintenance manuals.

In the absence of maintenance and inspection standards published by organisation responsible for the type design maintenance personnel should refer to the relevant aircraft airworthiness standards and procedures published or used as guidance by the Agency or the competent authority. The maintenance standards used should contain methods, techniques and practises acceptable to the Agency or competent authority for the maintenance of aircraft and its components.

4.1 The manufactures instructions for continued airworthiness should be followed when determining the need for an independent inspection.

4.2 In the absence of maintenance and inspection standards published by organisation responsible for the type design, maintenance tasks that involve the assembly or any disturbance of a control system that, if errors occurred, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft should be considered as flight safety sensitive maintenance tasks needing an independent inspection. A control system is an aircraft system by which the flight path, attitude, or propulsive force of the aircraft is changed, including the flight, engine and propeller controls, the related system controls and the associated operating mechanisms.

4.3 Independent inspections should be carried out by at least two persons, to ensure correct assembly, locking and sense of operation. A technical record of the inspections should contain the signatures of both persons before the relevant CRS is issued.

4.3.1 An independent inspection is an inspection first made by an authorised person signing the maintenance release who assumes full responsibility for the satisfactory completion of the work, before being subsequently inspected by a second independent competent person who attests to the satisfactory completion of the work recorded and that no deficiencies have been found.

4.3.2 The second independent competent person is not issuing a maintenance release therefore is not required to hold certification privileges. However they should be suitably qualified to carry out the inspection.

4.4 When work is being done under the control of an approved maintenance organisation the organisation should have procedures to demonstrate that the signatories have been trained and have gained experience on the specific control systems being inspected.

4.5. When work is being undertaken by an independent M.A.801 (b) 2 certifying staff, the qualifications and experience of the second independent competent person should be directly assessed by the person certifying for the maintenance, taking into account the individual's training and experience. It should not be acceptable for the certifying staff signing the release to show the person performing the independent inspection how to perform the inspection at the time the work is completed.

4.6 In summary the following maintenance tasks should primarily be considered when inspecting aircraft control systems that have been disturbed:

- installation, rigging and adjustment of flight controls.
- installation of aircraft engines, propellers and rotors.
- overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes.

Consideration should also be given to:

- previous experience of maintenance errors, depending on the consequences of the failure.
- information arising from an 'occurrence reporting system'

4.7 When checking control systems that have undergone maintenance the person signing the maintenance release and the person performing the independent check should consider the following points independently:

- all those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking.
- the system as a whole should be inspected for full and free movement over the complete range.
- cables should be tensioned correctly with adequate clearance at secondary stops.
- the operation of the control system as a whole should be observed to ensure that the controls are operating in the correct sense.
- if the control system is duplicated to provide redundancy, each system should be checked separately.

if different control systems are interconnected so that they affect each other, all the interactions should be checked through the full range of the applicable controls.

**AMC M.A.402 (b) Performance of maintenance**

When performing maintenance, personnel are required to use the tools, equipment and test apparatus necessary to ensure completion of work in accordance with accepted maintenance and inspection standards. Inspection, service or calibration on a regular basis should be in accordance with the equipment manufacturers' instructions. All tools requiring calibration should be traceable to an acceptable standard.

If the organisation responsible for the type design involved recommends special equipment or test apparatus, personnel should use the recommended equipment or apparatus or equivalent equipment accepted by the competent authority.

All work should be performed using materials of such quality and in a manner, that the condition of the aircraft or its components after maintenance will be at least equal to its original or modified condition (with regard to aerodynamic function, structural strength, resistance to vibration, deterioration and any other qualities affecting airworthiness).

**AMC M.A.402 (d) Performance of maintenance**

The working environment should be appropriate for the maintenance task being performed such that the effectiveness of personnel is not impaired.

(a) Temperature should be maintained such that personnel can perform the required tasks without undue discomfort.

(b) Airborne contamination (e.g. dust, precipitation, paint particles, filings) should be kept to a minimum to ensure aircraft/components surfaces are not contaminated, if this is not possible all susceptible systems should be sealed until acceptable conditions are re-established.

(c) Lighting should be adequate to ensure each inspection and maintenance task can be performed effectively.

(d) Noise levels should not be allowed to rise to the level of distraction for inspection staff or if this is not possible inspection staff should be provided with personnel equipment to reduce excessive noise.

**AMC M.A.402 (e) Performance of maintenance**

Facilities should be provided appropriate for all planned maintenance. This may require aircraft hangars that are both available and large enough for the planned maintenance.

Aircraft component workshops should be large enough to accommodate the components that are planned to be maintained.

Protection from inclement weather means the hangar or component workshop structures should be to a standard that prevents the ingress of rain, hail, ice, snow, wind and dust etc.

**AMC M.A.403 (b) Aircraft defects**

An assessment of both the cause and any potentially hazardous effect of any defect or combination of defects that could affect flight safety should be made in order to initiate

any necessary further investigation and analysis necessary to identify the root cause of the defect.

**AMC M.A.403 (d) Aircraft defects**

All deferred defects should be made known to the pilot/flight crew, whenever possible, prior to their arrival at the aircraft.

Deferred defects should be transferred on to worksheets at the next appropriate maintenance check, and any deferred defect which is not rectified during the maintenance check, should be re-entered on to a new deferred defect record sheet. The original date of the defect should be retained.

The necessary components or parts needed for the rectification of defects should be made available or ordered on a priority basis, and fitted at the earliest opportunity.

## **Subpart ECOMPONENTS**

### **AMC M.A.501 (a) - Installation**

1. To ensure a component is in a satisfactory condition, the person referred to under M.A.801 or the approved maintenance organisation should perform checks and verifications.
2. Performance of above checks and verifications should take place before the component is installed on the aircraft.
3. The following list, though not exhaustive, contains typical checks to be performed:
  - (a) verify the general condition of components and their packaging in relation to damages that could affect the integrity of the components;
  - (b) verify that the shelf life of the component has not expired;
  - (c) verify that items are received in the appropriate package in respect of the type of component: e.g. correct ATA 300 or electrostatic sensitive devices packaging, when necessary;
  - (d) verify that component has all plugs and caps appropriately installed to prevent damage or internal contamination. Tape should not be used to cover electrical connections or fluid fittings/openings because adhesive residues can insulate electrical connections and contaminate hydraulic or fuel units.
4. The purpose of the EASA Form 1 (see also Part-M Appendix II) is to release components after manufacture and to release maintenance work carried out on such components under the approval of a competent authority and to allow components removed from one aircraft/component to be fitted to another aircraft/ component.
5. For the purpose of Part-M, a document equivalent to an EASA Form 1 may be:
  - (a) a release document issued by an organisation under the terms of a bilateral agreement signed by the European Community;
  - (b) a release document issued by an organisation approved under the terms of a JAA maintenance bilateral agreement until superseded by the corresponding agreement signed by the European Community;
  - (c) a JAA Form One issued prior to 28 September 2004 by a JAR 145 organisation approved by a JAA Full Member State;
  - (d) in the case of new aircraft components that were released from manufacturing prior to the Part-21 compliance date the component should be accompanied by a JAA Form One issued by a JAR 21 organisation approved by a JAA Full Member Authority and within the JAA mutual recognition system;
  - (f) a JAA Form One issued prior to 28 September 2005 by a production organisation approved by a competent authority in accordance with its national regulations;
  - (g) a JAA Form One issued prior to 28 September 2008 by a maintenance organisation approved by a competent authority in accordance with its national regulations;
  - (h) a release document acceptable to a competent authority according to the provisions of a bilateral agreement between the competent authority and a third country until

superseded by the corresponding agreement signed by the European Community. This provision is valid provided the above agreements between the competent authority and a third country are notified to the Commission and to the other competent authorities in accordance with Article 9 of Regulation (EC) No 1592/2002.

(i) paragraphs (f) and (g) do not apply to the Part-145 maintenance environment.

6. Any item in storage without an EASA Form 1 or equivalent cannot be installed on aircraft registered in a Member State unless an EASA Form 1 is issued for such item by an appropriately approved maintenance organisation in accordance with AMC M.A.613 (a)

#### **AMC M.A.501 (b) – Installation**

1. The EASA Form 1 identifies the airworthiness and eligibility status of an aircraft component. Block 13 "Remarks" on the EASA Form 1 in some cases contains vital airworthiness related information (see also Part-M Appendix II) which may need appropriate and necessary actions.

2. The fitment of a replacement components/material should only take place when the person referred to under M.A.801 or the M.A. Subpart F maintenance organisation is satisfied that such components/material meet required standards in respect of manufacture or maintenance, as appropriate.

3. The person referred to under M.A.801 or the M.A. Subpart F approved maintenance organisation should be satisfied that the component in question meets the approved data/standard, such as the required design and modification standards. This may be accomplished by reference to the TC holder or manufacturer's parts catalogue or other approved data (i.e. SB). Care should also be exercised in ensuring compliance with applicable AD and the status of any service life limited parts fitted to the aircraft component.

#### **AMC M.A.501(c) – Installation**

1. Standard parts are parts manufactured in complete compliance with an established industry, Agency, competent authority or other Government specification which includes design, manufacturing, test and acceptance criteria, and uniform identification requirements. The specification should include all information necessary to produce and verify conformity of the part. It should be published so that any party may manufacture the part. Examples of specifications are National Aerospace Standards (NAS), Army-Navy Aeronautical Standard (AN), Society of Automotive Engineers (SAE), SAE Sematec, Joint Electron Device Engineering Council, Joint Electron Tube Engineering Council, and American National Standards Institute (ANSI), EN Specifications etc...

2. To designate a part as a standard part the TC holder may issue a standard parts manual accepted by the competent authority of original TC holder or may make reference in the parts catalogue to a national/international specification (such as a standard diode/capacitor etc) not being an aviation only specification for the particular part.

3. Documentation accompanying standard parts should clearly relate to the particular parts and contain a conformity statement plus both the manufacturing and supplier source. Some material is subject to special conditions such as storage condition or life limitation etc. and this should be included on the documentation and / or material packaging.

4. An EASA Form 1 or equivalent is not normally issued and therefore none should be expected.

#### **AMC M.A.501 (d) – Installation**

1. Consumable material is any material which is only used once, such as lubricants, cements, compounds, paints, chemicals dyes and sealants etc.
2. Raw material is any material that requires further work to make it into a component part of the aircraft such as metals, plastics, wood, fabric etc.
3. Material both raw and consumable should only be accepted when satisfied that it is to the required specification. To be satisfied, the material and or its packaging should be marked with the specification and where appropriate the batch number.
4. Documentation accompanying all material should clearly relate to the particular material and contain a conformity statement plus both the manufacturing and supplier source. Some material is subject to special conditions such as storage condition or life limitation etc. and this should be included on the documentation and / or material packaging.
5. EASA form 1 or equivalent is not normally issued for such material and therefore none should be expected. The material specification is normally identified in the TC holder's data except in the case where the Agency or the competent authority has agreed otherwise.
6. Items purchased in batches (fasteners etc.) should be supplied intact in the original equipment manufacturer (OEM) package. Packaging should state the P/N, batch number and the quantity specified in the package. The documentation accompanying the material should contain P/N, lot number and the supplied quantity, and the manufacturing sources. If the material is acquired from different lots, acceptance documentation for each lot should be supplied.

#### **AMC M.A.504 (a) - Control of unserviceable components**

A component continues to be unserviceable until a decision is taken pursuant to AMC M.A.605 (c) 6

#### **AMC M.A.504 (b) - Control of unserviceable components**

1. M.A.801(b)(2) certifying staff or the Section A Subpart F approved maintenance organisation performing maintenance should ensure proper identification of any unserviceable components.
2. The unserviceable status of the component should be clearly declared on a tag together with the component identification data and any information useful to define actions necessary to be taken. Such information should state, as applicable, in service times, maintenance status, preservation status, failures, defects or malfunctions reported or detected exposure to adverse environmental conditions, if the component has been involved in or affected by an accident/incident. Means should be provided to prevent unwanted separation of this tag from the component.

3. M.A.801(b)(2) certifying staff performing aircraft maintenance should send, with the agreement of the aircraft owner/lessee, any unserviceable component to a maintenance organisation approved under Section A Subpart F or Part-145 for controlled storage.

**AMC M.A.504 (c) - Control of unserviceable components – unsalvageable components**

1. The following types of components should typically be classified as unsalvageable:
  - (a) components with non-repairable defects, whether visible or not to the naked eye;
  - (b) components that do not meet design specifications, and cannot be brought into conformity with such specifications;
  - (c) components subjected to unacceptable modification or rework that is irreversible;
  - (d) certified life-limited parts that have reached or exceeded their certified life limits, or have missing or incomplete records;
  - (e) components that cannot be returned to airworthy condition due to exposure to extreme forces, heat or adverse environment;
  - (f) components for which conformity with an applicable airworthiness directive cannot be accomplished;
  - (g) components for which continuing airworthiness records and/or traceability to the manufacturer can not be retrieved.
2. It is common practice for possessors of aircraft components to dispose of unsalvageable components by selling, discarding, or transferring such items. In some instances, these items have reappeared for sale and in the active parts inventories of the aviation community. Misrepresentation of the status of components and the practice of making such items appear serviceable has resulted in the use of unsalvageable nonconforming components. Therefore organisations disposing of unsalvageable aircraft components should consider the possibility of such components later being misrepresented and sold as serviceable components. Caution should be exercised to ensure that unsalvageable components are disposed of in a manner that does not allow them to be returned to service.

**AMC M.A.504 (d) 2 - Control of unserviceable components**

1. Mutilation should be accomplished in such a manner that the components become permanently unusable for their original intended use. Mutilated components should not be able to be reworked or camouflaged to provide the appearance of being serviceable, such as by re-plating, shortening and re-threading long bolts, welding, straightening, machining, cleaning, polishing, or repainting.
2. Mutilation may be accomplished by one or a combination of the following procedures:
  - (a) grinding,
  - (b) burning,
  - (c) removal of a major lug or other integral feature,
  - (d) permanent distortion of parts,

- (e) cutting a hole with cutting torch or saw,
- (f) melting,
- (g) sawing into many small pieces,
- (h) any other method accepted by the competent authority or the Agency on a case by case basis.

3. The following procedures are examples of mutilation that are often less successful because they may not be consistently effective:

- (a) stamping or vibro-etching,
- (b) spraying with paint,
- (c) small distortions, incisions or hammer marks,
- (d) identification by tag or markings,
- (e) drilling small holes,
- (f) sawing in two pieces only.

4. Since manufacturers producing approved aircraft components should maintain records of serial numbers for "retired" certified life-limited or other critical components, the organisation that mutilates a component should provide the original manufacturer with the data plate and/or serial number and final disposition of the component.

#### **AMC M.A.504 (e) - Control of unserviceable components**

A maintenance organisation may choose, in agreement with the component's owner, to release an unsalvageable component for legitimate non-flight uses, such as for training and education, research and development. In such instances, mutilation may not be appropriate. The following methods should be used to prevent the component re-entering the aviation supply system:

- (a) permanently marking or stamping the component, as "NOT SERVICEABLE." (Ink stamping is not an acceptable method);
- (b) removing original part number identification;
- (c) removing data plate identification;
- (d) maintaining a tracking or accountability system, by serial number or other individualised data, to record transferred unsalvageable aircraft component;
- (e) including written procedures concerning disposal of such components in any agreement or contract transferring such components.

NOTE: Unsalvageable components should not be released to any person or organisation that is known to return unsalvageable components back into the aviation supply system, due to the potential safety threat.

## Subpart F MAINTENANCE ORGANISATION

### AMC M.A.601 Scope

An approved maintenance organisation may be approved to maintain aircraft/aircraft components not type certificated by the Agency.

### AMC M.A.602 Application

An application should be made on an EASA Form 2 (Appendix IX) or equivalent acceptable to the competent authority.

### AMC M.A.603 (a) Extent of Approval

The following table identifies the ATA specification 100 chapter for the category C component rating.

CLASS	RATING	ATA CHAPTERS
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs		
	C1 Air Cond & Press	21
	C2 Auto Flight	22
	C3 Comms and Nav	23 - 34
	C4 Doors - Hatches	52
	C5 Electrical Power	24 - 33
	C6 Equipment	25 - 38 - 45
	C7 Engine – APU	49 - 71 - 72 - 73 - 74 - 75 - 76 - 77 - 78 - 79 - 80 - 81 - 82 - 83
	C8 Flight Controls	27 - 55 - 57.40 - 57.50 - 57.60 - 57.70
	C9 Fuel - Airframe	28
	C10 Helicopters - Rotors	62 - 64 - 66 - 67
	C11 Helicopter - Trans	63 - 65
	C12 Hydraulic	29
	C13 Instruments	31
	C14 Landing Gear	32
	C15 Oxygen	35
	C16 Propellers	61
	C17 Pneumatic	36 - 37
	C18 Protection ice/rain/fire	26 - 30
	C19 Windows	56
C20 Structural	53 - 54 - 57.10 - 57.20 - 57.30	

### **AMC M.A.603 (b) Extent of approval**

1. The agreement by the competent authority for the fabrication of parts by the approved maintenance organisation should be formalised through the approval of a detailed procedure in the maintenance organisation manual. This AMC contains principles and conditions to be taken into account for the preparation of an acceptable procedure.
2. Fabrication, inspection, assembly and test should be clearly within the technical and procedural capability of the approved maintenance organisation.
3. The approved data necessary to fabricate the part are those approved either by the competent authority, the TC holder, Part-21 design organisation approval holder, or STC holder.
4. Items fabricated by an approved maintenance organisation may only be used by that organisation in the course of overhaul, maintenance, modifications, or repair of aircraft or components undergoing work within its own facility. The permission to fabricate does not constitute approval for manufacture, or to supply externally and the parts do not qualify for certification on EASA Form 1. This also applies to the bulk transfer or surplus inventory, in that locally fabricated parts are physically segregated and excluded from any delivery certification.
5. Fabrication of parts, modification kits etc for onward supply and/or sale may not be conducted under a M.A. Subpart F approval.
6. The data specified in paragraph 3 may include repair procedures involving the fabrication of parts. Where the data on such parts is sufficient to facilitate fabrication, the parts may be fabricated by an approved maintenance organisation. Care must be taken to ensure that the data include details of part numbering, dimensions, materials, processes, and any special manufacturing techniques, special raw material specification or/and incoming inspection requirement and that the approved organisation has the necessary capability. That capability should be defined by way of maintenance organisation manual content. Where special processes or inspection procedures are defined in the approved data which are not available at the approved maintenance organisation, that organisation can not fabricate the part unless the TC/STC-holder gives an approved alternative.
7. Examples of fabrication under the scope of an M.A. Subpart F approval can include but are not limited to the following:
  - (a) fabrication of bushes, sleeves and shims,
  - (b) fabrication of secondary structural elements and skin panels,
  - (c) fabrication of control cables,
  - (d) fabrication of flexible and rigid pipes,
  - (e) fabrication of electrical cable looms and assemblies,
  - (f) formed or machined sheet metal panels for repairs.

Note: It is not acceptable to fabricate any item to pattern unless an engineering drawing of the item is produced which includes any necessary fabrication processes and which is accepted to the competent authority.

8. Where a TC-holder or an approved production organisation is prepared to make available complete data which is not referred to in aircraft manuals or service bulletins but provides manufacturing drawings for items specified in parts lists, the fabrication of these items is not considered to be within the scope of an M.A. Subpart F approval unless agreed

otherwise by the competent authority in accordance with a procedure specified in the maintenance organisation manual.

9. Inspection and Identification.

Any locally fabricated part should be subject to an inspection stage before, separately, and preferably independently from, any inspection of its installation. The inspection should establish full compliance with the relevant manufacturing data, and the part should be unambiguously identified as fit for use by stating conformity to the approved data. Adequate records should be maintained of all such fabrication processes including heat treatment and the final inspections. All parts, excepting those with inadequate space, should carry a part number which clearly relates it to the manufacturing/inspection data. Additional to the part number the approved maintenance organisation's identity should be marked on the part for traceability purposes.

**AMC M.A.604 Maintenance organisation manual**

1. Appendix IV to this AMC provides an outline of the format of an acceptable maintenance organisation manual for a small organisation with less than 10 maintenance staff.
2. The maintenance organisation exposition as specified in Part-145 provides an outline of the format of an acceptable maintenance organisation manual for larger organisations with more than 10 maintenance staff, dependent upon the complexity of the organisation.

**AMC M.A.605 (a) Facilities**

1. Where a hangar is not owned by the M.A. Subpart F organisation, it may be necessary to establish proof of tenancy. In addition, sufficiency of hangar space to carry out planned maintenance should be demonstrated by the preparation of a projected aircraft hangar visit plan relative to the aircraft maintenance programme. The aircraft hangar visit plan should be updated on a regular basis.
2. Protection from the weather elements relates to the normal prevailing local weather elements that are expected throughout any twelve-month period. Aircraft hangar and aircraft component workshop structures should be to a standard that prevents the ingress of rain, hail, ice, snow, wind and dust etc. Aircraft hangar and aircraft component workshop floors should be sealed to minimise dust generation.
3. Aircraft maintenance staff should be provided with an area where they may study maintenance instructions and complete continuing airworthiness records in a proper manner.

**AMC M.A.605 (b) Facilities**

It is acceptable to combine any or all of the office accommodation requirements into one office subject to the staff having sufficient room to carry out assigned tasks.

**AMC M.A.605 (c) Facilities**

1. Storage facilities for serviceable aircraft components should be clean, well-ventilated and maintained at an even dry temperature to minimise the effects of condensation. Manufacturer's storage recommendations should be followed for those aircraft components identified in such published recommendations.
2. Adequate storage racks should be provided and strong enough to hold aircraft components and provide sufficient support for large aircraft components such that the component is not damaged during storage.
3. All aircraft components, wherever practicable, should remain packaged in their protective material to minimise damage and corrosion during storage. A shelf life control system should be utilised and identity tags used to identify components.
4. Segregation means storing unserviceable components in a separate secured location from serviceable components.
5. Segregation and management of any unserviceable component should be ensured according to the pertinent procedure approved to that organisation.
6. Procedures should be defined by the organisation describing the decision process for the status of unserviceable components. This procedure should identify at least the following:
  - role and responsibilities of the persons managing the decision process;
  - description of the decision process to choose between maintaining, storing or mutilating a component;
  - traceability of decision
7. Once unserviceable components or materials have been identified as unsalvageable in accordance with M.A.504 (c), the organisation should establish secure areas in which to segregate such items and to prevent unauthorised access. Unsalvageable components should be managed through a procedure to ensure that these components receive the appropriate final disposal according to M.A.504 (d) or (e). The person responsible for the implementation of this procedure should be identified.

#### **AMC M.A.606 (a) Personnel requirements**

With regard to the accountable manager, it is normally intended to mean the chief executive officer of the maintenance organisation approved under M.A. Subpart F, who by virtue of position has overall (including in particular financial) responsibility for running the organisation. The accountable manager may be the accountable manager for more than one organisation and is not required to be necessarily knowledgeable on technical matters. When the accountable manager is not the chief executive officer, the competent authority will need to be assured that such an accountable manager has direct access to chief executive officer and has a sufficiency of maintenance funding allocation.

AMC M.A.606 (b) Personnel requirements<sup>1</sup>. Dependent upon the size of the organisation, the functions may be subdivided under individual managers or combined in any number of ways.

2. The maintenance organisation should have, dependent upon the extent of approval, an aircraft maintenance manager, a workshop manager all of whom should report to the accountable manager. In small maintenance organisations any manager may also be the

accountable manager, and may also be the aircraft maintenance manager or the workshop manager.

3. The aircraft maintenance manager is responsible for ensuring that all maintenance required to be carried out, plus any defect rectification carried out during aircraft maintenance, is carried out to the design and quality standards specified in this Part. The aircraft maintenance manager is also responsible for any corrective action resulting from the M.A.616 organisational review.

4. The workshop manager is responsible for ensuring that all work on aircraft components is carried out to the standards specified in this Part and also responsible for any corrective action resulting from the M.A.616 organisational review.

5. Notwithstanding the example sub-paragraphs 2 - 4 titles, the organisation may adopt any title for the foregoing managerial positions but should identify to the competent authority the titles and persons chosen to carry out these functions.

#### **AMC M.A.606(c) Personnel requirements**

1. All nominated persons should, in the normal way, be expected to satisfy the competent authority that they possess the appropriate experience and qualifications which are listed in paragraphs 2.1 to 2.5 below.

2. All nominated persons should have:

2.1. practical experience and expertise in the application of aviation safety standards and safe maintenance practices;

2.2. comprehensive knowledge of:

(a) Part-M and any associated requirements and procedures;

(b) the maintenance organisation manual;

2.3. five years aviation experience of which at least three years should be practical maintenance experience;

2.4. knowledge of the relevant type(s) of aircraft or components maintained;

2.5. knowledge of maintenance standards.

#### **AMC M.A.606 (d) Personnel requirements**

1. All staff are subjected to compliance with the organisation's procedures specified in the maintenance organisation manual relevant to their duties.

2. To have sufficient staff means that the approved maintenance organisation employs or contracts staff directly, even on a volunteer basis, for the anticipated maintenance workload.

3. Temporarily sub-contracted means the person is employed by another organisation and contracted by that organisation to the approved maintenance organisation.

#### **AMC M.A.606(e) Personnel requirements**

1. Personnel involved in maintenance should be assessed for competence by 'on the job' evaluation and/or by examination relevant to their particular job role within the organisation before unsupervised work is permitted.
2. Adequate initial and recurrent training should be provided and recorded to ensure continued competence.

#### **AMC M.A.606 (f) Personnel requirements**

1. Continued airworthiness non-destructive testing means such testing specified by the type certificate holder of the aircraft, engine or propeller in the M.A.304 (b) maintenance data for in service aircraft/aircraft components for the purpose of determining the continued fitness of the product to operate safely.
2. Appropriately qualified means to level 1, 2 or 3 as defined by European Standard EN 4179 dependant upon the non-destructive testing function to be carried out.
3. Notwithstanding the fact that level 3 personnel may be qualified via EN 4179 to establish and authorise methods, techniques, etc., this does not permit such personnel to deviate from methods and techniques published by the type certificate holder/manufacture in the form of continued airworthiness data, such as in non-destructive test manuals or service bulletins, unless the manual or service bulletin expressly permits such deviation.
4. Notwithstanding the general references in EN 4179 to a national aerospace NDI board, all examinations should be conducted by personnel or organisations under the general control of such a board. In the absence of a national aerospace NDI board, examinations should be conducted by personnel or organisations under the general control of the NDI board of a Member State designated by the competent authority.
5. Particular non-destructive test means any one or more of the following: dye penetrant, magnetic particle, eddy current, ultrasonic and radiographic methods including X ray and gamma ray.
6. In addition it should be noted that new methods are and will be developed, such as, but not limited to thermography and shearography, which are not specifically addressed by EN 4179. Until such time as an agreed standard is established such methods should be carried out in accordance with the particular equipment manufacturers' recommendations including any training and examination process to ensure competence of the personnel with the process.
7. Any approved maintenance organisation that carries out continued airworthiness non-destructive testing should establish qualification procedures for non-destructive testing.
8. Boroscopy and other techniques such as delamination coin tapping are non-destructive inspections rather than non-destructive testing. Notwithstanding such differentiation, approved maintenance organisation should establish a procedure to ensure that personnel who carry out and interpret such inspections are properly trained and assessed for their competence with the process. Non-destructive inspections, not being considered as non-destructive testing by M.A. Subpart F are not listed in Appendix IV to Part-M under class rating D1.
9. The referenced standards, methods, training and procedures should be specified in the maintenance organisation manual.

10. Any such personnel who intend to carry out and/or control a non-destructive test for which they were not qualified prior to the effective date of Part-M should qualify for such non-destructive test in accordance with EN 4179.

#### **AMC M.A.607 Certifying staff**

1. Adequate understanding of the relevant aircraft and/or aircraft component(s) to be maintained together with the associated organisation procedures means that the person has received training and has relevant maintenance experience on the product type and associated organisation procedures such that the person understands how the product functions, what are the more common defects with associated consequences.
2. All prospective certifying staff are required to be assessed for competence, qualification and capability related to intended certifying duties. Competence and capability can be assessed by having the person work under the supervision of another certifying person for sufficient time to arrive at a conclusion. Sufficient time could be as little as a few weeks if the person is fully exposed to relevant work. The person need not be assessed against the complete spectrum of intended duties. When the person has been recruited from another approved maintenance organisation and was a certifying person in that organisation then it is reasonable to accept a written confirmation from the previous organisation.
3. The organisation should hold copies of all documents that attest to qualification, and to recent experience.
4. Relevant maintenance experience should be understood to mean that the person has worked in an aircraft or component maintenance environment and has either exercised the privileges of the certification authorisation and/or has actually carried out maintenance on at least some of the aircraft type systems specified in the particular certification authorisation.

#### **AMC M.A.607 (c) Certifying staff**

1. The following minimum information as applicable should be kept on record in respect of each certifying person:
  - (a) name;
  - (b) date of birth;
  - (c) basic training;
  - (d) type training;
  - (e) recurrent training;
  - (f) specialised training;
  - (g) experience;
  - (h) qualifications relevant to the approval;
  - (i) scope of the authorisation;
  - (j) date of first issue of the authorisation;
  - (k) if appropriate - expiry date of the authorisation.

2. Persons authorised to access the system should be maintained at a minimum to ensure that records cannot be altered in an unauthorised manner or that such confidential records become accessible to unauthorised persons.
3. The competent authority should be granted access to the records upon request.

#### **AMC M.A.608 (a) Components, equipment and tools**

1. Once the applicant for M.A. Subpart F approval has determined the intended scope of approval for consideration by the competent authority, it will be necessary to show that all tools and equipment as specified in the maintenance data can be made available when needed.
2. All such tools should be clearly identified and listed in a control register including any personal tools and equipment that the organisation agrees can be used.
3. For tools required on an occasional basis, the organisation should ensure that they are controlled in terms of servicing or calibration as required.

#### **AMC M.A.608 (b) Components, equipment and tools**

1. The control of these tools and equipment requires that the organisation has a procedure to inspect/service and, where appropriate, calibrate such items on a regular basis and indicate to users that the item is within any inspection or service or calibration time-limit. A clear system of labelling all tooling, equipment and test equipment is therefore necessary giving information on when the next inspection or service or calibration is due and if the item is unserviceable for any other reason where it may not be obvious. A register should be maintained for all the organisation's precision tooling and equipment together with a record of calibrations and standards used.
2. Inspection, service or calibration on a regular basis should be in accordance with the equipment manufacturers' instructions except where the M.A. Subpart F organisation can show by results that a different time period is appropriate in a particular case.

#### **AMC M.A.609 Maintenance Data**

When an organisation uses customer provided maintenance data, the scope of approval indicated in the maintenance organisation manual should be limited to the individual aircraft covered by the contracts signed with those customers unless the organisation also holds its own complete set of maintenance data for that type of aircraft.

#### **AMC M.A.613 (a) Component certificate of release to service**

1. An aircraft component which has been maintained off the aircraft requires the issue of a certificate of release to service for such maintenance and another CRS to service in regard to being installed properly on the aircraft when such action occurs.
2. In the case of components in storage prior to Part-145, Part-M and Part-21 and not released on an EASA Form 1 or equivalent in accordance with M.A.501(a) or removed serviceable from active aircraft which have been withdrawn from service, this paragraph

provides additional guidance regarding the conditions under which an EASA Form 1 may be issued .

2.1 An EASA Form 1 may be issued for an aircraft component which has been:

- released without an EASA Form 1 or equivalent.
- Used on an aircraft and removed in a serviceable condition. Examples include leased and loaned aircraft components.
- Removed from aircraft which have been withdrawn from service, or from aircraft which have been involved in abnormal occurrences such as accidents, incidents, heavy landings or lightning strikes.
- Components maintained by an unapproved organisation.

2.2. An appropriately rated M.A. Subpart F maintenance organisation may issue an EASA Form 1 as detailed in this AMC sub-paragraph 2.5 to 2.9, as appropriate, in accordance with procedures detailed in the manual as approved by the competent authority. The appropriately rated M.A. Subpart F maintenance organisation is responsible for ensuring that all reasonable measures have been taken to ensure that only approved and serviceable aircraft components are issued an EASA Form 1 under this paragraph.

2.3. For the purposes of this paragraph 2 only, appropriately rated means an organisation with an approval class rating for the type of component or for the product in which it may be installed.

2.4. An EASA Form 1 issued in accordance with this paragraph 2 should be issued by signing in block 20 and stating "Inspected" in block 12. In addition, block 13 should specify:

2.4.1. when the last maintenance was carried out and by whom;

2.4.2. if the component is unused, when the component was manufactured and by whom with a cross reference to any original documentation which should be included with the Form;

2.4.3. a list of all airworthiness directives, repairs and modifications known to have been incorporated. If no airworthiness directives or repairs or modifications are known to be incorporated then this should be so stated

2.4.4. detail of life used for service life limited parts being any combination of fatigue, overhaul or storage life;

2.4.5. for any aircraft component having its own maintenance history record, reference to the particular maintenance history record as long as the record contains the details that would otherwise be required in block 13. The maintenance history record and acceptance test report or statement, if applicable, should be attached to the EASA Form 1.

2.5. New / unused aircraft components

2.5.1 Any unused aircraft component in storage without an EASA Form 1 up to the effective date(s) for Part-21 that was manufactured by an organisation acceptable to the competent authority at the time may be issued an EASA Form 1 by an appropriately rated maintenance organisation approved under M.A. Subpart F. The EASA Form 1 should be issued in accordance with the following subparagraphs which should be included in a procedure within the maintenance organisation manual.

Note 1: It should be understood that the release of a stored but unused aircraft component in accordance with this paragraph represents a maintenance release under M.A. Subpart F and not a production release under Part-21. It is not intended to bypass the production release procedure agreed by the Member State for parts and subassemblies intended for fitment on the manufacturers own production line.

(a) An acceptance test report or statement should be available for all used and unused aircraft components that are subjected to acceptance testing after manufacturing or maintenance as appropriate.

(b) The aircraft component should be inspected for compliance with the manufacturer's instructions and limitations for storage and condition including any requirement for limited storage life, inhibitors, controlled climate and special storage containers. In addition or in the absence of specific storage instructions the aircraft component should be inspected for damage, corrosion and leakage to ensure good condition.

(c) The storage life used of any storage life limited parts should be established.

2.5.2. If it is not possible to establish satisfactory compliance with all applicable conditions specified in subparagraph 2.5.1 (a) to (c) inclusive the aircraft component should be disassembled by an appropriately rated organisation and subjected to a check for incorporated airworthiness directives, repairs and modifications and inspected/tested in accordance with the manufacturers maintenance instructions to establish satisfactory condition and, if relevant, all seals, lubricants and life limited parts replaced. On satisfactory completion after reassembly an EASA Form 1 may be issued stating what was carried out and the reference of the manufacturers maintenance instructions included.

2.6. Used aircraft components removed from a serviceable aircraft.

2.6.1. Serviceable aircraft components removed from a Member State registered aircraft may be issued an EASA Form 1 by an appropriately rated organisation subject to compliance with this subparagraph.

(a). The organisation should ensure that the component was removed from the aircraft by an appropriately qualified person.

(b). The aircraft component may only be deemed serviceable if the last flight operation with the component fitted revealed no faults on that component/related system.

(c). The aircraft component should be inspected for satisfactory condition including in particular damage, corrosion or leakage and compliance with any additional manufacturer's maintenance instructions.

(d). The aircraft record should be researched for any unusual events that could affect the serviceability of the aircraft component such as involvement in accidents, incidents, heavy landings or lightning strikes. Under no circumstances may an EASA Form 1 be issued in accordance with this paragraph 2.6 if it is suspected that the aircraft component has been subjected to extremes of stress, temperatures or immersion which could effect its operation.

(e). A maintenance history record should be available for all used serialised aircraft components.

(f). Compliance with known modifications and repairs should be established.

(g). The flight hours/cycles/landings as applicable of any service life limited parts including time since overhaul should be established.

- (h). Compliance with known applicable airworthiness directives should be established.
- (i). Subject to satisfactory compliance with this subparagraph 2.6.1 an EASA Form 1 may be issued and should contain the information as specified in paragraph 2.4 including the aircraft from which the aircraft component was removed.

2.6.2. Serviceable aircraft components removed from a non Member State registered aircraft may only be issued an EASA Form 1 if the components are leased or loaned from the maintenance organisation approved under M.A. Subpart F who retains control of the airworthiness status of the components. An EASA Form 1 may be issued and should contain the information as specified in paragraph 2.4 including the aircraft from which the aircraft component was removed.

#### 2.7. Used aircraft components removed from an aircraft withdrawn from service.

Serviceable aircraft components removed from a Member State registered aircraft withdrawn from service may be issued an EASA Form 1 by a maintenance organisation approved under M.A. Subpart F subject to compliance with this sub paragraph.

(a). Aircraft withdrawn from service are sometimes dismantled for spares. This is considered to be a maintenance activity and should be accomplished under the control of an organisation approved under M.A. Subpart F, employing procedures approved by the competent authority.

(b). To be eligible for installation components removed from such aircraft may be issued with an EASA Form 1 by an appropriately rated organisation following a satisfactory assessment.

(c). As a minimum the assessment will need to satisfy the standards set out in paragraphs 2.5 and 2.6 as appropriate. This should where known, include the possible need for the alignment of scheduled maintenance that may be necessary to comply with the maintenance programme applicable to the aircraft on which the component is to be installed.

(d). Irrespective of whether the aircraft holds a certificate of airworthiness or not, the organisation responsible for certifying any removed component should satisfy itself that the manner in which the components were removed and stored are compatible with the standards required by M.A. Subpart F.

(e). A structured plan should be formulated to control the aircraft disassembly process. The disassembly is to be carried out by an appropriately rated organisation under the supervision of certifying staff, who will ensure that the aircraft components are removed and documented in a structured manner in accordance with the appropriate maintenance data and disassembly plan.

(f). All recorded aircraft defects should be reviewed and the possible effects these may have on both normal and standby functions of removed components are to be considered.

(g). Dedicated control documentation is to be used as detailed by the disassembly plan, to facilitate the recording of all maintenance actions and component removals performed during the disassembly process. Components found to be unserviceable are to be identified as such and quarantined pending a decision on the actions to be taken. Records of the maintenance accomplished to establish serviceability are to form part of the component maintenance history.

(h). Suitable M.A. Subpart F facilities for the removal and storage of removed components are to be used which include suitable environmental conditions, lighting, access

equipment, aircraft tooling and storage facilities for the work to be undertaken. While it may be acceptable for components to be removed, given local environmental conditions, without the benefit of an enclosed facility subsequent disassembly (if required) and storage of the components should be in accordance with manufacturer's recommendations.

2.8. Used aircraft components maintained by organisations not approved in accordance with M.A. Subpart F.

For used components maintained by a maintenance organisation unapproved under M.A. Subpart F, due care should be exercised before acceptance of such components. In such cases an appropriately rated maintenance organisation approved under part-145 should establish satisfactory conditions by:

- (a) dismantling the component for sufficient inspection in accordance with the appropriate maintenance data,
- (b) replacing of all service life limit components when no satisfactory evidence of life used is available and/or the components are in an unsatisfactory condition,
- (c) reassembling and testing as necessary the component,
- (d) completing all certification requirements as specified in M.A.613

2.9. Used aircraft components removed from an aircraft involved in an accident or incident.

Such components should only be issued with an EASA Form 1 when processed in accordance with paragraph 2.7 and a specific work order including all additional necessary tests and inspections made necessary by the accident or incident. Such a work order may require input from the TC holder or original manufacturer as appropriate. This work order should be referenced in block 13.

3. A certificate should not be issued for any component when it is known that the component is unserviceable except in the case of a component undergoing a series of maintenance processes at several approved maintenance organisations and the component needs a certificate for the previous maintenance process carried out for the next approved maintenance organisation to accept the component for subsequent maintenance processes. A clear statement of limitation should be endorsed in block 13.

4. The certificate is to be used for export/import purposes, as well as for domestic purposes, and serves as an official certificate for components from the manufacturer/maintenance organisation to users. The certificate is not a delivery or shipping note. It should only be issued by organisations approved by a competent authority or the Agency as applicable within the scope of the approval.

#### **AMC M.A.614 (a) Maintenance records**

1. Properly executed and retained records provide owners, operators and maintenance personnel with information essential in controlling unscheduled and scheduled maintenance, and trouble shooting to eliminate the need for re-inspection and rework to establish airworthiness.

The prime objective is to have secure and easily retrievable records with comprehensive and legible contents. The aircraft record should contain basic details of all serialised aircraft components and all other significant aircraft components installed, to ensure

traceability to such installed aircraft component documentation and associated M.A.304 maintenance data.

2. The maintenance record can be either a paper or computer system or any combination of both. The records should remain legible throughout the required retention period.
3. Paper systems should use robust material which can withstand normal handling and filing.
4. Computer systems may be used to control maintenance and/or record details of maintenance work carried out. Computer systems used for maintenance should have at least one backup system which should be updated at least within 24 hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorised personnel to alter the database.

#### **AMC M.A.614 (c) Maintenance records**

Associated maintenance data is specific information such as repair and modification data. This does not necessarily require the retention of all aircraft maintenance manual, component maintenance manual, parts catalogues etc issued by the TC holder or STC holder. Maintenance records should refer to the revision status of the data used.

#### **AMC M.A.616 Organisational review**

1. The primary objectives of the organisational review are to enable the approved maintenance organisation to ensure that it can deliver a safe product and that approved maintenance organisation remains in compliance with the requirements.
2. The approved maintenance organisation should identify:
  - 2.1. The person responsible for the organisational review, and;
  - 2.2. The frequency of the reviews, and;
  - 2.3. The scope and content of the reviews, and;
  - 2.4. The persons accomplishing the reviews, and;
  - 2.5. The procedure for planning, performing and processing review findings.
  - 2.6. The procedure for ensuring corrective actions are carried out in the appropriate time frame.
3. The organisation quality system as specified in Part-145 provides an acceptable basic structure for the organisational review system for organisations with more than 10 maintenance staff, dependent upon the complexity of the organisation.
4. Appendix VIII should be used to manage the organisational reviews.

#### **AMC M.A.617 Changes to the approved maintenance organisation**

The competent authority should be given adequate notification of any proposed changes in order to enable the maintenance organisation to remain approved if agreed by the

competent authority during negotiations about any of the specified changes. Without this paragraph the approval would automatically be suspended in all cases.

## **Subpart G CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

### **AMC M.A.704 Continuing airworthiness management exposition**

1. The purpose of the continuing airworthiness management exposition is to set forth the procedures, means and methods of the M.A. Subpart G organisation. Compliance with its contents will assure compliance with Part-M requirements.

2. A continuing airworthiness management exposition should comprise:

Part 0 General organisation

Part 1 Continuing airworthiness procedures

Part 2 Quality system or organisational review (as applicable)

Part 3 Contracted maintenance (for operators) – management of maintenance (liaison with maintenance organisations in the case of non commercial air transport)

Part 4 Airworthiness review procedures (if applicable)

3. Where a M.A. Subpart G organisation is also approved to another Part, the exposition or manual required by the other Part may form the basis of the continuing airworthiness management exposition in a combined document. Follows the example for a combined Part-145 and M.A. Subpart G organisation:

#### *Part-145 Exposition*

Part 1 Management

Part 2 Maintenance procedures

Part L2 maintenance procedures Additional line

Part 3 Quality system and/or organisational review (as applicable)

Part 4 Contracts with owners/operators

Part 5 Appendices (sample of documents)

Part 7 FAA supplement (if applicable)

Part 8 TCCA supplement (if applicable)

Part 3 should also cover the functions specified by M.A.712 quality system.

Part 4 should also cover contracted maintenance (for operators) – Management of maintenance (liaison with maintenance organisations in the case of non commercial air transport)

Additional parts should be introduced covering the following:

Part 0 General organisation

Part 6 Continuing airworthiness procedures

Part 9 Airworthiness review procedures (if applicable)

4. Personnel should be familiar with those parts of the exposition that are relevant to their tasks.

5. The M.A. Subpart G organisation should specify in the exposition who is responsible for the amendment of the document.

6. Unless otherwise agreed by the approving competent authority, the person responsible for the management of the quality system or for the organisational review should be responsible for monitoring and amending the exposition, including associated procedures manuals, and the submission of proposed amendments to the approving competent authority. The approving competent authority may agree a procedure, which will be stated in the amendment control section of the exposition, defining the class of amendments which can be incorporated without the prior consent of the competent authority.

7. The operator may use electronic data processing (EDP) for publication of the continuing airworthiness management exposition. The continuing airworthiness management exposition should be made available to the approving competent authority in a form acceptable to the competent authority. Attention should be paid to the compatibility of EDP publication systems with the necessary dissemination of the continuing airworthiness management exposition, both internally and externally.

8. Part 0 "General organisation" of the continuing airworthiness management exposition should include a corporate commitment by the M.A Subpart G organisation, signed by the accountable manager confirming that the continuing airworthiness management exposition and any associated manuals define the organisation compliance with Part-M and will be complied with at all times.

9. The accountable manager's exposition statement should embrace the intent of the following paragraph and in fact this statement may be used without amendment. Any modification to the statement should not alter the intent:

This exposition defines the organisation and procedures upon which the competent authority\* M.A. Subpart G continuing airworthiness management approval is based.

These procedures are approved by the undersigned and should be complied with, as applicable, in order to ensure that all continuing airworthiness tasks of..... (Quote operators's name)..... fleet of aircraft and/or of all aircraft under contract in accordance with M.A.201 (e) with..... (Quote organisation's name)..... are carried out on time to an approved standard.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published from time to time where these new or amended regulations are in conflict with these procedures.

It is understood that the competent authority\* will approve this organisation whilst the competent authority \* is satisfied that the procedures are being followed and the work standard maintained. It is understood that the competent authority\* reserves the right to suspend, vary or revoke the M.A. Subpart G continuing airworthiness management approval of the organisation or the air operators certificate, as applicable, if the competent authority\* has evidence that the procedures are not followed and the standards not upheld.

Signed .....

Dated .....

Accountable Manager and ...(quote position).....

For and on behalf of ....(quote organisation's name)..... "

\* Where it states competent authority please insert the actual name of the approving competent authority organisation or administration delivering the M.A. Subpart G continuing airworthiness management approval or the air operators certificate.

10. Whenever the accountable manager is changed it is important to ensure that the new accountable manager signs the paragraph 9 statement at the earliest opportunity as part of the acceptance by the approving competent authority.

Failure to carry out this action invalidates the M.A. Subpart G continuing airworthiness management approval or the air operators certificate.

Appendix V contains an example of an exposition lay-out.

### **AMC M.A.705 Facilities**

Office accommodation should be such that the incumbents, whether they be continuing airworthiness management, planning, technical records or quality staff, can carry out their designated tasks in a manner that contributes to good standards. In the smaller M.A. Subpart G organisations, the approving competent authority may agree to these tasks being conducted from one office subject to being satisfied that there is sufficient space and that each task can be carried out without undue disturbance. Office accommodation should also include an adequate technical library and room for document consultation.

### **AMC M.A.706 Personnel requirements**

1. The person or group of persons should represent the continuing airworthiness management structure of the organisation and be responsible for all continuing airworthiness functions. Dependent on the size of the operation and the organisational set-up, the continuing airworthiness functions may be divided under individual managers or combined in nearly any number of ways. However, if a quality system is in place it should be independent from the other functions.

2. The actual number of persons to be employed and their necessary qualifications is dependent upon the tasks to be performed and thus dependent on the size and complexity of the organisation (general aviation aircraft, corporate aircraft, number of aircraft and the aircraft types, complexity of the aircraft and their age and for commercial air transport, route network, line or charter, ETOPS) and the amount and complexity of maintenance contracting. Consequently, the number of persons needed, and their qualifications may differ greatly from one organisation to another and a simple formula covering the whole range of possibilities is not feasible.

3. To enable the approving competent authority to accept the number of persons and their qualifications, an organisation should make an analysis of the tasks to be performed, the way in which it intends to divide and/or combine these tasks, indicate how it intends to assign responsibilities and establish the number of man/hours and the qualifications needed to perform the tasks. With significant changes in the aspects relevant to the number and qualifications of persons needed, this analysis should be updated.

4. Nominated person or group of persons should have:

4.1. practical experience and expertise in the application of aviation safety standards and safe operating practices;

4.2. a comprehensive knowledge of:

- (a). relevant parts of operational requirements and procedures;
  - (b). the AOC holder's Operations Specifications when applicable;
  - (c). the need for, and content of, the relevant parts of the AOC holder's Operations Manual when applicable;
- 4.3. knowledge of quality systems;
  - 4.4. five years relevant work experience of which at least two years should be from the aeronautical industry in an appropriate position;
  - 4.5. a relevant engineering degree or an aircraft maintenance technician qualification with additional education acceptable to the approving competent authority. 'relevant engineering degree' means an engineering degree from aeronautical, mechanical, electrical, electronic, avionic or other studies relevant to the maintenance and continuing airworthiness of aircraft/aircraft components;
  - 4.6. thorough knowledge with the organisation's continuing airworthiness management exposition;
  - 4.7. knowledge of a relevant sample of the type(s) of aircraft gained through a formalised training course;
  - 4.8. knowledge of maintenance methods.

#### **AMC M.A.706 (e) Personnel requirements**

1. The competent authority of the operator should only accept that the nominated post holder be employed by the organisation approved under Part-145 when it is manifest that he/she is the only available competent person in a position to exercise this function, within a practical working distance from the operator's offices.
2. This paragraph only applies to contracted maintenance and therefore does not affect situations where the organisation approved under Part-145 and the operator are the same organisation.

#### **AMC M.A.707 (a) Airworthiness review staff**

1. Airworthiness review staff are only required if the M.A. Subpart G organisation wants to be granted M.A.711 (b) airworthiness review privileges.
2. A person qualified to the AMC M.A.706 subparagraph 4.5 should be considered as holding the equivalent to an aeronautical degree.
3. An appropriate Part-66 licence is a category B or C licence in the sub-category of the aircraft reviewed. It is not necessary to satisfy the experience requirements of Part-66 at the time of the review.
4. To hold a position with appropriate responsibilities means the airworthiness review staff should have a position in the organisation independent from the airworthiness management process or with overall authority on the airworthiness management process of complete aircraft.

#### **AMC M.A.708 (c) Continuing airworthiness management**

1. Where an operator is not approved under Part-145 or an operator's maintenance organisation is an independent organisation, a contract should be agreed between the operator and a maintenance organisation approved under Part-145, which specifies, in detail, the work to be performed by the maintenance organisation. Appendix XI to this AMC gives further details on the subject.
2. Both the specification of work and the assignment of responsibilities should be clear, unambiguous and sufficiently detailed to ensure that no misunderstanding should arise between the parties concerned (operator, maintenance organisation and the competent authority) that could result in a situation where work that has a bearing on the airworthiness or serviceability of aircraft is not or will not be properly performed.
3. Special attention should be paid to procedures and responsibilities to ensure that all maintenance work is performed, service bulletins are analysed and decisions taken on accomplishment, airworthiness directives are completed on time and that all work, including non-mandatory modifications is carried out to approved data and to the latest standards.
4. For line maintenance, the actual layout of the contract the IATA Standard Ground Handling Agreement may be used as a basis, but this does not preclude the competent authority of operator from ensuring that the content of the contract is acceptable to them, and especially that the contract allows the operator to properly exercise its maintenance responsibility. Those parts of a contract that have no bearing on the technical or operational aspects of airworthiness are outside the scope of this paragraph.
5. It is possible to contract another operator that is not directly approved under Part-145. In this case the operator's continuing airworthiness management exposition should include appropriate procedures to ensure that all this contracted maintenance is ultimately performed on time by organisations approved under Part-145 in accordance with the contracting operator's data. In particular the quality system procedures should place great emphasis on monitoring compliance with the above. The list of Part-145 approved contractors, or a reference to this list, should be included in the operator's continuing airworthiness management exposition.
6. Such a maintenance arrangement does not absolve the operator from its overall continuing airworthiness responsibility. Specifically, in order to accept the maintenance arrangement, the competent authority should be satisfied that such an arrangement allows the operator to ensure full compliance with responsibilities pursuant to M.A.201.
7. The purpose of M.A.708(c) is to ensure that all maintenance is carried out by properly approved Part-145 organisations. This does not preclude a primary maintenance arrangement with an operator that is not such an organisation, when it proves that such an arrangement is in the interest of the operator by simplifying the management of its maintenance, and the operator keeps an appropriate control of it. Such an arrangement should not preclude the operator from ensuring that all maintenance is performed by a Part-145 approved organisation and complying with the M.A.201 continuing airworthiness responsibility requirements. Typical examples of such arrangements follow:

- Component maintenance:

The operator may find it more appropriate to have a primary contractor, that would despatch the components to appropriately approved organisations, rather than himself sending different types of components to various maintenance organisations approved under Part-145. The benefit for the operator is that the management of maintenance is simplified by having a single contact point for component maintenance. The operator

remains responsible for ensuring that all maintenance is performed by maintenance organisations approved under Part-145 and in accordance with the approved standard.

- Aeroplane, engine and component maintenance:

The operator may wish to have a maintenance contract with another operator of the same type of aircraft not approved under Part-145. A typical case is that of a dry-leased aeroplane between operators, where the parties, for consistency or continuity reasons (especially for short term lease agreements) find it appropriate to keep the aeroplane under the current maintenance arrangement. Where this arrangement involves various Part 145 approved contractors, it might be more manageable for the lessee operator to have a single contract with the lessor operator. Such an arrangement should not be understood as a transfer of responsibility to the lessor operator: the lessee operator, being the approved operator of the aircraft, remains responsible for the continuing airworthiness of the aeroplane in performing the M.A.708 functions, and employing the M.A.706 continuing airworthiness management group of persons and staff.

In essence, this does not alter the intent of M.A.201 (h) in that it also requires that the operator has to establish a written maintenance contract acceptable to the competent authority of operator and, whatever type of acceptable arrangement is made, the operator is required to exercise the same level of control on contracted maintenance, particularly through the M.A.706 (c) continuing airworthiness management group of persons and quality system as referred to in M.A.712.

#### **AMC M.A.708 (c) (1) Continuing airworthiness management – unscheduled maintenance**

The intent of this paragraph is that maintenance contracts are not necessary when the operator's continuing airworthiness system, as approved by the competent authority of operator, specifies that the relevant maintenance activity may be ordered through one time work orders. This includes for obvious reasons unscheduled line maintenance and may also include aeroplane component maintenance up to engines, so long as the competent authority of operator considers that the maintenance is manageable through work orders, both in term of volume and complexity. It should be noted that this paragraph implies that even where base maintenance is ordered on a case-by-case basis, there should be a written maintenance contract.

#### **AMC M.A.710 (a) Airworthiness review**

1. A full documented review is a check of at least the following categories of documents:

- registration papers
- M.A.305 aircraft continuing airworthiness record system
- M.A.306 operator's technical log system
- list of deferred defects, minimum equipment list and configuration deviation list if applicable
- aircraft flight manual including aircraft configuration
- aircraft Maintenance programme

- maintenance Data
- relevant work packages
- AD status
- modification and SB status
- modification and repair approval sheets
- list of service life limited component
- relevant EASA Form 1 or equivalent
- mass and balance report and equipment list
- aircraft, engine and propeller TC Data Sheets

As a minimum, sample checks within each document category should be carried out.

2. The M.A. Subpart G organisation should develop procedures for the airworthiness review staff to produce a compliance report that confirms the above have been reviewed and found in compliance with Part-M.

#### **AMC M.A.710 (b) and (c) Airworthiness review**

1. The physical survey could require actions categorised as maintenance (e.g. operational tests, tests of emergency equipment, visual inspections requiring panel opening etc.). In this case, after the airworthiness review a release to service should be issued in accordance with Part-M.
2. The physical survey may include verifications to be carried out during flight.
3. The M.A. Subpart G organisation should develop procedures for the airworthiness review staff to produce a compliance report that confirms the physical survey has been carried out and found satisfactory.
4. To ensure compliance the physical survey may include relevant sample checks of items.

#### **AMC M.A.710 (e) Airworthiness review**

A copy of both physical survey and document review compliance reports stated above should be sent to the competent authority together with any recommendation issued.

#### **AMC M.A.711 (b) Privileges of the organisation**

It is not necessary for an organisation to be approved to carry out airworthiness reviews. This can be contracted to another appropriately approved organisation. In this case, the airworthiness review should be carried out every year and the ARC issued by the competent authority following a recommendation.

#### **AMC M.A.712 (a) Quality system**

1. Procedures should be held current such that they reflect best practice within the organisation. It is the responsibility of all employees to report any difficulties with the procedures via their organisation's internal occurrence reporting mechanisms.
2. All procedures, and changes to the procedures, should be verified and validated before use where practicable.
3. The feedback part of the system should address who is required to rectify any non-compliance in each particular case and the procedure to be followed if rectification is not completed within appropriate timescales. The procedure should lead to the accountable manager specified in M.A.706.
4. The independent quality audit reports referenced in AMC M.A.712 (b) should be sent to the relevant department for rectification action giving target rectification dates. Rectification dates should be discussed with such department before the quality department or nominated quality auditor confirms such dates in the report. The relevant department is required to rectify findings and inform the quality manager or the quality auditor of such rectification.
5. The accountable manager should hold regular meetings with staff to check progress on rectification except that in the large organisations such meetings may be delegated on a day to day basis to the quality manager subject to the accountable manager meeting at least twice per year with the senior staff involved to review the overall performance and receiving at least a half yearly summary report on findings of non-compliance.

#### **AMC M.A.712 (b) Quality System**

1. The primary objectives of the quality system are to enable the M.A. Subpart G organisation to ensure airworthy aircraft and to remain in compliance with the Part-M requirements.
2. An essential element of the quality system is the independent audit.
3. The independent audit is an objective process of routine sample checks of all aspects of the M.A. Subpart G organisation's ability to carry out continuing airworthiness management to the required standards. It includes some product sampling as this is the end result of the process.
4. The independent audit represents an objective overview of the complete continuing airworthiness management related activities. It is intended to complement the M.A.902 requirement for an airworthiness review to be satisfied that all aircraft managed by the organisation remain airworthy.
5. The independent audit should ensure that all aspects of M.A. Subpart G compliance are checked annually, including all the sub-contracted activities, and may be carried out as a complete single exercise or subdivided over the year period in accordance with a scheduled plan. The independent audit does not require each procedure to be checked against each product line when it can be shown that the particular procedure is common to more than one product line and the procedure has been checked every year without resultant findings. Where findings have been identified, the particular procedure should be rechecked against other product lines until the findings have been rectified after which the independent audit procedure may revert back to year for the particular procedure.

Provided that there are no safety related findings, the audit time periods specified in this AMC may be increased by up to 100% subject to agreement by the competent authority.

6. Where the organisation has more than one location approved the quality system should describe how these are integrated into the system and include a plan to audit each location every year.

7. A report should be raised each time an audit is carried out describing what was checked and the resulting findings against applicable requirements, procedures and products.

8. The independence of the audit should be established by always ensuring that audits are carried out by personnel not responsible for the function, procedure or products being checked.

9. An organisation should establish a quality plan acceptable to the competent authority of approval to show when and how often the activities as required by M.A. Subpart G will be audited.

### **AMC M.A.712 (f) Quality system**

A small organisation is an organisation managing less than 10 aircraft. This number should be decreased by 50% in the case of large aircraft. The combination of aircraft and aircraft types, the utilisation of the aircraft and the number of approved locations of the organisations should also be considered before replacing the quality system by an organisational review.

### **AMC M.A.713 Changes to the approved continuing airworthiness organisation**

1. This paragraph covers scheduled changes to the continuing airworthiness organisation's approval. Whilst the requirements relating to air operator certificates, including their issue, variation and continued validity, are prescribed in the appropriate regulation, operators should be aware this paragraph is included in Part M and may affect continued acceptance of the continuing airworthiness management.

2. The primary purpose of this paragraph is to enable the continuing airworthiness organisation to remain approved if agreed by the competent authority during negotiations about any of the specified changes. Without this paragraph the approval would automatically be suspended in all cases.

### **AMC M.A.714 Record-keeping**

1. The M.A. Subpart G organisation should ensure that it always receives a complete CRS from the approved maintenance organisation such that the required records can be retained. The system to keep the continuing airworthiness records should be described in the organisation continuing airworthiness management exposition.

2. When an organisation arranges for the relevant maintenance organisation to retain copies of the continuing airworthiness records on its behalf, it will nevertheless continue to be responsible for the records under M.A.714 relating to the preservation of records. If it ceases to be the organisation of the aircraft, it also remains responsible for transferring the records to any other person or organisation managing continuing airworthiness of the aircraft.

3. Keeping continuing airworthiness records in a form acceptable to the competent authority means in paper form or on a computer database or a combination of both methods. Records stored in microfilm or optical disc form are also acceptable. The record should remain legible throughout the required retention period.
4. Paper systems should use robust material which can withstand normal handling and filing.
5. Computer systems should have at least one backup system which should be updated within 24 hours of any new entry. Each terminal is required to contain programme safeguards against the ability of unauthorised personnel to alter the database.
6. Microfilming or optical storage of continuing airworthiness records may be carried out at any time. The records should be as legible as the original record and remain so for the required retention period.

## **Subpart H CERTIFICATE OF RELEASE TO SERVICE – CRS**

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

A certificate of release to service is necessary before flight, at the completion of any defect rectification, whilst the aircraft operates a flight between scheduled maintenance checks.

### **AMC M.A.801 (d) Aircraft certificate of release to service**

1. The aircraft certificate of release to service should contain the following statement:
  - (a) 'Certifies that the work specified except as otherwise specified was carried out in accordance with Part-M and in respect to that work the aircraft is considered ready for release to service'.
  - (b) For a Pilot-owner a certificate of release to service should contain the following statement:

'Certifies that the limited pilot-owner maintenance specified except as otherwise specified was carried out in accordance with Part M and in respect to that work the aircraft is considered ready for release to service'.
2. The certificate of release to service should relate to the task specified in the manufacturer's or operator's instruction or the aircraft maintenance programme which itself may cross-refer to a manufacturer's/operator's instruction in a maintenance manual, service bulletin etc.
3. The date such maintenance was carried out should include when the maintenance took place relative to any life or overhaul limitation in terms of date/flying hours/cycles/landings etc., as appropriate.
4. When extensive maintenance has been carried out, it is acceptable for the certificate of release to service to summarise the maintenance so long as there is a unique cross-reference to the work-pack containing full details of maintenance carried out. Dimensional information should be retained in the work-pack record.
5. The person issuing the certificate of release to service should use his normal signature except in the case where a computer release to service system is used. In this latter case the competent authority will need to be satisfied that only the particular person can electronically issue the release to service. One such method of compliance is the use of a magnetic or optical personal card in conjunction with a personal identity number (PIN) known only to the individual, which is keyed into the computer. A certification stamp is optional.
6. At the completion of all maintenance, owners, certifying staff, operators and maintenance organisations should ensure they have a clear, concise, legible record of the work performed.
7. In the case of an M.A.801 (b) 2 release to service, certifying staff should retain all records necessary to prove that all requirements have been met for the issuance of a certificate of release to service.

### **AMC M.A.801 (e) Aircraft certificate of release to service**

1. Being unable to establish full compliance with sub-paragraph M.A.801 (b) means that the maintenance required by the aircraft owner or M.A. Subpart G organisation could not be completed due either to running out of available aircraft maintenance downtime for the scheduled check or by virtue of the condition of the aircraft requiring additional maintenance downtime.
2. The aircraft owner or M.A. Subpart G organisation is responsible for ensuring that all required maintenance has been carried out before flight. Therefore an aircraft owner or M.A. Subpart G organisation should be informed and agree to the deferment of full compliance with M.A. 801(b). The certificate of release to service may then be issued subject to details of the deferment, including the aircraft owner or M.A. Subpart G organisation authorisation, being endorsed on the certificate.
3. If a certificate of release to service is issued with incomplete maintenance a record should be kept stating what action the mechanic, supervisor and certifying staff should take to bring the matter to the attention of the relevant aircraft owner or M.A. Subpart G organisation so that the issue may be discussed and resolved with the aircraft owner or M.A. Subpart G organisation.

### **AMC M.A.801 (f) Aircraft certificate of release to service**

‘Hazard seriously the flight safety’ means any instance where safe operation could not be assured or which could lead to an unsafe condition. It typically includes, but is not limited to, significant cracking, deformation, corrosion or failure of primary structure, any evidence of burning, electrical arcing, significant hydraulic fluid or fuel leakage and any emergency system or total system failure. An airworthiness directive overdue for compliance is also considered a hazard to flight safety.

### **AMC M.A.802 Component certificate of release to service**

When an approved organisation maintains an aircraft component for use by the organisation an EASA Form 1 may not be necessary depending upon the organisation’s internal release procedures, however all the information normally required for the EASA Form 1 should be adequately detailed in the certificate of release to service.

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

1. The pilot-owner should hold a valid pilot license issued or validated by a member state for the aircraft type being maintained.
2. Privately operated means the aircraft is not operated pursuant to M.A.201 (h) and (i).
3. A pilot owner should only issue a certificate of release to service for maintenance performed by the pilot owner and after demonstrating the competence to carry out such maintenance tasks.

## **Subpart I AIRWORTHINESS REVIEW CERTIFICATE**

### **AMC M.A.901 (a) Aircraft airworthiness review**

EASA Form 15a is issued by competent authorities while EASA Form 15b is issued by a M.A. Subpart G organisation.

### **AMC M.A.901 (b) Aircraft airworthiness review**

1. If the continuing airworthiness of the aircraft is not managed according to a Part-M appendix I arrangement between the owner and the M.A. Subpart G organisation, the aircraft should be considered to be outside a controlled environment.
2. The fact that limited pilot-owner maintenance as defined in M.A.803 (b) is not carried out and released by an approved maintenance organisation does not change the status of an aircraft in a controlled environment providing the M.A. Subpart G organisation under contract has been informed of any such maintenance carried out.

### **AMC M.A.901 (c) 2 Aircraft airworthiness review**

When the aircraft has remained within a controlled environment, the extension of the validity of the airworthiness review certificate does not require an airworthiness review but only a verification of the continuous compliance with M.A.902 (b).

### **AMC M.A.901 (d) Aircraft airworthiness review**

The recommendation sent to the competent authority should contain at least the items described below.

#### **(a) General information**

- M.A. Subpart G organisation information
- owner/lessee information
- date and place the document review and the aircraft survey were carried out
- period and place the aircraft can be seen if required by the competent authority

#### **(b) Aircraft information**

- registration
- type
- manufacturer
- serial number
- flight manual reference
- weight and centre of gravity data
- maintenance programme reference

#### **(c) Documents accompanying the recommendation**

- copy of registration papers
- copy of the owners request for a new airworthiness review certificate

(d) Aircraft status

- aircraft total time and cycles
- list of persons or organisations having carried out continuing airworthiness activities including maintenance tasks on the aircraft and its components since the last airworthiness review certificate

(e) Aircraft survey

- a precise list of the areas of the aircraft that were surveyed and their status

(f) Findings

- a list of all the findings made during the airworthiness review with the corrective action carried out

(g) Statement

A statement signed by the airworthiness review staff recommending the issue of an airworthiness review certificate.

The statement should confirm that the aircraft in its current configuration complies with the following:

- airworthiness directives up to the latest published issue, and;
- type certificate datasheet, and;
- maintenance programme, and;
- component service life limitations, and;
- the valid weight and centre of gravity schedule reflecting the current configuration of the aircraft, and;
- Part 21 for all modifications and repairs, and;
- the current flight manual including supplements, and;
- operational requirements.

The above items should clearly state the exact reference of the data used in establishing compliance; for instance the number and issue of the type certificate data sheet used should be stated.

The statement should also confirm that all of the above is properly entered and certified in the aircraft continuing airworthiness record system and/or in the operator's technical log.

**AMC M.A.901 (e) Aircraft airworthiness review**

Suitable accommodation should include:

- a) an office with normal office equipment such as desks, telephones, photocopying machines etc. whereby the continuing airworthiness records can be reviewed.
- b) a hangar when needed for the physical survey.

The support of personnel appropriately qualified in accordance with Part-66 is necessary when the competent authority's airworthiness review staff is not appropriately qualified.

#### **AMC M.A.903 (a) - 1 Transfer of aircraft registration within the EU**

The applicant should notify to the competent authority within the former Member State of registry so as to allow the proper transfer of information between the two competent authorities during the aircraft transfer process.

#### **AMC M.A.903 (b) Transfer of aircraft registration within the EU**

In case of transfer of aircraft registration within EU, the aircraft owner/ operator should verify that the competent authority of the new Member State of registry has entered the new aircraft registration on the existing airworthiness review certificate and validated the change.

#### **AMC M.A.904 (a)-1 Airworthiness reviews of aircraft imported into the EU**

In order to allow for possible participation of authority personnel, the applicant should inform the competent authority at least 10 working days in advance of the time and location of the airworthiness review.

#### **AMC M.A.904 (a)-2 Airworthiness reviews of aircraft imported into the EU**

1. When performing an airworthiness review of aircraft imported into the EU the aircraft and the relevant records should be reviewed to determine the work to be undertaken to establish the airworthiness of the aircraft.
2. In determining the work to be undertaken during the airworthiness review on the aircraft, the following should be taken into consideration:
  - a - the information from third country authorities such as export certificates, primary authority information; and,
  - b - the information on aircraft maintenance history such as continuing airworthiness records, aircraft, engine, propeller, rotor and life limited part log books or cards as appropriate, tech log / flight log / cabin log, list of deferred defects, total flight times and cycles, times and cycles since last maintenance, accident history, former maintenance schedule, former AD compliance status; and,
  - c - the information on aircraft such as aircraft, engine and propeller type certificate datasheets, noise and emission certificate data sheets, flight manual and supplements; and,
  - d - the aircraft continuing airworthiness status such as the aircraft and component AD status, the SB status, the maintenance status, the status of all service life limited components, weight and centre of gravity schedule including equipment list; and,
  - e - the modification and repair status of the aircraft detailing elements such as owner/operator designed

- modifications and repairs, STCs, and parts needing European parts approval (EPA); and,
- f - the aircraft cabin configuration such as emergency equipment fitted, cockpit configuration, placards, instrument limitations, cabin layout; and,
  - g - the maintenance needed for import, such as embodiment of modifications needed to comply with the EASA type certificate, bridging check to comply with the new maintenance programme; and,
  - h - the avionics such as, but not limited to, radio and navigation equipment, instrument flight rules (IFR) equipment, digital flight data recorder (DFDR) / cockpit voice recorder (CVR) test, ELT 406 MHz code and identification; and,
  - i - the compass compensation; and,
  - j - special operating rules such as extended twin-engine operations (ETOPS)/ long range operations (LROPS), reduced vertical separation minima (RVSM), MNPS, all weather operations (AWOPS), RNAV; and,
  - k - the aircraft survey including verification of conformity with the flight manual and the datasheet, presence of fire proof identification plates, conformity of markings including registration, presence and serviceability of emergency equipment, internal and external lighting systems, and,
  - l - check flight including check of control system / cockpit ground check / engine run up.

3. If there is no M.A. Subpart G organisation approved for the specific aircraft type available, the competent authority may carry out the airworthiness review in accordance with this paragraph and the provisions M.A.902 (e) and M.B.902. In this case, the airworthiness review should be requested to the competent authority with a 30-day notice.

#### **AMC M.A.904 (b) Airworthiness review of aircraft imported into the EU**

The recommendation sent to the competent authority should contain at least the items described below.

(a) All the information set forth by AMC M.A 902(d)

(b) Aircraft information

- aircraft assigned registration
- state of manufacturer
- previous registration
- export certificate number
- TC and TC data sheet numbers
- noise and emissions TC and TC data sheet numbers
- comparison of prior maintenance programme with the proposed new maintenance programme.

(c) Documents accompanying the recommendation

- copy of the application, and;
- original export certificate, and;
- copy of the approvals of the flight manual and its supplements, and;
- list of ADs incorporated up to the latest published issue, and;
- proposed new maintenance programme, and;
- status of all service life limited components, and;
- the valid weight and centre of gravity schedule reflecting the current configuration of the aircraft, and;
- Part-21 approval reference for all modifications and repairs.

(d) Maintenance

- a copy of the work packages requested by the subpart G organisation including details of any bridging check to ensure all the necessary maintenance has been carried out.

(e) Aircraft check flight

- a copy of the check flight report

## **Section B PROCEDURE FOR COMPETENT AUTHORITIES**

### **Subpart A GENERAL**

#### **AMC M.B.102 (a) Competent authority - General**

1. In deciding upon the required airworthiness organisational structure, the competent authority should review the number of certificates to be issued, the number and size of potential operators, the number of M.A. Subpart F approved maintenance organisations and M.A. Subpart G continuing airworthiness management organisations within that Member State, as well as the level of civil aviation activity, number and complexity of aircraft and the size of the Member State's aviation industry.
2. The competent authority should retain effective control of important inspection functions and not delegate them in such a way that aircraft owners, operators, M.A. Subpart F approved maintenance organisations and M.A. Subpart G continuing airworthiness management organisations, in effect, regulate themselves in airworthiness matters.
3. The set-up of the organisational structure should ensure that the various tasks and obligations of the competent authority are not relying on individuals. That means that a continuing and undisturbed fulfilment of these tasks and obligations of the competent authority should also be guaranteed in case of illness, accident or leave of individual employees.

#### **AMC M.B.102 (c) Competent authority – Qualification and training**

1. Competent authority inspectors should have:
  - 1.1 practical experience and expertise in the application of aviation safety standards and safe operating practices;
  - 1.2 comprehensive knowledge of:
    - (a). relevant parts of implementing rules, certification specifications and guidance material;
    - (b). the competent authority's procedures;
    - (c). the rights and obligations of an inspector;
    - (d). quality systems;
    - (e). continuing airworthiness management.
  - 1.3 training on auditing techniques.
  - 1.4 five years relevant work experience to be allowed to work as an inspector independently. This may include experience gained during training to obtain the subparagraph 1.5 qualification.
  - 1.5 a relevant engineering degree or an aircraft maintenance technician qualification with additional education. 'relevant engineering degree' means an engineering degree from

aeronautical, mechanical, electrical, electronic, avionic or other studies relevant to the maintenance and continuing airworthiness of aircraft/aircraft components.

1.6 knowledge of a relevant sample of the type(s) of aircraft gained through a formalised training course.

1.7 knowledge of maintenance standards.

2. In addition to technical competency, inspectors should have a high degree of integrity, be impartial in carrying out their tasks, be tactful, and have a good understanding of human nature.

3. A programme for continuation training should be developed which provides for the inspectors, at regular intervals, to visit appropriate manufacturers and attend technical symposia as well as training or refresher courses to gain first-hand knowledge of new developments. As a general policy, it is not desirable for the inspectors to obtain technical qualifications from those entities under their direct regulatory jurisdiction.

#### **AMC M.B.102 (d) Competent authority organisation - Procedures**

The documented procedures should contain the following information:

(a) The Member State's designation of the competent authority(ies).

(b) The title(s) and name(s) of the manager(s) of the competent authority and their duties and responsibilities.

(c) Organisation chart(s) showing associated chains of responsibility of the senior persons.

(d) A procedure defining the qualifications for staff together with a list of staff authorised to sign certificates.

(e) A general description of the facilities.

(f) Procedures specifying how the competent authority(ies) ensure(s) compliance with Part-M.

#### **AMC M.B.104 (a) Record-keeping**

1. The record-keeping system should ensure that all records are accessible whenever needed within a reasonable time. These records should be organized in a consistent way through out the competent authority (chronological, alphabetical order, etc.).

2. All records containing sensitive data regarding applicants or organisations should be stored in a secure manner with controlled access to ensure confidentiality of this kind of data.

3. All computer hardware used to ensure data backup should be stored in a different location from that containing the working data in an environment that ensures they remain in good condition. When hardware- or software-changes take place special care should be taken that all necessary data continues to be accessible at least through the full period specified in M.B.104 (c) and/or (e).

#### **AMC M.B.104 (f) Record-keeping**

The cases, when records shall be made available should be limited to:

- incidents or accidents,
- findings through the aircraft continuing monitoring program where organisations approved by another competent authority are involved, to determine the root cause,
- aircraft mainly operated in another Member State,
- an aircraft previously operated in another Member State
- an organisation having approvals in several Member States

When records are requested from another Member State, the reason for the request should be clearly stated. The records can be made available by sending a copy or by allowing their consultation.

### **AMC M.B.105 (a) Mutual exchange of information**

One typical case where the mutual exchange of information is necessary is when an aircraft is transferred inside the EU according to M.A.903. When notified of such a transfer, a competent authority should inform the competent authority where the aircraft will be registered of any known problems with the aircraft being transferred. Furthermore, the competent authority where the aircraft will be registered should ensure that the former competent authority has been properly notified that the aircraft is leaving.

**Subpart BACCOUNTABILITY**

To be developed as appropriate.

## **Subpart C CONTINUING AIRWORTHINESS**

### **AMC M.B.301 (a) Maintenance programme**

For the competent authority of registry to verify compliance with M.A.302, the auditing surveyor/inspector should have received training on maintenance programme development and control.

### **AMC M.B.301 (b) Maintenance programme**

1. When assessing aircraft maintenance programmes for approval, the competent authority should verify that the maintenance programme is acceptable for the continued airworthiness of the specific aircraft listed and it is appropriate for the proposed operating environment and scheduled utilisation.
2. The competent authority should assess the contents taking into account the origins of the document i.e. the manufacturers recommended maintenance programme, a MRB report, the operators own experience or another approved programme.
3. A competent authority may elect to publish a proposed maintenance schedule for a piston engined aircraft type or a group of piston engined aircraft types below 2730Kgs maximum take off mass (MTOM). When owners/operators of piston engined aircraft below 2730Kgs MTOM elect to use a competent authority proposed maintenance schedule, all the out of phase manufacturer recommendations should be incorporated into the final maintenance programme in order for it to be approved.
4. A copy of the approved programme should be retained by the competent authority, unless the programme is approved by a M.A. Subpart G approved organisation.
5. The documentation issued by the competent authority to approve the operator's maintenance programme may include details of who may issue certificates of release to service in a particular situation and may define which tasks are considered as complex maintenance tasks or limited pilot owner maintenance according to Appendix VIII to Part-M.
6. In the case of commercial air transport or large aircraft, development of the approved operator's maintenance programme is dependent upon sufficient satisfactory in-service experience which has been properly processed. In general, the task being considered for escalation beyond the MRB limits should have been satisfactorily repeated at the existing frequency several times before being proposed for escalation. Appendix I to AMC M.A.302 and M.B.301 (b) gives further information.
7. The competent authority may approve an incomplete maintenance programme at the start of operation of an aircraft or an operator, subject to limiting the approval of the maintenance programme to a period that does not exceed any required maintenance not yet approved.
8. If the competent authority is no longer satisfied that a safe operation can be maintained, the approval of a maintenance programme or part of it may be suspended or revoked. Events giving rise to such action include:
  - 8.1 An operator changing the utilisation of an aircraft;

8.2 The owner or M.A. Subpart G approved organisation has failed to ensure that the programme reflects the maintenance needs of the aircraft such that safe operation can be assured.

### **AMC M.B.301(c) Maintenance Programme**

1. Approval of an aircraft maintenance programme through a procedure established by a M.A. Subpart G organisation should require the organisation to demonstrate to the competent authority that it has competence, procedures and record keeping provisions, which will enable the organisation to analyse aircraft reliability, TC holder's instructions, and other related operating and maintenance criteria.

2. According to the complexity of the aircraft and the nature of the operation, the maintenance programme procedures should contain reliability centred maintenance and condition monitored maintenance programme procedures and have procedures relating to the programme control which contain the following provisions:

- (a). task escalation or adjustment
- (b). maintenance programme review
- (c). SB or Service Information assessment
- (d). component and structures in service performance review
- (e). maintenance programme revision
- (f). maintenance procedure effectiveness review and amendment
- (g). manufacturer maintenance planning document (MPD) review and assessment
- (h). AD review and assessment
- (i). owner/maintenance/M.A. Subpart G organisation liaison
- (j). training

3. When the competent authority requests, the organisation should make provision for the attendance a competent authority representative at meetings held to consider maintenance implications arising from reviews of the above provisions.

### **AMC M.B.301(d) Maintenance programme**

Programmes and all associated airworthiness data, including that data used for substantiating the escalation of programmes shall be made available to the competent authority upon request.

### **AMC M.B.303 (b) Aircraft continuing airworthiness monitoring**

1. Sample product surveys of aircraft include:

- (a). in depth surveys carried out during extensive maintenance that fully encompass selected aspects of an aircraft's airworthiness
- (b). ramp surveys carried out during aircraft operations to monitor the apparent condition of an aircraft's airworthiness.

- c. in-flight surveys, as deemed necessary by the competent authority.
2. The competent authority should undertake regular sample product surveys of aircraft on its register to verify that: -
  - (a). the condition of an aircraft as sampled is to a standard acceptable for the Certificate of Airworthiness to remain in force,
  - (b). the operator/Owner's management of the airworthiness of their aircraft is effective,
  - (c). satisfactory levels of continued airworthiness are being achieved,
  - (d). the approval and licenses granted to organisations and persons continue to be applied in a consistent manner to achieve the required standards.

#### **AMC M.B.303 (c) Aircraft continuing airworthiness monitoring**

Each competent authority should create an annual programme of surveys, selecting aircraft and/or operators depending on local knowledge of the maintenance environment, operating conditions, airworthiness standards and past surveillance experience. The programme should be used to identify the operator/fleet/aircraft, which are causing the greatest concern.

#### **AMC M.B.303 (d) Aircraft continuing airworthiness monitoring**

1. Appendix III to this AMC is an example format for an annual in depth survey programme. A sample of the 14 key risk airworthiness elements identified on the example should be assessed during each survey and the survey should include the aircraft as the product sample. The survey should be a 'deep cut' through the elements or systems selected and all findings should be recorded. Surveyors/inspectors in conjunction with the owners, operators and maintenance organisations should identify the root cause of each confirmed finding.
2. In addition, an annual ramp survey programme should be developed based on geographical locations, taking into account airfield activity, and focusing on key issues that can be surveyed in the time available without unnecessarily delaying the aircraft.
3. Surveyors/inspectors should be satisfied that the root cause found and the corrective actions taken are adequate to correct the deficiency and to prevent re-occurrence.
4. Where the aircraft continuing airworthiness monitoring survey visit can be linked to the oversight of an approved organisation then credit can be taken in the monitoring process of that approved organisation.

**Subpart D MAINTENANCE STANDARDS**

To be developed as appropriate.

## **Subpart E COMPONENTS**

To be developed as appropriate.

## **Subpart F MAINTENANCE ORGANISATION**

### **AMC M.B.602 (a) Initial approval**

1. 'Formally indicate in writing' means that an EASA Form 4 (appendix X) should be used for this activity. With the exception of the accountable manager, an EASA Form 4 should be completed for each person nominated to hold a position required by M.A.606 (b)
2. In the case of the accountable manager approval of the maintenance organisation manual containing the accountable manager's signed commitment statement constitutes formal acceptance.

### **AMC M.B.602 (b) Initial approval**

The competent authority should indicate approval of the maintenance organisation manual in writing.

### **AMC M.B.602 (c) Initial approval**

1. The competent authority should determine by whom, and how the audit shall be conducted. For example, it will be necessary to determine whether one large team audit or a short series of small team audits or a long series of single man audits are most appropriate for the particular situation.
2. The audit may be carried out on a product line type basis. For example, in the case of an organisation with Socata TB20 and Piper PA 28 ratings, the audit is concentrated on one type only for a full compliance check. Dependant upon the result, the second type may only require a sample check that should at least cover the activities identified as weak for the first type.
3. The competent authority auditing surveyor should always ensure that he/she is accompanied throughout the audit by a senior technical member of the organisation. The reason for being accompanied is to ensure the organisation is fully aware of any findings during the audit.
4. The auditing surveyor should inform the senior technical member of the organisation at the end of the audit visit on all findings made during the audit.

### **AMC M.B.602 (e) Initial approval**

1. Findings should be recorded on an audit report form with a provisional categorisation as a level 1 or 2. Subsequent to the audit visit that identified the particular findings, the competent authority should review the provisional finding levels, adjusting them if necessary and change the categorisation from 'provisional' to 'confirmed'.
2. All findings should be confirmed in writing to the applicant organisation within 2 weeks of the audit visit.
3. There may be occasions when the competent authority finds situations in the applicant's organisation on which it is unsure about compliance. In this case, the organisation should be informed about possible non-compliance at the time and the fact

that the situation will be reviewed within the competent authority before a decision is made. If the review concludes that there is no finding then a verbal confirmation to the organisation will suffice.

#### **AMC M.B.602 (f) Initial approval**

1. The audit report should be made on an EASA Form 6F (see appendix VI).
2. A quality review of the EASA Form 6F audit report should be carried out by a competent independent person nominated by the competent authority. The review should take into account the relevant paragraphs of M.A. Subpart F, the categorisation of finding levels and the closure action taken. Satisfactory review of the audit form should be indicated by a signature on the EASA Form 6F.

#### **AMC M.B.602 (g) Initial approval**

The audit reports should include the date each finding was cleared together with reference to the competent authority report or letter that confirmed the clearance.

#### **AMC M.B.603 (a) Issue of approval**

1. For approvals involving more than one competent authority, the approval should be granted in conjunction with the competent authorities of the Member States in whose territories the other maintenance organisation facilities are located. For practical reasons the initial approval should be granted on the basis of a joint audit visit by the approving competent authority and competent authorities of the Member States in whose territories the other maintenance organisation facilities are located. Audits related to the continuation of the approval should be delegated to the competent authorities of the Member States in whose territories the other maintenance organisation facilities are located. The resulting audit form and recommendation should then be submitted to the approving competent authority.
2. The approval should be based upon the organisational capability relative to M.A. Subpart F compliance and not limited by reference to individual EASA certificated products.

For example, if the organisation is capable of maintaining within the limitation of M.A. Subpart F the Cessna 100 series aircraft the approval schedule should state A2 Cessna 100 series and not Cessna 172 RG which is a particular designator for one of many Cessna 100 series.

#### **AMC M.B.603 (c) Issue of approval**

The numeric sequence of the approval reference should be unique to the particular approved maintenance organisation.

#### **AMC M.B.604 (b) Continuing oversight**

1. Where the competent authority has decided that a series of audit visits are necessary to arrive at a complete audit of an approved maintenance organisation, the program should indicate which aspects of the approval will be covered on each visit.
2. It is recommended that part of an audit concentrates on the organisations internal self monitoring reports produced by the organisational review to determine if the organisation is identifying and correcting its problems.
3. At the successful conclusion of the audit(s) including verification of the manual, an audit report form should be completed by the auditing surveyor including all recorded findings, closure actions and recommendation. An EASA Form 6F should be used for this activity.
4. Credit may be claimed by the competent authority surveyor(s) for specific item audits completed during the preceding 23-month period subject to four conditions:
  - (a) the specific item audit should be the same as that required by M.A. Subpart F latest amendment, and
  - (b) there should be satisfactory evidence on record that such specific item audits were carried out and that all corrective actions have been taken, and
  - (c) the competent authority surveyor(s) should be satisfied that there is no reason to believe standards have deteriorated in respect of those specific item audits being granted a back credit;
  - (d) the specific item audit being granted a back credit should be audited not later than 24 months after the last audit of the item.

#### **AMC M.B.605 (b) 1- Findings**

For a level 1 finding it may be necessary for the competent authority to ensure that further maintenance and re-certification of all affected products is accomplished, dependent upon the nature of the finding.

#### **AMC M.B.606 Changes**

1. Changes in nominated persons

The competent authority should have adequate control over any changes to personnel specified in M.A.606 (a) and (b). Such changes will require an amendment to the manual.

2. It is recommended that a simple manual status sheet is maintained which contains information on when an amendment was received by the competent authority and when it was approved.
3. The competent authority should define the class of amendments to the manual which may be incorporated through indirect approval. In this case a procedure should be stated in the amendment section of the maintenance organisation manual.
4. The approved maintenance organisation should submit each manual amendment to the competent authority whether it be an amendment for competent authority approval or an indirectly approved amendment. Where the amendment requires competent authority approval, the competent authority when satisfied, should indicate its approval in writing. Where the amendment has been submitted under the indirect approval procedure the competent authority should acknowledge receipt in writing.

5. The following changes to the M.A. Subpart F approval should not be subject to the indirect approval procedure:

- Name change
- Change of accountable manager
- Address change
- Approval scope and rating
- New facility
- Any other change to the approval designated by the competent authority.

**AMC M.B.701 (a) Application**

1. The competent authority should not expect the documents listed in M.B.701 (a) to be submitted in a completed state with the initial application for grant or change since each may require approval in its own right and may be subject to amendment as a result of competent authority assessment during the technical investigations. Draft documents should be submitted at the earliest opportunity so that investigation of the application can begin. Grant or change cannot be achieved until the competent authority is in possession of completed documents.
2. This information is required to enable the competent authority to conduct its investigation, to assess the volume of maintenance work necessary and the locations at which it will be accomplished.
3. The applicant should inform the competent authority where base and scheduled line maintenance is to take place and give details of any contracted maintenance which is in addition to that provided in response to M.A.201 (h) 2 or M.A.708 (c).
4. At the time of application, the operator should have arrangements for all base and scheduled line maintenance in place for an appropriate period of time, as accepted to the competent authority. The operator should establish further arrangements in due course before the maintenance is due.

Base maintenance contracts for high-life time checks may be based on one time contracts, when the competent authority considers that this is compatible with the operator's fleet size.

**AMC M.B.702 (a) Initial approval**

1. 'Formally indicate in writing' means that an EASA Form 4 should be used for this activity. With the exception of the accountable manager, an EASA Form 4 should be completed for each person nominated to hold a position required by M.A.706 (b), (c) and (d)
2. In the case of the accountable manager approval of the continuing airworthiness management exposition containing the accountable manager's signed commitment statement constitutes formal acceptance.

**AMC M.B.702 (b) Initial approval**

1. The competent authority should indicate approval of the continuing airworthiness management exposition in writing.
2. Contracts for sub-contracting continuing airworthiness management tasks by operators should be included in the continuing airworthiness organisation exposition. The competent authorities should verify that the standards set forth in AMC M.A.201 (h) 1 have been met when approving the exposition

### **AMC M.B.702 (c) Initial approval**

1. The competent authority should determine by whom, and how the audit shall be conducted. For example, it will be necessary to determine whether one large team audit or a short series of small team audits or a long series of single man audits are most appropriate for the particular situation.
2. The audit may be carried out on a product line type basis. For example, in the case of an organisation with Airbus A320 and Airbus A310 ratings, the audit is concentrated on one type only for a full compliance check. Dependant upon the result, the second type may only require a sample check that should at least cover the activities identified as weak for the first type.
3. When determining the scope of the audit and which activities of the organisation will be assessed during the audit, the privileges of the approved organisation should be taken into account, e.g. approval to carry out airworthiness reviews.
4. The competent authority auditing surveyor should always ensure that he/she is accompanied throughout the audit by a senior technical member of the organisation. Normally this is the quality manager. The reason for being accompanied is to ensure the organisation is fully aware of any findings during the audit.
5. The auditing surveyor should inform the senior technical member of the organisation at the end of the audit visit on all findings made during the audit.

### **AMC M.B.702 (e) Initial approval**

1. Findings should be recorded on an audit report form with a provisional categorisation as a level 1 or 2. Subsequent to the audit visit that identified the particular findings, the competent authority should review the provisional finding levels, adjusting them if necessary and change the categorisation from 'provisional' to 'confirmed'.
2. All findings should be confirmed in writing to the applicant organisation within 2 weeks of the audit visit.
3. There may be occasions when the competent authority finds situations in the applicant's organisation on which it is unsure about compliance. In this case, the organisation should be informed about possible non-compliance at the time and the fact that the situation will be reviewed within the competent authority before a decision is made. If the review concludes that there is no finding then a verbal confirmation to the organisation will suffice.

### **AMC M.B.702 (f) Initial approval**

1. The audit report form should be the EASA Form 13 (appendix VII).
2. A quality review of the EASA Form 13 audit report should be carried out by a competent independent person nominated by the competent authority. The review should take into account the relevant paragraphs of M.A. Subpart G, the categorisation of finding levels and the closure action taken. Satisfactory review of the audit form should be indicated by a signature on the EASA Form 13.

### **AMC M.B.702 (g) Initial approval**

The audit reports should include the date each finding was cleared together with reference to the competent authority report or letter that confirmed the clearance.

#### **AMC M.B.703 (a) Issue of approval**

1. For approvals involving more than one competent authority, the approval should be granted in conjunction with the competent authority of the Member States in whose territories the other continuing airworthiness management organisation facilities are located. For practical reasons the initial approval should be granted on the basis of a joint audit visit by the approving competent authority and competent authority of the Member States in whose territories the other continuing airworthiness management organisation facilities are located. Audits related to the renewal of the approval should be delegated to the competent authority of the Member States in whose territories the other continuing airworthiness management organisation facilities are located. The resulting audit form and recommendation should then be submitted to the approving competent authority.

2. The approval should be based upon the aircraft maintenance programmes relative to M.A. Subpart G compliance and not limited by reference to individual EASA certificated aircraft.

NOTE: For example, if the organisation is capable of maintaining within the limitation of M.A. Subpart G the Airbus A 300 series aircraft the approval schedule should state Airbus A300 series under maintenance programme XXX and Airbus A300-600 series under maintenance programme YYY.

#### **AMC M.B.703 (c) Issue of approval**

The numeric sequence should be unique to the particular M.A. Subpart G Continuing Airworthiness Management Organisation.

#### **AMC M.B.703 (d) Issue of Approval**

1. The approval of an operator's continuing airworthiness management organisation should be indicated by means of a statement containing the following information:

- (a) Air operator Certificate number;
- (b) Name of the operator;
- (c) Type(s) of aircraft for which the continuing airworthiness management organisation has been approved;
- (d) Reference identification of the operator's approved maintenance programme(s);
- (e) Reference identification of the operators approved continuing airworthiness management exposition; and
- (f) Any limitations imposed by the competent authority of operator on the approval.
- (g) Any subcontractors working under the operator's quality system.

2. The EASA form 14 may be used for the subparagraph 1 statement.

3. In the case the continuing airworthiness management organisation of the operator is approved to manage the continuing airworthiness of non commercial air transport aircraft

under an arrangement with the owner, and/or to carry out airworthiness reviews, these privileges should be put on an EASA Form 14.

#### **AMC M.B.704 (b) Continuing oversight**

1. Where the competent authority has decided that a series of audit visits are necessary to arrive at a complete audit of an approved continuing airworthiness management organisation, the program should indicate which aspects of the approval will be covered on each visit.
2. It is recommended that part of an audit concentrates on two ongoing aspects of the M.A. Subpart G approval, namely the organisations internal self monitoring quality reports produced by the quality monitoring personnel to determine if the organisation is identifying and correcting its problems and secondly the number of concessions granted by the quality manager.
3. At the successful conclusion of the audit(s) including verification of the exposition, an audit report form should be completed by the auditing surveyor including all recorded findings, closure actions and recommendation. An EASA Form 13 should be used for this activity.
4. Credit may be claimed by the competent authority Surveyor(s) for specific item audits completed during the preceding 11 month period subject to four conditions:
  - a the specific item audit should be the same as that required by M.A. Subpart G latest amendment, and
  - b there should be satisfactory evidence on record that such specific item audits were carried out and that all corrective actions have been taken, and
  - c the competent authority surveyor(s) should be satisfied that there is no reason to believe standards have deteriorated in respect of those specific item audits being granted a back credit;
  - d the specific item audit being granted a back credit should be audited not later than 12 months after the last audit of the item.
5. When an operator sub-contracts continuing airworthiness management tasks all sub-contracted organisations should also be audited by the competent authority of operator at periods not exceeding 12 months to ensure they fully comply with M.A. Subpart G. For these audits, the competent authority auditing surveyor should always ensure that he/she is accompanied throughout the audit by a senior technical member of the operator. All findings should be sent to and corrected by the operator.

#### **AMC M.B.705 (b) 1- Findings**

1. For a level 1 finding the competent authority should inform the owner/operator and the competent authority of any potentially affected aircraft in order that corrective action can be taken to ensure possible unsafe conditions on these aircraft are corrected before further flight.
2. Furthermore, a level 1 finding could lead to a non compliance to be found on an aircraft as specified in M.B. 303 (g). In this case, proper action as specified in M.B.303 (h) would be taken.

## **AMC M.B.706 Changes**

### 1. Changes in nominated persons

The competent authority should have adequate control over any changes to the personnel specified in M.A.706 (a), (b), (c) and (d). Such changes will require an amendment to the exposition.

2. It is recommended that a simple exposition status sheet is maintained which contains information on when an amendment was received by the competent authority and when it was approved.

3. The competent authority should define the class of amendments to the exposition which may be incorporated through indirect approval. In this case a procedure should be stated in the amendment section of the approved continuing airworthiness organisation exposition.

4. The approved continuing airworthiness organisation should submit each exposition amendment to the competent authority whether it be an amendment for competent authority approval or an indirectly approved amendment. Where the amendment requires competent authority approval, the competent authority when satisfied, should indicate its approval in writing. Where the amendment has been submitted under the indirect approval procedure the competent authority should acknowledge receipt in writing.

5. The following changes to the M.A. Subpart G approval should not be subject to the indirect approval procedure:

- Name change
- Change of accountable manager
- Address change
- Approval scope and rating
- New facility
- Any other change to the approval designated by the competent authority.

**Subpart H                    CERTIFICATE OF RELEASE TO SERVICE – CRS**

To be developed as appropriate.

## **Subpart I AIRWORTHINESS REVIEW CERTIFICATE**

### **AMC M.B.901 Assessment of recommendations**

1. The result of the verification and the investigation of a recommendation should be sent to the applicant within 30 days. If corrective action has been requested before the issuance of an airworthiness review certificate, the competent authority may decide a further period for the assessment of the requested corrective action.
2. The verification of the compliance statement required by M.B.901 does not mean repeating the airworthiness review itself. However the competent authority should verify that the M.A. Subpart G organisation has carried out a complete and accurate assessment of the airworthiness of the aircraft.
3. Depending on the content of the recommendation, the history of the particular aircraft, and the knowledge of the M.A.Subpart G organisation making the recommendation in terms of experience, number and correction of findings and previous recommendations the extent of the investigation will vary. Therefore, whenever possible the person carrying out the investigation should be involved in the oversight of the M.A.Subpart G organisation making the recommendation.
4. In some cases, the inspector may decide that it is necessary to organise:
  - a physical survey of the aircraft, or;
  - a full or partial airworthiness review.

In this case, the inspector should inform the M.A.Subpart G organisation making the recommendation with sufficient notice so that it may organise itself according to M.A.901 (e).

Furthermore, this part of the investigation should be carried out by appropriate airworthiness review staff in accordance with M.B.902(b).

5. Only when satisfied the aircraft is airworthy, should the inspector issue an airworthiness review certificate.

### **AMC M.B.902 (b) Airworthiness review by the competent authority**

1. A person qualified in accordance with AMC M.B.102 (c) subparagraph 1.5 should be considered as holding the equivalent to an aeronautical degree.
2. An appropriate Part-66 licence is a category B or C licence in the subcategory of the aircraft reviewed. It is not necessary to satisfy the recent experience requirements of Part 66 at the time of the review nor to hold the type rating on the particular aircraft.
3. To hold a position with appropriate responsibilities means the airworthiness review staff should have a position within the competent authority that authorises that person to sign on behalf that competent authority.
4. A person in the competent authority carrying out airworthiness reviews or airworthiness certificate renewal inspections in a Member State, prior to the date of entry into force of Part-M should be considered as complying with M.B.902(b).

**AMC M.B.902 (c) Airworthiness review by the competent authority**

The minimum content of the airworthiness review staff record should be:

- Name,
- Date of Birth,
- Basic Education,
- Experience,
- Aeronautical Degree and/or part-66-qualification,
- Initial Training received,
- Type Training received,
- Continuation Training received,
- Experience in continuing airworthiness and within the organisation,
- Responsibilities of current job.

## **Appendix I to AMC M.A.302 and AMC M.B.301 (b)**

### **Content of the maintenance programme**

#### **1 General requirements**

1.1 The maintenance programme should contain the following basic information.

1.1.1 The type/model and registration number of the aircraft, engines and, where applicable, auxiliary power units and propellers

1.1.2 The name and address of the owner, operator or M.A Subpart G approved organisation managing the aircraft airworthiness.

1.1.3 The reference, the date of issue and issue number of the approved maintenance programme.

1.1.4 A statement signed by the owner, operator or M.A Subpart G approved organisation managing the aircraft airworthiness to the effect that the specified aircraft will be maintained to the programme and that the programme will be reviewed and updated as required.

1.1.5 Contents/list of effective pages and their revision status of the document.

1.1.6 Check periods, which reflect the anticipated utilisation of the aircraft. Such utilisation should be stated and include a tolerance of not more than 25%. Where utilisation cannot be anticipated, calendar time limits should also be included.

1.1.7 Procedures for the escalation of established check periods, where applicable and acceptable to the competent authority of registry.

1.1.8 Provision to record the date and reference of approved amendments incorporated in the maintenance programme.

1.1.9 Details of pre-flight maintenance tasks that are accomplished by maintenance staff.

1.1.10 The tasks and the periods (intervals/frequencies) at which each part of the aircraft, engines, APU's, propellers, components, accessories, equipment, instruments, electrical and radio apparatus, together with the associated systems and installations should be inspected. This should include the type and degree of inspection required.

1.1.11 The periods at which components should be checked, cleaned, lubricated, replenished, adjusted and tested.

1.1.12 If applicable details of ageing aircraft system requirements together with any specified sampling programmes.

1.1.13 If applicable details of specific structural maintenance programmes where issued by the type certificate holder including but not limited to:

a. Maintenance of structural Integrity by damage Tolerance and Supplemental Structural Inspection Programmes (SSID).

b. Structural maintenance programmes resulting from the SB review performed by the TC holder.

- c. Corrosion prevention and control.
- d. Repair Assessment.
- e. Widespread Fatigue Damage

1.1.14 If applicable a statement of the limit of validity in terms of total flight cycles/calendar date/flight hours for the structural programme in 1.1.13.

1.1.15 The periods at which overhauls and/or replacements by new or overhauled components should be made.

1.1.16 A cross-reference to other documents approved by the Agency which contain the details of maintenance tasks related to mandatory life limitations, Certification Maintenance Requirements (CMR's) and ADs.

Note: To prevent inadvertent variations to such tasks or intervals these items should not be included in the main portion of the maintenance programme document, or any planning control system, without specific identification of their mandatory status.

1.1.17 Details of, or cross-reference to, any required reliability programme or statistical methods of continuous Surveillance.

1.1.18 A statement that practices and procedures to satisfy the programme should be to the standards specified in the TC holder's Maintenance Instructions. In the case of approved practices and procedures that differ, the statement should refer to them.

1.1.19 Each maintenance task quoted should be defined in a definition section of the programme.

## **2 Programme basis**

2.1 An owner or an M.A Subpart G approved organisation's aircraft maintenance programme should normally be based upon the MRB report, where applicable, and the TC holder's maintenance planning document or Chapter 5 of the maintenance manual, (i.e. the manufacturer's recommended maintenance programme).

The structure and format of these maintenance recommendations may be re-written by the owner or the M.A Subpart G approved organisation to better suit the operation and control of the particular maintenance programme.

2.2 For a newly type-certificated aircraft where no previously approved maintenance programme exists, it will be necessary for the owner or the M.A Subpart G approved organisation to comprehensively appraise the manufacturer's recommendations (and the MRB report where applicable), together with other airworthiness information, in order to produce a realistic programme for approval.

2.3 For existing aircraft types it is permissible for the operator to make comparisons with maintenance programmes previously approved. It should not be assumed that a programme approved for one owner or the M.A Subpart G approved organisation would automatically be approved for another.

Evaluation should be made of the aircraft/fleet utilisation, landing rate, equipment fit and, in particular, the experience of the owner or the M.A Subpart G approved organisation when assessing an existing programme.

Where the competent authority is not satisfied that the proposed maintenance programme can be used as is, the competent authority should request appropriate changes such as additional maintenance tasks or de-escalation of check frequencies as necessary.

### **3 Amendments**

Amendments (revisions) to the approved maintenance programme should be made by the owner or the M.A Subpart G approved organisation, to reflect changes in the TC holder's recommendations, modifications, service experience, or as required by the competent authority.

### **4 Permitted variations to maintenance periods**

The owner or the M.A Subpart G approved organisation may only vary the periods prescribed by the programme with the approval of the competent authority or through a procedure developed in the maintenance programme and approved by the competent authority.

### **5 Periodic review of maintenance programme contents**

5.1 The owner or the M.A Subpart G approved organisation's approved maintenance programmes should be subject to periodic review to ensure that they reflect current TC holder's recommendations, revisions to the MRB report if applicable, mandatory requirements and the maintenance needs of the aircraft.

5.2 The owner or the M.A Subpart G approved organisation should review the detailed requirements at least annually for continued validity in the light of operating experience.

### **6. Reliability Programmes**

#### **6.1 Applicability**

6.1.1 A reliability programme should be developed in the following cases:

- (a) the aircraft maintenance programme is based upon MSG-3 logic
- (b) the aircraft maintenance programme includes condition monitored components
- (c) the aircraft maintenance programme does not contain overhaul time periods for all significant system components
- (d) when specified by the Manufacturer's maintenance planning document or MRB.

6.1.2 A reliability Programme need not be developed in the following cases:

- (a) the maintenance programme is based upon the MSG-1 or 2 logic but only contains hard time or on condition items
- (b) the aircraft is not a large aircraft according to Part-M
- (c) the aircraft maintenance programme provides overhaul time periods for all significant system components.

Note : for the purpose of this paragraph, a significant system is a system the failure of which could hazard the aircraft safety.

6.1.3 Notwithstanding paragraphs 6.1.1 and 6.1.2 above, an M.A.Subpart G organisation may however, develop its own reliability monitoring programme when it may be deemed beneficial from a maintenance planning point of view.

6.2 Applicability for M.A.Subpart G organisation/operator of small fleets of aircraft

6.2.1 For the purpose of this paragraph, a small fleet of aircraft is a fleet of less than 6 aircraft of the same type.

6.2.2 The requirement for a reliability programme is irrespective of the M.A.Subpart G organisation's fleet size.

6.2.3 Complex reliability programmes could be inappropriate for a small fleet. It is recommended that such M.A.Subpart G organisations tailor their reliability programmes to suit the size and complexity of operation.

6.2.4 One difficulty with a small fleet of aircraft consists in the amount of available data which can be processed: when this amount is too low, the calculation of alert level is very coarse. Therefore "alert levels" should be used carefully.

6.2.5 An M.A.Subpart G organisation of a small fleet of aircraft, when establishing a reliability programme, should consider the following:

- (a) The programme should focus on areas where a sufficient amount of data is likely to be processed.
- (b) When the amount of available data is very limited, the M.A.Subpart G organisation's engineering judgement is then a vital element. In the following examples, careful engineering analysis should be exercised before taking decisions:
  - A "0" rate in the statistical calculation may possibly simply reveal that enough statistical data is missing, rather than there is no potential problem.
  - When alert levels are used, a single event may have the figures reach the alert level. Engineering judgement is necessary so as to discriminate an artefact from an actual need for a corrective action.
  - In making his engineering judgement, an M.A.Subpart G organisation is encouraged to establish contact and make comparisons with other M.A.Subpart G organisations of the

same aircraft, where possible and relevant. Making comparison with data provided by the manufacturer may also be possible.

- 6.2.6 In order to obtain accurate reliability data, it should be recommended to pool data and analysis with one or more other M.A.Subpart G organisation(s). Paragraph 6.6 of this paragraph specifies under which conditions it is acceptable that M.A.Subpart G organisations share reliability data.
- 6.2.7 Notwithstanding the above there are cases where the M.A.Subpart G organisation will be unable to pool data with other M.A.Subpart G organisation, e.g. at the introduction to service of a new type. In that case the competent authority should impose additional restrictions on the MRB/MPD tasks intervals (e.g. no variations or only minor evolution are possible, and with the competent authority approval).

### 6.3 Engineering judgement

- 6.3.1 Engineering judgement is itself inherent to reliability programmes as no interpretation of data is possible without judgement. In approving the M.A.Subpart G organisation's maintenance and reliability programmes, the competent authority is expected to ensure that the organisation which runs the programme (it may be the M.A.Subpart G organisation, or an Part-145 organisation under contract) hires sufficiently qualified personnel with appropriate engineering experience and understanding of reliability concept (see AMC M.A.706)
- 6.3.2 It follows that failure to provide appropriately qualified personnel for the reliability programme may lead the competent authority to reject the approval of the reliability programme and therefore the aircraft maintenance programme.

### 6.4 Contracted maintenance

- 6.4.1 Whereas M.A.302 specifies that, the aircraft maintenance programme -which includes the associated reliability programme-, should be managed and presented by the M.A.Subpart G organisation to the competent authority, it is understood that the M.A.Subpart G organisation may delegate certain functions to the Part-145 organisation under contract, provided this organisation proves to have the appropriate expertise.
- 6.4.2 These functions are:
- (a) Developing the aircraft maintenance and reliability programmes,
  - (b) Performing the collection and analysis of the reliability data,
  - (c) Providing reliability reports, and
  - (d) Proposing corrective actions to the M.A.Subpart G organisation.
- 6.4.3 Notwithstanding the above decision to implement a corrective action (or the decision to request from the competent authority the approval to implement a corrective action) remains the M.A.Subpart G organisation's prerogative and responsibility. In relation to paragraph 6.4.2(d) above, a decision not to implement a corrective action should be justified and documented.

6.4.4 The arrangement between the M.A.Subpart G organisation and the Part-145 organisation should be specified in the maintenance contract (see appendix 11) and the relevant CAME, and MOE procedures.

## 6.5 Reliability programme

In preparing the programme details, account should be taken of this paragraph. All associated procedures should be clearly defined.

### 6.5.1 Objectives

6.5.1.1 A statement should be included summarising as precisely as possible the prime objectives of the programme. To the minimum it should include the following:

- (a) to recognise the need for corrective action,
- (b) to establish what corrective action is needed and,
- (c) to determine the effectiveness of that action

6.5.1.2 The extent of the objectives should be directly related to the scope of the programme. Its scope could vary from a component defect monitoring system for a small M.A.Subpart G organisation, to an integrated maintenance management programme for a big M.A.Subpart G organisation. The manufacturer's maintenance planning documents may give guidance on the objectives and should be consulted in every case.

6.5.1.3 In case of a MSG-3 based maintenance programme, the reliability programme should provide a monitor that all MSG-3 related tasks from the maintenance programme are effective and their periodicity is adequate.

### 6.5.2 Identification of items.

The items controlled by the programme should be stated, e.g. by ATA Chapters. Where some items (e.g. aircraft structure, engines, APU) are controlled by separate programmes, the associated procedures (e.g. individual sampling or life development programmes, constructor's structure sampling programmes) should be cross referenced in the programme.

### 6.5.3 Terms and definitions.

The significant terms and definitions applicable to the Programme should be clearly identified. Terms are already defined in MSG-3, Part-145 and Part-M.

### 6.5.4 Information sources and collection.

6.5.4.1 Sources of information should be listed and procedures for the transmission of information from the sources, together with the procedure for collecting and receiving it, should be set out in detail in the CAME or MOE as appropriate.

6.5.4.2 The type of information to be collected should be related to the objectives of the Programme and should be such that it enables both an overall broad based assessment of the information to be made and also allow for assessments to be made as to whether any reaction, both to trends and to individual events, is necessary. The following are examples of the normal prime sources:

- (a) Pilots Reports.
- (b) Technical Logs.

- (c) Aircraft Maintenance Access Terminal / On-board Maintenance System readouts.
- (d) Maintenance Worksheets.
- (e) Workshop Reports.
- (f) Reports on Functional Checks.
- (h) Reports on Special Inspections
- (g) Stores Issues/Reports.
- (i) Air Safety Reports.
- (j) Reports on Technical Delays and Incidents.
- (k) Other sources: ETOPS, RVSM, CAT II/III.

6.5.4.3 In addition to the normal prime sources of information, due account should be taken of continuing airworthiness and safety information promulgated under Part-21

#### 6.5.5 Display of information.

Collected information may be displayed graphically or in a tabular format or a combination of both. The rules governing any separation or discarding of information prior to incorporation into these formats should be stated. The format should be such that the identification of trends, specific highlights and related events would be readily apparent.

6.5.5.1 The above display of information should include provisions for “nil returns” to aid the examination of the total information.

6.5.5.2 Where “standards” or “alert levels” are included in the programme, the display of information should be oriented accordingly.

#### 6.5.6 Examination, analysis and interpretation of the information.

The method employed for examining, analysing and interpreting the programme information should be explained.

##### 6.5.6.1 Examination.

Methods of examination of information may be varied according to the content and quantity of information of individual programmes. These can range from examination of the initial indication of performance variations to formalised detailed procedures at specific periods, and the methods should be fully described in the programme documentation.

##### 6.5.6.2 Analysis and Interpretation.

The procedures for analysis and interpretation of information should be such as to enable the performance of the items controlled by the programme to be measured; they should also facilitate recognition, diagnosis and recording of significant problems. The whole process should be such as to enable a critical assessment to be made of the effectiveness of the programme as a total activity. Such a process may involve:

- (a) Comparisons of operational reliability with established or allocated standards (in the initial period these could be obtained from in-service experience of similar equipment of aircraft types).

- (b) Analysis and interpretation of trends.
- (c) The evaluation of repetitive defects.
- (d) Confidence testing of expected and achieved results.
- (e) Studies of life-bands and survival characteristics.
- (f) Reliability predictions.
- (g) Other methods of assessment.

6.5.6.3 The range and depth of engineering analysis and interpretation should be related to the particular programme and to the facilities available. The following, at least, should be taken into account:

- (a) Flight defects and reductions in operational reliability.
- (b) Defects occurring on-line and at main base.
- (c) Deterioration observed during routine maintenance.
- (d) Workshop and overhaul facility findings.
- (e) Modification evaluations.
- (f) Sampling programmes.
- (g) The adequacy of maintenance equipment and publications.
- (h) The effectiveness of maintenance procedures.
- (i) Staff training.
- (j) Service bulletins, technical instructions, etc.

6.5.6.4 Where the M.A.Subpart G organisation relies upon contracted maintenance and/or overhaul facilities as an information input to the programme, the arrangements for availability and continuity of such information should be established and details should be included.

#### 6.5.7 Corrective Actions.

6.5.7.1 The procedures and time scales both for implementing corrective actions and for monitoring the effects of corrective actions should be fully described. Corrective actions shall correct any reduction in reliability revealed by the programme and could take the form of:

- (a) Changes to maintenance, operational procedures or techniques.
- (b) Maintenance changes involving inspection frequency and content, function checks, overhaul requirements and time limits, which will require amendment of the scheduled maintenance periods or tasks in the approved maintenance programme. This may include escalation or de-escalation of tasks, addition, modification or deletion of tasks.
- (c) Amendments to approved manuals (e.g. maintenance manual, crew manual).
- (d) Initiation of modifications.
- (e) Special inspections of fleet campaigns.
- (f) Spares provisioning.

- (g) Staff training.
- (h) Manpower and equipment planning.

Note: Some of the above corrective actions may need the competent authority's approval before implementation.

6.5.7.2 The procedures for effecting changes to the maintenance programme should be described, and the associated documentation should include a planned completion date for each corrective action, where applicable.

#### 6.5.8 Organisational Responsibilities.

The organisational structure and the department responsible for the administration of the programme should be stated. The chains of responsibility for individuals and departments (Engineering, Production, Quality, Operations etc.) in respect of the programme, together with the information and functions of any programme control committees (reliability group), should be defined. Participation of the competent authority should be stated. This information should be contained in the CAME or MOE as appropriate.

#### 6.5.9 Presentation of information to the competent authority.

The following information should be submitted to the competent authority for approval as part of the reliability programme:

- (a) The format and content of routine reports.
- (b) The time scales for the production of reports together with their distribution.
- (c) The format and content of reports supporting request for increases in periods between maintenance (escalation) and for amendments to the approved maintenance programme. These reports should contain sufficient detailed information to enable the competent authority to make its own evaluation where necessary.

#### 6.5.10 Evaluation and review.

Each programme should describe the procedures and individual responsibilities in respect of continuous monitoring of the effectiveness of the programme as a whole. The time periods and the procedures for both routine and non-routine reviews of maintenance control should be detailed (progressive, monthly, quarterly, or annual reviews, procedures following reliability "standards" or "alert levels" being exceeded, etc.).

6.5.10.1 Each Programme should contain procedures for monitoring and, as necessary, revising the reliability "standards" or "alert levels". The organisational responsibilities for monitoring and revising the "standards" should be specified together with associated time scales.

6.5.10.2 Although not exclusive, the following list gives guidance on the criteria to be taken into account during the review.

- (a) Utilisation (high/low/seasonal).
- (b) Fleet commonality.
- (c) Alert Level adjustment criteria.

- (d) Adequacy of data.
- (e) Reliability procedure audit.
- (f) Staff training.
- (g) Operational and maintenance procedures.

#### 6.5.11 Approval of maintenance programme amendment

The competent authority may authorise the M.A.Subpart G organisation to implement in the maintenance programme changes arising from the reliability programme results prior to their formal approval by the authority when satisfied that ;

- (a) the Reliability Programme monitors the content of the Maintenance Programme in a comprehensive manner, and
- (b) the procedures associated with the functioning of the “Reliability Group” provide the assurance that appropriate control is exercised by the Owner/operator over the internal validation of such changes.

#### 6.6 Pooling Arrangements.

6.6.1 In some cases, in order that sufficient data may be analysed it may be desirable to “pool” data: i.e. collate data from a number of M.A.Subpart G organisations of the same type of aircraft. For the analysis to be valid, the aircraft concerned, mode of operation, and maintenance procedures applied must be substantially the same: variations in utilisation between two M.A.Subpart G organisations may more than anything, fundamentally corrupt the analysis. Although not exhaustive the following list gives guidance on the primary factors which need to be taken into account.

- (a) Certification factors, such as: aircraft TCDS compliance (variant) / modification status, including SB compliance.
- (b) Operational Factors, such as: operational environment / utilisation, e.g. low/high/seasonal etc / respective fleet size operating rules applicable (e.g. ETOPS/RVSM/All Weather etc.) / operating procedures / MEL and MEL utilisation
- (c) Maintenance factors, such as: aircraft age maintenance procedures; maintenance standards applicable; lubrication procedures and programme; MPD revision or escalation applied or maintenance programme applicable.

6.6.2 Although it may not be necessary for all of the foregoing to be completely common, it is necessary for a substantial amount of commonality to prevail. Decision should be taken by the competent authority on a case by case basis.

6.6.3 In case of a short term lease agreement (less than 6 month) more flexibility against the para 6.6.1 criteria may be granted by the competent authority, so as to allow the owner/operator to operate the aircraft under the same programme during the lease agreement effectivity.

6.6.4 Changes by any one of the M.A.Subpart G organisation to the above, requires assessment in order that the pooling benefits can be maintained. Where an M.A.Subpart G organisation wishes to pool data in this way, the approval of the competent authority should be sought prior to any formal agreement being signed between M.A.Subpart G organisations.

6.6.5 Whereas this paragraph 6.6 is intended to address the pooling of data directly between M.A.Subpart G organisations, it is acceptable that the M.A.Subpart G organisation participates in a reliability programme managed by the aircraft manufacturer, when the competent authority is satisfied that the manufacturer manages a reliability programme which complies with the intent of this paragraph.

## **Appendix II to M.A. 201 (h) 1 : Sub-contracting of continuing airworthiness management tasks**

### **1. SUB-CONTRACTED OPERATOR'S CONTINUING AIRWORTHINESS MANAGEMENT TASKS**

1.1 To actively control the standards of the sub-contracted organisation the operator should employ a person or group of persons who are trained and competent in the disciplines associated with M.A Subpart G. As such they are responsible for determining what maintenance is required, when it has to be performed and by whom and to what standard, in order to ensure the continued airworthiness of the aircraft being operated.

1.2 The operator should conduct a pre-contract audit to establish that the sub-contracted organisation can achieve the standards required by M.A Subpart G in connection with those activities to be sub-contracted.

1.3 The operator should ensure that the sub-contracted organisation has sufficient qualified personnel who are trained and competent in the functions to be subcontracted. In assessing the adequacy of personnel resources the operator should consider the particular needs of those activities that are to be sub-contracted, while taking into account the sub-contracted organisations existing commitments.

1.4 To be appropriately approved to contract out continuing airworthiness management tasks the operator should have procedures for the management control of these arrangements. The operator's continuing airworthiness management exposition should contain relevant procedures to reflect his control of those arrangements made with the sub-contracted organisation.

1.5 Sub-contracted continuing airworthiness management tasks should be addressed in a contract between the operator and the sub-contracted organisation. The contract should also specify that the sub-contracted organisation is responsible for informing the operator who is in turn responsible for notifying the respective competent authority, of any subsequent changes that affect their ability to support the contract.

1.6 Organisations providing continuing airworthiness management tasks to support commercial air transport operators should use procedures which set out the manner by which the organisation fulfils its responsibility to those sub-contracted activities. Such procedures may be developed by either the sub-contracted organisation or the operator.

1.7 Where the sub-contracted organisation develops its own procedures these should be compatible with the operator's continuing airworthiness management exposition and the terms of the contract. These should be accepted by the competent authority as extended procedures of the operator and as such should be cross-referenced from the continuing airworthiness management exposition. One current copy of the sub-contracted organisation's relevant procedures should be kept by the operator and should be accessible to the competent authority where needed.

Note: Should any conflict arise between the sub-contracted organisation's procedures and those of the operator then the policy and procedures of the continuing airworthiness management exposition will prevail.

1.8 The contract should also specify that the sub-contracted organisation's procedures may only be amended with the agreement of the operator. The operator should ensure that these amendments are compatible with their continuing airworthiness management exposition and in compliance with M.A Subpart G.

The operator should nominate who will be responsible for continued monitoring and acceptance of the sub-contracted organisation procedures and their amendments. The controls used to fulfil this function should be clearly set out in the amendment section of the continuing airworthiness management exposition detailing the level of operator involvement.

1.9 Whenever any elements of continuing airworthiness management tasks are sub-contracted the operator's continuing airworthiness management personnel should have access to all relevant data in order to fulfil their responsibilities.

Note: The operator retains authority to override where necessary for the continuing airworthiness of their aircraft, any recommendation of the sub-contracted organisation.

1.10 The operator should ensure that the sub-contracted organisation continues to have qualified technical expertise and sufficient resources to perform the subcontracted tasks while in compliance with the relevant procedures. Failure to do so may invalidate the approval of the operators continuing airworthiness management system.

1.11 The contract should provide for competent authority monitoring.

1.12 The contract should address the respective responsibilities to ensure that any findings arising from the competent authority monitoring will be closed to the satisfaction of the competent authority.

## 2. ACCOMPLISHMENT

This paragraph describes topics, which may be applicable in such a sub-contract arrangements.

### 2.1 Scope of work

The type of aircraft and their registrations, engine types and/or component subject to the continuing airworthiness management tasks contract should be specified.

### 2.2 Maintenance programme development and amendment

The operator may sub-contract the preparation of the draft maintenance programme and any subsequent amendments. However, the operator remains responsible for assessing that the draft proposals meet his needs and obtaining competent authority approval; the relevant procedures should specify these responsibilities. The contract should also stipulate that any data necessary to substantiate the approval of the initial programme or an amendment to this programme should be provided for operator agreement and/or competent authority upon request.

### 2.3 Maintenance programme effectiveness and reliability

The operator should have in place a system to monitor and assess the effectiveness of the maintenance programme based on maintenance and operational experience. The collection of data and initial assessment may be made by the sub-contracted organisation; the required actions are to be endorsed by the operator.

Where reliability monitoring is used to establish maintenance programme effectiveness, this may be provided by the sub-contracted organisation and should be specified in the relevant procedures. Reference should be made to the operators approved maintenance programme and reliability programme. Participation of the operator's personnel in reliability meetings with the sub-contracted organisation should also be specified.

In providing reliability data the sub-contracted organisation is limited to working with primary data/documents provided by the operator or data provided by the operators

contracted maintenance organisation(s) from which the reports are derived. The pooling of reliability data is permitted if accepted by the competent authority.

#### 2.4 Permitted variations to maintenance programme.

The reasons and justification for any proposed variation to scheduled maintenance may be prepared by the sub-contracted organisation. Acceptance of the proposed variation should be granted by the operator. The means by which the operator acceptance is given should be specified in the relevant procedures. When outside the limits set out in the maintenance programme, the operator is required to obtain approval by the competent authority.

#### 2.5 Scheduled maintenance

Where the sub-contracted organisation plans and defines maintenance checks or inspections in accordance with the approved maintenance programme, the required liaison with the operator, including feedback should be defined.

The planning control and documentation should be specified in the appropriate supporting procedures. These procedures should typically set out the operator's level of involvement in each type of check. This will normally involve the operator assessing and agreeing to a work specification on a case by case for base maintenance checks. For routine line maintenance checks this may be controlled on a day-to-day basis by the sub-contracted organisation subject to appropriate liaison and operator controls to ensure timely compliance. This typically may include, but is not necessarily limited to:

- Applicable work package, including job cards,
- Scheduled component removal list,
- ADs to be incorporated,
- Modifications to be incorporated

The associated procedures should ensure that the operator is advised in a timely manner on the accomplishment of such tasks.

#### 2.6 Quality monitoring

The operator's quality system should monitor the adequacy of the sub-contracted continuing airworthiness management task performance for compliance with the contract and M.A Subpart G. The terms of the contract should therefore include a provision allowing the operator to perform a quality surveillance (including audits) upon the sub-contracted organisation. The aim of the surveillance is primarily to investigate and judge the effectiveness of those sub-contracted activities and thereby to ensure compliance with M.A Subpart G and the contract. Audit reports may be subject to review when requested by the competent authority.

#### 2.7 Access by the competent authority

The contract should specify that the sub-contracted organisation should always grant access to the competent authority.

#### 2.8 Maintenance data

The maintenance data used for the purpose of the contract should be specified, together with those responsible for providing such documentation and the competent authority responsible for the acceptance/approval of such data when applicable. The operator should ensure such data including revisions is readily available to the operator's continuing airworthiness management personnel and those in the sub-contracted organisation who

may be required to assess such data. The operator should establish a 'fast track' means of ensuring that urgent data is transmitted to the sub-contractor in a timely manner. Maintenance data may include, but is not necessarily limited to:

- Maintenance programme,
- ADs,
- Service Bulletins,
- Major repairs/modification data,
- Aircraft Maintenance Manual,
- Engine overhaul manual,
- Aircraft IPC,
- Wiring diagrams,
- Trouble shooting manual,

## 2.9 Airworthiness directives

While the various aspects of AD assessment, planning and follow-up may be accomplished by the sub-contracted organisation, embodiment is performed by a Part-145 maintenance organisation. The operator is responsible for ensuring timely embodiment of applicable ADs and is to be provided with notification of compliance. It therefore follows that the operator should have clear policies and procedures on AD embodiment supported by defined procedures which will ensure that the operator agrees to the proposed means of compliance.

The relevant procedures should specify:

- What information (e.g. AD publications, continuing airworthiness records, flight hours/cycles, etc.) the sub-contracted organisation needs from the operator.
- What information (e.g. AD planning listing, detailed engineering order, etc) the operator needs from the sub-contracted organisation in order to ensure timely compliance with ADs.

To fulfil their above responsibility, operators should ensure that they are in receipt of current mandatory continued airworthiness information for the aircraft and equipment that they operate.

## 2.10 Service bulletin/modifications

The sub-contracted organisation may be required to review and make recommendations on embodiment of an SB and other associated non-mandatory material based on a clear operator policy. This should be specified in the contract.

## 2.11 Service life limit controls & component control/removal forecast.

Where the sub-contracted organisation performs planning activities, it should be specified that the organisation should be in receipt of the current flight cycles; flight hours; landings and/or calendar controlled details as applicable, at a frequency to be specified in the contract. The frequency should be such that it allows the organisation to properly perform the sub-contracted planning functions. It therefore follows that there will need to be adequate liaison between the operator, his Part-145 maintenance organisation(s) and the sub-contracted organisation. Additionally the contract should specify how the operator will

be in possession of all current flight cycles, flight hours, etc. in order that the operator may assure the timely accomplishment of the required maintenance.

#### 2.12 Engine health monitoring

If the operator sub-contracts the on wing engine health monitoring, the sub-contracted organisation should be in receipt of all the relevant information to perform this task, including any parameter reading deemed necessary to be supplied by the operator for this control. The contract should also specify what kind of feedback information (such as engine limitation, appropriate technical advice, etc.) the organisation should provide to the operator.

#### 2.13 Defect control

Where the operator has sub-contracted the day-to-day control of technical log deferred defects this should be specified in the contract and should be adequately described in the appropriate procedures. The operator's MEL/CDL provides the basis for establishing which defects may be deferred and associated limits. The procedures should also define the responsibilities and actions to be taken for defects such as AOG situations, repetitive defects, and damage beyond type certificate holder's limits.

For all other defects identified during maintenance, the information should be brought to the attention of the operator who dependant upon the procedural authority granted by the competent authority may determine that some defects can be deferred. Therefore, adequate liaison between the operator, his sub-contracted organisation and contracted Part-145 maintenance organisation should be ensured.

The sub-contracted organisation should make a positive assessment of potential deferred defects and consider potential hazards arising from the cumulative effect of any combination of defects. The sub-contracted organisations should liaise with the operator to gain his agreement following this assessment.

Deferment of MEL/CDL allowable defects can be accomplished by a contracted Part-145 organisation in compliance with the relevant technical log procedures, subject to the acceptance by the aircraft commander.

#### 2.14 Mandatory occurrence reporting

All incidents and occurrences that fall within the reporting criteria defined in Part-M and Part-145 should be reported as required by the respective requirements. The operator should ensure adequate liaison exists with the sub-contracted organisation and the Part-145 organisation.

#### 2.15 Continuing airworthiness records

These may be maintained and kept by the sub-contracted organisation on behalf of the operator who remains the owner of these documents. However, the operator should be provided with the current status of AD compliance and service life limited components in accordance with agreed procedures. The operator should also be provided with unrestricted and timely access to original records as and when needed. On-line access to the appropriate information systems is acceptable.

The record keeping requirements of Part-M should be satisfied. Access to the records by duly authorised members of the competent authority should be arranged upon request.

#### 2.16 Check flight procedures

Check Flights are carried out under the control of the operator. Check flight requirements from the sub-contracted organisation or contracted Part-145 maintenance organisations should be agreed by the operator

## 2.17 Communication between the operator and sub-contracted organisation

2.17.1 To exercise airworthiness responsibility the operator needs to be in receipt of all relevant reports and relevant maintenance data. The contract should specify what information should be provided and when.

2.17.2 Meetings provide one important corner stone whereby the operator can exercise part of its responsibility for ensuring the airworthiness of the operated aircraft. They should be used to establish good communications between the operator, the sub-contracted organisation and, where different to the foregoing, the contracted Part-145 organisation. The terms of contract should include whenever appropriate the provision for a certain number of meetings to be held between involved parties. Details of the types of liaison meetings and associated terms of reference of each meeting should be documented. The meetings may include but are not limited to all or a combination of:

### a - Contract review

Before the contract is applicable, it is very important that the technical personnel of both parties that are involved in the application of the contract meet in order to be sure that every point leads to a common understanding of the duties of both parties.

### b - Work scope planning meeting

Work scope planning meetings may be organised so that the tasks to be performed may be commonly agreed.

### c - Technical meeting

Scheduled meetings should be organised in order to review on a regular basis and agree actions on technical matters such as ADs, SBs, future modifications, major defects found during shop visit, reliability, etc...

### d - Quality meeting

Quality meetings should be organised in order to examine matters raised by the operator's quality surveillance and the competent authority's monitoring activity and to agree upon necessary corrective actions.

### e - Reliability meeting

When a reliability programme exists, the contract should specify the operator's and Part-145 approved organisation's respective involvement in that programme, including the participation to reliability meetings. Provision to enable the competent authority participation in the periodical reliability meetings should also be provided.





## Appendix IV to AMC M.A.604 Maintenance Organisation Manual

### 1. Purpose

The maintenance organisation manual is the reference for all the work carried out by the approved maintenance organisation. It should contain all the means established by the organisation to ensure compliance with Part-M according to the extent of approval and the privileges granted to the organisation.

The maintenance organisation manual should define precisely the work that the approved maintenance organisation is authorised to carry out and the subcontracted work. It should detail the resources used by the organisation, its structure and its procedures.

### 2. Content

A typical Maintenance Organisation Manual for a small organisation (less than 10 maintenance staff) should be designed to be used directly on a day to day basis. The working documents and lists should be directly included into the manual. It should contain the following:

#### Part A. — General

##### — Table of content

##### — List of effective pages

##### — Record of amendments

##### — Amendment procedure

- Drafting
- Amendments requiring direct approval by the competent authority
- Approval

##### — Distribution

- Name or title of each person holding a copy of the manual

##### — Accountable manager statement

- Approval of the manual
- Statement that the maintenance organisation manual and any incorporated document identified therein reflect the organisation's means of compliance with Part-M
- Commitment to work according to the manual
- Commitment to amend the manual when necessary

#### Part B — Description

##### — Organisation's scope of work

- Description of the work carried out by the organisation (type of product, type of work) and subcontracted work
- Identification of the level of work which can be performed at each facility.

— **General presentation of the organisation**

- Legal name and social status

— **Name and title of management personnel**

- Accountable manager
- Senior managers
- Duties and responsibilities

— **Organisation chart**

— **Certifying staff**

- Minimum qualification and experience
- List of authorised certifying staff

— **Personnel**

- Technical personnel (number, qualifications and experience)
- Administrative personnel (number)

— **General description of the facility**

- Geographical location (map)
- Plan of hangars
- Specialised workshops
- Office accommodation
- Stores
- Availability of all leased facilities.

— **Tools, equipment and material**

- List of tools, equipment and material used (including access to tools used on occasional basis)
- Test apparatus
- Calibration frequencies

— **Maintenance data**

- List of maintenance data used in accordance with M.A.402, and appropriate amendment subscription information (including access to data used on occasional basis).

Part C — General Procedures

— **Organisational review**

- Purpose (to insure that the approved maintenance organisation continues to meet the requirements of Part-M)
- Responsibility
- Organisation, frequency, scope and content (including processing of authority's findings)
- Planning and performance of the review
- Organisational review checklist and forms
- Processing and correction of review findings
- Reporting
- Review of subcontracted work

— **Training**

- Description of the methods used to ensure compliance with the personnel qualification and training requirements (certifying staff training, specialised training)
- Description of the personnel records to be retained

— **Contracting**

- Selection criteria and control
- Nature of contracted work
- List of contractors
- Nature of arrangements
- Assignment of responsibilities for the certification of the work performed

— **One time authorisations**

- Maintenance checks
- Certifying staff

Part D — Working Procedures

— **Work order acceptance**

— **Preparation and issue of the work package**

- Control of the work order
- Preparation of the planned work
- Work package content (copy of forms, work cards, procedure for their use, distribution)
- Responsibilities and signatures needed for the authorisation of the work

— **Logistics**

- Persons/functions involved
- Criteria for choosing suppliers
- Procedures used for incoming inspection and storage of parts, tools and materials
- Copy of forms and procedure for their use and distribution

— **Execution**

- Persons/functions involved and respective role
- Documentation (work package and work cards)
- Copy of forms and procedure for their use and distribution
- Use of work cards or manufacturer's documentation
- Procedures for accepting components from stores including eligibility check
- Procedures for returning unserviceable components to stores

— **Release to Service – Certifying staff**

- Authorised certifying staff functions and responsibilities

— **Release to Service - Supervision**

Detailed description of the system used to ensure that all maintenance tasks, applicable to the work requested of the approved maintenance organisation, have been completed as required.

- Supervision content
- Copy of forms and procedure for their use and distribution
- Control of the work package

— **Release to Service – Certificate of release to service**

- Procedure for signing the CRS (including preliminary actions)
- Certificate of release to service wording and standardised form
- Completion of the aircraft continuing airworthiness record system
- Completion of EASA Form 1
- Incomplete maintenance
- Check flight authorisation
- Copy of CRS and EASA Form 1

— **Records**

— **Special procedures**

Such as specialised tasks, disposal of unsalvageable components, re-certification of parts not having an EASA Form 1, etc.

— **Occurrence reporting**

- Occurrences to be reported
- Timeframe of reports
- Information to be reported
- Recipients

— **Management of indirect approval of the manual**

- Amendments content eligible for indirect approval
- Responsibility
- Traceability
- Information to the competent authority
- Final validation

Part E – Appendices

— **Sample of all documents used.**

— **List of maintenance locations.**

— **List of Part 145 or M.A. Subpart F organisations.**

#### **4. Approval**

The competent authority should approve the manual in writing. This will normally be done by approving a list of effective pages.

Minor amendments, or amendments to a large capability list, can be approved indirectly, through a procedure approved by the member state.

#### **5. Continuous compliance with Part-M**

When a maintenance organisation manual no longer meets the requirements of this Part-M, whether through a change in Part-M, a change in the organisation or its activities, or through an inadequacy shown to exist by verification inspections conducted under the organisational review, or any other reason that affects the manuals conformity to requirements, the approved maintenance organisation is responsible to prepare and have approved an amendment to its manual.

#### **6. Distribution**

The manual describes how the organisation works therefore the manual or relevant parts thereof need to be distributed to all concerned staff in the organisation and contracted organisations.

**Appendix V to AMC M.A.704 Continuing airworthiness management organisation  
exposition**

**CONTINUING AIRWORTHINESS MANAGEMENT EXPOSITION**

## TABLE OF CONTENT

### **Part 0**      **General organisation**

- 0.1              Corporate commitment by the accountable manager.
- 0.2              General information.
- 0.3              Management personnel.
- 0.4              Management organisation chart.
- 0.5              Notification procedure to the competent authority regarding changes to the organisation's activities / approval / location / personnel.
- 0.6              Exposition amendment procedures.

### **Part 1**      **Continuing airworthiness management procedures**

- 1.1              Aircraft technical log utilisation and MEL application (commercial air transport).  
Aircraft continuing airworthiness record system utilisation (non commercial air transport).
- 1.2              Aircraft maintenance programmes – development amendment and approval.
- 1.3              Time and continuing airworthiness records, responsibilities, retention, access.
- 1.4              Accomplishment and control of airworthiness directives.
- 1.5              Analysis of the effectiveness of the maintenance programme(s).
- 1.6              Non mandatory modification embodiment policy.
- 1.7              Major modification standards.
- 1.8              Defect reports.
- 1.9              Engineering activity.
- 1.10             Reliability programmes.
- 1.11             Pre-flight inspections.
- 1.12             Aircraft weighing.
- 1.13             Check flight procedures.

### **Part 2**      **Quality system**

- 2.1              Continuing airworthiness quality policy, plan and audits procedure.
- 2.2              Monitoring of continuing airworthiness management activities.
- 2.3              Monitoring of the effectiveness of the maintenance programme(s).
- 2.4              Monitoring that all maintenance is carried out by an appropriate maintenance organisation
- 2.5              Monitoring that all contracted maintenance is carried out in accordance with the contract, including sub-contractors used by the maintenance contractor.
- 2.6              Quality audit personnel.

**Part 3 Contracted Maintenance**

- 3.1 Maintenance contractor selection procedure.
- 3.2 Quality audit of aircraft.

**Part 4 Airworthiness review procedures**

- 4.1 Airworthiness review staff.
- 4.2 Review of aircraft records.
- 4.3 Physical survey.
- 4.4 Additional procedures for recommendations to competent authorities for the import of aircraft.
- 4.5 Recommendations to competent authorities for the issue of ARC.
- 4.6 Issuance of ARC.
- 4.7 Airworthiness review records, responsibilities, retention and access.

**Part 5 Appendices**

- 5.1 Sample documents.
- 5.2 List of airworthiness review staff.
- 5.3 List of sub-contractors as per AMC M.A.201 (h) 2 and M.A.711 (a) 3.
- 5.4 List of approved maintenance organisations contracted.
- 5.5 Copy of contracts for sub-contracted work (appendix 2 to AMC M.A.201 (h) 2).
- 5.6 Copy of contracts with approved maintenance organisations.

## LIST OF EFFECTIVE PAGES

Page	Revision
1	Original
2	Original

Page	Revision
3	Original
4	Original

Page	Revision
5	Original
....	....

## DISTRIBUTION LIST

*(The document should include a distribution list to ensure proper distribution of the manual and to demonstrate to the competent authority that all personnel involved in continuing airworthiness has access to the relevant information. This does not mean that all personnel have to be in receipt of a manual but that a reasonable amount of manuals are distributed within the organisation(s) so that the concerned personnel may have quick and easy access to this manual.*

*Accordingly, the continuing airworthiness management exposition should be distributed to:*

- *the operator's or the organisation's management personnel and any person at a lower level as necessary; and,*
- *the Part-145 or M.A. Subpart F contracted maintenance organisation(s) ; and,*
- *the competent authority.)*

## **PART 0 GENERAL ORGANISATION**

### **0.1 Corporate commitment by the accountable manager**

*(The accountable manager's exposition statement should embrace the intent of the following paragraph and in fact this statement may be used without amendment. Any modification to the statement should not alter the intent.)*

This exposition defines the organisation and procedures upon which the M.A. Subpart G approval of Joe Bloggs under Part-M is based.

These procedures are approved by the undersigned and must be complied with, as applicable; in order to ensure that all the continuing airworthiness activities including maintenance for aircraft managed by Joe Bloggs is carried out on time to an approved standard.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published by the Agency or the competent authority from time to time where these new or amended regulations are in conflict with these procedures.

The competent authority will approve this organisation whilst the competent authority is satisfied that the procedures are being followed. It is understood that the competent authority reserves the right to suspend, vary or revoke the M.A. Subpart G continuing airworthiness management approval of the organisation, as applicable, if the competent authority has evidence that the procedures are not followed and the standards not upheld.

In the case of commercial air transport, suspension or revocation of the approval of the Part M Subpart G continuing airworthiness management approval would invalidate the AOC.

### **0.2 General Information**

#### **a) Brief description of the organisation**

*(This paragraph should describe broadly how the whole organisation [i.e. including the whole operator in the case of commercial air transport or the whole organisation when other approvals are held] is organised under the management of the accountable manager, and should refer to the organisation charts of paragraph 0.4.)*

#### **b) Relationship with other organisations**

*(This paragraph may not be applicable to every organisation.)*

#### **(1) Subsidiaries / mother company**

*(For clarity purpose, where the organisation belongs to a group, this paragraph should explain the specific relationship the organisation may have with other members of that group - e.g. links between Joe Bloggs Airlines, Joe Bloggs Finance, Joe Bloggs Leasing, Joe Bloggs Maintenance, etc...)*

#### **(2) Consortiums**

*(Where the organisation belongs to a consortium, it should be indicated here. The other members of the consortium should be specified, as well as the scope of organisation of the consortium [e.g.*

*operations, maintenance, design (modifications and repairs), production etc...]. The reason for specifying this is that consortium maintenance may be controlled through specific contracts and through consortium's policy and/or procedures manuals that might unintentionally override the maintenance contracts. In addition, in respect of international consortiums, the respective competent authorities should be consulted and their agreement to the arrangement clearly stated. This paragraph should then make reference to any consortium's continuing airworthiness related manual or procedure and to any competent authority agreement that would apply.)*

#### c) Aircraft managed – Fleet composition

*(This paragraph should quote the aircraft types and the number of aircraft of each type. The following is given as an example :)*

Joe Bloggs PLC manages, as of 28 November 2003, the following:

- . 3 B737-300
- . 3 B737-400
- . 1 A 320-200
- . 14 F27 (MK500), etc...

For commercial air transport, the fleet composition reference with the aircraft registrations is given by Joe Bloggs Airlines' current AOC (*or else where e.g. in the Operation Manual, by agreement of the competent authority*)

*(Depending on the number of aircraft, this paragraph may be updated as follows:*

- 1) the paragraph is revised each time an aircraft is removed from or added in the list.*
- 2) the paragraph is revised each time a type of aircraft or a significant number of aircraft is removed from or added to the list. In that case the paragraph should explain where the current list of aircraft managed is available for consultation.)*

#### d) Type of operation

*(This paragraph should give broad information on the type of operations such as: commercial, aerial work, non commercial, long haul/short haul/regional, scheduled/charter, regions/countries/continents flown, etc)*

### **0.3 Management personnel**

#### a) Accountable manager

*(This paragraph should address the duties and responsibilities of the accountable manager as far as Part M.A. subpart G is concerned and demonstrate that he has corporate authority for ensuring that all continuing airworthiness activities can be financed and carried out to the required standard.)*

#### b) Nominated post holder for continuing airworthiness (for commercial air transport)

*(This paragraph should:*

- Emphasise that the nominated post holder for continuing airworthiness is responsible to ensure that all maintenance is carried out on time to an approved standard.*

- Describe the extent of his authority as regards his Part M responsibility for continuing airworthiness.

*This paragraph is not necessary for organisations not holding an AOC)*

c) Continuing airworthiness coordination

*(This paragraph should list the job functions that constitute the "group of persons" as required by M.A.706(c) in enough detail so as to show that all the continuing airworthiness responsibilities as described in Part M are covered by the persons that constitute that group. In the case of small operators, where the "Nominated Post holder for continuing airworthiness constitutes himself the "group of persons", this paragraph may be merged with the previous one.)*

d) Duties and responsibilities

*(This paragraph should further develop the duties and responsibilities of:*

*-the personnel listed in paragraphs c): "Continuing airworthiness coordination ",*

*-the quality manager, as regards the quality monitoring of the maintenance system [which includes the approved maintenance organisation(s)]*

e) Manpower resources and training policy

**(1) Manpower resources**

*(This paragraph should give broad figures to show that the number of people dedicated to the performance of the approved continuing airworthiness activity is adequate. It is not necessary to give the detailed number of employees of the whole company but only the number of those involved in continuing airworthiness. This could be presented as follows:)*

As of 28 November 2003, the number of employees dedicated to the performance of the continuing airworthiness management system is the following:

	Full Time	Part Time in equivalent full time
Quality monitoring	AA	aa = AA'
Continuing airworthiness management	BB	bb = BB'
<i>(Detailed information about the</i>	BB1	bb1 = BB1'
<i>management group of persons)</i>	BB2	bb2 = BB2'
Other...	CC	cc =CC'
Total	TT	tt = TT'
Total Man hours	TT + TT'	

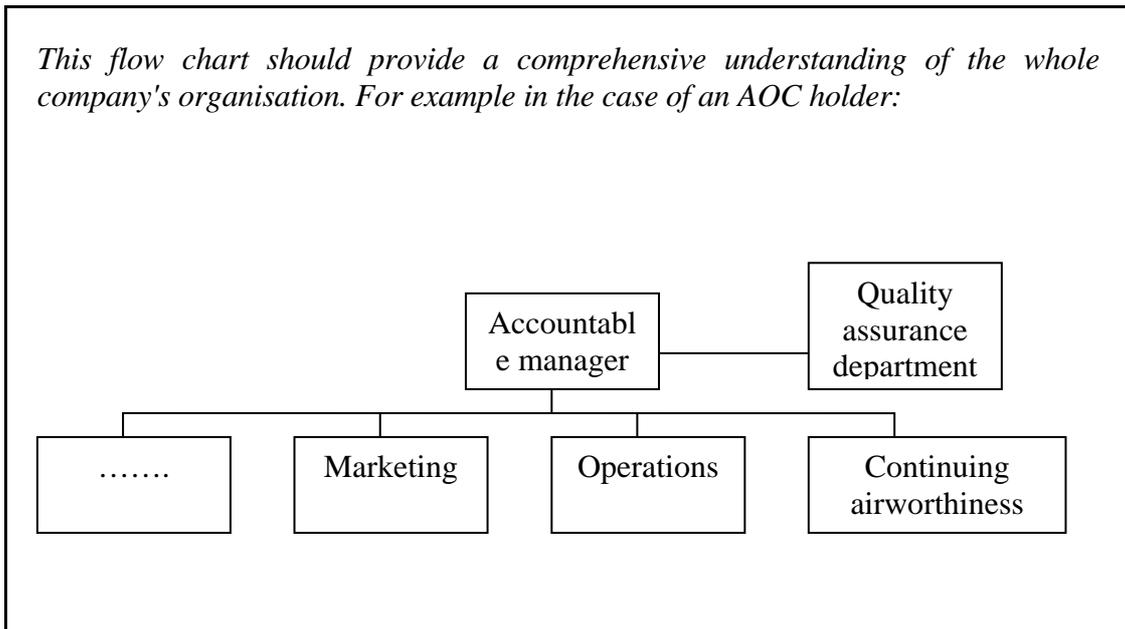
*(Note: According to the size and complexity of the organisation, this table may be further developed or simplified)*

## **(2) Training policy**

*(This paragraph should show that the training and qualification standards for the personnel quoted above are consistent with the size and complexity of the organisation. It should also explain how the need for recurrent training is assessed and how the training recording and follow-up is performed)*

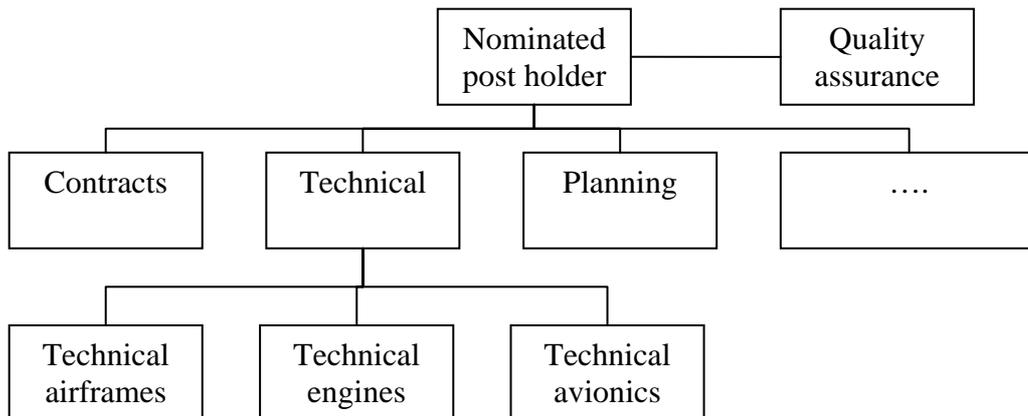
### **0.4 Management organisation charts**

#### **a) General organisation chart**



#### **b) Continuing airworthiness management organisation chart**

*This flow chart should give further details on the continuing airworthiness Management system, and should clearly show the independence of the quality monitoring system, including the links between the quality assurance department and the other departments (see example below). This flow chart may be combined with the one above or subdivided as necessary, depending on the size and the complexity of the organisation. For example in the case of an AOC holder:*



## **0.5 Notification procedure to the competent authority regarding changes to the organisation's activities / approval / location / personnel**

*(This paragraph should explain in which occasion the company should inform the competent authority prior to incorporating proposed changes; for instance:*

*The accountable manager (or any delegated person such as the engineering director or the quality manager) will notify to the competent authority any change concerning:*

- (1) the company's name and location(s)*
- (2) the group of person as specified in paragraph 0.3.c)*
- (3) operations, procedures and technical arrangements, as far as they may affect the approval.*

*Joe Bloggs will not incorporate such change until the change have been assessed and approved by the competent authority.)*

## **0.6 Exposition amendment procedure**

*(This paragraph should explain who is responsible for the amendment of the exposition and submission to the competent authority for approval. This may include, if agreed by the competent authority the possibility for the approved organisation to approve internally minor changes that have no impact on the approval held. The paragraph should then specify what types of changes are considered as minor and major and what the approval procedures for both cases are.)*

## **PART 1 CONTINUING AIRWORTHINESS MANAGEMENT PROCEDURES**

### **1.1 Aircraft technical log utilisation and MEL application**

**or**

### **1.1 Aircraft continuing airworthiness record system utilisation**

a) Aircraft technical log and/or continuing airworthiness record system

#### **(1) General**

*(It may be useful to remind, in this introduction paragraph, the purpose of the aircraft technical log system and/or continuing airworthiness record system, with special care to the options of M.A.305 and M.A.306 For that purpose, paragraphs of M.A.305 and M.A.306 may be quoted or further explained.)*

#### **(2) Instructions for use**

*(This paragraph should provide instructions for using the aircraft technical log and/or continuing airworthiness record system. It should insist on the respective responsibilities of the maintenance personnel and operating crew. Samples of the technical log and/or continuing airworthiness record system should be included in Part 5 "Appendices" in order to provide enough detailed instructions.)*

#### **(3) Aircraft technical log approval (For commercial air transport)**

*(This paragraph should explain who is responsible for submitting the aircraft technical log any subsequent amendment to the competent authority for approval and what is the procedure to be followed)*

b) M.E.L. application

*(Although the MEL is a document that is normally not controlled by the continuing airworthiness management system, and that the decision of whether accepting or not a MEL tolerance normally remains the responsibility of the operating crew, this paragraph should explain in sufficient detail the MEL application procedure, because the MEL is a tool that the personnel involved in maintenance have to be familiar with in order to ensure proper and efficient communication with the crew in case of a defect rectification to be deferred.)*

*(This paragraph does not apply to those types of aircraft that do not have an MEL or are not used for commercial air transport and that are not required to have one.)*

#### **(1) General**

*(This paragraph should explain broadly what a MEL document is. The information could be extracted from the aircraft flight manual.)*

#### **(2) MEL categories**

*(Where an owner/operator uses a classification system placing a time constraint on the rectification of such defect, it should be explained here what are the general principles of such a system. It is essential for the personnel involved in maintenance to be familiar with it for the management of MEL's deferred defect rectification.)*

### **(3) Application**

*(This paragraph should explain how the maintenance personnel identify a MEL limitation to the crew. This should refer to the technical log procedures)*

### **(4) Acceptance by the crew (For commercial air transport)**

*(This paragraph should explain how the crew notifies his acceptance or non acceptance of the MEL deferment in the technical log)*

### **(5) Management of the MEL time limits**

*(After a technical limitation is accepted by the crew, the defect must be rectified within the time limit specified in the MEL. There should be a system to ensure that the defect will actually be corrected before that limit. This system could be the aircraft technical log for those [small] operators that use it as a planning document, or a specific follow-up system, in other cases, where control of the maintenance time limit is ensured by another means such as data processed planning systems.)*

### **(6) MEL Time Limitation Overrun**

*(The competent authority may grant the owner/operator to overrun MEL time limitation under specified conditions. Where applicable this paragraph should describe the specific duties and responsibilities for controlling these extensions.)*

## **1.2 Aircraft maintenance programmes - development and amendment**

### **a) General**

*(This introductory paragraph should remind that the purpose of a maintenance programme is to provide maintenance planning instructions necessary for the safe operation of the aircraft.)*

### **b) Content**

*(This paragraph should explain what is [are] the format[s] of the company's aircraft maintenance programme[s]. Appendix I to AMC M.A.302 (a) and M.B.301 (d) should be used as a guideline to develop this paragraph.)*

### **c) Development**

#### **(1) Sources**

*(This paragraph should explain what are the sources [MRB, MPD, Maintenance Manual, etc..] used for the development of an aircraft maintenance programme.)*

#### **(2) Responsibilities**

*(This paragraph should explain who is responsible for the development of an aircraft maintenance programme)*

#### **(3) Manual amendments**

*(This paragraph should demonstrate that there is a system for ensuring the continuing validity of the aircraft maintenance programme. Particularly, it should show how any relevant information is used to update the aircraft maintenance programme. This should include, as applicable, MRB report*

*revisions, consequences of modifications, manufacturers and competent authority recommendations, in service experience, and reliability reports.)*

#### **(4) Acceptance by the authority**

*(This paragraph should explain who is responsible for the submission of the maintenance programme to the competent authority and what the procedure to follow is. This should in particular address the issue of the competent authority approval for variation to maintenance periods. This may include, if agreed by the competent authority the possibility for the approved organisation to approve internally certain changes. The paragraph should then specify what types of changes are concerned and what the approval procedures are.)*

### **1.3 Time and continuing airworthiness records, responsibilities, retention, access**

#### **a) Hours and cycles recording**

*(The recording of flight hours and cycles is essential for the planning of maintenance tasks. This paragraph should explain how the continuing airworthiness management organisation has access to the current flight hours and cycle information and how it is processed through the organisation.)*

#### **b) Records**

*(This paragraph should give in detail the type of company documents that are required to be recorded and what are the recording period requirements for each of them. This can be provided by a table or series of tables that would include the following:*

- Family of document [if necessary],*
- Name of document,*
- Retention period,*
- Responsible person for retention,*
- Place of retention,)*

#### **c) Preservation of records**

*(This paragraph should set out the means provided to protect the records from fire, floods, etc.. as well as the specific procedures in place to guarantee that the records will not be altered during the retention period [especially for the computer record].)*

#### **d) Transfer of continuing airworthiness records**

*(This paragraph should set out the procedure for the transfer of records, in case of purchase/lease-in, sale/lease-out and transfer to another organisation of an aircraft. In particular, it should specify which records have to be transferred and who is responsible for the coordination [if necessary] of the transfer.)*

### **1.4 Accomplishment and control of Airworthiness Directives**

*(This paragraph should demonstrate that there is a comprehensive system for the management of airworthiness directives. This paragraph may for instance include the following Sub-paragraphs:)*

#### **a) Airworthiness directive information**

*(This paragraph should explain what the AD information sources are and who receives them in the company. Where available, redundant sources [e.g. agency+ competent authority + manufacturer or association] may be useful.)*

#### b) Airworthiness directive decision

*(This paragraph should explain how and by whom the AD information is analysed and what kind of information is provided to the contracted maintenance organisations in order to plan and to perform the airworthiness directive. This should as necessary include a specific procedure for emergency airworthiness directive management)*

#### c) Airworthiness directive control

*(This paragraph should specify how the organisation manages to ensure that all the applicable airworthiness directives are performed and that they are performed on time. This should include a close loop system that allows verifying that for each new or revised airworthiness directive and for each aircraft:*

- *the AD is not applicable or,*
- *if the AD is applicable:*
  - *the Airworthiness Directive is not yet performed but the time limit is not overdue,*
  - *the Airworthiness Directive is performed, and any repetitive inspection are identified and performed.*

*This may be a continuous process or may be based on scheduled reviews.)*

### **1.5 Analysis of the effectiveness of the maintenance programme**

*(this paragraph should show what tools are used in order to analyse the efficiency of the maintenance programme, such as:*

- PIREPS,*
- air turn-backs*
- spare consumption,*
- repetitive technical occurrence and defect,*
- technical delays analysis [through statistics if relevant],*
- technical incidents analysis [through statistics if relevant],*
- etc...*

*The paragraph should also indicate by whom and how these data are analysed, what is the decision process to take action and what kind of action could be taken. This may include:*

- amendment of the maintenance programme,*
- amendment of maintenance or operational procedures,*
- etc...)*

### **1.6 Non-mandatory modification embodiment policy**

*(This paragraph should specify how the non-mandatory modification information are processed through the organisation, who is responsible for their assessment against the operator's/owner's own need and operational experience, what are the main criteria for decision and who takes the decision of implementing [or not] a non-mandatory modification)*

### **1.7 Major repair modification standards**

*(This paragraph should set out a procedure for the assessment of the approval status of any major modification before embodiment. This will include the assessment of the need of an Agency or design*

*organisation approval. It should also identify the type of approval required, and the procedure to follow to have a modification approved by the Agency or design.)*

## **1.8 Defect reports**

### a) Analysis

*(This paragraph should explain how the defect reports provided by the contracted maintenance organisations are processed by the continuing airworthiness management organisation. Analysis should be conducted in order to give elements to activities such as maintenance programme evolution and non mandatory modification policy.)*

### b) Liaison with manufacturers and regulatory authorities

*(Where a defect report shows that such defect is likely to occur to other aircraft, a liaison should be established with the manufacturer and the certification competent authority, so that they may take all the necessary action.)*

### c) Deferred defect policy

*(Defects such as cracks and structural defect are not addressed in the MEL and CDL. However, it may be necessary in certain cases to defer the rectification of a defect. This paragraph should establish the procedure to be followed in order to be sure that the deferment of any defect will not lead to any safety concern. This will include appropriate liaison with the manufacturer.)*

## **1.9 Engineering activity**

*(Where applicable, this paragraph should expose the scope of the organisation's engineering activity in terms of approval of modification and repairs. It should set out a procedure for developing and submitting a modification/repair design for approval to the Agency and include reference to the supporting documentation and forms used. It should identify the person in charge of accepting the design before submission to the Agency or the competent authority.*

*Where the organisation has a DOA capability under Part 21, it should be indicated here and the related manuals should be referred to.)*

## **1.10 Reliability programmes**

*(This paragraph should explain appropriately the management of a reliability programme. It should at least address the following:*

- extent and scope of the operator's reliability programmes,*
- specific organisational structure, duties and responsibilities,*
- establishment of reliability data,*
- analysis of the reliability data,*
- corrective action system (maintenance programme amendment),*
- scheduled reviews (reliability meetings, the participation of the competent authority.)*

*(This paragraph may be, where necessary, subdivided as follows:)*

### a) Airframe

### b) Propulsion

### c) Component

### **1.11 Pre-flight inspections**

*(This paragraph should show how the scope and definition of pre-flight inspection, that are usually performed by the operating crew, is kept consistent with the scope of the maintenance performed by the contracted maintenance organisations. It should show how the evolution of the pre-flight inspection content and the maintenance programme are concurrent, each time necessary.)*

*(The following paragraphs are self explanatory. Although these activities are normally not performed by continuing airworthiness personnel, these paragraphs have been placed here in order to ensure that the related procedures are consistent with the continuing airworthiness activity procedures.)*

- a) Preparation of aircraft for flight
- b) Sub-contracted ground handling function
- c) Security of Cargo and Baggage loading
- d) Control of refueling, Quantity/Quality
- e) Control of snow, ice dust and sand contamination to an approved standard

### **1.12 Aircraft weighing**

*(This paragraph should state in which occasion an aircraft has to be weighed [for instance after a major modification because of weight and balance operational requirements, etc.] who performs it, according to which procedure, who calculates the new weight and balance and how the result is processed into the organisation.)*

### **1.13 Check flight procedures**

*(The criteria for performing a check flight are normally included in the aircraft maintenance programme. This paragraph should explain how the check flight procedure is established in order to meet its intended purpose [for instance after a heavy maintenance check, after engine or flight control removal installation, etc.], and the release procedures to authorise such a check flight.)*

## **PART 2 QUALITY SYSTEM**

### **2.1 Continuing airworthiness quality policy, plan and audits procedure**

- a) Continuing airworthiness quality policy

*(This paragraph should include a formal Quality Policy statement; that is a commitment on what the Quality System is intended to achieve. It should include at the minimum monitoring compliance with Part M and any additional standards specified by the organisation.)*

- b) Quality plan

*(This paragraph should show how the quality plan is established. The quality plan will consist of a quality audit and sampling schedule that should cover all the areas specific to Part M in a definite period of time. However, the scheduling process should also be dynamic and allow for special evaluations when trends or concerns are identified. In case of sub-contracting, this paragraph should*

*also address the planning of the auditing of subcontractors at the same frequency as the rest of the organisation.)*

c) Quality audit procedure

*(The quality audit is a key element of the quality system. Therefore, the quality audit procedure should be sufficiently detailed to address all the steps of an audit, from the preparation to the conclusion, show the audit report format [e.g. by ref. to paragraph 5.1 "sample of document"], and explain the rules for the distribution of audits reports in the organisation [e.g.: involvement of the Quality Manager, Accountable Manager, Nominated Postholder, etc...].)*

d) Quality audit remedial action procedure

*(This paragraph should explain what system is put in place in order to ensure that the corrective actions are implemented on time and that the result of the corrective action meets the intended purpose. For instance, where this system consists in periodical corrective actions review, instructions should be given how such reviews should be conducted and what should be evaluated.)*

## **2.2 Monitoring of continuing airworthiness management activities**

*(This paragraph should set out a procedure to periodically review the activities of the maintenance management personnel and how they fulfil their responsibilities, as defined in Part 0.)*

## **2.3 Monitoring of the effectiveness of the maintenance programme(s)**

*(This paragraph should set out a procedure to periodically review that the effectiveness of the maintenance programme is actually analysed as defined in Part 1.)*

## **2.4 Monitoring that all maintenance is carried out by an appropriate maintenance organisation**

*(This paragraph should set out a procedure to periodically review that the approval of the contracted maintenance organisations are relevant for the maintenance being performed on the operator's fleet. This may include feed back information from any contracted organisation on any actual or contemplated amendment, in order to ensure that the maintenance system remains valid and to anticipate any necessary change in the maintenance agreements.*

*If necessary, the procedure may be subdivided as follows:*

a) Aircraft maintenance

b) Engines

c) Components)

## **2.5 Monitoring that all contracted maintenance is carried out in accordance with the contract, including sub-contractors used by the maintenance contractor**

*(This paragraph should set out a procedure to periodically review that the continuing airworthiness management personnel are satisfied that all contracted maintenance is carried out in accordance with the contract. This may include a procedure to ensure that the system allows all the personnel involved in the contract [including the contractors and his subcontractors] to be acquainted with its terms and that, for any contract amendment, relevant information is dispatched in the organisation and at the contractor.)*

## **2.6 Quality audit personnel**

*(This paragraph should establish the required training and qualification standards of auditors. Where persons act as a part time auditor, it should be emphasized that this person must not be directly involved in the activity he/she audits.)*

## **PART 3 CONTRACTED MAINTENANCE**

### **3.1 Maintenance contractor selection procedure**

*(This paragraph should explain how a maintenance contractor is selected by the continuing airworthiness management organisation. Selection should not be limited to the verification that the contractor is appropriately approved for the type of aircraft, but also that the contractor has the industrial capacity to undertake the required maintenance. This selection procedure should preferably include a contract review process in order to insure that:*

- the contract is comprehensive and that no gap or unclear area remains,*
- every one involved in the contract [both at the continuing airworthiness management organisation and at the maintenance contractor] agrees with the terms of the contract and fully understand his responsibility.*
- that functional responsibilities of all parties are clearly identified.*
- is signed by the owner/lessee of the aircraft in the case of non-commercial air transport.*

*In the case of non commercial air transport, this activity should be carried in agreement with the owner.)*

### **3.2 Quality audit of aircraft**

*(This paragraph should set out the procedure when performing a quality audit of an aircraft. It should set out the differences between an airworthiness review and quality audit. This procedure may include:*

- compliance with approved procedures;*
- contracted maintenance is carried out in accordance with the contract;*
- continued compliance with Part M. )*

## **PART 4 AIRWORTHINESS REVIEW PROCEDURES**

### **4.1 Airworthiness review staff**

*(This paragraph should establish the working procedures for the assessment of the airworthiness review staff. The assessment addresses experience, qualification, training etc. A description shall be given regarding the issuance of authorisations for the airworthiness review staff and how records are kept and maintained.)*

### **4.2 Review of aircraft records**

*(This paragraph should describe in detail the aircraft records that are required to be reviewed during the airworthiness review. The level of detail that needs to be reviewed shall be described and the number of records that need to be reviewed during a sample check.)*

#### **4.3 Physical survey**

*(This paragraph should describe how the physical survey needs to be performed. It should list the topics that need to be reviewed, the physical areas of the aircraft to be inspected, which documents onboard the aircraft that need to be reviewed etc. )*

#### **4.4 Additional procedures for recommendations to competent authorities for the import of aircraft**

*(This paragraph should describe the additional tasks regarding the recommendation for the issuance of an airworthiness review certificate in the case of an import of an aircraft. This shall include: communication with the competent authority of registry, additional items to be reviewed during the airworthiness review of the aircraft, specification of maintenance required to be carried out etc. )*

#### **4.5 Recommendations to competent authorities for the issue of airworthiness review certificates**

*(This paragraph should stipulate the communication procedures with the competent authorities in case of a recommendation for the issuance of an airworthiness review certificate. In addition the content of the recommendation should be described.)*

#### **4.6 Issuance of airworthiness review certificates**

*(This paragraph should set out the procedures for the issuance of the ARC. It should address record keeping, distribution of the ARC copies etc. This procedure should ensure that only after an airworthiness review that has been properly carried out, an ARC will be issued. )*

#### **4.7 Airworthiness review records, responsibilities, retention and access**

*(This paragraph should describe how records are kept, the periods of record keeping, location where the records are being stored, access to the records and responsibilities.)*

### **PART 5 APPENDICES**

#### **5.1 Sample documents**

*(A self explanatory paragraph)*

#### **5.2 List of airworthiness review staff**

*(A self explanatory paragraph)*

#### **5.3 List of sub-contractors as per AMC M.A.201 (h) 1 and M.A.711 (a) 3.**

*(A self explanatory paragraph, in addition it should set out that the list should be periodically reviewed)*

#### **5.4 List of approved maintenance organisations contracted**

*(A self explanatory paragraph, in addition it should set out that the list should be periodically reviewed)*

**5.5 Copy of contracts for sub-contracted work (appendix II to AMC M.A.201 (h) 1)**

*(A self explanatory paragraph)*

**5.6 Copy of contracts with approved maintenance organisations**

*(A self explanatory paragraph)*



\*delete where applicable

**M.A. SUBPART F APPROVAL RECOMMENDATION REPORT  
FORM 6F**

**EASA**

**Part 2: M.A. Subpart F Compliance Audit Review**

The five columns may be labelled & used as necessary to record the approval product line or facility, including subcontractor's, reviewed. Against each column used of the following M.A. Subpart F subparagraphs please either tick (✓) the box if satisfied with compliance or cross (X ) the box if not satisfied with compliance and specify the reference of the Part 4 finding next to the box or enter N/A where an item is not applicable, or N/R when applicable but not reviewed.

Para	Subject					
M.A.60 3	Extent of approval	<input type="checkbox"/>				
M.A.60 4	See Part 3	<input type="checkbox"/>				
M.A.60 5	Facilities	<input type="checkbox"/>				
M.A.60 6	Personnel requirements	<input type="checkbox"/>				
M.A.60 7	Certifying staff	<input type="checkbox"/>				
M.A.60 8	Equipment and tools	<input type="checkbox"/>				
M.A.60 9	Maintenance data	<input type="checkbox"/>				
M.A.61 0	Maintenance work orders	<input type="checkbox"/>				
M.A.61 1	Maintenance standards	<input type="checkbox"/>				

M.A.61 2	Aircraft CRS	<input type="checkbox"/>				
M.A.61 3	Component CRS	<input type="checkbox"/>				
M.A.61 4	Continuing airworthiness records	<input type="checkbox"/>				
M.A.61 5	Privileges of the organisation	<input type="checkbox"/>				
M.A.61 6	Organisational review	<input type="checkbox"/>				
M.A.61 7	Changes	<input type="checkbox"/>				

Competent authority surveyor (s):

Signature(s):

Competent authority office:

Date of Form 6F part 2 completion:

**M.A. SUBPART F APPROVAL RECOMMENDATION REPORT  
FORM 6F**

**EASA**

**PART 3: Compliance with M.A. Subpart F maintenance organisation manual (MOM)**

*Please either tick (✓) the box if satisfied with compliance; or if not satisfied with compliance and specify the reference of the Part 4 finding; or enter N/A where an item is not applicable; or N/R when applicable but not reviewed.*

**Part A      General**

- |     |                          |                                  |
|-----|--------------------------|----------------------------------|
| 1.1 | <input type="checkbox"/> | Table of content.                |
| 1.2 | <input type="checkbox"/> | List of effective pages.         |
| 1.3 | <input type="checkbox"/> | Record of amendments.            |
| 1.4 | <input type="checkbox"/> | Amendment procedure.             |
| 1.5 | <input type="checkbox"/> | Distribution.                    |
| 1.6 | <input type="checkbox"/> | Accountable manager's statement. |

**Part B      Description**

- |     |                          |   |
|-----|--------------------------|---|
| 2.1 | <input type="checkbox"/> | Organisation's scope of work.             |
| 2.2 | <input type="checkbox"/> | General presentation of the organisation. |
| 2.3 | <input type="checkbox"/> | Name and title of management personnel.   |
| 2.4 | <input type="checkbox"/> | Organisation chart.                       |
| 2.5 | <input type="checkbox"/> | Certifying staff.                         |
| 2.6 | <input type="checkbox"/> | Personnel.                                |
| 2.7 | <input type="checkbox"/> | General description of the facility.      |
| 2.8 | <input type="checkbox"/> | Tools, equipment and materiel.            |
| 2.9 | <input type="checkbox"/> | Maintenance data.                         |

**Part C      General procedures**

- |     |                          |                          |
|-----|--------------------------|--------------------------|
| 3.1 | <input type="checkbox"/> | Organisational review.   |
| 3.2 | <input type="checkbox"/> | Training.                |
| 3.3 | <input type="checkbox"/> | Contracting.             |
| 3.4 | <input type="checkbox"/> | One time authorisations. |

**PART 3: Compliance with M.A. Subpart F maintenance organisation manual (MOM)**

Part D Working Procedures

- |      |                          |   |
|------|--------------------------|---|
| 4.1  | <input type="checkbox"/> | Work order acceptance.                                  |
| 4.2  | <input type="checkbox"/> | Preparation and issue of work package.                  |
| 4.3  | <input type="checkbox"/> | Logistics.  |
| 4.4  | <input type="checkbox"/> | Execution.  |
| 4.5  | <input type="checkbox"/> | Release to service – Certifying staff.                  |
| 4.6  | <input type="checkbox"/> | Release to service – Supervision.                       |
| 4.7  | <input type="checkbox"/> | Release to service – Certificate of release to service. |
| 4.8  | <input type="checkbox"/> | Records.  |
| 4.9  | <input type="checkbox"/> | Special procedures.                                     |
| 4.10 | <input type="checkbox"/> | Occurrence reporting.                                   |
| 4.11 | <input type="checkbox"/> | Management of indirect approval of the manual.          |

Part E Appendices

- |     |                          |   |
|-----|--------------------------|---|
| 5.1 | <input type="checkbox"/> | Sample of all documents used.                     |
| 5.2 | <input type="checkbox"/> | List of sub-contractors.                          |
| 5.3 | <input type="checkbox"/> | List of maintenance locations.                    |
| 5.4 | <input type="checkbox"/> | List of Part 145 or M.A. Subpart F organisations. |

**Date of Form 6F part 3 completion:**

MOM reference:

MOM amendment:

Competent authority audit staff:

Signature(s):

Competent authority office:

Date of Form 6F part 3 completion:

**M.A. SUBPART F APPROVAL RECOMMENDATION REPORT  
FORM 6F**

**EASA**

**Part 4: Findings regarding M.A. Subpart F compliance status**

Each level 1 and 2 finding should be recorded whether it has been rectified or not and should be identified by a simple cross reference to the Part 2 requirement. All non-rectified findings should be copied in writing to the organisation for the necessary corrective action.

Part 2 or 3 ref.	Audit reference(s):  Findings	L e v e l	Corrective action		
			Date Due	Date Closed	Reference



**M.A. SUBPART F APPROVAL RECOMMENDATION REPORT  
FORM 6F**

**EASA**

**Part 5: M.A. Subpart F approval or continued approval or change recommendation**

Name of organisation:

Approval reference:

Audit reference(s):

The following M.A. Subpart F scope of approval is recommended for this organisation:

Or, it is recommended that the M.A. Subpart F scope of approval specified in EASA Form 3 referenced  
..... be continued.

Name of recommending competent authority surveyor:

Signature of recommending competent authority surveyor:

Competent authority office:

Date of recommendation:

Form 6F review (quality check) :

Date:

Appendix VII to AMC M.B.702(f) EASA Form 13

**M.A. SUBPART G APPROVAL RECOMMENDATION REPORT  
FORM 13**

**EASA**

**Part 1: General**

Name of organisation:

Approval reference:

Requested approval rating/  
EASA Form 14 or AOC dated\*:

Other approvals held (if app.)

Address of facility(ies) audited:

Audit period: from            to            :

Date(s) of audit(s):

Audit reference(s):

Persons interviewed:

Competent authority surveyor:

Signature(s):

Competent authority office:

Date of Form 13 part 1 completion:

\*delete as where applicable

**M.A. SUBPART G APPROVAL RECOMMENDATION REPORT  
FORM 13**

**EASA**

**Part 2: M.A. Subpart G Compliance Audit Review**

The five columns may be labelled & used as necessary to record the approval product line or facility, including subcontractor's, reviewed. Against each column used of the following M.A. Subpart G subparagraphs please either tick (√) the box if satisfied with compliance or cross (X ) the box if not satisfied with compliance and specify the reference of the Part 4 finding next to the box or enter N/A where an item is not applicable, or N/R when applicable but not reviewed.

Para	Subject					
M.A.70 3	Extent of approval	<input type="checkbox"/>				
M.A.70 4	See Part 3	<input type="checkbox"/>				
M.A.70 5	Facilities	<input type="checkbox"/>				
M.A.70 6	Personnel requirements	<input type="checkbox"/>				
M.A.70 7	Airworthiness review staff	<input type="checkbox"/>				
M.A.70 8	Continuing airworthiness management	<input type="checkbox"/>				
M.A.20 1	AOC holder subcontracting	<input type="checkbox"/>				
M.A.30 2	Maintenance programme	<input type="checkbox"/>				
M.A.30 3	Airworthiness directives	<input type="checkbox"/>				
M.A.30	Modifications and repairs	<input type="checkbox"/>				

4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M.A.30	Records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M.A.30	Technical log	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M.A.70	Documentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M.A.71	Airworthiness review	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M.A.71	Privileges of the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M.A.71	Quality system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M.A.71	Changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M.A.71	Record keeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competent authority surveyor (s):		Signature(s):				
Competent authority office:		Date of Form 13 part 2 completion:				

<b>M.A. SUBPART G APPROVAL RECOMMENDATION REPORT FORM 13</b>		<b>EASA</b>
<b>PART 3: Compliance with M.A. Subpart G continuing airworthiness management exposition (CAME)</b>		
<i>Please either tick (✓) the box if satisfied with compliance; or if not satisfied with compliance and specify the reference of the Part 4 finding; or enter N/A where an item is not applicable; or N/R when applicable but not reviewed.</i>		
Part 0	General organisation	
0.1	<input type="checkbox"/>	Corporate commitment by the accountable manager.
0.2	<input type="checkbox"/>	General information.
0.3	<input type="checkbox"/>	Management personnel.
0.4	<input type="checkbox"/>	Management Organisation Chart.

0.5	<input type="checkbox"/>	Notification procedure to the competent authority regarding changes to the organisation's activities / approval / location / personnel.
0.6	<input type="checkbox"/>	Exposition amendment procedures.
Part 1	Continuing airworthiness management procedures	
1.1	<input type="checkbox"/>	Aircraft technical log utilisation and MEL application (commercial air transport). Aircraft continuing airworthiness record system utilisation (non commercial air transport).
1.2	<input type="checkbox"/>	Aircraft maintenance programmes – development amendment and approval.
1.3	<input type="checkbox"/>	Time and continuing airworthiness records, responsibilities, retention, access.
1.4	<input type="checkbox"/>	Accomplishment and control of airworthiness directives.
1.5	<input type="checkbox"/>	Analysis of the effectiveness of the maintenance programme(s).
1.6	<input type="checkbox"/>	Non mandatory modification embodiment policy.
1.7	<input type="checkbox"/>	Major modification standards.
1.8	<input type="checkbox"/>	Defect reports.
1.9	<input type="checkbox"/>	Engineering activity.
1.10	<input type="checkbox"/>	Reliability programmes.
1.11	<input type="checkbox"/>	Pre-flight inspections.
1.12	<input type="checkbox"/>	Aircraft weighing.
1.13	<input type="checkbox"/>	Check flight procedures.
Part 2	Quality system	
2.1	<input type="checkbox"/>	Continuing airworthiness quality policy, plan and audits procedure.
2.2	<input type="checkbox"/>	Monitoring of continuing airworthiness management activities.
2.3	<input type="checkbox"/>	Monitoring of the effectiveness of the maintenance programme(s).
2.4	<input type="checkbox"/>	Monitoring that all maintenance is carried out by an appropriate maintenance
2.5	<input type="checkbox"/>	Monitoring that all contracted maintenance is carried out in accordance with the contract, including sub-contractors used by the maintenance contractor.

**M.A. SUBPART G APPROVAL RECOMMENDATION REPORT  
FORM 13**

**EASA**

**PART 3: Compliance with M.A. Subpart G continuing airworthiness management exposition (CAME)**

2.6  Quality audit personnel.

Part 3 Contracted Maintenance

3.1  Maintenance contractor selection procedure.

3.2  Detailed list of maintenance contractors

3.3  Quality audit of aircraft.

Part 4 Airworthiness review procedures

- 4.1  Airworthiness review staff.
- 4.2  Review of aircraft records.
- 4.3  Physical survey.
- 4.4  Additional procedures for recommendations to competent authorities for the import of aircraft.
- 4.5  Recommendations to competent authorities for the issue of airworthiness review certificates.
- 4.6  Issuance of airworthiness review certificates
- 4.7  Airworthiness review records, responsibilities, retention and access.

Part 5 Appendices

- 5.1  Sample Documents.
- 5.2  List of sub-contractors as per M.A.711 (a) 3 and AMC M.A.201 (h) 2.
- 5.3  List of approved maintenance organisations contracted.
- 5.4  Copy of contracts for sub-contracted work (appendix 2 to AMC M.A.201 (h) 2).
- 5.5  Copy of contracts with approved maintenance organisations.

**Date of Form 13 part 3 completion:**

CAME Reference:

CAME Amendment:

Competent authority audit staff:

Signature(s):

Competent authority office:

Date of Form 13 part 3 completion:

**M.A. SUBPART G APPROVAL RECOMMENDATION REPORT  
FORM 13**

**EASA**

**Part 4: Findings regarding M.A. Subpart G compliance status**

Each level 1 and 2 finding should be recorded whether it has been rectified or not and should be identified by a simple cross reference to the Part 2 requirement. All non-rectified findings should be copied in writing to the organisation for the necessary corrective action.

Part 2 or 3 ref.	Audit reference(s):  Findings	L e v e l	Corrective action		
			Date Due	Date Closed	
					Reference



**Part 5: M.A. Subpart G approval or continued approval or change recommendation**

Name of organisation:

Approval reference:

Audit reference(s):

The following M.A. Subpart G scope of approval is recommended for this organisation:

Or, it is recommended that the M.A. Subpart G scope of approval specified in EASA Form 14 referenced ..... be continued.

Name of recommending competent authority surveyor:

Signature of recommending competent authority surveyor:

Competent authority office:

Date of recommendation:

Form 13 review (quality check) :

Date:

## Appendix VIII to AMC M.A.616

**This is only applicable to organisations with less than 10 maintenance staff members. For larger organisations, the principles and practices of an independent quality assurance system should be used.**

### **1. Organisational review features.**

Organisational review program should be organised as an overall internal evaluation program that has written descriptions of the key elements of the program. The program should have a structured and planned series of evaluations that are designed to improve the quality of all steps and functions in the process that leads to a final safe product while ensuring that subpart F approved maintenance organisation remains in compliance with the requirements.

a. The organisational review program should not be misunderstood as a program that replaces existing competent authority auditing requirements, such as the continuing oversight programs cited in M.B.604. It is comprehensive and includes identifying corrective actions, verifying that those actions have taken place, and ensuring that problems do not re-occur. Further, one of the most critical aspects of an organisational review program is the regular involvement of management, which typically distinguishes it from the normal checks and verifications that each person in the organisation is requested to carry out on work performed to ensure a final safe product and continuous compliance with rules.

b. The organisational review should cover all systems, processes, and products that are basic components of the maintenance organisation's activities. There is no set list of items to be covered since each operation is unique, but a representative list of areas to evaluate would include:

- (1) Facilities and equipment.
- (2) Maintenance scope of work, capability list and limitations versus actual practice including control over any deviation authorisation.
- (3) Personnel qualifications, training, and staffing levels.
- (4) Manuals and airworthiness data.
- (5) Continuity of work and supervision during personnel changes.
- (6) Supplier selection, approval, and surveillance, as applicable.
- (7) Components and materials handling (incoming, tagging, storage, etc.).
- (8) Inspection processes.
- (9) Tool adequacy and calibration.
- (10) Maintenance release process.
- (11) Defect reporting.
- (12) Records and record keeping procedures.
- (13) Communication to the competent authority.

### **2. Organisational review program.**

The following are essential elements of an organisational review program. Each of these should be described in a program document.

a. As a part of identifying organisational review responsibility, the maintenance organisation should identify resources and personnel that conduct the organisational reviews within the company. Maintenance organisations may decide to use outside resources in support of, or to accomplish organisational reviews.

A maintenance organisation's organisational review program should identify the person and/or group within the organisation who has the responsibility and authority to:

- (i) Perform organisational reviews.
- (ii) Identify and record any findings and the evidence necessary to substantiate those findings.
- (iii) Recommend or assist with the development of corrective actions to findings.
- (iv) Verify the implementation of corrective actions consistent with an action plan and validate that corrective actions are effective.
- (v) Communicate and coordinate activities with Competent Authorities on a regular basis.

Having a well-structured organisational review programme ensures that all areas of operations are covered at appropriate intervals. It also institutionalises the process so that a change in personnel does not adversely affect the program.

The accountable manager is responsible for the organisational review program. He may formally delegate this responsibility to one of the M.A.606 (b) persons. An organisational review program might consist of developing simplified checklist/s and a schedule (monthly, quarterly, semi-annual, or annual) for accomplishing checklist items. The review should at least include a written statement acknowledging the completion of the checklist items and the signature of the person conducting the organisational review. Under these conditions, occasional independent oversight of checklist development and accomplishment should be considered.

#### b. Reporting to the accountable manager

To be effective, the results of the organisational review program should be submitted to the accountable manager on a regular basis. The accountable manager should analyse the organisational review results to verify that satisfactory corrective actions have been implemented.

#### c. Follow up process

A follow up process is needed to verify whether findings are isolated instances or actual symptoms of policy, procedural, or managerial problems. A follow up process should include scheduled evaluations, follow-up evaluations as necessary and special evaluations when trends are identified.

#### d. A plan for scheduling organisational reviews

It is essential for a maintenance organisation's organisational review program to include a defined schedule of activities. This planned schedule will serve to verify that the organisational review program is comprehensive, well controlled, and timely. A schedule also provides a vehicle for keeping management and the entire organisation informed. The scheduling process should also be dynamic and allow for special organisational reviews. In addition, follow-up organisational reviews should be scheduled as necessary.

All key areas should be reviewed at least once each year

#### e. Corrective Action Plan

Corrective action plans should be developed in response to findings. The corrective action plans should be monitored to verify their timely and effective implementation.

f. Records

The organisational reviews should be documented in reports and other appropriate records.

The organisational review program files should include: scheduled organisational review reports; special organisational review reports, including the trends or other reasons for scheduling a special evaluation; corrective action plans; and results of follow-up evaluations.

The maintenance organisation should maintain and secure these records and provide them upon Competent Authority request.

**3. Training and experience of evaluators.**

The evaluators that are used by the maintenance organisation should have a perfect knowledge of the maintenance organisation manual. General experience only is usually insufficient therefore evaluators should be trained on the techniques that can be used for organisational reviews such as regulations, auditing, interview techniques, evaluation principles, and system analysis techniques.

Recurrent training - A programme for continuation training should be developed. It should provide for evaluators, at regular intervals, to attend technical training and specific review training to gain first-hand knowledge of new developments.

**4. Organisational reviews implementation.**

During organisational reviews, the following basic steps should be followed:

Step 1: Understanding the System and its procedures.

The evaluator should analyse the maintenance organisation manual to review how the organisation intends to work in a given field.

Step 2: Identifying Controls.

Once the evaluators have developed a good understanding of how the system operates, the next step is to identify the critical elements which ensure that the organisation remains in compliance with the maintenance organisation's manual.

Step 3: Evaluation Controls

An evaluation of whether the maintenance organisation works in accordance with the maintenance organisation's manual should be conducted using following techniques:

- review of records, documentation, discrepancies reports, etc.
- sample check of products maintained;
- sample check of actual practices;
- interview of personnel involved;

Step 4: Reporting of results.

A standardised form should be developed for an organisational review report. The report should include at least the following.

(i) Scope of the evaluation. This should include the areas evaluated, personnel interviewed (to be done in general terms to provide management an indication as to the scope and depth of the review without violating any confidentiality), records examined, sampling plans, etc.

- (ii) Results. Descriptions of each finding presented in such a manner as to indicate the relative importance of each. This will allow responsible personnel to set priorities for developing responses. A classification as provided in the M.B.605 could be followed.
- (iii) Agreed corrective actions.
- (iv) Positive results. (Some might be shared between different units within the maintenance organisation.)

#### Step 5: Developing corrective action plans.

Corrective action plans should be developed principally by the person responsible for implementing the corrective action; however, if the evaluator has properly conducted its evaluation, it will have a detailed understanding of the systems and procedures underlying the problems and should be able to assist with the analysis of alternatives. The evaluator should ensure that a corrective action plan is developed in a timely manner and includes all the key elements, particularly when the corrective action is to be implemented and who is responsible for implementation.

#### Step 6: Follow-up Evaluations.

To be effective, the organizational review program should have follow-up reviews any time a significant corrective action is planned. The purpose is two-fold: to confirm that the action has taken place as planned and to verify that the corrective action has been effective. If a properly implemented corrective action does not work, new alternatives should be developed as soon as possible. Keeping management aware of the results of follow-up reviews is an essential part of the program.

**Appendix IX EASA Form 2**

**Application for**

<b>Competent authority</b>	<b>Part-M</b>	<b>Subpart F Approval*</b>	<b>initial grant*</b>
		<b>Subpart G Approval*</b>	<b>Change*</b>

---

**1. Registered name of applicant:**

**2. Trading name (if different):**

**3. Addresses requiring approval:**

**4. Tel. .... Fax ..... E-mail .....**

**5. Scope of approval relevant to this application: see page 2 for possibilities in the case of a Subpart F approval:**

**6. Position and name of the (proposed\*)**

**Accountable Manager: .....**

**7. Signature of the (proposed\*)**

**Accountable Manager: .....**

**8. Place: .....**

**9. Date: .....**

Note (1) : A note giving the address(es) to which the Form(s) should be sent.

Note (2) : An optional note to give information on any fees payable.

\* delete as applicable

**SCOPE OF SUBPART-F APPROVAL AVAILABLE**

<b>CLASS</b>	<b>RATING</b>	<b>LIMITATION</b>
AIRCRAFT	A2 Aeroplanes/airships 5700 Kg and below	Quote aeroplane/airship manufacturer or group or type
	A3 Helicopters	Quote helicopter manufacturer or group or type
	A 4 Aircraft other than A1, A2 or A3	Quote aircraft type or group
ENGINES	B1 Turbine	Quote engine type
	B2 Piston	Quote engine manufacturer or group or type
	B3 APU	Quote engine manufacturer or type
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press	Quote aircraft type or aircraft manufacturer or component manufacturer or the particular component and or cross refer to a capability list in the exposition.
	C2 Auto Flight	
	C3 Comms and Nav	
	C4 Doors – Hatches	
	C5 Electrical Power	
	C6 Equipment	
	C7 Engine – APU	
	C8 Flight Controls	
	C9 Fuel – Airframe	
	C10 Helicopter – Rotors	
	C11 Helicopter – Trans	
	C12 Hydraulic	
	C13 Instruments	
	C14 Landing Gear	
	C15 Oxygen	
	C16 Propellers	
	C17 Pneumatic	
	C18 Protection ice/rain/fire	
	C19 Windows	
	C20 Structures	
SPECIALISED SERVICES	D1 Non destructive insp.	Quote particular NDT method

**With reference to the above scope of approval and item 5 on page 1, please complete in the following example style, but relevant to your organization.**

<b>A2</b>	<b>Piper PA34</b>	<b>B2</b>	<b>Lycoming Piston</b>
<b>A2</b>	<b>Cessna Piston Twins</b>	<b>B3</b>	<b>Garrett GTCP85</b>
<b>A3</b>	<b>Bell 47</b>	<b>C2</b>	<b>SFENA</b>
<b>B1</b>	<b>Turbomeca Artoust</b>	<b>C4</b>	<b>Socata TB 20</b>
		<b>D1</b>	<b>Eddy Current</b>

**Appendix X to AMC EASA Form 4**

**COMPETENT AUTHORITY**

Details of Management Personnel required to be accepted as specified in Part-.....

1. Name:
  
2. Position:
  
3. Qualifications relevant to the item (2) position:
  
4. Work experience relevant to the item (2) position:

Signature: ..... Date: .....

On completion, please send this form under confidential cover to the competent authority

Competent authority use only

Name and signature of authorised competent authority staff member accepting this person:

Signature: ..... Date: .....

Name: ..... Office: .....

EASA Form 4

## Appendix XI to AMC to M.A.708(c)

### CONTRACTED MAINTENANCE

#### 1. **Maintenance contracts**

The following paragraphs are not intended to provide a standard maintenance contract but to provide a list of the main points that should be addressed, when applicable, in a maintenance contract between an Operator and a Part-145 approved organisation. As only the technical parts of the maintenance contracts have to be acceptable to the competent authority, the following paragraphs only address technical matters and exclude matters such as costs, delay, warranty, etc...

When maintenance is contracted to more than one Part-145 approved organisation (for example aircraft base maintenance to X, engine maintenance to Y and line maintenance to Z1, Z2&Z3), attention should be paid to the consistency of the different maintenance contracts.

A maintenance contract is not normally intended to provide appropriate detailed work instruction to the personnel (and is not normally distributed as such). Accordingly there must be established organisational responsibility, procedures and routines in the Operator's M.A.Subpart G & Part-145 organisations to take care of these functions in a satisfactory way such that any person involved is informed about his responsibility and the procedures which apply. These procedures and routines can be included/append to the operator's CAME and maintenance organisation's MOE or consist in separate procedures. In other words procedures and routines should reflect the conditions of the contract.

#### 2. **Aircraft maintenance**

This paragraph applies to a maintenance contract that includes base maintenance and, possibly, line maintenance. Paragraph 4 of this appendix addresses the issue of maintenance contracts restricted to only line maintenance. Aircraft maintenance also includes the maintenance of the engines and APU while they are installed on the aircraft.

##### 2.1. **Scope of work**

The type of aircraft and engines subject to the maintenance contract must be specified. It should preferably include the aircraft's registration numbers.

The type of maintenance to be performed by the Part-145 approved organisation should be specified unambiguously.

##### 2.2. **Locations identified for the performance of maintenance/ Certificates held**

The place(s) where base and line maintenance will be performed should be specified. The certificate held by the maintenance organisation at the place(s) where the maintenance will be performed should be referred to in the contract. If necessary the contract may address the possibility of performing maintenance at any location subject to the need for such maintenance arising either from the unserviceability of the aircraft or from the necessity of supporting occasional line maintenance.

##### 2.3. **Subcontracting**

The maintenance contract should specify under which conditions the Part-145 approved organisation may subcontract tasks to a third party (whether this third party is Part-145 approved or not). At least the contract should make reference to Part-145.75. Additional guidance is provided by the AMC to 145.A.75. In addition the Operator may require the Part-145 approved organisation to request the operator's approval before subcontracting to a third party. Access should be given to the operator to any information (especially the quality monitoring information) about the Part-145 approved organisation's subcontractors involved in the contract. It should however be noted that under operators responsibility both the

operator and the operator's competent authority are entitled to be fully informed about subcontracting, although the operator's competent authority will normally only be concerned with aircraft, engine and APU subcontracting.

#### 2.4. Maintenance programme

The maintenance programme under which the maintenance has to be performed has to be specified. The operator must have that maintenance Programme approved by its competent authority. When the maintenance programme is used by several operators, it is important to remember that it is the responsibility of each operator to have that maintenance programme approved under its own name by its competent authority.

## 2.5. Quality monitoring

The terms of the contract should include a provision allowing the operator to perform a quality surveillance (including audits) upon the Part-145 approved organisation. The maintenance contract should specify how the results of the Quality surveillance are taken into account by the Part-145 approved organisation (See also para.2.22. "*Meetings*").

## 2.6. Competent authority involvement

When the operator's and the Part-145 approved organisation's competent authority are not the same, the operator and the Part-145 approved organisation have to ensure together with their competent authority that the respective competent authority's responsibilities are properly defined and that, if necessary, delegations have been established.

## 2.7. Airworthiness data

The airworthiness data used for the purpose of this contract as well as the authority responsible for the acceptance/approval must be specified. This may include, but may not be limited to:

- Maintenance Programme,
- AD's,
- major repairs/modification data,
- aircraft Maintenance Manual,
- aircraft IPC,
- Wiring diagrams,
- Trouble shooting manual,
- Minimum Equipment List (normally on board the aircraft),
- Operations Manual
- Flight Manual

## 2.8. Incoming Conditions

The contract should specify in which condition the Operator's must send the aircraft to the Part-145 approved organisation. For checks of significance i.e. 'C' checks and above, it may be beneficial that a workscope planning meeting be organised so that the tasks to be performed may be commonly agreed (see also paragraph 7.22: "*Meetings*").

## 2.9. Airworthiness Directives and Service Bulletin/Modifications

The contract should specify what information the operator is responsible to provide to the Part-145 approved organisation, such as the due date of the AD, the selected means of compliance, the decision to embody Service Bulletins (SB's) or modification, etc... In addition the type of information the operator will need in return to complete the control of ADs and modification-status should be specified.

## 2.10. Hours & Cycles control.

Hours and cycles control is the responsibility of the operator, but there may be cases where the Part-145 approved organisation must be in receipt of the current flight hours and cycles on a regular basis so that it may update the records for its own planning functions (see also paragraph 2.21: "*Exchange of information*").

## 2.11. Life limited parts

Life Limited Parts control is the responsibility of the operator.

The Part-145 approved organisation will have to provide the operator with all the necessary information about the LLP removal/installation so that the Operator may update its records (see also paragraph 2.21 "*Exchange of information*").

2.12. Supply of parts.

The contract should specify whether a particular type of material or component comes from the operator's or the Part-145 approved organisation's store, which type of component is pooled, etc...Attention should be paid on the fact that it is the Part-145 competence and responsibility to be in any case satisfied that the component in question meets the approved data/standard and to ensure that the aircraft component is in a satisfactory condition for fitment. In other words, there is definitely no way for a Part-145 organisation to accept whatever he receives from the operator. For the certification of parts, additional guidance is provided by 145.A.42.

2.13. Pooled parts at line stations.

The contract should specify how the subject of pooled parts at line stations should be addressed.

2.14. Scheduled maintenance

For planning scheduled maintenance checks, the support documentation to be given to the Part-145 approved organisation should be specified. This may include, but may not be limited to:

- applicable work package, including job cards;
- scheduled component removal list;
- modifications to be incorporated;
- etc...

When the Part-145 approved organisation determines, for any reason, to defer a maintenance task, it has to be formally agreed by the Operator. If the deferment goes beyond an approved limit, refer to paragraph 2.17: "*Deviation from the maintenance Schedule*". This should be addressed, where applicable, in the maintenance contract.

2.15. Unscheduled maintenance/Defect rectification.

The contract should specify to which level the Part-145 approved organisation may rectify a defect without reference to the operator. As a minimum, the approval and incorporation of major repairs should be addressed. The deferment of any defect rectification shall be submitted to the operator and, if applicable, to its competent authority.

2.16. Deferred tasks.

See paragraphs 2.14 and 2.15 above and AMC to 145.A.50 (e). In addition, the use of the Operator's MEL and the relation with the Operator in case of a defect that cannot be rectified at the line station should be addressed.

2.17. Deviation from the maintenance schedule.

Deviations have to be requested by the operator to its competent authority or granted by the Operator in accordance with a procedure acceptable to its competent authority. The contract should specify the support the Part-145 approved organisation may provide to the operator in order to substantiate the deviation request.

2.18. Test flight.

If any test flight is required, it shall be performed in accordance with the operator's Continuing airworthiness management exposition.

2.19. Release to service documentation.

The release to service has to be performed by the Part-145 approved organisation in accordance with its MOE procedures. The contract should, however, specify which support forms have to be used (Operator's technical log, Part-145 approved organisation's maintenance visit file, etc...) and the documentation the Part-145 approved organisation should provide to the operator upon delivery of the aircraft. This may include but may not be limited to:

- Certificate of release to service *-mandatory-*,
- flight test report,
- list of modifications embodied,
- list of repairs,
- list of AD's incorporated,
- maintenance visit report,
- etc...

2.20. Maintenance recording.

The Operator may contract the Part-145 approved organisation to retain some of the maintenance records required by Part-M Subpart C. It should be ensured that every requirement of Part-M Subpart C is fulfilled by either the operator or the Part-145 approved organisation. In such a case, free and quick access to the above mentioned records should be given by the Part-145 approved organisation to the operator and its competent authority (in case of two different competent authority involved, see paragraph 2.6 "*competent authority involvement*").

2.21. Exchange of information.

Each time exchange of information between the operator and the Part-145 approved organisation is necessary, the contract should specify what information should be provided and when (i.e. on what occasion or at what frequency), how, by whom and to whom it has to be transmitted.

2.22. Meetings.

In order that the competent authority may be satisfied that a good communication system exists between the Operator and the Part-145 approved organisation, the terms of the maintenance contract should include the provision for a certain number of meetings to be held between both parties.

2.22.1. Contract review.

Before the contract is applicable, it is very important that the technical personnel of both parties that are involved in the application of the contract meet in order to be sure that every point leads to a common understanding of the duties of both parties.

2.22.2. Workscope planning meeting.

Workscope planning meetings may be organised so that the tasks to be performed may be commonly agreed.

2.22.3. Technical meeting.

Scheduled meetings may be organised in order to review on a regular basis technical matters such as AD's, SB's, future modifications, major defects found during maintenance check, reliability, etc...

2.22.4. Quality meeting.

Quality meetings may be organised in order to examine matters raised by the operator's quality surveillance and to agree upon necessary corrective actions.

2.22.5.

Reliability meeting.

When a reliability programme exists, the contract should specify the Operator's and Part-145 approved/accepted Organisation's respective involvement in that programme, including the participation to reliability meetings.

### 3. **Engine maintenance.**

This paragraph deals with engine shop maintenance. "On wing" engine maintenance should be covered by paragraph 2 above.

#### 3.1. Scope of work.

The type of engine subject to the maintenance contract must be specified.

The type of maintenance to be performed by the Part-145 approved organisation should be specified unambiguously.

#### 3.2. Location identified for the performance of maintenance/ Certificates held.

The place(s) where base and line maintenance will be performed should be specified. The certificate held by the maintenance organisation at the place(s) where the maintenance will be performed has to be referred to in the contract.

#### 3.3. Subcontracting.

The maintenance contract should specify under which conditions the Part-145 approved organisation may subcontract tasks to a third party (whether this third party is Part-145 approved or not). At least the contract should make reference to Part-145.75. Additional guidance is provided by the AMC to 145.A.75. In addition the Operator may require the Part-145 approved organisation to request the operator's approval before subcontracting to a third party. Access should be given to the operator to any information (especially the quality monitoring information) about the Part-145 approved organisation's subcontractors involved in the contract. It should however be noted that under operators responsibility both the operator and the operator's competent authority are entitled to be fully informed about subcontracting, although the operator's competent authority will normally only be concerned with aircraft, engine and APU subcontracting.

#### 3.4. Maintenance Programme.

The maintenance programme under which the maintenance has to be performed has to be specified. The operator must have that maintenance Programme approved by its competent authority. When the maintenance programme is used by several operators, it is important to remember that it is the responsibility of each operator to have that maintenance programme approved under its own name by its competent authority.

#### 3.5. Quality monitoring.

The terms of the contract should include a provision allowing the operator to perform a quality surveillance (including audits) upon the Part-145 approved organisation. The maintenance contract should specify how the results of the Quality surveillance are taken into account by the Part-145 approved organisation (See also para.3.21. "*Meetings*").

#### 3.6. Competent authority involvement

When the operator's and the Part-145 approved organisation's competent authority are not the same, the operator and the Part-145 approved organisation have to ensure together with their competent authority that the respective competent authority's responsibilities are properly defined and that, if necessary, delegations have been established.

#### 8.7. Airworthiness data.

The airworthiness data used for the purpose of this contract as well as the authority responsible for the acceptance/approval must be specified. This may include, but may not be limited to:

- Maintenance Programme;
- AD's;

- major repairs/modification data;
- Engine overhaul manual;
- other?...

### 3.8. Incoming Conditions.

The contract should specify in which condition the Operator's must send the aircraft to the Part-145 approved organisation. For instance it is important to specify the configuration of the engine, e.g. including the list of the components that remain fitted to the engine before sending it to the Part-145 approved organisation. It may also be valuable that a workscope planning meeting be organised so that the tasks to be performed may be commonly agreed (see also paragraph 3.21: "*Meetings*").

### 3.9. Airworthiness Directives and Service Bulletin/Modifications

The contract should specify what information the operator is responsible to provide to the Part-145 approved organisation, such as the due date of the AD, the selected means of compliance, the decision to embody Service Bulletins (SB's) or modification, etc... In addition the type of information the operator will need in return to complete the control of ADs and modification-status should be specified.

### 3.10. Hours & Cycles control.

Hours and cycles control is the responsibility of the operator, but there may be cases where the Part-145 approved organisation must be in receipt of the current flight hours and cycles on a regular basis so that it may update the records for its own planning functions (see also paragraph 3.20: "*Exchange of information*").

### 3.11. Life Limited Parts.

Life Limited Parts control is the responsibility of the Operator.

The Part-145 approved organisation will have to provide the operator with all the necessary information about the LLP removal/installation so that the Operator may update its records (see also paragraph 3.20 "*Exchange of information*").

### 3.12. Supply of parts.

The contract should specify whether a particular type of material or component comes from the operator's or the Part-145 approved organisation's store, which type of component is pooled, etc...Attention should be paid on the fact that it is the Part-145 competence and responsibility to be in any case satisfied that the component in question meets the approved data/standard and to ensure that the aircraft component is in a satisfactory condition for fitment. In other words, there is definitely no way for a Part-145 organisation to accept whatever he receives from the operator. For the certification of parts, additional guidance is provided by 145.A.42.

### 3.13. Scheduled maintenance.

For planning scheduled maintenance checks, the support documentation to be given to the Part-145 approved organisation should be specified. This may include, but may not be limited to:

- applicable work package, including job cards;
- scheduled component removal list;
- modifications to be incorporated;
- etc...

When the Part-145 approved organisation determines, for any reason, to defer a maintenance task, it has to be formally agreed by the Operator. If the deferment goes beyond an approved limit, refer to paragraph 3.16: "*Deviation from the maintenance Schedule*". This should be addressed, where applicable, in the maintenance contract.

- 3.14. **Unscheduled maintenance/Defect rectification.**  
The contract should specify to which level the Part-145 approved organisation may rectify a defect without reference to the operator. As a minimum, the approval and incorporation of major repairs should be addressed. The deferment of any defect rectification shall be submitted to the operator and, if applicable, to its competent authority.
- 3.15. **Deferred tasks.**  
See paragraphs 3.13 and 3.14 above and AMC to 145.A.50 (e).
- 3.16. **Deviation from the Maintenance Schedule.**  
Deviations have to be requested by the operator to its competent authority or granted by the Operator in accordance with a procedure acceptable to its competent authority. The contract should specify the support the Part-145 approved organisation may provide to the operator in order to substantiate the deviation request.
- 3.17. **Test bench.**  
The contract should specify the acceptability criterion and whether a representative of the operator should witness an engine undergoing test.
- 3.18. **Release to service documentation.**  
The contract should specify the documentation the Part-145 approved organisation should provide to the operator upon delivery of the aircraft/engine. This may include but may not be limited to:
- JAA Form One<sup>3</sup> -*mandatory*-,
  - test bench report,
  - list of modifications embodied,
  - list of repairs,
  - list of AD's performed,
  - etc...
- 3.19. **Maintenance recording.**  
The Operator may contract the Part-145 approved organisation to retain some of the maintenance records required by Part-M Subpart C. It should be ensured that every requirement of Part-M Subpart C is fulfilled by either the operator or the Part-145 approved organisation. In such a case, free and quick access to the above mentioned records should be given by the Part-145 approved organisation to the operator and its competent authority (in case of two different competent authority involved, see paragraph 3.6 "*competent authority involvement*").
- 3.20 **Exchange of information.**  
Each time exchange of information between the Operator and the Part-145 approved organisation is necessary, the contract should specify what information should be provided and when (i.e. on what occasion or at what frequency), how, by whom and to whom it has to be transmitted.
- 3.21. **Meetings.**  
In order that the competent authority may be satisfied that a good communication system exists between the Operator and the Part-145 approved organisation, the terms of the maintenance contract should include the provision for a certain number of meetings to be held between both parties.
- 3.21.1. **Contract review.**
-

Before the contract is applicable, it is very important that the technical personnel of both parties that are involved in the application of the contract meet in order to be sure that every point leads to a common understanding of the duties of both parties.

- 3.21.2.      **Workscope planning meeting.**  
Workscope planning meetings may be organised so that the tasks to be performed may be commonly agreed.
- 3.21.3.      **Technical meeting**  
Scheduled meetings may be organised in order to review on a regular basis technical matters such as AD's, SB's, future modifications, major defects found during shop visit, reliability, etc...
- 3.21.4.      **Quality meeting**  
Quality meetings may be organised in order to examine matters raised by the operator's quality surveillance and to agree upon necessary corrective actions.
- 3.21.5.      **Reliability meeting.**  
When a reliability programme exists, the contract should specify the Operator's and Part-145 approved/accepted Organisation's respective involvement in that programme, including the participation to reliability meetings.

#### **4.      Aircraft line maintenance.**

This paragraph applies to maintenance contract that includes line maintenance but excludes base maintenance activities.

##### **4.1.    Scope of work.**

The type of aircraft subject to the maintenance contract must be specified. It should include the aircraft's registration numbers.

The extent of maintenance to be performed by the Part-145 approved organisation should be specified unambiguously.

##### **4.2.    Location identified for the performance of maintenance/ Certificates held.**

The place(s) where line maintenance will be performed should be specified. The certificate held by the maintenance organisation at the place(s) where the maintenance will be performed has to be referred to in the contract.

##### **4.3.    Subcontracting.**

The maintenance contract should specify under which conditions the Part-145 approved organisation may subcontract tasks to a third party (whether this third party is Part-145 approved or not). At least the contract should make reference to Part-145.75. Additional guidance is provided by the AMC to 145.A.75. In addition the Operator may require the Part-145 approved organisation to request the operator's approval before subcontracting to a third party. Access should be given to the operator to any information (especially the quality monitoring information) about the Part-145 approved organisation's subcontractors involved in the contract. It should however be noted that under operators responsibility both the operator and the operator's competent authority are entitled to be fully informed about subcontracting, although the operator's competent authority will normally only be concerned with aircraft, engine and APU subcontracting.

##### **4.4.    Quality monitoring.**

The fact that the operator's contractor is appropriately approved in accordance with Part-145, does not preclude the Operator from performing a quality surveillance (including audits) upon the Part-145 approved organisation.

4.5. Airworthiness data.

The airworthiness data used for the purpose of this contract as well as the authority responsible for the acceptance/approval must be specified. This may include, but may not be limited to:

- aircraft Maintenance Manual;
- aircraft IPC;
- Wiring diagrams;
- Trouble shooting manual;
- Minimum Equipment List (normally on board the aircraft);
- Operations Manual;
- Flight Manual.

4.6. Supply of parts.

The contract should specify whether a particular type of material or component is supplied by the operator or the Part-145 approved organisation. Attention should be paid on the fact that it is the part-145 competence and responsibility to be in any case satisfied that the component in question meets the approved data/standard and to ensure that the aircraft component is in a satisfactory condition for fitment. In other words, there is definitely no way for a Part-145 organisation to accept whatever he receives from the operator. Storage conditions should also be addressed.

9.7. Pooled parts.

The contract should specify how the subject of pooled parts at line stations should be addressed.

9.8. Unscheduled maintenance/Defect rectification.

The contract should specify to which level the Part-145 approved organisation may rectify a defect without reference to the operator, and what action should be taken in case the defect rectification may not be performed by the Part-145 approved organisation.

9.9. Deferred tasks.

The use of the operator's MEL and the relation with the operator in case of a defect that cannot be rectified at the line station should be addressed.

9.10. Release to service.

The release to service has to be performed by the Part-145 approved organisation in accordance with its MOE procedures. The contract should however specify which support forms have to be used (operator's technical log, etc...).

9.11. Exchange of information.

Each time exchange of information between the operator and Part-145 approved organisation is necessary, the contract should specify what information should be provided and when, how, by whom and to whom it has to be transmitted.

9.12. Meetings.

Before the contract is applicable, it may be beneficial that the technical personnel of both parties that are involved in the application of the contract meet in order to be sure that every point leads to a common understanding of both parties duties.

## **Annex II**

# **Acceptable Means of Compliance to Part-145**

### **SECTION A TECHNICAL REQUIREMENTS**

#### **AMC 145.A.10 Scope**

1. *Line Maintenance* should be understood as any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight.

(a) *Line Maintenance* may include:

- Trouble shooting.
- Defect rectification.
- Component replacement with use of external test equipment if required. Component replacement may include components such as engines and propellers.
- Scheduled maintenance and/or checks including visual inspections that will detect obvious unsatisfactory conditions/discrepancies but do not require extensive in depth inspection. It may also include internal structure, systems and powerplant items which are visible through quick opening access panels/doors.
- Minor repairs and modifications which do not require extensive disassembly and can be accomplished by simple means.

(b) For temporary or occasional cases (AD's, SB's) the Quality Manager may accept base maintenance tasks to be performed by a line maintenance organisation provided all requirements are fulfilled as defined by the competent authority.

(c) Maintenance tasks falling outside these criteria are considered to be *Base Maintenance*.

(d) Aircraft maintained in accordance with "progressive" type programmes should be individually assessed in relation to this para. In principle, the decision to allow some "progressive" checks to be carried out should be determined by the assessment that all tasks within the particular check can be carried out safely to the required standards at the designated line maintenance station.

2. For an organisation to be approved in accordance with 145.A.10 as an organisation located within the Member States means that the management as specified in 145.A.30 (a) and (b) should be located in the Member States. When the management are located in several Member States, then the approval should be granted by the competent authority in whose State the accountable manager is located.

3. Where the organisation uses facilities both inside and outside the Member State such as satellite facilities, sub-contractors, line stations etc., such facilities may be included in the approval without being identified on the approval certificate subject to the maintenance organisation exposition identifying the facilities and containing procedures to control such facilities and the competent authority being satisfied that they form an integral part of the approved maintenance organisation.

#### **AMC 145.A.15 Application**

In a form and in a manner established by the competent authority means that the application should be made on an EASA Form 2.

#### **AMC 145.A.20 Terms of approval**

The following table identifies the ATA specification 100 chapter for the category C component rating.

1)

CLASS	RATING	ATA CHAPTERS
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press	21
	C2 Auto Flight	22
	C3 Comms and Nav	23 - 34
	C4 Doors - Hatches	52
	C5 Electrical Power	24 - 33
	C6 Equipment	25 - 38 - 45
	C7 Engine – APU	49 - 71 - 72 - 73 - 74 - 75 - 76 - 77 - 78 - 79 - 80 - 81 - 82 - 83
	C8 Flight Controls	27 - 55 - 57.40 - 57.50 - 57.60 - 57.70
	C9 Fuel – Airframe	28
	C10 Helicopters – Rotors	62 - 64 - 66 - 67
	C11 Helicopter - Trans	63 - 65
	C12 Hydraulic	29
	C13 Instruments	31
	C14 Landing Gear	32
	C15 Oxygen	35
	C16 Propellers	61
	C17 Pneumatic	36 - 37
	C18 Protection ice/rain/fire	26 - 30
	C19 Windows	56
	C20 Structural	53 - 54 - 57.10 - 57.20 - 57.30

#### **AMC 145.A.25(a) Facility requirements**

1. Where the hangar is not owned by the organisation, it may be necessary to establish proof of tenancy. In addition, sufficiency of hangar space to carry out planned base maintenance should be demonstrated by the preparation of a projected aircraft hangar visit plan relative to the maintenance programme. The aircraft hangar visit plan should be updated on a regular basis.

2. Protection from the weather elements relates to the normal prevailing local weather elements that are expected throughout any twelve month period. Aircraft hangar and component workshop structures should prevent the ingress of rain, hail, ice, snow, wind and dust etc. Aircraft hangar and component workshop floors should be sealed to minimise dust generation.

3. For line maintenance of aircraft, hangars are not essential but it is recommended that access to hangar accommodation be demonstrated for usage during inclement weather for minor scheduled work and lengthy defect rectification.
4. Aircraft maintenance staff should be provided with an area where they may study maintenance instructions and complete maintenance records in a proper manner.

#### **AMC 145.A.25(b) Facility requirements**

It is acceptable to combine any or all of the office accommodation requirements into one office subject to the staff having sufficient room to carry out assigned tasks.

#### **AMC 145.A.25(d) Facility requirements**

1. Storage facilities for serviceable aircraft components should be clean, well-ventilated and maintained at a constant dry temperature to minimise the effects of condensation. Manufacturers storage recommendations should be followed for those aircraft components identified in such published recommendations.
2. Storage racks should be strong enough to hold aircraft components and provide sufficient support for large aircraft components such that the component is not distorted during storage.
3. All aircraft components, wherever practicable, should remain packaged in protective material to minimise damage and corrosion during storage.

#### **AMC 145.A.30(a) Personnel requirements**

With regard to the accountable manager, it is normally intended to mean the chief executive officer of the approved maintenance organisation, who by virtue of position has overall (including in particular financial) responsibility for running the organisation. The accountable manager may be the accountable manager for more than one organisation and is not required to be necessarily knowledgeable on technical matters as the maintenance organisation exposition defines the maintenance standards. When the accountable manager is not the chief executive officer the competent authority will need to be assured that such an accountable manager has direct access to chief executive officer and has a sufficiency of 'maintenance funding' allocation.

#### **AMC 145.A.30(b) Personnel requirements**

1. Dependent upon the size of the organisation, the Part-145 functions may be subdivided under individual managers or combined in any number of ways.
2. The organisation should have, dependent upon the extent of approval, a base maintenance manager, a line maintenance manager, a workshop manager and a quality manager, all of whom should report to the accountable manager except in small Part-145 organisation where any one manager may also be the accountable manager, as determined by the competent authority, he/she may also be the line maintenance manager or the workshop manager.
3. The base maintenance manager is responsible for ensuring that all maintenance required to be carried out in the hangar, plus any defect rectification carried out during base maintenance, is carried out to the design and quality standards

specified in 145.A.65(b). The base maintenance manager is also responsible for any corrective action resulting from the quality compliance monitoring of 145.A.65(c).

4. The line maintenance manager is responsible for ensuring that all maintenance required to be carried out on the line including line defect rectification is carried out to the standards specified in 145.A.65(b) and also responsible for any corrective action resulting from the quality compliance monitoring of 145.A.65(c).

5. The workshop manager is responsible for ensuring that all work on aircraft components is carried out to the standards specified in 145.A.65(b) and also responsible for any corrective action resulting from the quality compliance monitoring of 145.A.65(c).

6. The quality manager's responsibility is specified in 145.A.30(c).

7. Notwithstanding the example sub-paragraphs 2 - 6 titles, the organisation may adopt any title for the foregoing managerial positions but should identify to the competent authority the titles and persons chosen to carry out these functions.

8. Where an organisation chooses to appoint managers for all or any combination of the identified Part-145 functions because of the size of the undertaking, it is necessary that these managers report ultimately through either the base maintenance manager or line maintenance manager or workshop manager or quality manager, as appropriate, to the accountable manager.

NOTE: Certifying staff may report to any of the managers specified depending upon which type of control the approved maintenance organisation uses (for example licensed engineers/independent inspection/dual function supervisors etc.) so long as the quality compliance monitoring staff specified in 145.A.65(c)(1) remain independent.

#### **AMC 145.A.30(c) Personnel requirements**

Monitoring the quality system includes requesting remedial action as necessary by the accountable manager and the nominated persons referred to in 145.A.30(b).

#### **AMC 145.A.30 (d) Personnel requirements**

1. Has sufficient staff means that the organisation employs or contracts such staff of which at least half the staff that perform maintenance in each workshop, hangar or flight line on any shift should be employed to ensure organisational stability. Contract staff, being part time or full time should be made aware that when working for the organisation they are subjected to compliance with the organisation's procedures specified in the maintenance organisation exposition relevant to their duties. For the purpose of this sub-paragraph, employed means the person is directly employed as an individual by the maintenance organisation approved under Part-145 whereas contracted means the person is employed by another organisation and contracted by that organisation to the maintenance organisation approved under Part-145.

2. The maintenance man-hour plan should take into account any maintenance carried out on aircraft / aircraft components from outside the Member State and should also take into account all work carried out outside the scope of the Part-145 approval.

3. The maintenance man-hour plan should relate to the anticipated maintenance work load except that when the organisation cannot predict such workload, due to the short term nature of its contracts, then such plan should be based upon the minimum maintenance workload needed for commercial viability. Maintenance work load includes all necessary work such as, but not limited to, planning, maintenance record

checks, production of worksheets/cards in paper or electronic form, accomplishment of maintenance, inspection and the completion of maintenance records.

4. In the case of aircraft base maintenance, the maintenance man-hour plan should relate to the aircraft hangar visit plan as specified in AMC 145.A.25(a).

5. In the case of aircraft component maintenance, the maintenance man-hour plan should relate to the aircraft component planned maintenance as specified in 145.A.25(a) (2).

6. The quality monitoring compliance function man-hours should be sufficient to meet the requirement of 145.A.65(c) which means taking into account AMC 145.A.65(c). Where quality monitoring staff perform other functions, the time allocated to such functions needs to be taken into account in determining quality monitoring staff numbers.

7. The maintenance man-hour plan should be reviewed at least every 3 months and updated when necessary.

8. Significant deviation from the maintenance man-hour plan should be reported through the departmental manager to the quality manager and the accountable manager for review. Significant deviation means more than a 25% shortfall in available man-hours during a calendar month for any one of the functions specified in 145.A.30(d).

#### **AMC 145.A.30(e) Personnel requirements**

1. The referenced procedure requires amongst others that planners, mechanics, specialised services staff, supervisors and certifying staff are assessed for competence by 'on the job' evaluation and/or by examination relevant to their particular job role within the organisation before unsupervised work is permitted. A record of the qualification and competence assessment should be kept.

2. Adequate initial and recurrent training should be provided and recorded to ensure continued competence.

3. To assist in the assessment of competence, job descriptions are recommended for each job role in the organisation. Basically, the assessment should establish that:

a. Planners are able to interpret maintenance requirements into maintenance tasks, and have an appreciation that they have no authority to deviate from the maintenance data.

b. Mechanics are able to carry out maintenance tasks to any standard specified in the maintenance data and will notify supervisors of mistakes requiring rectification to re-establish required maintenance standards.

c. Specialised services staff are able to carry out specialised maintenance tasks to the standard specified in the maintenance data and will both inform and await instructions from their supervisor in any case where it is not possible to complete the specialised maintenance in accordance with the maintenance data.

d. Supervisors are able to ensure that all required maintenance tasks are carried out and where not completed or where it is evident that a particular maintenance task cannot be carried out to the maintenance data, then such problems will be reported to the 145.A.30(c) person for appropriate action. In addition, for those supervisors who also carry out maintenance tasks, that they understand such tasks should not be undertaken when incompatible with their management responsibilities.

e. Certifying staff are able to determine when the aircraft or aircraft component is ready to release to service and when it should not be released to service.

4. In the case of planners, specialised services staff, supervisors and certifying staff, a knowledge of organisation procedures relevant to their particular role in the organisation is important. The aforementioned list is not exclusive and may include other categories of personnel.

5. Quality audit staff are able to monitor compliance with Part-145 identifying non compliance in an effective and timely manner in order that the organisation may remain in compliance Part-145.

6. In respect to the understanding of the application of human factors and human performance issues, maintenance, management, and quality audit personnel should be assessed for the need to receive Initial human factors training, but in any case all maintenance, management, and quality audit personnel should receive human factors continuation training. This should concern to a minimum:

- Post-holders, managers, supervisors;
- Certifying staff, technicians, and mechanics;
- Technical support personnel such as, planners, engineers, technical record staff;
- Quality control/assurance staff;
- Specialised services staff;
- Human factors staff/ human factors trainers;
- Store department staff, purchasing department staff;
- Ground equipment operators;
- Contract staff in the above categories.

7. Initial human factors training should cover all the topics of the training syllabus specified in GM 145.A.30(e) either as a dedicated course or else integrated within other training. The syllabus may be adjusted to reflect the particular nature of the organisation. The syllabus may also be adjusted to meet the particular nature of work for each function within the organisation. For example:

- small organisations not working in shifts may cover in less depth subjects related to teamwork and communication,
- planners may cover in more depth the scheduling and planning objective of the syllabus and in less depth the objective of developing skills for shift working.

Depending on the result of the evaluation as specified in paragraph 5, initial training should be provided to personnel within 6 months of joining the maintenance organisation, but temporary staff may need be trained shortly after joining the organisation to cope with the duration of employment.

Personnel being recruited from another maintenance organisation approved under Part-145 and temporary staff should be assessed for the need to receive any additional Human factors training to meet the new maintenance organisation's approved under Part-145 human factors training standard.

8. The purpose of human factors continuation training is primarily to ensure that staff remain current in terms of human factors and also to collect feedback on human factors issues. Consideration should be given to the possibility that such training has the involvement of the quality department. There should be a procedure to ensure that feedback is formally passed from the trainers to the quality department to initiate action where necessary.

Human factors continuation training should be of an appropriate duration in each two year period in relation to relevant quality audit findings and other internal/external sources of information available to the organisation on human errors in maintenance.

9. Human factors training may be conducted by the maintenance organisation itself, or independent trainers or any training organisations acceptable to the competent authority.
10. The Human factors training procedures should be specified in the maintenance organisation exposition.

#### **AMC 145.A.30(f) Personnel requirements**

1. Continued airworthiness non-destructive testing means such testing specified by the type certificate holder /aircraft or engine or propeller manufacturer in accordance with the maintenance data as specified in 145.A.45 for in service aircraft/aircraft components for the purpose of determining the continued fitness of the product to operate safely.
2. Appropriately qualified means to Level 1, 2 or 3 as defined by the European Standard 4179:2000 (EN 4179) dependant upon the non-destructive testing function to be carried out.
3. Notwithstanding the fact that Level 3 personnel may be qualified via EN 4179 to establish and authorise methods, techniques, etc., this does not permit such personnel to deviate from methods and techniques published by the type certificate holder/manufacturer in the form of continued airworthiness data, such as in non-destructive test manuals or service bulletins, unless the manual or service bulletin expressly permits such deviation.
4. Notwithstanding the general references in EN 4179 to a national aerospace non destructive testing (NDT) board, all examinations should be conducted by personnel or organisations under the general control of such a board. In the absence of a national aerospace NDT board, the aerospace NDT board of another Member State should be used, as defined by the competent authority.
5. Particular non-destructive test means any one or more of the following; Dye penetrant, magnetic particle, eddy current, ultrasonic and radiographic methods including X ray and gamma ray.
6. It should be noted that new methods are and will be developed, such as, but not limited to thermography and shearography, which are not specifically addressed by EN 4179. Until such time as an agreed standard is established such methods should be carried out in accordance with the particular equipment manufacturers recommendations including any training and examination process to ensure competence of the personnel with the process.
7. Any maintenance organisation approved under Part-145 that carries out NDT should establish NDT specialist qualification procedures detailed in the exposition and accepted by the competent authority.
8. Boroscoping and other techniques such as delamination coin tapping are non-destructive inspections rather than non-destructive testing. Notwithstanding such differentiation, the maintenance organisation should establish an exposition procedure accepted by the competent authority to ensure that personnel who carry out and interpret such inspections are properly trained and assessed for their competence with the process. Non-destructive inspections, not being considered as NDT by Part-145 are not listed in Appendix 2 under class rating D1.
9. The referenced standards, methods, training and procedures should be specified in the maintenance organisation exposition.
10. Any such personnel who intend to carry out and/or control a non-destructive test for which they were not qualified prior to the effective date of Part-145 should qualify for such non-destructive test in accordance with EN 4179.

### **AMC 145.A.30 (g) Personnel requirements**

1. For the purposes of category A minor scheduled line maintenance means any minor scheduled inspection/check up to and including a weekly check specified in the operators approved aircraft maintenance programme. For aircraft maintenance programmes that do not specify a weekly check, the competent authority will determine the most significant check that is considered equivalent to a weekly check.

2. Typical tasks permitted after appropriate task training to be carried out by the category A for the purpose of the category A issuing an aircraft certificate of release to service as specified in 145.A.50 as part of minor scheduled line maintenance or simple defect rectification are contained in the following list:

- a. Replacement of wheel assemblies.
- b. Replacement of wheel brake units.
- c. Replacement of emergency equipment .
- d. Replacement of ovens, boilers and beverage makers.
- e. Replacement of internal and external lights, filaments and flash tubes.
- f. Replacement of windscreen wiper blades.
- g. Replacement of passenger and cabin crew seats, seat belts and harnesses.
- h. Closing of cowlings and refitment of quick access inspection panels.
- i. Replacement of toilet system components but excluding gate valves.
- j. Simple repairs and replacement of internal compartment doors and placards but excluding doors forming part of a pressure structure.
- k. Simple repairs and replacement of overhead storage compartment doors and cabin furnishing items.
- l. Replacement of static wicks.
- m. Replacement of aircraft main and APU aircraft batteries.
- n. Replacement of inflight entertainment system components but excluding public address.
- o. Routine lubrication and replenishment of all system fluids and gases.
- p. The de-activation only of sub-systems and aircraft components as permitted by the operator's minimum equipment list where such de-activation is agreed by the competent authority as a simple task.
- q. Replacement of any other component as agreed by the Agency for a particular aircraft type only where it is agreed that the task is simple.

NOTE: This list will be periodically updated in the light of ongoing experience and technological changes.

### **AMC 145.A.30 (h)(1) Personnel requirements**

The category B1 and B2 support staff need not hold a a certifying authorisation in accordance with 145.A.35 (b) but the organisation may use such appropriately authorised certifying staff to satisfy the requirement.

### **AMC 145.A.30(j)(4) Personnel requirements**

1. For the issue of a limited certification authorisation the commander or flight engineer should hold either a valid air transport pilots license (ATPL), commercial pilots license (CPL) or flight engineer (F/EL) licence in accordance with JAR-FCL, or a national equivalent acceptable to the competent authority on the aircraft type. In addition the limited certification authorisation is subject to the maintenance organisation exposition containing procedures to address the personnel requirements of 145.A.30 (e) and associated AMC and guidance material.

Such procedures should include as a minimum:

- a. Completion of adequate maintenance airworthiness regulation training.
- b. Completion of adequate task training for the specific task on the aircraft. The task training should be of sufficient duration to ensure that the individual has a thorough understanding of the task to be completed and will involve training in the use of associated maintenance data.
- c. Completion of the procedural training as specified in Part-145.

The above procedures should be specified in the maintenance organisation exposition and be accepted by the competent authority.

2.(i) Typical tasks that may be certified and/or carried out by the commander holding an ATPL or CPL are minor maintenance or simple checks included in the following list:

- a. Replacement of internal lights, filaments and flash tubes.
- b. Closing of cowlings and refitment of quick access inspection panels.
- c. Role changes e.g. stretcher fit, dual controls, FLIR, doors, photographic equipment etc.
- d. Any check / replacement involving simple techniques consistent with this AMC and as agreed by the competent authority.

2. (ii) Holders of a valid JAR FCL Flight engineers licence, or a national equivalent acceptable to the competent authority, on the aircraft type may only exercise this limited certification authorisation privilege when performing the duties of a flight engineer.

In addition to paragraph 2(i)(a) to (d) other typical minor maintenance or simple defect rectification tasks that may be carried out are included in the following list:

- a. Replacement of wheel assemblies.
- b. Replacement of simple emergency equipment that is easily accessible.
- c. Replacement of ovens, boilers and beverage makers.
- d. Replacement of internal and external lights, filaments and flash tubes.
- e. Replacement of passenger and cabin crew seats, seat belts and harnesses.
- f. Simple replacement of overhead storage compartment doors and cabin furnishing items.
- g. Replacement of static wicks.
- h. Replacement of aircraft main and APU aircraft batteries.
- i. Replacement of inflight entertainment system components but excluding public address.
- j. The de-activation only of sub-systems and aircraft components as permitted by the operator's minimum equipment list where such de-activation is agreed by the competent authority as a simple task.

- k. Re-setting of tripped circuit breakers under the guidance of maintenance control.
- l. Any other simple task as agreed by the competent authority for a particular aircraft type only where it is agreed that the task is simple.
3. The authorisation should have a finite life of twelve months subject to satisfactory re-current training on the applicable aircraft type.

#### **AMC 145.A.30(j)(5) Personnel requirements**

1. For the purposes of this sub-paragraph “unforeseen” means that the aircraft grounding could not reasonably have been predicted by the operator because the defect was unexpected due to being part of a hitherto reliable system.
2. A one-off authorisation should only be considered for issue by the quality department of the contracted organisation after it has made a reasoned judgement that such a requirement is appropriate under the circumstances and at the same time maintaining the required airworthiness standards. The organisation’s quality department will need to assess each situation individually prior to the issuance of a one-off authorisation
3. A one-off authorisation should not be issued where the level of certification required could exceed the knowledge and experience level of the person it is issued to. In all cases, due consideration should be given to the complexity of the work involved and the availability of required tooling and/or test equipment needed to complete the work.

#### **AMC 145.A.30(j)(5)(i) Personnel requirements**

In those situations where the requirement for a one off authorisation to issue a CRS for a task on an aircraft type for which certifying staff does not hold a type-rated authorisation has been identified, the following procedure is recommended:

1. Flight crew should communicate details of the defect to the operator’s supporting maintenance organisation with full details of the defect. If necessary the supporting maintenance organisation will then request the use of a one off authorisation from the quality department.
2. When issuing a one off authorisation, the quality department of the organisation should verify that:
  - a) Full technical details relating to the work required to be carried out have been established and passed to the certifying staff.
  - b) The organisation has an approved procedure in place for co-ordinating and controlling the total maintenance activity undertaken at the location under the authority of the one off authorisation.
  - c) The person to whom a one-off Authorisation is issued has been provided all the necessary information and guidance relating to maintenance data and any special technical instructions associated with the specific task undertaken. A detailed step by step worksheet has been defined by the organisation, communicated to the one off authorisation holder.

d) The person holds authorisations of equivalent level and scope on other aircraft type of similar technology, construction and systems.

3. The one off authorisation holder should sign off the detailed step by step worksheet when completing the work steps. The completed tasks should be verified by visual examination and/or normal system operation upon return to an appropriately approved Part-145 maintenance facility.

#### **AMC 145.A.30(j)(5)(ii) Personnel requirements**

This paragraph addresses staff not employed by the maintenance organisation who meet the requirements of 145.A.30(j) (5). In addition to the items listed in AMC 145.A.30(j) (5) (i), paragraph 1, 2(a), (b) and (c) and 3 the quality department of the organisation may issue such one off authorisation providing full qualification details relating to the proposed certifying personnel are verified by the quality department and made available at the location.

#### **AMC 145.A.35(a) Certifying staff and category B1 and B2 support staff**

1. Adequate understanding of the relevant aircraft and/or aircraft component(s) to be maintained together with the associated organisation procedures means that the person has received training and has relevant maintenance experience on the product type and associated organisation procedures such that the person understands how the product functions, what are the more common defects with associated consequences.

2. The organisation should hold copies of all documents that attest to qualification, and to recent experience.

#### **AMC 145.A.35(b) Certifying staff and category B1 and B2 support staff**

The organisation issues the certification authorisation when satisfied that compliance has been established with the appropriate paragraphs of Part-145 and Part-66. In granting the certification authorisation the maintenance organisation approved under Part-145 needs to be satisfied that the person holds a valid Part-66 aircraft maintenance licence and may need to confirm such fact with the competent authority of the Member State that issued the licence.

#### **AMC 145.A.35(d) Certifying staff and category B1 and B2 support staff**

1. Continuation training is a two way process to ensure that certifying staff remain current in terms of procedures, human factors and technical knowledge and that the organisation receives feedback on the adequacy of its procedures and maintenance instructions. Due to the interactive nature of this training, consideration should be given to the possibility that such training has the involvement of the quality department to ensure that feedback is actioned. Alternatively, there should be a procedure to ensure that feedback is formally passed from the training department to the quality department to initiate action.

2. Continuation training should cover changes in relevant requirements such as Part-145, changes in organisation procedures and the modification standard of the products being maintained plus human factor issues identified from any internal or external analysis of incidents. It should also address instances where staff failed to follow procedures and the reasons why particular procedures are not always followed. In many cases the continuation training will reinforce the need to follow procedures and ensure that incomplete or incorrect procedures are identified to the company in order that they can be corrected. This does not preclude the possible need to carry out a quality audit of such procedures.

3. Continuation training should be of sufficient duration in each 2 year period to meet the intent of 145.A.35(d) and may be split into a number of separate elements. 145.A.35(d) requires such training to keep certifying staff updated in terms of relevant technology, procedures and human factors issues which means it is one part of ensuring quality. Therefore sufficient duration should be related to relevant quality audit findings and other internal / external sources of information available to the organisation on human errors in maintenance. This means that in the case of an organisation that maintains aircraft with few relevant quality audit findings, continuation training could be limited to days rather than weeks, whereas a similar organisation with a number of relevant quality audit findings, such training may take several weeks. For an organisation that maintains aircraft components, the duration of continuation training would follow the same philosophy but should be scaled down to reflect the more limited nature of the activity. For example certifying staff who release hydraulic pumps may only require a few hours of continuation training whereas those who release turbine engine may only require a few days of such training. The content of continuation training should be related to relevant quality audit findings and it is recommended that such training is reviewed at least once in every 24 month period.

4. The method of training is intended to be a flexible process and could, for example, include a Part-147 continuation training course, aeronautical college courses, internal short duration courses, seminars, etc. The elements, general content and length of such training should be specified in the maintenance organisation exposition unless such training is undertaken by an organisation approved under Part 147 when such details may be specified under the approval and cross referenced in the maintenance organisation exposition.

#### **AMC 145.A.35(e) Certifying staff and category B1 and B2 support staff**

The programme for continuation training should list all certifying staff and support staff and when training will take place, the elements of such training and an indication that it was carried out reasonably on time as planned. Such information should subsequently be transferred to the certifying staff and support staff record as required by 145.A.35 (j).

#### **AMC 145.A.35(f) Certifying staff and category B1 and B2 support staff**

1. As stated in 145.A.35 (f), with one exception, all prospective certifying staff are required to be assessed for competence, qualification and capability related to intended certifying duties. There are a number of ways in which such assessment may be carried out but the following points need to be considered to establish an assessment procedure that fits the particular organisation.

2. Competence and capability can be assessed by working the person under the supervision of either another certifying person or a quality auditor for sufficient time to arrive at a conclusion. Sufficient time could be as little as a few weeks if the person

is fully exposed to relevant work. It is not required to assess against the complete spectrum of intended duties. When the person has been recruited from another approved maintenance organisation and was a certifying person in that organisation then the organisation should accept a written confirmation from the person responsible for running the quality system about the person.

3. Qualification assessment means collecting copies of all documents that attest to qualification, such as the licence and/or any authorisation held. This should be followed by a confirmation check with the organisation(s) that issued such document(s) and finally a comparison check for differences between the product type ratings on the qualification documents and the relevant product types maintained by the organisation. This latter point may reveal a need for product type differences training.

#### **AMC 145.A.35 (j) Certifying staff and category B1 and B2 support staff**

1. The following minimum information as applicable should be kept on record in respect of each certifying person or category B1 or B2 support person:

- a. Name
- b. Date of Birth
- c. Basic Training
- d. Type Training
- e. Continuation Training
- f. Experience
- g. Qualifications relevant to the approval
- h. Scope of the authorisation
- i. Date of first issue of the authorisation
- j. If appropriate - expiry date of the authorisation
- k. Identification Number of the authorisation

2. The record may be kept in any format but should be controlled by the organisation's quality department. This does not mean that the quality department should run the record system.

3. Persons authorised to access the system should be maintained at a minimum to ensure that records cannot be altered in an unauthorised manner or that such confidential records become accessible to unauthorised persons.

4. The competent authority is an authorised person when investigating the records system for initial and continued approval or when the competent authority has cause to doubt the competence of a particular person.

#### **AMC 145.A.40(a) Equipment, tools and material**

Once the applicant for approval has determined the intended scope of approval for consideration by the competent authority, it will be necessary to show that all tools and equipment as specified in the maintenance data can be made available when needed. All such tools and equipment that require to be controlled in terms of servicing or calibration by virtue of being necessary to measure specified dimensions and torque figures etc, should be clearly identified and listed in a control register including any personal tools and equipment that the organisation agrees can be used.

### **AMC 145.A.40(b) Equipment, tools and material**

1. The control of these tools and equipment requires that the organisation has a procedure to inspect/service and, where appropriate, calibrate such items on a regular basis and indicate to users that the item is within any inspection or service or calibration time-limit. A clear system of labelling all tooling, equipment and test equipment is therefore necessary giving information on when the next inspection or service or calibration is due and if the item is unserviceable for any other reason where it may not be obvious. A register should be maintained for all precision tooling and equipment together with a record of calibrations and standards used.
2. Inspection, service or calibration on a regular basis should be in accordance with the equipment manufacturers' instructions except where the organisation can show by results that a different time period is appropriate in a particular case.

### **AMC 145.A.42(a) Acceptance of components**

An equivalent document to an EASA Form 1 may be:

- (a) a release document issued by an organisation under the terms of a bilateral agreement signed by the European Community;
- (b) a release document issued by an organisation approved under the terms of a JAA maintenance bilateral agreement until superseded by the corresponding agreement signed by the European Community;
- (c) a JAA Form One issued prior to 28 September 2004 by a JAR 145 organisation approved by a JAA Full Member State;
- (d) in the case of new aircraft components that were released from manufacturing prior to the Part-21 compliance date the component should be accompanied by a JAA Form One issued by a JAR 21 organisation approved by a JAA Full Member Authority and within the JAA mutual recognition system;
- (e) a JAA Form One issued prior to 28 September 2005 by a production organisation approved by a competent authority in accordance with its national regulations;

### **AMC 145.A.42(b) Acceptance of components**

The EASA Form 1 identifies the eligibility and status of an aircraft component. Block 13 "Remarks" on the EASA Form One in some cases contains vital airworthiness related information which may need appropriate and necessary actions.

The receiving organisation should be satisfied that the component in question is in satisfactory condition and has been appropriately released to service. In addition, the organisation should ensure that the component meets the approved data/standard, such as the required design and modification standard. This may be accomplished by reference to the manufacturer's parts catalogue or other approved data (i.e. Service Bulletin). Care should also be exercised in ensuring compliance with applicable airworthiness directives and the status of any life limited parts fitted to the aircraft component.

## **AMC 145.A.42(c) Acceptance of components**

1. The agreement by the competent authority for the fabrication of parts by the approved maintenance organisation should be formalised through the approval of a detailed procedure in the Maintenance Organisation Exposition. This AMC contains principles and conditions to be taken into account for the preparation of an acceptable procedure.
2. Fabrication, inspection assembly and test should be clearly within the technical and procedural capability of the organisation;
3. All necessary data to fabricate the part should be approved either by the competent authority or the type certificate (TC) holder or Part-21 design organisation approval holder, or supplemental type certificate (STC) holder;
4. Items fabricated by an organisation approved under Part-145 may only be used by that organisation in the course of overhaul, maintenance, modifications, or repair of aircraft or components undergoing work within its own facility. The permission to fabricate does not constitute approval for manufacture, or to supply externally and the parts do not qualify for certification on EASA Form One. This prohibition also applies to the bulk transfer of surplus inventory, in that locally fabricated parts are physically segregated and excluded from any delivery certification.
5. Fabrication of parts, modification kits etc for onward supply and/or sale may not be conducted by an organisation approved under Part-145.
6. The data specified in paragraph 3 may include repair procedures involving the fabrication of parts. Where the data on such parts is sufficient to facilitate fabrication, the parts may be fabricated by an organisation approved under Part-145. Care should be taken to ensure that the data include details of part numbering, dimensions, materials, processes, and any special manufacturing techniques, special raw material specification or/and incoming inspection requirement and that the approved organisation has the necessary capability. That capability should be defined by way of exposition content. Where special processes or inspection procedures are defined in the approved data which are not available at the organisation the organisation can not fabricate the part unless the TC/STC-holder gives an approved alternative.
7. Examples of fabrication under the scope of an Part-145 approval can include but are not limited to the following:
  - a) Fabrication of bushes, sleeves and shims.
  - b) Fabrication of secondary structural elements and skin panels.
  - c) Fabrication of control cables.
  - d) Fabrication of flexible and rigid pipes.
  - e) Fabrication of electrical cable looms and assemblies.
  - f) Formed or machined sheet metal panels for repairs.

All the above fabricated parts, should be in accordance with data provided in overhaul or repair manuals, modification schemes and service bulletins, drawings or otherwise approved by the competent authority.

Note: It is not acceptable to fabricate any item to pattern unless an engineering drawing of the item is produced which includes any necessary fabrication processes and which is acceptable to the competent authority.

8. Where a TC-holder or an approved production organisation is prepared to make available complete data which is not referred to in aircraft manuals or service bulletins but provides manufacturing drawings for items specified in parts lists, the fabrication of these items is not considered to be within the scope of an approval

unless agreed otherwise by the competent authority in accordance with a procedure specified in the exposition.

#### 9. Inspection and Identification.

Any locally fabricated part should be subjected to an inspection stage before, separately, and preferably independently from, any inspection of its installation. The inspection should establish full compliance with the relevant manufacturing data, and the part should be unambiguously identified as fit for use by stating conformity to the approved data. Adequate records should be maintained of all such fabrication processes including, heat treatment and the final inspections. All parts, except those having not enough space, should carry a part number which clearly relates it to the manufacturing/inspection data. Additional to the part-number the organisation's identity should be marked on the part for traceability purposes.

#### **AMC 145.A.42(d) Acceptance of components**

1. The following types of components should typically be classified as unsalvageable:

- a. Components with non-repairable defects, whether visible or not to the naked eye;
- b. Components that do not meet design specifications, and cannot be brought into conformity with such specifications;
- c. Components subjected to unacceptable modification or rework that is irreversible;
- d. Certified life-limited parts that have reached or exceeded their certified life limits, or have missing or incomplete records;
- e. Components that cannot be returned to airworthy condition due to exposure to extreme forces, heat or adverse environment;
- f. Components for which conformity with an applicable airworthiness directive cannot be accomplished;
- g. Components for which maintenance records and/or traceability to the manufacturer can not be retrieved.

2. It is common practice for possessors of aircraft components to dispose of unsalvageable components by selling, discarding, or transferring such items. In some instances, these items have reappeared for sale and in the active parts inventories of the aviation community. Misrepresentation of the status of components and the practice of making such items appear serviceable have resulted in the use of unsalvageable nonconforming Components. Therefore Organisations disposing of unsalvageable aircraft components should consider the possibility of such components later being misrepresented and sold as serviceable components. Caution should be exercised to ensure that unsalvageable components are disposed of in a manner that does not allow them to be returned to service.

#### **AMC 145.A.45(b) Maintenance data**

1. Except as specified in sub-paragraph 5, each maintenance organisation approved under Part-145 should hold and use the following minimum maintenance

data relevant to the organisation's approval class rating. All maintenance related Implementing Rules and associated AMCs , approval specifications and Guidance Material, all applicable national maintenance requirements and notices which have not been superseded by an Agency requirement, procedure or directive and all applicable EASA airworthiness directives plus any non-national airworthiness directive supplied by a contracted non-EU operator or customer.

2. In addition to sub-paragraph 1, an organisation with an approval class rating in category A - Aircraft, should hold and use the following maintenance data where published. The appropriate sections of the operator's aircraft maintenance programme, aircraft maintenance manual, repair manual, supplementary structural inspection document, corrosion control document, service bulletins, service letters, service instructions, modification leaflets, NDT manual, parts catalogue, type certificate data sheet and any other specific document issued by the type certificate or supplementary type certificate holder as maintenance data.

3. In addition to sub-paragraph 1, an organisation with an approval class rating in category B - Engines/APUs, should hold and use the following maintenance data where published. The appropriate sections of the engine/APU maintenance and repair manual, service bulletins, service letters, modification leaflets, non-destructive inspection (NDI) manual, parts catalogue, type certificate data sheet and any other specific document issued by the type certificate holder as maintenance data.

4. In addition to sub-paragraph 1, an organisation with an approval class rating in category C - Components other than complete engines/APUs, should hold and use the following maintenance data where published. The appropriate sections of the vendor maintenance and repair manual, service bulletins and service letters plus any document issued by the type certificate holder as maintenance data on whose product the component may be fitted when applicable.

5. Appropriate sections of the sub-paragraphs 2 to 4 additional maintenance data means in relation to the maintenance work scope at each particular maintenance facility. For example, a base maintenance facility should have almost complete set(s) of the maintenance data whereas a line maintenance facility may need only the maintenance manual and the parts catalogue.

6. An organisation only approved in class rating category D – Specialised services, should hold and use all applicable specialised service(s) process specifications.

#### **AMC 145.A.45(c) Maintenance data**

1 The referenced procedure should ensure that when maintenance personnel discover inaccurate, incomplete or ambiguous information in the maintenance data they should record the details. The procedure should then ensure that the Part-145 approved maintenance organisation notifies the problem to the author of the maintenance data in a timely manner. A record of such communications to the author of the maintenance data should be retained by the Part-145 approved organisation until such time as the type certificate holder has clarified the issue by e.g. amending the maintenance data.

2 The referenced procedure should be specified in the maintenance organisation exposition.

#### **AMC 145.A.45(d) Maintenance data**

The referenced procedure should address the need for a practical demonstration by the mechanic to the quality personnel of the proposed modified maintenance instruction. When satisfied the quality personnel should approve the modified maintenance instruction and ensure that the type certificate or supplementary type certificate holder is informed of the modified maintenance instruction. The procedure should include a paper/electronic traceability of the complete process from start to finish and ensure that the relevant maintenance instruction clearly identifies the modification. Modified maintenance instructions should only be used in the following circumstances;

- a Where the type certificate / supplementary type certificate holders original intent can be carried out in a more practical or more efficient manner.
- b Where the type certificate / supplementary type certificate holders original intent cannot be achieved by following the maintenance instructions. For example, where a component cannot be replaced following the original maintenance instructions.
- c For the use of alternative tools / equipment.

#### **AMC 145.A.45 (f) Maintenance data**

1. Relevant parts of the organisation means with regard to aircraft base maintenance, aircraft line maintenance, engine workshops, mechanical workshops and avionic workshops. Therefore, for example engine workshops should have a common system throughout such engine workshops that may be different to that in aircraft base maintenance.
2. The workcards should differentiate and specify, when relevant, disassembly, accomplishment of task, reassembly and testing. In the case of a lengthy maintenance task involving a succession of personnel to complete such task, it may be necessary to use supplementary workcards or worksheets to indicate what was actually accomplished by each individual person.

#### **AMC 145.A.45 (g) Maintenance data**

1. To keep data up to date a procedure should be set up to monitor the amendment status of all data and maintain a check that all amendments are being received by being a subscriber to any document amendment scheme.
2. Data being made available to personnel maintaining aircraft means that the data should be available in close proximity to the aircraft being maintained, for supervisors, mechanics and certifying staff to study.
3. Where computer systems are used, the number of computer terminals should be sufficient in relation to the size of the work programme to enable easy access, unless the computer system can produce paper copies. Where microfilm or microfiche readers/printers are used, a similar requirement is applicable.

#### **AMC 145.A.47(a) Production planning**

1. Depending on the amount and complexity of work generally performed by the maintenance organisation, the planning system may range from a very simple procedure to a complex organisational set-up including a dedicated planning function in support of the production function.

2. For the purpose of Part-145, the production planning function includes two complementary elements:

- scheduling the maintenance work ahead, to ensure that it will not adversely interfere with other work as regards the availability of all necessary personnel, tools, equipment, material, maintenance data and facilities.
- during maintenance work, organising maintenance teams and shifts and provide all necessary support to ensure the completion of maintenance without undue time pressure.

3. When establishing the production planning procedure, consideration should be given to the following:

- logistics,
- inventory control,
- square meters of accommodation,
- man-hours estimation,
- man-hours availability,
- preparation of work,
- hangar availability,
- environmental conditions (access, lighting standards and cleanliness),
- co-ordination with internal and external suppliers, etc.
- scheduling of safety-critical tasks during periods when staff are likely to be most alert.

#### **AMC145.A.47(b) Production planning**

Limitations of human performance, in the context of planning safety related tasks, refers to the upper and lower limits, and variations, of certain aspects of human performance (Circadian rhythm / 24 hours body cycle) which personnel should be aware of when planning work and shifts.

#### **AMC145.A.47(c) Production planning**

The primary objective of the changeover / handover information is to ensure effective communication at the point of handing over the continuation or completion of maintenance actions. Effective task and shift handover depends on three basic elements:

- The outgoing person's ability to understand and communicate the important elements of the job or task being passed over to the incoming person.
- The incoming person's ability to understand and assimilate the information being provided by the outgoing person.
- A formalised process for exchanging information between outgoing and incoming persons and a planned shift overlap and a place for such exchanges to take place.

#### **AMC 145.A.50(a) Certification of maintenance**

1. A component which has been maintained off the aircraft needs the issue of a certificate of release to service for such maintenance and another certificate of release to service in regard to being installed properly on the aircraft when such action occurs. In the case of base maintenance this takes the form of a separate task sign off for the maintenance and installation tasks.

1.2. When an organisation maintains a component for use by the organisation, an EASA Form 1 may not be necessary depending upon the organisations' internal release procedures defined in the maintenance organisation exposition.

1.3. "Hazard seriously the flight safety" means any instances where safe operation could not be assured or which could lead to an unsafe condition. It typically includes, but is not limited to, significant cracking, deformation, corrosion or failure of primary structure, any evidence of burning, electrical arcing, significant hydraulic fluid or fuel leakage and any emergency system or total system failure. An airworthiness directive overdue for compliance is also considered a hazard to flight safety.

2. In the case of the issue of EASA Form 1 for components in storage prior to Part-145 and Part-21 and not released on an EASA Form 1 or equivalent in accordance with 145.A.42(a) or removed serviceable from a serviceable aircraft or an aircraft which have been withdrawn from service the following applies.

2.1 An EASA Form 1 may be issued for an aircraft component which has been:

- Maintained before Part-145 became effective or manufactured before Part-21 became effective.
- Used on an aircraft and removed in a serviceable condition. Examples include leased and loaned aircraft components.
- Removed from aircraft which have been withdrawn from service, or from aircraft which have been involved in abnormal occurrences such as accidents, incidents, heavy landings or lightning strikes.
- Components maintained by an unapproved organisation.

2.2. An appropriately rated maintenance organisation approved under Part-145 may issue an EASA Form 1 as detailed in this AMC sub-paragraph 2.5 to 2.9, as appropriate, in accordance with procedures detailed in the exposition as approved by the competent authority. The appropriately rated organisation is responsible for ensuring that all reasonable measures have been taken to ensure that only approved and serviceable aircraft components are issued an EASA Form 1 under this paragraph.

2.3. For the purposes of this paragraph 2 only, appropriately rated means an organisation with an approval class rating for the type of component or for the product in which it may be installed.

2.4. An EASA Form 1 issued in accordance with this paragraph 2 should be issued by signing in block 20 and stating "Inspected" in block 12. In addition, block 13 should specify:

2.4.1. When the last maintenance was carried out and by whom.

2.4.2. If the component is unused, when the component was manufactured and by whom with a cross reference to any original documentation which should be included with the Form.

2.4.3. A list of all airworthiness directives, repairs and modifications known to have been incorporated. If no airworthiness directives or repairs or modifications are known to be incorporated then this should be so stated.

2.4.4. Detail of life used for service life limited parts being any combination of fatigue, overhaul or storage life.

2.4.5. For any aircraft component having its own maintenance history record, reference to the particular maintenance history record as long as the record contains the details that would otherwise be required in block 13. The maintenance history record and acceptance test report or statement, if applicable, should be attached to the EASA Form 1.

## 2.5. New / unused aircraft components

2.5.1 Any unused aircraft component in storage without an EASA Form 1 up to the effective date(s) for Part-21 that was manufactured by an organisation acceptable to the competent authority at the time may be issued an EASA Form 1 by an appropriately rated maintenance organisation approved under Part-145. The EASA Form 1 should be issued in accordance with the following subparagraphs which should be included in a procedure within the maintenance organisation manual.

Note 1: It should be understood that the release of a stored but unused aircraft component in accordance with this paragraph represents a maintenance release under Part-145 and not a production release under Part-21. It is not intended to bypass the production release procedure agreed by the Member State for parts and subassemblies intended for fitment on the manufacturers own production line.

(a) An acceptance test report or statement should be available for all used and unused aircraft components that are subjected to acceptance testing after manufacturing or maintenance as appropriate.

(b) The aircraft component should be inspected for compliance with the manufacturer's instructions and limitations for storage and condition including any requirement for limited storage life, inhibitors, controlled climate and special storage containers. In addition or in the absence of specific storage instructions the aircraft component should be inspected for damage, corrosion and leakage to ensure good condition.

(c) The storage life used of any storage life limited parts should be established.

2.5.2. If it is not possible to establish satisfactory compliance with all applicable conditions specified in subparagraph 2.5.1 (a) to (c) inclusive the aircraft component should be disassembled by an appropriately rated organisation and subjected to a check for incorporated airworthiness directives, repairs and modifications and inspected/tested in accordance with the manufacturers maintenance instructions to establish satisfactory condition and, if relevant, all seals, lubricants and life limited parts replaced. On satisfactory completion after reassembly an EASA Form 1 may be issued stating what was carried out and the reference of the manufacturers maintenance instructions included.

## 2.6. Used aircraft components removed from a serviceable aircraft.

2.6.1. Serviceable aircraft components removed from a Member State registered aircraft may be issued an EASA Form 1 by an appropriately rated organisation subject to compliance with this subparagraph.

a. The organisation should ensure that the component was removed from the aircraft by an appropriately qualified person.

b. The aircraft component may only be deemed serviceable if the last flight operation with the component fitted revealed no faults on that component/related system.

- c. The aircraft component should be inspected for satisfactory condition including in particular damage, corrosion or leakage and compliance with any additional manufacturer's maintenance instructions.
- d. The aircraft record should be researched for any unusual events that could affect the serviceability of the aircraft component such as involvement in accidents, incidents, heavy landings or lightning strikes. Under no circumstances may an EASA Form 1 be issued in accordance with this paragraph 2.6 if it is suspected that the aircraft component has been subjected to extremes of stress, temperatures or immersion which could effect its operation.
- e. A maintenance history record should be available for all used serialised aircraft components.
- f. Compliance with known modifications and repairs should be established.
- g. The flight hours/cycles/landings as applicable of any service life limited parts including time since overhaul should be established.
- h. Compliance with known applicable airworthiness directives should be established.
- i. Subject to satisfactory compliance with this subparagraph 2.6.1 an EASA Form 1 may be issued and should contain the information as specified in paragraph 2.4 including the aircraft from which the aircraft component was removed.

2.6.2. Serviceable aircraft components removed from a non Member State registered aircraft may only be issued an EASA Form 1 if the components are leased or loaned from the maintenance organisation approved under Part-145 who retains control of the airworthiness status of the components. An EASA Form 1 may be issued and should contain the information as specified in paragraph 2.4 including the aircraft from which the aircraft component was removed.

## 2.7. Used aircraft components removed from an aircraft withdrawn from service.

Serviceable aircraft components removed from a Member State registered aircraft withdrawn from service may be issued an EASA Form 1 by a maintenance organisation approved under Part-145 subject to compliance with this sub paragraph.

- a. Aircraft withdrawn from service are sometimes dismantled for spares. This is considered to be a maintenance activity and should be accomplished under the control of an organisation approved under Part-145, employing procedures approved by the competent authority.
- b. To be eligible for installation components removed from such aircraft may be issued with an EASA Form 1 by an appropriately rated organisation following a satisfactory assessment.
- c. As a minimum the assessment will need to satisfy the standards set out in paragraphs 2.5 and 2.6 as appropriate. This should where known, include the possible need for the alignment of scheduled maintenance that may be necessary to comply with the maintenance programme applicable to the aircraft on which the component is to be installed.
- d. Irrespective of whether the aircraft holds a certificate of airworthiness or not, the organisation responsible for certifying any removed component should satisfy itself that the manner in which the components were removed and stored are compatible with the standards required by Part-145.
- e. A structured plan should be formulated to control the aircraft disassembly process. The disassembly is to be carried out by an appropriately rated organisation under the supervision of certifying staff, who will ensure that the aircraft components are removed and documented in a structured manner in accordance with the appropriate maintenance data and disassembly plan.

f. All recorded aircraft defects should be reviewed and the possible effects these may have on both normal and standby functions of removed components are to be considered.

g. Dedicated control documentation is to be used as detailed by the disassembly plan, to facilitate the recording of all maintenance actions and component removals performed during the disassembly process. Components found to be unserviceable are to be identified as such and quarantined pending a decision on the actions to be taken. Records of the maintenance accomplished to establish serviceability are to form part of the component maintenance history.

h. Suitable Part-145 facilities for the removal and storage of removed components are to be used which include suitable environmental conditions, lighting, access equipment, aircraft tooling and storage facilities for the work to be undertaken. While it may be acceptable for components to be removed, given local environmental conditions, without the benefit of an enclosed facility subsequent disassembly (if required) and storage of the components should be in accordance with manufacturer's recommendations.

2.8. Used aircraft components maintained by organisations not approved in accordance with Part-145.

For used components maintained by a maintenance organisation unapproved under Part-145, due care should be exercised before acceptance of such components. In such cases an appropriately rated maintenance organisation approved under part-145 should establish satisfactory conditions by:

- a) dismantling the component for sufficient inspection in accordance with the appropriate maintenance data,
- b) replacing of all service life limit components when no satisfactory evidence of life used is available and/or the components are in an unsatisfactory condition,
- c) reassembling and testing as necessary the component,
- d) completing all certification requirements as specified in 145.A.50.

2.9. Used aircraft components removed from an aircraft involved in an accident or incident.

Such components should only be issued with an EASA Form 1 when processed in accordance with paragraph 2.7 and a specific work order including all additional necessary tests and inspections made necessary by the accident or incident. Such a work order may require input from the TC holder or original manufacturer as appropriate. This work order should be referenced in block 13.

### **AMC145.A.50(b) Certification of maintenance**

1. The certificate of release to service should contain the following statement:

'Certifies that the work specified except as otherwise specified was carried out in accordance with Part-145 and in respect to that work the aircraft/aircraft component is considered ready for release to service'.

2. The certificate of release to service should relate to the task specified in the manufacturer's or operator's instruction or the aircraft maintenance program which itself may cross-refer to a manufacturer's/operator's instruction in a maintenance manual, service bulletin etc.

3. The date such maintenance was carried out should include when the maintenance took place relative to any life or overhaul limitation in terms of date/flying hours/cycles/landings etc., as appropriate.

4. When extensive maintenance has been carried out, it is acceptable for the certificate of release to service to summarise the maintenance so long as there is a unique cross-reference to the work-pack containing full details of maintenance carried out. Dimensional information should be retained in the work-pack record.

5. The person issuing the certificate of release to service should use his normal signature except in the case where a computer release to service system is used. In this latter case the competent authority will need to be satisfied that only the particular person can electronically issue the release to service. One such method of compliance is the use of a magnetic or optical personal card in conjunction with a personal identity number (PIN) known only to the individual which is keyed into the computer. A certification stamp is optional.

#### **AMC145.A.50(d) Certification of maintenance**

The purpose of the certificate is to release assemblies/items/components/parts (hereafter referred to as 'item(s)') after maintenance and to release maintenance work carried out on such items under the approval of a competent authority and to allow items removed from one aircraft/aircraft component to be fitted to another aircraft/aircraft component.

The certificate referenced EASA Form 1 is called the authorised release certificate.

The certificate is to be used for export/import purposes, as well as for domestic purposes, and serves as an official certificate for items from the manufacturer/maintenance organisation to users. The certificate is not a delivery or shipping note.

It can only be issued by organisations approved by the particular competent authority within the scope of the approval.

The certificate may be used as a rotatable tag by utilising the available space on the reverse side of the certificate for any additional information and despatching the item with two copies of the certificate so that one copy may be eventually returned with the item to the maintenance organisation. The alternative solution is to use existing rotatable tags and also supply a copy of the certificate.

Under no circumstances may a certificate be issued for any item when it is known that the item has a defect considered a serious hazard to flight safety.

A certificate should not be issued for any item when it is known that the item is unserviceable except in the case of an item undergoing a series of maintenance processes at several maintenance organisations approved under Part-145 and the item needs a certificate for the previous maintenance process carried out for the next maintenance organisation approved under Part-145 to accept the item for subsequent maintenance processes. As mentioned for Block 13, a clear statement of limitation should be endorsed in Block 13.

NOTE: Aircraft may not be released using the certificate.

#### **AMC 145.A.50(e) Certification of maintenance**

1. Being unable to establish full compliance with sub-paragraph Part-145.A.50(a) means that the maintenance required by the aircraft operator could not be completed

due either to running out of available aircraft maintenance downtime for the scheduled check or by virtue of the condition of the aircraft requiring additional maintenance downtime.

2. The aircraft operator is responsible for ensuring that all required maintenance has been carried out before flight and therefore 145.A.50(e) requires such operator to be informed in the case where full compliance with 145.A.50(a) cannot be achieved within the operators limitations. If the operator agrees to the deferment of full compliance, then the certificate of release to service may be issued subject to details of the deferment, including the operator's authority, being endorsed on the certificate.

NOTE: Whether or not the aircraft operator does have the authority to defer maintenance is an issue between the aircraft operator and its Member State. In case of doubt concerning such a decision of the operator, the approved maintenance organisation should inform its Member State of such doubt, before issue of the certificate of release to service. This will allow the Member State to investigate the matter with the State of Registry or the State of the operator as appropriate.

3. The procedure should draw attention to the fact that 145.A.50 (a) does not normally permit the issue of a certificate of release to service in the case of non-compliance and should state what action the mechanic, supervisor and certifying staff should take to bring the matter to the attention of the relevant department or person responsible for technical co-ordination with the aircraft operator so that the issue may be discussed and resolved with the aircraft operator. In addition, the appropriate person(s) as specified in 145.A.30(b) should be kept informed in writing of such possible non-compliance situations and this should be included in the procedure.

#### **AMC 145.A.50(f) Certification of maintenance**

1. Suitable release certificate means a certificate which clearly states that the aircraft component is serviceable; that clearly specifies the organisation releasing said component together with details of the authority under whose approval the organisation works including the approval or authorisation reference.

2. Compliance with all other Part-145 and operator requirements means making an appropriate entry in the aircraft technical log, checking for compliance with type design standards, modifications, repairs, airworthiness directives, life limitations and condition of the aircraft component plus information on where, when and why the aircraft was grounded.

#### **AMC 145.A.55(c) Maintenance records**

Associated maintenance data is specific information such as repair and modification data. This does not necessarily require the retention of all Aircraft Maintenance Manual, Component Maintenance Manual, IPC etc issued by the TC holder or STC holder. Maintenance records should refer to the revision status of the data used.

#### **AMC 145.A.60(b) Occurrence reporting**

1. The aim of occurrence reporting is to identify the factors contributing to incidents, and to make the system resistant to similar errors.

2. An occurrence reporting system should enable and encourage free and frank reporting of any (potentially) safety related occurrence. This will be facilitated by the establishment of a just culture. An organisation should ensure that personnel are not inappropriately punished for reporting or co-operating with occurrence investigations.

3. The internal reporting process should be closed-loop, ensuring that actions are taken internally to address safety hazards.
4. Feedback to reportees, both on an individual and more general basis, is important to ensure their continued support for the scheme.

**AMC 145.A.65(a) Safety and quality policy, maintenance procedures and quality system**

The safety and quality policy should as a minimum include a statement committing the organisation to:

- Recognise safety as a prime consideration at all times
- Apply Human factors principles
- Encourage personnel to report maintenance related errors/incidents
- Recognise that compliance with procedures, quality standards, safety standards and regulations is the duty of all personnel
- Recognise the need for all personnel to cooperate with the quality auditors.

**AMC 145.A.65(b) Safety and quality policy, maintenance procedures and quality system**

1. Maintenance procedures should be held current such that they reflect best practice within the organisation. It is the responsibility of all organisation's employees to report any differences via their organisation's internal occurrence reporting mechanisms.
2. All procedures, and changes to those procedures, should be verified and validated before use where practicable.
3. All technical procedures should be designed and presented in accordance with good human factors principles.

**AMC 145.A.65(b)(2) Safety and quality policy, maintenance procedures and quality system**

Specialised services includes any specialised activity, such as, but not limited to non-destructive testing requiring particular skills and/or qualification. 145.A.30(f) covers the qualification of personnel but, in addition, there is a need to establish maintenance procedures that cover the control of any specialised process.

**AMC 145.A.65(b)(3) Safety and quality policy, maintenance procedures and quality system**

1. The purpose of this procedure is to minimise the rare possibility of an error being repeated whereby the identical aircraft components are not reassembled thereby compromising more than one system. One example is the remote possibility of failure to reinstall engine gearbox access covers or oil filler caps on all engines of a multi-engined aircraft resulting in major oil loss from all engines.

Another example is the case of removal and refitment of oil filler caps, which should require a re-inspection of all oil filler caps after the last oil filler cap has supposedly been refitted.

2. Procedures should be established to detect and rectify maintenance errors that could, as minimum, result in a failure, malfunction, or defect endangering the safe operation of the aircraft if not performed properly. The procedure should identify the method for capturing errors, and the maintenance tasks or processes concerned.

In order to determine the work items to be considered, the following maintenance tasks should primarily be reviewed to assess their impact on safety:

- Installation, rigging and adjustments of flight controls,
- Installation of aircraft engines, propellers and rotors,
- Overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes, but additional information should also be processed, such as:
- Previous experiences of maintenance errors, depending on the consequence of the failure,
- Information arising from the ‘occurrence reporting system’ required by 145.A.60,
- Member State requirements for error capturing, if applicable.

3. In order to prevent omissions, every maintenance task or group of tasks should be signed-off. To ensure the task or group of tasks is completed, it should only be signed-off after completion. Work by unauthorised personnel (i.e. temporary staff, trainee,...) should be checked by authorised personnel before they sign-off. The grouping of tasks for the purpose of signing-off should allow critical steps to be clearly identified

Note: A “sign-off” is a statement by the competent person performing or supervising the work, that the task or group of tasks has been correctly performed. A sign-off relates to one step in the maintenance process and is therefore different to the release to service of the aircraft. “Authorised personnel” means personnel formally authorised by the maintenance organisation approved under Part-145 to sign-off tasks. “Authorised personnel” are not necessarily “certifying staff” .

#### **AMC 145.A.65 (c)(1) Safety and quality policy, maintenance procedures and quality system.**

1. The primary objectives of the quality system are to enable the organisation to ensure that it can deliver a safe product and that organisation remains in compliance with the requirements.

2. An essential element of the quality system is the independent audit .

3. The independent audit is an objective process of routine sample checks of all aspects of the organisation’s ability to carry out all maintenance to the required standards and includes some product sampling as this is the end result of the maintenance process. It represents an objective overview of the complete maintenance related activities and is intended to complement the 145.A.50(a) requirement for certifying staff to be satisfied that all required maintenance has been properly carried out before issue of the certificate of release to service. Independent audits should include a percentage of random audits carried out on a sample basis when maintenance is being carried out. This means some audits during the night for those organisations that work at night.

4. Except as specified in sub-paragraphs 7 and 9, the independent audit should ensure that all aspects of Part-145 compliance are checked every 12 months and may

be carried out as a complete single exercise or subdivided over the 12 month period in accordance with a scheduled plan. The independent audit does not require each procedure to be checked against each product line when it can be shown that the particular procedure is common to more than one product line and the procedure has been checked every 12 months without resultant findings. Where findings have been identified, the particular procedure should be rechecked against other product lines until the findings have been rectified after which the independent audit procedure may revert back to 12 monthly for the particular procedure.

5. Except as specified otherwise in sub-paragraphs 7, the independent audit should sample check one product on each product line every 12 months as a demonstration of the effectiveness of maintenance procedures compliance. It is recommended that procedures and product audits be combined by selecting a specific product example, such as an aircraft or engine or instrument and sample checking all the procedures and requirements associated with the specific product example to ensure that the end result should be an airworthy product.

For the purpose of the independent audit a product line includes any product under an Appendix 2 approval class rating as specified in the approval schedule issued to the particular organisation.

It therefore follows for example that a maintenance organisation approved under Part-145 with a capability to maintain aircraft, repair engines, brakes and autopilots would need to carry out 4 complete audit sample checks each year except as specified otherwise in sub-paragraphs 5, 7 or 9.

6. The sample check of a product means to witness any relevant testing and visually inspect the product and associated documentation. The sample check should not involve repeat disassembly or testing unless the sample check identifies findings requiring such action.

7. Except as specified otherwise in sub-paragraph 9, where the smallest organisation, that is an organisation with a maximum of 10 personnel actively engaged in maintenance, chooses to contract the independent audit element of the quality system in accordance with 145.A.65 (c)(1) it is conditional on the audit being carried out twice in every 12 month period.

8. Except as specified otherwise in sub-paragraph 9, where the organisation has line stations listed as per 145.A.75 (d) the quality system should describe how these are integrated into the system and include a plan to audit each listed line station at a frequency consistent with the extent of flight activity at the particular line station. Except as specified otherwise in sub-paragraph 9 the maximum period between audits of a particular line station should not exceed 24 months.

9. Except as specified otherwise in sub-paragraph 5, the competent authority may agree to increase any of the audit time periods specified in this AMC 145.A.65 (c)(1) by up to 100% provided that there are no safety related findings and subject to being satisfied that the organisation has a good record of rectifying findings in a timely manner.

10. A report should be raised each time an audit is carried out describing what was checked and the resulting findings against applicable requirements, procedures and products.

11. The independence of the audit should be established by always ensuring that audits are carried out by personnel not responsible for the function, procedure or products being checked. It therefore follows that a large maintenance organisation approved under Part-145, being an organisation with more than about 500 maintenance staff should have a dedicated quality audit group whose sole function is to conduct audits, raise finding reports and follow up to check that findings are being rectified. For the medium sized maintenance organisation approved under Part-145, being an organisation with less than about 500 maintenance staff, it is acceptable to

use competent personnel from one section/department not responsible for the production function, procedure or product to audit the section/department that is responsible subject to the overall planning and implementation being under the control of the quality manager. Organisations with a maximum of 10 maintenance staff actively engaged in carrying out maintenance may contract the independent audit element of the quality system to another organisation or a qualified and competent person approved by the competent authority.

#### **AMC 145.A.65(c)(2) Safety and quality policy, maintenance procedures and quality system**

1. An essential element of the quality system is the quality feedback system.
2. The quality feedback system may not be contracted to outside persons. The principal function of the quality feedback system is to ensure that all findings resulting from the independent quality audits of the organisation are properly investigated and corrected in a timely manner and to enable the accountable manager to be kept informed of any safety issues and the extent of compliance with Part-145.
3. The independent quality audit reports referenced in AMC 145.A.65(c)(1) sub-paragraph 10 should be sent to the relevant department(s) for rectification action giving target rectification dates. Rectification dates should be discussed with such department(s) before the quality department or nominated quality auditor confirms such dates in the report. The relevant department(s) are required by 145.A.65(c)(2) to rectify findings and inform the quality department or nominated quality auditor of such rectification.
4. The accountable manager should hold regular meetings with staff to check progress on rectification except that in the large organisations such meetings may be delegated on a day to day basis to the quality manager subject to the accountable manager meeting at least twice per year with the senior staff involved to review the overall performance and receiving at least a half yearly summary report on findings of non-compliance.
5. All records pertaining to the independent quality audit and the quality feedback system should be retained for at least 2 years after the date of clearance of the finding to which they refer or for such periods as to support changes to the AMC 145.A.65(c)(1) sub-paragraph 9 audit time periods, whichever is the longer.

#### **AMC 145.A.70(a) Maintenance organisation exposition**

The following information should be included in the maintenance organisation exposition:

The information specified in 145.A.70 sub - paragraphs (6) and (12) to (16) inclusive, whilst a part of the maintenance organisation exposition, may be kept as separate documents or on separate electronic data files subject to the management part of said exposition containing a clear cross reference to such documents or electronic data files.

The exposition should contain the information, as applicable, specified in this AMC. The information, may be presented in any subject order so long as all applicable subjects are covered. Where an organisation uses a different format, for example, to allow the exposition to serve for more than one approval, then the exposition should contain a cross reference Annex using this list as an index with an explanation as to where in the exposition the subject matter can be found.

Small maintenance organisations may combine the various items to form a simple exposition more relevant to their needs.

The operator may use electronic data processing (EDP) for publication of the maintenance organisation exposition. The maintenance organisation exposition should be made available to the approving competent authority in a form acceptable to the competent authority. Attention should be paid to the compatibility of EDP publication systems with the necessary dissemination of the maintenance organisation exposition, both internally and externally.

PART 0  
GENERAL ORGANISATION (Operators within the European Union)

This section is reserved for those maintenance organisations approved under Part-145 who are also operators within the European Union.

PART 1  
MANAGEMENT

- 1.1 Corporate commitment by the accountable manager.
- 1.2 Safety and quality policy.
- 1.3 Management personnel.
- 1.4 Duties and responsibilities of the management personnel.
- 1.5 Management organisation chart.
- 1.6 List of certifying staff.
- 1.7 Manpower resources.
- 1.8 General description of the facilities at each address intended to be approved.
- 1.9 Organisations intended scope of work.
- 1.10 Notification procedure to the competent authority regarding changes to the organisation's activities/approval/location/personnel.
- 1.11 Exposition amendment procedures including, if applicable, delegated procedures.

PART 2  
MAINTENANCE PROCEDURES

- 2.1 Supplier evaluation and subcontract control procedure.
- 2.2 Acceptance/inspection of aircraft components and material from outside contractors.
- 2.3 Storage, tagging and release of aircraft components and material to aircraft maintenance.
- 2.4 Acceptance of tools and equipment.
- 2.5 Calibration of tools and equipment.
- 2.6 Use of tooling and equipment by staff (including alternate tools).
- 2.7 Cleanliness standards of maintenance facilities.
- 2.8 Maintenance instructions and relationship to aircraft/aircraft component manufacturers' instructions including updating and availability to staff.

- 2.9 Repair procedure.
- 2.10 Aircraft maintenance programme compliance.
- 2.11 Airworthiness directives procedure.
- 2.12 Optional modification procedure.
- 2.13 Maintenance documentation in use and completion of same.
- 2.14 Technical record control.
- 2.15 Rectification of defects arising during base maintenance.
- 2.16 Release to service procedure.
- 2.17 Records for the operator.
- 2.18 Reporting of defects to the competent authority/operator/manufacturer.
- 2.19 Return of defective aircraft components to store.
- 2.20 Defective components to outside contractors.
- 2.21 Control of computer maintenance record systems.
- 2.22 Control of man-hour planning versus scheduled maintenance work.
- 2.23 Control of critical tasks.
- 2.24 Reference to specific maintenance procedures such as -
  - Engine running procedures,
  - Aircraft pressure run procedures,
  - Aircraft towing procedures,
  - Aircraft taxiing procedures.
- 2.25 Procedures to detect and rectify maintenance errors.
- 2.26 Shift/task handover procedures
- 2.27 Procedures for notification of maintenance data inaccuracies and ambiguities, to the type certificate holder.
- 2.28 Production planning procedures

## PART

2

### ADDITIONAL LINE MAINTENANCE PROCEDURES

- L2.1 Line maintenance control of aircraft components, tools, equipment etc.
- L2.2 Line maintenance procedures related to servicing/fuelling/de-icing etc.
- L2.3 Line maintenance control of defects and repetitive defects.
- L2.4 Line procedure for completion of technical log.
- L2.5 Line procedure for pooled parts and loan parts.
- L2.6 Line procedure for return of defective parts removed from aircraft.
- L2.7 Line procedure control of critical tasks.

## PART 3 SYSTEM PROCEDURES

QUALITY

- 3.1 Quality audit of organisation procedures.
- 3.2 Quality audit of aircraft.

- 3.3 Quality audit remedial action procedure.
- 3.4 Certifying staff and category B1 and B2 support staff qualification and training procedures.
- 3.5 Certifying staff and category B1 and B2 support staff records.
- 3.6 Quality audit personnel.
- 3.7 Qualifying inspectors.
- 3.8 Qualifying mechanics.
- 3.9 Aircraft or aircraft component maintenance tasks exemption process control.
- 3.10 Concession control for deviation from organisations' procedures.
- 3.11 Qualification procedure for specialised activities such as NDT welding etc.
- 3.12 Control of manufacturers' and other maintenance working teams.
- 3.13 Human factors training procedure
- 3.14 Competence assessment of personnel.

#### PART 4

- 4.1 Contracted operators.
- 4.2 Operator procedures and paperwork.
- 4.3 Operator record completion.

#### PART 5

- 5.1 Sample of documents.
- 5.2 List of Sub-contractors as per 145.A.75 (b).
- 5.3 List of Line maintenance locations as per 145.A.75 (d).
- 5.4 List of contracted organisations as per 145.A.70(a)(16).

#### PART

6

#### OPERATORS MAINTENANCE PROCEDURES

This section is reserved for those maintenance organisations approved under Part-145 who are also operators.

#### PART 7

FAA

#### SUPPLEMENTARY PROCEDURES FOR A FAR PART-145 REPAIR STATION

This section is reserved for those maintenance organisations approved under Part-145 who are also certificated as a FAA FAR Part-145 repair station.

The content of this Part reflects the differences between Part-145 and FAR Parts 43/145 which will change over time as harmonisation and experience with the FAA progresses.

FAA Advisory Circular 145-7A Appendix 2 contains details of the Part 7 contents.

#### PART 8 TRANSPORT CANADA CIVIL AVIATION (TCCA) SUPPLEMENTARY PROCEDURES FOR A TCCA AM573 MAINTENANCE ORGANISATION

This section reserved for those Part-145 approved maintenance organisations who are also approved as a TCCA AM 573 maintenance organisation.

The content of this Part reflects the difference between Part-145 and AM 573 and will change over time as harmonisation and experience with Transport Canada Civil Aviation progresses.

TCCA Aircraft Maintenance & Manufacturing Staff Instruction MSI 10 Appendix A contains details of the Part 8 contents.

### **AMC 145.A.75(b) Privileges of the organisation**

1. Working under the quality system of an organisation appropriately approved under Part-145 (sub contracting) refers to the case of one organisation, not itself appropriately approved to Part-145 that carries out aircraft line maintenance or minor engine maintenance or maintenance of other aircraft components or a specialised service as a subcontractor for an organisation appropriately approved under Part-145. To be appropriately approved to subcontract the organisation should have a procedure for the control of such subcontractors as described below. Any approved maintenance organisation that carries out maintenance for another approved maintenance organisation within its own approval scope is not considered to be subcontracting for the purpose of this paragraph.

NOTE: For those organisations approved under Part-145 that are also certificated by the FAA under FAR Part-145 it should be noted that FAR Part-145 is more restrictive in respect of maintenance activities that can be contracted or sub-contracted to another maintenance organisation. It is therefore recommended that any listing of contracted or sub-contracted maintenance organisations should identify which meet the Part-145 criteria and which meet the FAR Part-145 criteria.

2. Maintenance of engines or engine modules other than a complete workshop maintenance check or overhaul is intended to mean any maintenance that can be carried out without disassembly of the core engine or, in the case of modular engines, without disassembly of any core module.

#### **3. FUNDAMENTALS OF SUB-CONTRACTING UNDER PART-145**

3.1 The fundamental reasons for allowing an organisation approved under Part-145 to sub-contract certain maintenance tasks are:

(a) To permit the acceptance of specialised maintenance services, such as, but not limited to, plating, heat treatment, plasma spray, fabrication of specified parts for minor repairs / modifications, etc., without the need for direct approval by the competent authority in such cases.

(b) To permit the acceptance of aircraft maintenance up to but not including a base maintenance check as specified in 145.A.75(b) by organisations not appropriately approved under Part-145 when it is unrealistic to expect direct approval by the competent authority. The competent authority will determine when it is unrealistic but in general it is considered unrealistic if only one or two organisations intend to use the sub-contract organisation.

(c) To permit the acceptance of component maintenance.

(d) To permit the acceptance of engine maintenance up to but not including a workshop maintenance check or overhaul of an engine or engine module as specified in 145.A.75(b) by organisations not appropriately approved under Part-145 when it is unrealistic to expect direct approval by the competent authority. The determination of unrealistic is as per sub-paragraph (b).

3.2 When maintenance is carried out under the sub-contract control system it means that for the duration of such maintenance, the Part-145 approval has been

temporarily extended to include the sub-contractor. It therefore follows that those parts of the sub-contractor's facilities personnel and procedures involved with the maintenance organisation's products undergoing maintenance should meet Part-145 requirements for the duration of that maintenance and it remains the organisation's responsibility to ensure such requirements are satisfied.

3.3 For the criteria specified in sub-paragraph 3.1 the organisation is not required to have complete facilities for maintenance that it needs to sub-contract but it should have its own expertise to determine that the sub-contractor meets the necessary standards. However an organisation cannot be approved unless it has the in-house facilities, procedures and expertise to carry out the majority of maintenance for which it wishes to be approved in terms of the number of class ratings.

3.4 The organisation may find it necessary to include several specialist sub-contractors to enable it to be approved to completely certify the release to service of a particular product. Examples could be specialist welding, electro-plating, painting etc. To authorise the use of such subcontractors, the competent authority will need to be satisfied that the organisation has the necessary expertise and procedures to control such sub-contractors.

3.5 An organisation working outside the scope of its approval schedule is deemed to be not approved. Such an organisation may in this circumstance operate only under the sub-contract control of another organisation approved under Part-145.

3.6 Authorisation to sub-contract is indicated by the competent authority accepting the maintenance organisation exposition containing a specific procedure on the control of sub-contractors.

#### 4 PRINCIPAL PART-145 PROCEDURES FOR THE CONTROL OF SUB-CONTRACTORS NOT APPROVED UNDER PART-145

4.1 A pre audit procedure should be established whereby the maintenance organisations' subcontract control section, which may also be the 145.A.65(b) quality system independent audit section, should audit a prospective sub-contractor to determine whether those services of the sub-contractor that it wishes to use meets the intent of Part-145.

4.2 The organisation approved under Part-145 needs to assess to what extent it will use the sub-contractor's facilities. As a general rule the organisation should require its own paperwork, approved data and material/spare parts to be used, but it could permit the use of tools, equipment and personnel from the sub-contractor as long as such tools, equipment and personnel meet the requirement of Part-145. In the case of sub-contractors who provide specialised services it may for practical reasons be necessary to use their specialised services personnel, approved data and material subject to acceptance by the organisation approved under Part-145.

4.3 Unless the sub-contracted maintenance work can be fully inspected on receipt by the organisation approved under Part-145 it will be necessary for such organisation to supervise the inspection and release from the sub-contractor. Such activities should be fully described in the organisation procedure. The organisation will need to consider whether to use its own staff or authorise the sub-contractor's staff.

4.4 The certificate of release to service may be issued either at the sub-contractor or at the organisation facility by staff issued a certification authorisation in accordance with -145.A.30 as appropriate, by the organisation approved under Part-145. Such staff would normally come from the organisation approved under Part-145 but may otherwise be a person from the sub-contractor who meets the approved maintenance organisation certifying staff standard which itself is approved by the competent authority via the maintenance organisation exposition. The certificate of release to service and the EASA Form 1 will always be issued under the maintenance organisation approval reference.

4.5 The sub-contract control procedure will need to record audits of the sub-contractor, to have a corrective action follow up plan and to know when sub-contractors are being used. The procedure should include a clear revocation process for sub-contractors who do not meet the Part-145 approved maintenance organisation's requirements.

4.6 The Part-145 quality audit staff will need to audit the sub-contract control section and sample audit sub-contractors unless this task is already carried out by the quality audit staff as stated in sub-paragraph 4.1.

4.7 The contract between the Part-145 approved maintenance organisation and the sub-contractor should contain a provision for the competent authority and EASA standardisation team staff to have right of access to the sub-contractor.

#### **AMC 145.A.80 Limitations on the organisation**

This paragraph is intended to cover the situation where the larger organisation may temporarily not hold all the necessary tools, equipment etc., for an aircraft type or variant specified in the organisation's approval. This paragraph means that the competent authority need not amend the approval to delete the aircraft type or variants on the basis that it is a temporary situation and there is a commitment from the organisation to re-acquire tools, equipment etc. before maintenance on the type may recommence.

#### **AMC 145.A.85 Changes to the organisation**

The primary purpose of this paragraph is to enable the organisation to remain approved if agreed by the competent authority during negotiations about any of the specified changes. Without this paragraph the approval would automatically be suspended in all cases

## **SECTION B PROCEDURE FOR COMPETENT AUTHORITIES**

### **AMC 145.B.10 (1) Competent authority - General**

1. In deciding upon the required organisational structure, the competent authority should review the number of certificates to be issued, the number and size of potential Part-145 approved maintenance organisations within that Member State, as well as the level of civil aviation activity, number and complexity of aircraft and the size of the Member State's aviation industry.
2. The competent authority should retain effective control of important surveillance functions and not delegate them in such a way that Part-145 organisations, in effect, regulate themselves in airworthiness matters.
3. The set-up of the organisational structure should ensure that the various tasks and obligations of the competent authority are not relying on individuals. That means that a continuing and undisturbed fulfilment of these tasks and obligations of the competent authority should also be guaranteed in case of illness, accident or leave of individual employees.

### **AMC 145.B.10 (3) Competent authority – Qualification and training**

1. competent authority surveyors should have:
  - 1.1 practical experience and expertise in the application of aviation safety standards and safe operating practices;
  - 1.2 comprehensive knowledge of:
    - a. relevant parts of implementing rules, certification specifications and guidance material;
    - b. the competent authority's procedures;
    - c. the rights and obligations of a surveyor;
    - d. quality systems;
    - e. continuing airworthiness management.
  - 1.3 training on auditing techniques.
  - 1.4 five years relevant work experience to be allowed to work as an surveyor independently. This may include experience gained during training to obtain the 1.5 qualification.
  - 1.5 a relevant engineering degree or an aircraft maintenance technician qualification with additional education. 'relevant engineering degree' means an engineering degree from aeronautical, mechanical, electrical, electronic, avionic or other studies relevant to the maintenance and continuing airworthiness of aircraft/aircraft components.
  - 1.6 knowledge of maintenance standards.

2. In addition to technical competency, surveyors should have a high degree of integrity, be impartial in carrying out their tasks, be tactful, and have a good understanding of human nature.
3. A programme for continuation training should be developed that ensures that the surveyors remain competent to perform their allocated tasks.

#### **AMC 145.B.10 (4) Competent authority - Procedures**

The documented procedures should contain the following information:

- (a) The Member State's designation of the competent authority(ies).
- (b) The title(s) and name(s) of the manager(s) of the competent authority and their duties and responsibilities.
- (c) Organisation chart(s) showing associated chains of responsibility of the senior persons.
- (d) A procedure defining the qualifications for staff together with a list of staff authorised to sign certificates.
- (e) A general description of the facilities.
- (f) Procedures specifying how the competent authority(ies) ensure(s) compliance with Part-145.

#### **AMC 145.B.20 (1) Initial approval**

1. Formally indicated by the competent authority in writing means that the EASA Form 4 should be used for this activity. With the exception of the accountable manager, an EASA Form 4 should be completed for each person nominated to hold a position as required by 145.A.30(b).
2. Formal indication of acceptance should be by use of the EASA Form 4 or in the case of the Accountable Manager via approval of the Maintenance Organisation Exposition containing the Accountable Managers commitment statement.
3. The competent authority may reject an accountable manager where there is clear evidence that they previously held a senior position in any JAR/Part approved Organisation and abused that position by not complying with the particular JAR/Part requirements.

#### **AMC 145.B.20 (2) Initial approval**

Verification that the organisation complies with the exposition procedures should be established by the competent authority approving the maintenance organisation exposition.

### **AMC 145.B.20 (3) Initial approval**

1. The competent authority should determine by whom, and how the audit shall be conducted. For example, for a large organisation, it will be necessary to determine whether one large team audit or a short series of small team audits or a long series of single man audits are most appropriate for the particular situation.
2. It is recommended that the audit is carried out on a product line type basis in that, for example, in the case of an organisation with Airbus A310 and A320 ratings, the audit be concentrated on one type only for a full compliance check and dependant upon the result, the second type may only require a sample check against those activities seen to be weak on compliance for the first type.
3. The competent authority auditing surveyor should always ensure that he/she is accompanied throughout the audit by a senior technical member of the organisation. Normally this is the quality manager. The reason for being accompanied is to ensure the organisation is fully aware of any findings during the audit.
4. The auditing Surveyor should inform the senior technical member of the organisation at the end of the audit visit on all findings made during the audit.

### **AMC 145.B.20 (5) Initial approval**

1. The audit report form should be the EASA Form 6.
2. A quality review of the EASA Form 6 audit report form should be carried out by a competent independent person nominated by the competent authority. The review should take into account the relevant paragraphs of Part-145, the categorisation of finding levels and the closure action taken. Satisfactory review of the audit form should be indicated by a signature on the audit form.

### **AMC 145.B.20 (6) Initial approval**

1. The reports should include the date each finding was cleared together with reference to the competent authority report or letter that confirmed the clearance.
2. There may be occasions when the competent authority surveyor may find situations in the applicant's organisation on which he/she is unsure about compliance. In this case, the organisation should be informed about possible non-compliance at the time and the fact that the situation will be reviewed within the competent authority before a decision is made.  
If the decision is a finding of being in compliance then a verbal confirmation to the organisation will suffice.
3. Findings should be recorded on the audit report form with a provisional categorisation as a level 1 or 2. Subsequent to the audit visit that identified the particular findings, the competent authority should review the provisional finding levels, adjusting them if necessary and change the categorisation from provisional to confirmed.

4. All findings should be confirmed in writing to the applicant organisation within 2 weeks of the audit visit.

#### **AMC 145.B.25 (1) Issue of approval**

1. For approvals involving more than one Member State the approval should be granted in conjunction with the Member State in whose territory the other maintenance facilities are located. For practical reasons it is recommended that the initial approval should be granted on the basis of a joint audit visit by the approving Member State and the Member State in whose country the facility is located. Audits related to the renewal of the approval should be delegated to the Member State in whose territory the facility is located with the audit form and recommendation submitted to the approving Member State.

2. The approval should be based only upon the organisational capability (including any associated sub-contractors) relative to Part-145 and not limited by reference to EASA/national type certificated products. For example, if the organisation is capable of maintaining within the limitation of Part-145 the Boeing 737-200 series aircraft the approval schedule should state A1 Boeing 737-200 series and not Boeing 737-2H6 which is a particular airline designator for one of many -200 series.

3. The competent authority should indicate approval of the exposition in writing.

#### **AMC 145.B.25 (2) Issue of approval**

The validity of the Part-145 approval should be of unlimited duration.

#### **AMC 145.B.25 (3) Issue of approval**

The numeric sequence should be unique to the particular approved maintenance organisation.

#### **AMC 145.B.30 (1) Continuation of an approval**

Credit may be claimed by the competent authority surveyor(s) for specific item audits completed during the preceding 23 month period subject to four conditions:

- the specific item audit should be the same as that required by Part-145 latest amendment, and
- there should be satisfactory evidence on record that such specific item audits were carried out and that all corrective actions have been taken, and
- the competent authority surveyor(s) should be satisfied that there is no reason to believe standards have deteriorated in respect of those specific item audits being granted a back credit, and
- the specific item audit being granted a back credit should be audited not later than 24 months after the last audit of the item.

### **AMC 145B.30 (2) Continuation of an approval**

1. Where the competent authority has decided that a series of audit visits are necessary to arrive at a complete audit of an organisation, the program should indicate which aspects of the approval will be covered on each visit.
2. It is recommended that part of an audit concentrates on two ongoing aspects of the Part-145 approval, namely the organisations internal self monitoring quality reports produced by the quality monitoring personnel to determine if the organisation is identifying and correcting its problems and secondly the number of concessions granted by the quality manager.
3. At the successful conclusion of the audit including approval of the exposition, an audit report form should be completed by the auditing surveyor including all recorded findings, closure actions and recommendation. An EASA Form 6 should be used for this activity.
4. The accountable manager should be seen at least once every 24 months to ensure he/she fully understands the significance of the approval.
5. In the case of line stations the competent authority can adopt a sampling program based upon number of line stations and complexity.

### **AMC 145.B.35 Changes**

The competent authority should have adequate control over any changes to the management personnel specified in 145.A.30(a) and (b) and such changes in personnel will require an amendment to the exposition.

#### **AMC 145.B.35.(1) Changes**

Changes to the Part-145 approval include the following:

- Name change
- Address change
- Approval scope and rating
- New base facility
- The applicable part/s of the EASA Form 6 should be used for the change.

### **AMC 145.B.40 MOE amendments**

1. It is recommended that a simple exposition status sheet is maintained which contains information on when an amendment was received by the competent authority and when it was approved.
2. The competent authority may define some class of amendments to the exposition which may be incorporated without prior authority approval. In this case a procedure should be stated in the amendment section of the MOE. The exposition chapter dealing with scope of work/approval should not be subject to this procedure.

3. The organisation should submit each exposition amendment to the competent authority whether it is an amendment for approval or a delegated approval amendment. Where the amendment requires approval by the competent authority, the competent authority when satisfied, should indicate its approval in writing. Where the amendment has been submitted under the delegated approval procedure the competent authority should acknowledge receipt in writing.

#### **AMC 145.B.50 (a) Findings**

In practical terms a level 1 finding is where a competent authority finds a significant non-compliance with Part-145.

The following are example level 1 findings:

- Failure to gain access to the organisation during normal operating hours of the organisation in accordance with 145.A.90(2) after two written requests.
- If the calibration control of equipment as specified in 145.A.40(b) had previously broken down on a particular type product line such that most “calibrated” equipment was suspect from that time then that would be a level 1 finding.

Note: A complete product line is defined as all the aircraft, engine or component of a particular type.

For a level 1 finding it may be necessary for the competent authority to ensure that further maintenance and re-certification of all affected products is accomplished, dependent upon the nature of the finding.

In practical terms where a competent authority surveyor finds a non-compliance with Part-145 against one product, it is deemed to be a level 2 finding.

The following are example level 2 findings:

- One time use of a component without any serviceable tag.
- The training documents of the certifying staff are not completed.

#### **AMC 145.B.50 (b) Findings**

1. Where the organisation has not implemented the necessary corrective action within that period it may be appropriate to grant a further period of up to three months, subject to the competent authority notifying the accountable manager. In exceptional circumstances and subject to a realistic action plan being in place, the competent authority may specifically vary the maximum 6 month corrective action period. However, in granting such a change the past performance of the organisation should be considered.

2. It may be necessary for the competent authority to ensure that further maintenance and re-certification of all affected products is accomplished, dependent upon the nature of the finding.

#### **AMC 145.B.55 Record-keeping**

1. The record-keeping system should ensure that all records are accessible whenever needed within a reasonable time. These records should be organized in a consistent way through out the competent authority (chronological, alphabetical order, etc.).
2. All records containing sensitive data regarding applicants or organisations should be stored in a secure manner with controlled access to ensure confidentiality of this kind of data.
3. All computer hardware used to ensure data backup should be stored in a different location from that containing the working data in an environment that ensures they remain in good condition. When hardware or software changes take place special care should be taken to ensure that all necessary data continues to be accessible at least through the full period specified in 145.B.55.

**Appendix I**

**COMPETENT AUTHORITY**

Details of Management Personnel required to be accepted as specified in Part-.....

1.Name:

2.Position:

3.Qualifications relevant to the item (2) position:

4.Work experience relevant to the item (2) position:

Signature: .....

Date: .....

On completion, please send this form under confidential cover to the competent authority

Competent authority use only

Name and signature of authorised competent authority staff member accepting this person:

Signature: ..... Date: .....

Name: ..... Office: .....

EASA Form 4

## Appendix II

### 2) Part-145 APPROVAL RECOMMENDATION REPORT

EASA FORM 6

#### Part 1: General

Name of organisation:

Approval reference:

Requested approval rating/  
Form 3 dated\*:

FAA FAR 145 Cert No. (If app.)

Address of Facility Audited:

Audit period: From            to            :

Date(s) of Audit:

Audit reference(s):

Persons interviewed:

Competent authority surveyor:            Signature(s):

Competent authority office:    Date of Form 6 part 1 completion:

\*delete where applicable

**Part-145 APPROVAL RECOMMENDATION REPORT**

**EASA FORM 6**

**Part 2: Part-145 Compliance Audit Review**

The five columns may be labelled & used as necessary to record the approval class &/or product line reviewed. Against each column used of the following Part-145 sub-paragraphs please either tick (√) the box if satisfied with compliance or cross (X) the box if not satisfied with compliance and specify the reference of the Part 4 finding next to the box or enter N/A where an item is not applicable, or N/R when applicable but not reviewed.

Para	Subject					
145.25	Facilities	<input type="checkbox"/>				
145.30	Personnel	<input type="checkbox"/>				
145.35	Certifying Staff	<input type="checkbox"/>				
145.40	Equipment, Tools, etc.	<input type="checkbox"/>				
145.42	Acceptance of Components	<input type="checkbox"/>				
145.45	Maintenance Data	<input type="checkbox"/>				
145.47	Production Planning	<input type="checkbox"/>				
145.50	Certification of Maintenance	<input type="checkbox"/>				
145.55	Maintenance Records	<input type="checkbox"/>				
145.60	Occurrence Reporting	<input type="checkbox"/>				
145.65	Procedures & Quality	<input type="checkbox"/>				
145.70	See Part 3	<input type="checkbox"/>				
145.75	Privileges of AMO	<input type="checkbox"/>				

145.80 Limitations on AMO

<input type="checkbox"/>				
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145.85 Changes to AMO

<input type="checkbox"/>				
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145.90 Continued Validity

<input type="checkbox"/>				
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Competent surveyor (s):

Signature(s):

Competent authority office:

Date of Form 6 part 2 completion:

**PART 3: Compliance with 145.A.70 Maintenance organisation exposition**

*Please either tick (✓) the box if satisfied with compliance; or if not satisfied with compliance and specify the reference of the Part 4 finding; or enter N/A where an item is not applicable; or N/R when applicable but not reviewed.*

Part 1	Management	
1.1	<input type="checkbox"/>	Corporate commitment by the accountable manager.
1.2	<input type="checkbox"/>	Safety and Quality Policy.
1.3	<input type="checkbox"/>	Management personnel.
1.4	<input type="checkbox"/>	Duties and responsibilities of the management personnel.
1.5	<input type="checkbox"/>	Management Organisation Chart.
1.6	<input type="checkbox"/>	List of Certifying staff (Note: a separate document may be referenced).
1.7	<input type="checkbox"/>	Manpower resources.
1.8	<input type="checkbox"/>	General description of the facilities at each address intended to be approved.
1.9	<input type="checkbox"/>	Organisations intended scope of work.
1.10	<input type="checkbox"/>	Notification procedure to the competent authority regarding changes to the organisation's activities / approval / location / personnel.
1.11	<input type="checkbox"/>	Exposition amendment procedures.
Part 2	Maintenance Procedures	
2.1	<input type="checkbox"/>	Supplier evaluation and subcontract control procedure.
2.2	<input type="checkbox"/>	Acceptance/inspection of aircraft components and material from outside contractors.
2.3	<input type="checkbox"/>	Storage, tagging, and release of aircraft components and material to aircraft maintenance.
2.4	<input type="checkbox"/>	Acceptance of tools and equipment.
2.5	<input type="checkbox"/>	Calibration of tools and equipment.
2.6	<input type="checkbox"/>	Use of tooling and equipment by staff (including alternate tools).
2.7	<input type="checkbox"/>	Cleanliness standards of maintenance facilities.
2.8	<input type="checkbox"/>	Maintenance instructions and relationship to aircraft/aircraft component manufacturers' instructions including updating and availability to staff.
2.9	<input type="checkbox"/>	Repair procedure.
2.10	<input type="checkbox"/>	Aircraft maintenance programme compliance.
2.11	<input type="checkbox"/>	Airworthiness Directives procedure.
2.12	<input type="checkbox"/>	Optional modification procedure.
2.13	<input type="checkbox"/>	Maintenance documentation in use and completion of same.

2.14  Technical record control.

**Part-145 APPROVAL RECOMMENDATION REPORT**

**EASA FORM 6**

**PART 3: Compliance with 145.A.70 Maintenance organisation exposition**

2.15	<input type="checkbox"/>	Rectification of defects arising during base maintenance.
2.16	<input type="checkbox"/>	Release to service procedure.
2.17	<input type="checkbox"/>	Records for the operator.
2.18	<input type="checkbox"/>	Reporting of defects to the competent authority /Operator/Manufacturer.
2.19	<input type="checkbox"/>	Return of defective aircraft components to store.
2.20	<input type="checkbox"/>	Defective components to outside contractors.
2.21	<input type="checkbox"/>	Control of computer maintenance record systems.
2.22	<input type="checkbox"/>	Control of man-hour planning versus scheduled maintenance work.
2.23	<input type="checkbox"/>	Control of critical tasks.
2.24	<input type="checkbox"/>	Reference to specific maintenance procedures.
2.25	<input type="checkbox"/>	Procedures to detect and rectify maintenance errors.
2.26	<input type="checkbox"/>	Shift / task handover procedures.
2.27	<input type="checkbox"/>	Procedures for notification of maintenance data inaccuracies and ambiguities to the type certificate holder.
2.28	<input type="checkbox"/>	Production planning procedures

**Part L2 Additional Line Maintenance Procedures**

L2.1	<input type="checkbox"/>	Line maintenance control of aircraft components, tools, equipment, etc.
L2.2	<input type="checkbox"/>	Line maintenance procedures related to servicing/fuelling/de-icing, etc.
L2.3	<input type="checkbox"/>	Line maintenance control of defects and repetitive defects.
L2.4	<input type="checkbox"/>	Line procedure for completion of technical log.
L2.5	<input type="checkbox"/>	Line procedure for pooled parts and loan parts.
L2.6	<input type="checkbox"/>	Line procedure for return of defective parts removed from aircraft.
L2.7	<input type="checkbox"/>	Line procedure for control of critical tasks

**Part 3 Quality System Procedures**

3.1	<input type="checkbox"/>	Quality audit of organisation procedures.
3.2	<input type="checkbox"/>	Quality audit of aircraft.
3.3	<input type="checkbox"/>	Quality audit remedial action procedure.
3.4	<input type="checkbox"/>	Certifying staff qualification and training procedure.

3.5	<input type="checkbox"/>	Certifying staff records.
3.6	<input type="checkbox"/>	Quality audit personnel.

**Part-145 APPROVAL RECOMMENDATION REPORT**

**EASA FORM 6**

**PART 3: Compliance with 145.A.70 Maintenance organisation exposition**

3.7	<input type="checkbox"/>	Qualifying inspectors.
3.8	<input type="checkbox"/>	Qualifying mechanics.
3.9	<input type="checkbox"/>	Aircraft / aircraft component maintenance tasks exemption process control.
3.10	<input type="checkbox"/>	Concession control for deviation from organisation's procedures.
3.11	<input type="checkbox"/>	Qualification procedure for specialised activities such as NDT, welding etc.
3.12	<input type="checkbox"/>	Control of manufacturers' and other maintenance working teams.
3.13	<input type="checkbox"/>	Human Factors training procedure
3.14	<input type="checkbox"/>	Competence assessment of personnel

Part 4

4.1	<input type="checkbox"/>	Contracted operators.
4.2	<input type="checkbox"/>	Operator procedures/paperwork.
4.3	<input type="checkbox"/>	Operator record completion.

Part 5

Appendices

5.1	<input type="checkbox"/>	Sample Documents
5.2	<input type="checkbox"/>	List of sub-contractors
5.3	<input type="checkbox"/>	List of Line maintenance locations
5.4	<input type="checkbox"/>	List of Part-145 organisations

**Date of Form 6 part 3 completion:**

MOE Reference:

MOE Amendment:

Competent authority audit staff:

Signature(s):

Competent authority office:

Date of Form 6 part 3 completion:



3)

4) **Part-145 APPROVAL RECOMMENDATION REPORT**

**EASA FORM 6**

**Part 4: Findings Part-145 Compliance status**

Each level 1 and 2 finding should be recorded whether it has been rectified or not and should be identified by a simple cross reference to the Part 2 requirement. All non-rectified findings should be copied in writing to the organisation for the necessary corrective action.

Part 2 or 3 ref.	Audit reference(s):  <i>Findings</i>	L e v e l	Corrective action		
			Date Due	Date Closed	Reference

**Part 5: Part-145 Approval or continued approval or change recommendation\***

Name of organisation:

Approval reference:

Audit reference(s):

The following Part-145 scope of approval is recommended for this organisation:

Or, it is recommended that the Part-145 scope of approval specified in EASA Form 3 referenced ..... be continued.

Name of recommending competent authority surveyor:

Signature of recommending competent authority surveyor:

Competent authority office:

Date of recommendation:

Form 6 review (quality check) :

Date:

**Appendix III**

**Competent authority**

**Part-145 Approval**

**Application for initial  
grant**

**Change**

---

**1. Registered name of applicant:**

**2. Trading name (if different):**

**3. Addresses requiring approval:**

**4. Tel. .... Fax ..... E-mail .....**

**5. Scope of Part-145 Approval relevant to this application: see page 2 for possibilities:**

**6. Position and name of the (proposed\*) Accountable Manager:.....**

.....

**7. Signature of the (proposed\*) Accountable Manager:**

.....

**8. Place: .....**

**9. Date: .....**

Note (1) : A note giving the address(es) to which the Form(s) should be sent.

Note (2) : An optional note to give information on any fees payable.

\* Applicable only in the case of a new Part-145 Applicant.

**SCOPE OF PART-145 APPROVAL AVAILABLE**

<b>CLASS</b>	<b>RATING</b>	<b>LIMITATION</b>	<b>BASE</b>	<b>LINE</b>
AIRCRAFT	A1 Aeroplanes/airships above 5700 Kg	Quote aeroplane/airship type		
	A2 Aeroplanes/airships 5700 Kg and below	Quote aeroplane/airship manufacturer or group or type		
	A3 Helicopters	Quote helicopter manufacturer or group or type		
	A 4 Aircraft other than A1, A2 or A3	Quote aircraft type or group		
ENGINES	B1 Turbine	Quote engine type		
	B2 Piston	Quote engine manufacturer or group or type		
	B3 APU	Quote engine manufacturer or type		
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press	Quote aircraft type or aircraft manufacturer or component manufacturer or the particular component and or cross refer to a capability list in the exposition.		
	C2 Auto Flight			
	C3 Comms and Nav			
	C4 Doors – Hatches			
	C5 Electrical Power			
	C6 Equipment			
	C7 Engine – APU			
	C8 Flight Controls			
	C9 Fuel – Airframe			
	C10 Helicopter – Rotors			
	C11 Helicopter – Trans			
	C12 Hydraulic			
	C13 Instruments			
	C14 Landing Gear			
	C15 Oxygen			
	C16 Propellers			
	C17 Pneumatic			
	C18 Protection ice/rain/fire			
	C19 Windows			
	C20 Structures			
SPECIALISED SERVICES	D1 Non destructive insp.	Quote particular NDT method		
<p><b>With reference to the above scope of approval and item 5 on page 1, please complete in the following example style, but relevant to your organization.</b></p>				

<b>A1</b>	<b>Base &amp; Line Boeing 737-200</b>	<b>B2</b>	<b>Lycoming Piston</b>
<b>A2</b>	<b>Base Piper PA34</b>	<b>B3</b>	<b>Garrett GTCP85</b>
<b>A2</b>	<b>Base &amp; Line Cessna Piston Twins</b>	<b>C2</b>	<b>SFENA</b>
<b>A3</b>	<b>Bell 206/212</b>	<b>C4</b>	<b>Boeing 747</b>
<b>B1</b>	<b>CFM 56</b>	<b>D1</b>	<b>Eddy Current</b>

There maybe any number of types/manufacturers, etc. listed against each rating.

# **Annex III**

## **Guidance Material to Part-145**

### **SECTION A TECHNICAL REQUIREMENTS**

#### **GM 145.A.10 Scope**

This Guidance Material (GM) provides guidance on how the smallest organisations satisfy the intent of Part-145:

1. By inference, the smallest maintenance organisation would only be involved with a limited number of light aircraft, or aircraft components, used for commercial air transport. It is therefore a matter of scale, light aircraft do not demand the same level of resources, facilities or complex maintenance procedures as the large organisation.
2. It is recognised that an Part-145 approval may be required by two quite different types of small organisations, the first being the light aircraft maintenance hangar, the second being the component maintenance workshop, e.g. small piston engines, radio equipment etc.
3. Where only one person is employed (in fact having the certifying function and others), this organisations approved under Part-145 may use the alternatives provided in this Guidance Material limited to the following:

Class A2 Base and Line maintenance of aeroplanes of 5700 kg and below (piston engines only).

Class A3 Base and Line maintenance of single engined helicopters of less than 3175 kg.

Class A4 Aircraft other than A1, A2 and A3

Class B2 Piston engines with maximum output of less than 450 HP.

Class C Components.

Class D1 Non destructive Inspections.

Please note that the following sections only include the relevant paragraphs of Part-145 for which the alternative applies. When paragraphs of Part-145 not listed means full compliance needs to be demonstrated.

4. Organisations maintaining the class of aeroplanes, helicopters, engines or components within the limitations of AMC 145.A.20 paragraph 5.

5. 145.A.30(b): The minimum requirement is for one full time person who meets the Part-66 requirements for certifying staff and holds the position of "accountable manager, maintenance engineer and is also certifying staff". No other person may issue a certificate of release to service and therefore if absent, no maintenance may be released during such absence.

5.1. The quality monitoring function of 145.A.65(c) may be contracted to an appropriate organisation approved under Part-145 or to a person with appropriate technical knowledge and extensive experience of quality audits employed on a part-time basis, with the agreement of the competent authority.

Note: Full time for the purpose of Part-145 means not less than 35 hrs per week except during vacation periods.

5.2. 145.A.35. In the case of an approval based on one person using a subcontracted quality monitoring arrangement, the requirement for a record of certifying staff is satisfied by the submission to and acceptance by the competent

authority of the EASA Form 4. With only one person the requirement for a separate record of authorisation is unnecessary because the EASA Form 3 approval schedule defines the authorisation. An appropriate statement, to reflect this situation, should be included in the exposition.

5.3. 145.A.65(c). It is the responsibility of the contracted quality monitoring organisation or person to make a minimum of 2 visits per 12 months and it is the responsibility of this organisation or person to carry out such monitoring on the basis of 1 visit pre-announced and 1 visit unannounced to the organisation.

It is the responsibility of the organisation to comply with the findings of the contracted quality monitoring organisation or the person.

CAUTION: it should be understood that if the contracted organisation or the above mentioned person loses or gives up its approval, then the organisation's approval will be suspended.

6. Recommended operating procedure for an Part-145 approved maintenance organisation based upon up to 10 persons involved in maintenance.

6.1. 145.A.30(b): The normal minimum requirement is for the employment on a full-time basis of two persons who meet the competent authorities requirements for certifying staff, whereby one holds the position of "maintenance engineer" and the other holds the position of "quality audit engineer".

Either person can assume the responsibilities of the accountable manager providing that they can comply in full with the applicable elements of 145.A.30(a), but the "maintenance engineer" should be the certifying person to retain the independence of the "quality audit engineer" to carry out audits. Nothing prevents either engineer from undertaking maintenance tasks providing that the "maintenance engineer" issues the certificate of release to service.

The "quality audit engineer" should have similar qualifications and status to the "maintenance engineer" for reasons of credibility, unless he/she has a proven track-record in aircraft quality assurance, in which case some reduction in the extent of maintenance qualifications may be permitted..

In cases where the competent authority agrees that it is not practical for the organisation to nominate a postholder for the quality monitoring function, this function may be contracted in accordance to paragraph 5.1.

### **GM 145.A.30 (e) Personnel requirements (Training syllabus for initial human factors training)**

The training syllabus below identifies the topics and subtopics to be addressed during the human factors training.

The maintenance organisation may combine, divide, change the order of any subject of the syllabus to suit its own needs, so long as all subjects are covered to a level of detail appropriate to the organisation and its personnel.

Some of the topics may be covered in separate training (health and safety, management, supervisory skills, etc.) in which case duplication of training is not necessary.

Where possible, practical illustrations and examples should be used, especially accident and incident reports.

Topics should be related to existing legislation, where relevant. Topics should be related to existing guidance/ advisory material, where relevant (eg. ICAO HF Digests and Training Manual).

Topics should be related to maintenance engineering where possible; too much unrelated theory should be avoided.

- 1 General / Introduction to human factors
  - 1.1 Need to address human factors
  - 1.2 Statistics
  - 1.3 Incidents
- 2 Safety Culture / Organisational factors
- 3 Human Error
  - 3.1 Error models and theories
  - 3.2 Types of errors in maintenance tasks
  - 3.3 Violations
  - 3.4 Implications of errors
  - 3.5 Avoiding and managing errors
  - 3.6 Human reliability
- 4 Human performance & limitations
  - 4.1 Vision
  - 4.2 Hearing
  - 4.3 Information-processing
  - 4.4 Attention and perception
  - 4.5 Situational awareness
  - 4.6 Memory
  - 4.7 Claustrophobia and physical access
  - 4.8 Motivation
  - 4.9 Fitness/Health
  - 4.10 Stress
  - 4.11 Workload management
  - 4.12 Fatigue
  - 4.13 Alcohol, medication, drugs
  - 4.14 Physical work
  - 4.15 Repetitive tasks / complacency
- 5 Environment
  - 5.1 Peer pressure
  - 5.2 Stressors
  - 5.3 Time pressure and deadlines
  - 5.4 Workload
  - 5.5 Shift Work
  - 5.6 Noise and fumes
  - 5.7 Illumination
  - 5.8 Climate and temperature

- 5.9 Motion and vibration
- 5.10 Complex systems
- 5.11 Hazards in the workplace
- 5.12 Lack of manpower
- 5.13 Distractions and interruptions
- 6 Procedures, information, tools and practices
  - 6.1 Visual Inspection
  - 6.2 Work logging and recording
  - 6.3 Procedure – practice / mismatch / norms
  - 6.5 Technical documentation – access and quality
- 7 Communication
  - 7.1 Shift / Task handover
  - 7.2 Dissemination of information
  - 7.3 Cultural differences
- 8 Teamwork
  - 8.1 Responsibility
  - 8.2 Management, supervision and leadership
  - 8.3 Decision making
- 9 Professionalism and integrity
  - 9.1 Keeping up to date; currency
  - 9.2 Error provoking behaviour
  - 9.3 Assertiveness
- 10 Organisation's HF program
  - 10.1 Reporting errors
  - 10.2 Disciplinary policy
  - 10.3 Error investigation
  - 10.4 Action to address problems
  - 10.5 Feedback

**GM 145.A.30(j)(4) Personnel requirements (Flight crew)**

1. For the holder of an ATPL or CPL issued in accordance with JAR FCL 1 or JAR FCL 2 the theoretical knowledge and examination subjects are detailed in appendix 1 to JAR FCL 1.470 and appendix 1 to JAR FCL 2.470 and include the following subjects:

- Air law
- Airframe/systems/powerplant
- Instruments/electronics
- Mass and balance
- Performance

- Flight planning and monitoring
- Human performance and limitations
- Meteorology
- General navigation
- Radio Navigation
- Operational Procedures
- Principles of Flight
- VFR Communications
- IFR Communications

2. For the holder of an JAR FCL F/EL, JAR FCL 4 subpart D gives details on the theoretical and practical knowledge and skill requirements from which appendix 1 to JAR FCL 4.160 Technical Training Course (TTC) details the following subjects:

(See JAR-FCL 4.160(b)(1))

Familiarisation with basic maintenance procedures, to give additional technical background knowledge, especially with respect to the implication of systems malfunctions, and to train the applicant in maintenance related to the Minimum equipment list (MEL).

The theoretical knowledge instruction consists of 100 hours and includes the following elements:

1. Airframe and systems
2. Electrics
3. Powerplant and emergency equipment
4. Flight instruments and automatic flight control systems

Practical skills training provided by an organisation approved under Part-145 is given which includes 35 days practical experience in the following subjects:

- Fuselage and flight controls
- Engines
- Instruments
- Landing gear and brakes
- Cabin/cockpit/emergency equipment
- Ground handling and servicing
- Certificate of completion

Following successful completion of the technical training, the training organisation carrying out the theoretical knowledge instruction and/or the practical skill training, should provide the applicant with a certificate of satisfactory completion of the course, or part thereof.

#### **GM 145.A.55(a) Maintenance records**

1. Properly executed and retained records provide owners, operators and maintenance personnel with information essential in controlling unscheduled and scheduled maintenance, and trouble shooting to eliminate the need for re-inspection and rework to establish airworthiness.

The prime objective is to have secure and easily retrievable records with comprehensive and legible contents. The aircraft record should contain basic details of all serialised aircraft components and all other significant aircraft components installed, to ensure traceability to such installed aircraft component documentation and associated maintenance data as specified in 145.A.45.

2. Some gas turbine engines are assembled from modules and a true total time in service for a total engine is not kept. When owners and operators wish to take advantage of the modular design, then total time in service and maintenance records for each module is to be maintained. The maintenance records as specified are to be kept with the module and should show compliance with any mandatory requirements pertaining to that module.

3. Reconstruction of lost or destroyed records can be done by reference to other records which reflect the time in service, research of records maintained by repair facilities and reference to records maintained by individual mechanics etc. When these things have been done and the record is still incomplete, the owner/operator may make a statement in the new record describing the loss and establishing the time in service based on the research and the best estimate of time in service. The reconstructed records should be submitted to the competent authority for acceptance.

NOTE: Additional maintenance may be required.

4. The maintenance record can be either a paper or computer system or any combination of both.

5. Paper systems should use robust material which can withstand normal handling and filing. The record should remain legible throughout the required retention period.

6. Computer systems may be used to control maintenance and/or record details of maintenance work carried out. Computer systems used for maintenance should have at least one backup system which should be updated at least within 24 hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorised personnel to alter the database.

#### **GM 145.A.60(a) Occurrence reporting**

The organisation responsible for the design is normally the TC holder of the aircraft, engine or propeller and/or if known the STC holder.

#### **GM 145.A.60(c) Occurrence reporting**

Each report should contain at least the following information:

- i) Organisation name and approval reference.
- ii) Information necessary to identify the subject aircraft and / or component.
- iii) Date and time relative to any life or overhaul limitation in terms of flying hours/cycles/landings etc. as appropriate.
- iv) Details of the condition as required by 145.A.60(b).
- v) Any other relevant information found during the evaluation or rectification of the condition.

#### **GM 145.A.65(c)(1) Safety and quality policy, maintenance procedures and quality system**

Appendix 5 (continued)

1. The purpose of this GM is to give guidance on just one acceptable working audit plan to meet part of the needs of 145.A.65 (c)1. There are any number of other acceptable working audit plans.

2. The proposed plan lists the subject matter that should be covered by the audit and attempts to indicate applicability in the various types of workshops and aircraft facilities. The list should therefore be tailored for the particular situation and more than one list may be necessary. Each list should be shown against a timetable to indicate when the particular item is scheduled for audit and when the audit was completed.

PARA	Comment	HANGAR	ENGINE	MECH	AVIONIC
			Workshop	Workshop	Workshop
145.A.25		Yes	Yes	Yes	yes
145.A.30		Yes	Yes	Yes	yes
145.A.35		yes	Yes	Yes	yes
145.A.40		yes	Yes	Yes	yes
145.A.42		yes	Yes	Yes	yes
145.A.45		yes	Yes	Yes	yes
145.A.47		yes	Yes	Yes	yes
145.A.50		yes	Yes	Yes	yes
145.A.55		yes	Yes	Yes	yes
145.A.60		yes	Yes	Yes	yes
145.A.65		yes	Yes	Yes	yes
2.1	MOE	yes	Yes	Yes	yes
2.2	MOE	yes	Yes	Yes	yes
2.3	MOE	yes	Yes	Yes	yes
2.6	MOE	yes	Yes	Yes	yes
2.7	MOE	yes	Yes	Yes	yes
2.9	MOE	yes	Yes	Yes	yes
2.10	MOE	yes	No	No	no
2.11	MOE	yes	Yes	Yes	yes
2.12	MOE	yes	Yes	Yes	yes
2.13	MOE	yes	Yes	Yes	yes
2.15	MOE	yes	No	No	no
2.19	MOE	yes	Yes	Yes	yes
2.20	MOE	yes	Yes	Yes	yes
2.21	MOE	if appl	If appl	if appl	if appl
2.22	MOE	yes	Yes	No	no
2.23	MOE	yes	No	No	no
2.24	MOE	yes	Yes	Yes	yes
2.25	MOE	yes	Yes	Yes	yes
2.26	MOE	yes	Yes	Yes	yes
2.27	MOE	yes	Yes	Yes	yes
2.28	MOE	yes	Yes	Yes	yes
L2.1	MOE	if appl	No	No	no

L2.2	MOE	if appl	No	No	no
L2.3	MOE	if appl	No	No	no
L2.4	MOE	if appl	No	No	no
L2.5	MOE	if appl	No	No	no
L2.6	MOE	if appl	No	No	no
L2.7	MOE	if appl	No	No	no
3.9	MOE	if appl	If appl	if appl	if appl
3.10	MOE	if appl	If appl	if appl	if appl
3.11	MOE	if appl	If appl	if appl	no
3.12	MOE	yes	Yes	No	no
3.13	MOE	yes	Yes	Yes	yes
3.14	MOE	yes	Yes	Yes	yes
145.A.65		yes	Yes	Yes	yes
145.A.70		yes	Yes	Yes	yes
145.A.75		yes	Yes	Yes	yes
145.A.80		yes	Yes	Yes	yes
145.A.85		yes	Yes	Yes	yes

Note 1:“if appl” means if applicable or relevant.

Note 2: In the line station case all line stations should be audited at the frequency agreed by the competent authority within the limits of AMC 145.A.65(b).”

#### **GM 145.A.70(a) Maintenance organisation exposition**

1. The purpose of the maintenance organisation exposition (MOE) is to set forth the procedures, means and methods of the organisation.
2. Compliance with its contents will assure compliance with the requirements of Part-145, which is a pre-requisite to obtaining and retaining an approved maintenance organisation certificate.
3. 145.A.70 (a)(1) to (a)(11) constitutes the 'management' part of the MOE and therefore could be produced as one document and made available to the person(s) specified under 145.A.30 (b) who should be reasonably familiar with its contents. 145.A.70(a)(6) list of certifying staff may be produced as a separate document.
4. 145.A.70 (a)(12) constitutes the working procedures of the organisation and therefore as stated in the requirement may be produced as any number of separate procedures manuals. It should be remembered that these documents should be cross-referenced from the management MOE.
5. Personnel are expected to be familiar with those parts of the manuals that are relevant to the maintenance work they carry out.
6. The organisation should specify in the MOE who should amend the manual particularly in the case where there are several parts.
7. The quality manager should be responsible for monitoring the amendment of the MOE, unless otherwise agreed by the competent authority, including associated procedures manuals and submission of the proposed amendments to the competent authority. However the competent authority may agree via a procedure stated in the amendment section of the MOE that some defined class of amendments may be incorporated without prior approval by the competent authority.
8. The MOE should cover four main parts:
  - a. The management MOE covering the parts specified earlier.

- b. The maintenance procedures covering all aspects of how aircraft components may be accepted from outside sources and how aircraft will be maintained to the required standard.
- c. The quality system procedures including the methods of qualifying mechanics, inspection, certifying staff and quality audit personnel.
- d. Contracted operator procedures and paperwork.

9 The accountable manager's exposition statement as specified under 145.A.70 (a)(1) should embrace the intent of the following paragraph and in fact this statement may be used without amendment. Any modification to the statement should not alter the intent.

'This exposition and any associated referenced manuals defines the organisation and procedures upon which the (competent authority\*) Part-145 approval is based as required by -145.A.70. These procedures are approved by the undersigned and should be complied with, as applicable, when work/orders are being progressed under the terms of the Part-145 approval.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published by the (competent authority\*) from time to time where these new or amended regulations are in conflict with these procedures.

It is understood that the (competent authority\*) will approve this organisation whilst the (competent authority\*) is satisfied that the procedures are being followed and work standards maintained. It is further understood that the (competent authority\*) reserves the right to suspend, limit or revoke the approval of the organisation if the (competent authority\*) has evidence that procedures are not followed or standards not upheld.

Signed.....

Dated.....

Accountable Manager and.....(quote position).....

For and on behalf of.....(quote organisation's name).....'

NOTE:Where it states (competent authority\*) please insert the actual name of the competent authority, for example, CAA-NL, LBA, DGAC, CAA, etc., Whenever the accountable manager changes it is important to ensure that the new accountable manager signs the paragraph 9 statement at the earliest opportunity..

Failure to carry out this action could invalidate the Part-145 approval.

10. When an organisation is approved against any other Part containing a requirement for an exposition, a supplement covering the differences will suffice to meet the requirements except that the supplement should have an index showing where those parts missing from the supplement are covered.

## **Annex IV**

### **Acceptable Means of Compliance to Part-66**

#### **SECTION A**

##### **AMC 66.A.10 Application**

1. Maintenance experience should be written up in a manner that the reader has a reasonable understanding of where, when and what maintenance constitutes the experience. A task by task account is not necessary but at the same time a bland statement "X years maintenance experience completed" is not acceptable. A log book of maintenance experience is desirable and some competent authorities may require such log book to be kept. It is acceptable to cross refer in the EASA Form 19 to other documents containing information on maintenance.

2. Applicants claiming the maximum reduction in 66.A.30(a) total experience based upon having successfully completed 147.A.200 approved basic training, should include the Part-147 certificate of recognition for approved basic training.

3. Applicants claiming reduction in 66.A.30(a) total experience based upon having successfully completed technical training in an organisation or institute recognised by the competent authority as a competent organisation or institute, should include the relevant certificate of successful completion of training.

##### **AMC 66.A.20(a) Privileges**

The following definition of line and base maintenance should apply:

*Line maintenance* is any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight. It may include:

- trouble shooting;
- defect rectification;
- component replacement with use of external test equipment if required. Component replacement may include components such as engines and propellers;
- scheduled maintenance and/or checks including visual inspections that will detect obvious unsatisfactory conditions/discrepancies but do not require extensive in depth inspection. It may also include internal structure, systems and powerplant items which are visible through quick opening access panels/doors;
- minor repairs and modifications which do not require extensive disassembly and can be accomplished by simple means;
- for temporary or occasional cases (airworthiness directives, hereinafter **AD**; **service bulletins, hereinafter SB**) the quality manager may accept base maintenance tasks to be performed by a line maintenance organisation provided all requirements are fulfilled. The **Member State** will prescribe the conditions under which these tasks may be performed.

Maintenance tasks falling outside these criteria are considered to be *base maintenance*.

Note: Aircraft maintained in accordance with "progressive" type programmes need to be individually assessed in relation to this paragraph. In principle, the decision to allow some "progressive" checks to be carried out is determined by the assessment

that all tasks within the particular check can be carried out safely to the required standards at the designated line maintenance station.

#### **AMC 66.A.20(b)2 Privileges.**

The required 6-month experience should be on aircraft structure, powerplant and systems as appropriate to the category or subcategory and relevant to the type or group rating held.

Experience should be supported by documentary evidence.

#### **AMC 66.A.25 Basic knowledge requirements**

1 For an applicant being a person qualified by holding an academic degree in a aeronautical, mechanical or electronic discipline from a recognised university or other higher educational institute the need for any examination will depend upon the course taken in relation to Appendix I to Part-66

2 Knowledge gained and examinations passed during previous experiences, for example, in military aviation and civilian apprenticeships will be credited where the competent authority is satisfied that such knowledge and examinations are equivalent to that required by Appendix I to Part-66.

#### **AMC 66.A.30(a) Experience requirements**

1. For a category C applicant holding an academic degree the representative selection of tasks should include the observation of hangar maintenance, maintenance planning, quality assurance, record-keeping, approved spare parts control and engineering development.

2. While an applicant to a Part-66 category C licence may be qualified by having 3 years experience as category B1 or B2 certifying staff only in line maintenance, it is however recommended that any applicant to a category C holding a B1 or B2 licence demonstrate at least 12 months experience as a B1 or B2 base maintenance support staff.

3. A skilled worker is a person who has successfully completed a course of training, acceptable to the competent authority, involving the manufacture, repair, overhaul or inspection of mechanical, electrical or electronic equipment. The training would include the use of tools and measuring devices.

#### **AMC 66.A.30(d) Experience requirements**

To be considered as recent experience, at least 50% of the required 12 month experience should be gained within the 12 month period prior to the date of application for the Part-66 aircraft maintenance licence. The remainder of the experience should have been gained within the 7 year period prior to application.

### **AMC 66.A.30(e) Experience requirements**

1. For category A the additional experience of civil aircraft maintenance should be a minimum of 6 months. For category B1 or B2 the additional experience of civil aircraft maintenance should be a minimum of 12 months.
2. Aircraft maintenance experience gained outside a civil aircraft maintenance environment can include aircraft maintenance experience gained in armed forces, coast guards, police etc. or in aircraft manufacturing.

### **AMC 66.A.45(a) Type/task training and ratings**

- 1 For category A certifying staff specific training on each aircraft type will be required reflecting the authorised task(s) as indicated under -66.A.20 (a) 1.
- 2 Appropriately approved Part-145 or Part-147 organisation means compliance with the applicable paragraphs of AMC 66.A.45.

### **AMC 66.A.45(d) Type/task training and ratings**

1. The training should give adequate detailed theoretical knowledge of the aircraft, its main parts, systems, equipment, interior and applicable components, including training in the systems in use for technical manuals and maintenance procedures. The course should also take into account the following:
  - (a) in service experience on the aircraft type;
  - (b) feedback from in-service difficulties/occurrence reporting etc;
  - (c) significant airworthiness directives and/or service bulletins;
  - (d) known human factors issues associated with the particular aircraft type.
2. Theoretical training should be supported by training aids such as aircraft system components. Ground simulator time, engine ground running and computer based training (CBT) etc may also be utilised.
3. Knowledge is also recommended of relevant inspections and limitations as applicable to the effects of environmental factors such as cold and hot climates, wind, moisture, etc.
4. The practical training must comprise a period of 4 months for applicants with no recent recorded previous practical experience of aircraft of comparable construction and systems, including the engines, but this can be reduced to a minimum of two weeks for applicant with such previous experience.
5. A programme of structured on-job-training (OJT) may be prepared to satisfy the practical training requirement.

Where the practical training element is conducted by or under the responsibility of the training organisation under an Part-147 approval or a direct type course approval, it should be considered as part of the approved course and as such, **its acceptance by the competent authority** should be supported by a detailed syllabus showing its content and duration. The individual practical training records should be designed in a manner that they demonstrate compliance with the detailed practical training syllabus. Such

records may take the form of an individual training logbook. The logbook should be designed such that tasks may be countersigned by the Part-147 school or other course provider.

Where the practical training element is conducted by a maintenance organisation approved under Part-145, under its own responsibility, its acceptance by the competent authority should be supported by a detailed syllabus showing its content and duration. The individual practical training records should be designed in a manner that they demonstrate compliance with the detailed practical training syllabus. Alternatively, the practical training element may consist of a structured OJT programme. In this case the maintenance organisation approved under Part-145 should provide applicants for a type rating a logbook indicating a list of tasks to be performed under supervision. The logbook should be designed such that tasks may be countersigned by the supervisor. The list of tasks should be accepted either directly for each individual – depending on the individuals previous experience, or indirectly through the acceptance of a procedure giving delegation to the maintenance organisation.

In all cases the practical element should include an acceptable cross section of maintenance tasks, which, in the case of a structured OJT, can be tailored to accommodate the operating profile of the Part-145 organisation whilst also supplementing the theoretical course elements. The means by which the practical element is supervised and the control of the standard should be acceptable to the Member State. The duration of the practical type training element should take into account significant differences between types and be acceptable to the Member State. These differences will require considerably more practical training for certifying staff who are not familiar with the new techniques and technologies. Some examples of differences may include, but are not limited to, the following elements: Fly by wire, glass cockpit avionics, significant structural differences, etc.

5. Before grant of the aircraft type, the applicant should be able to:

(a) demonstrate by knowledge examination a detailed understanding of applicable systems, their operation and maintenance;

(b) ensure safe performance of maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks, as appropriate, for the type of aircraft, for example trouble shooting, repairs, adjustments, replacements, rigging and functional checks such as engine run, etc, if required;

(c) correctly use all technical literature and documentation for the aircraft;

(d) correctly use specialist/special tooling and test equipment, perform removal and

replacement of components and modules unique to type, including any on-wing

maintenance activity.

6. The practical assessment should also ensure safe performance of maintenance,

inspections and routine work according to the maintenance manual and other

relevant instructions and tasks as appropriate for the type of aircraft, for example

trouble shooting, repairs, adjustments (rigging), replacements and functional / operational checks etc including engine operation (ground running) if required.

#### **AMC 66.A.45(e) Type/task training and ratings**

Category C certifying staff may not carry out the duties of category B1 or B2, or equivalent within base maintenance, unless they hold the relevant B1 or B2 category and have passed type training corresponding to the relevant B1 or B2 category.

#### **AMC 66.A.45(g) Type/task training and ratings**

1. "Aircraft types representative of a group" means that:
  - for the B1 category the aircraft type should include typical systems and engines relevant to the group (e.g. retractable undercarriage, pressurisation, variable pitch propeller, etc. for the single piston engine metal subgroup) and,
  - for the B2 category the aircraft type should include complex avionics systems such as radio coupled autopilot, EFIS (Electronic flight instrument system), flight guidance systems, etc .
2. A "multiple engines" group automatically includes the corresponding "single engine" group.

#### **AMC 66.A.45(h) Type/task training and ratings**

1. Type experience should cover an acceptable cross section of tasks from Appendix II. For the first aircraft type of each manufacturer group , at least 50% of the Appendix II tasks, as applicable to the concerned aircraft type and licence category, should be performed. For the second aircraft type of each manufacturer group, this should be reduced to 30%. For subsequent aircraft types of each manufacturer group, this should be reduced to 20%.
2. Type experience should be demonstrated by the submission of records or logbook showing the Appendix II tasks performed by the applicant as specified by the competent authority.

#### **AMC 66.A.70 Conversion provisions**

Technical limitations will be deleted, as appropriate, when the person satisfactorily sits the relevant conversion examination and gains relevant experience.

## **SECTION B PROCEDURE FOR COMPETENT AUTHORITIES**

### **AMC 66.B.100 Procedure for the issue of an aircraft maintenance licence by the competent authority**

1. Applicants claiming credit against the 66.A.30(a) total experience requirement by virtue of 66.A.30(d) non-civil aircraft maintenance experience, may only be granted such credit where the Member State has recognised such non-civil aircraft maintenance experience. The competent authority in recognising non-civil aircraft maintenance experience will have specified who within the non-civil environment may make a statement that the applicant has met relevant maintenance experience. The applicant should include a detailed statement of such maintenance experience signed by the non-civil maintenance authority in accordance with the conditions specified in the competent authority's letter of recognition.
2. The competent authority should check that the experience record satisfies above paragraphs in terms of content and the countersigning signature.

### **AMC 66.B.105 Procedure for the issue of an aircraft maintenance licence via the Part-145 approved maintenance organisation**

1. The maintenance organisation approved under Part 145 procedure must be included in the organisation's exposition and audited by the Member State at least once in each 12 month period.
2. Applicants claiming the maximum reduction in -66.A.30(a) total experience based upon having successfully completed a 147.A.200 approved basic training course, should include the Part-147 certificate of recognition for approved basic training.
3. Applicants claiming reduction in -66.A.30(a) total experience based upon having successfully completed technical training in an organisation or institute recognised by the competent authority as a competent organisation or institute, should include the relevant certificate of successful completion of training.
4. Applicants claiming credit against the -66.A.30(a) total experience requirement by virtue of -66.A.30(d) non-civil aircraft maintenance experience, may only claim such credit where the competent authority has recognised such non-civil aircraft maintenance experience. The competent authority in recognising non-civil aircraft maintenance experience will have specified who within the non-civil environment may make a statement that the applicant has met relevant maintenance experience. The applicant should include a detailed statement of such maintenance experience signed by the non-civil maintenance authority in accordance with the conditions specified in the competent authority letter of recognition.
5. The Part 145 organisation should check that the experience record has been countersigned by the maintenance organisation approved under Part 145 except for the non-civil aircraft maintenance experience specified above.

6. The maintenance organisation approved under Part 145 may keep the experience record of applicants in a different form from that of application EASA Form 19 but such different form or manner must be acceptable to the competent authority.

**AMC 66.B.110 Procedure for the amendment of an aircraft maintenance licence to include an additional basic category or subcategory**

In the case of computer generated licences, the licence should be reissued.

**AMC 66.B.115 Procedure for the amendment of an aircraft maintenance licence to include an aircraft type or group**

Where aircraft type training is covered by more than one course, for example airframe and engine courses, the competent authority should ensure prior to the type rating endorsement that the content of the courses fully covers the scope of the license category. In this case, it is important that the interface is addressed.

In the case of differences training for a similar type, the competent authority should be satisfied that the candidates previous qualification supplemented by the differences training is acceptable as regards the type endorsement.

Determination of compliance with the practical elements can be demonstrated by provision of the detailed practical training records or logbook or, where available by an Part-147 training certificate covering the practical training element.

**AMC 66.B.100 to 115**

Aircraft type endorsement should use the standard codes contained in Appendix I.

**AMC 66.B.305 Conversion report for national qualifications**

The scope of the national qualifications and the Part-66 licence should be compared on the basis of a detailed analysis of the national and Part-66 basic qualification standards. The report should identify where a difference between the two standards exists. The report should show where such a difference would lead to a limitation on the Part-66 licence.

**AMC 66.B.310 Conversion report for approved maintenance organisations authorisations**

The scope of the approved maintenance organisation authorisation and the Part-66 licence should be compared on the basis of a detailed analysis of the Organisations procedures defining the scope of the authorisation, the scope of work of the organisation and the aircraft type qualifications held by the individuals or groups or individuals. The report should identify where a difference between the two scopes exists. The report should show where such a difference would lead to a limitation on the Part-66 licence.

## **AMC Appendix V to Part-66**

The national designators for Part-66 licences are as indicated below:

## APPENDIX I

### AIRCRAFT TYPE RATINGS FOR Part-66 AIRCRAFT MAINTENANCE LICENCE

#### Appendix I - Aircraft type ratings for Part-66 aircraft maintenance licence

The following aircraft type ratings will be used to ensure a common standard throughout the Member States.

The inclusion of an aircraft type in the licence does **not** indicate that the aircraft type has been granted a type certificate in the Member State that issued the licence, this list being only intended for the purpose of maintenance.

In order to keep this list current and type ratings consistent, where a Member State needs to issue a type rating that is not included in this list, such information should be first passed on to the Agency.

1. Aeroplanes with a maximum take-off mass of 5700 kg and above, and/or requiring type training and individual type rating [to be completed].

Aerospatiale/BAe Concorde (RR Olympus)	Airbus A318 (PW6000)
Aerospatiale N262 (Bastan)	Airbus A330 (GE CF6)
Aerospatiale SN601 (PW JT15D)	Airbus A330 (PW 4000)
Aerospaceline Guppy (Allison 501)	Airbus A330 (RR RB211Trent)
Airbus A300 B2/B4 (GE CF6)	Airbus A340 (CFM56)
Airbus A300 B2/B4(PW JT9D)	Airbus A340 (RR RB211)
Airbus A300 B2/B4(PW 4000)	Airbus Beluga (GE CF6)
Airbus A300-600 (PW JT9D)	Antonov AN12 (IP A1-20)
Airbus A300-600 (GE CF6)	Antonov AN22 (Samara/Kusnetsov)
Airbus A300-600 (PW 4000)	Antonov AN24 (IP A1-24)
Airbus A310 (GE CF6)	Antonov AN26 (IP A1-24)
Airbus A310 (PW JT9D)	Antonov AN28 ( Rzeszow)
Airbus A310 (PW 4000)	Antonov AN32 (IPA1-20)
Airbus A318/A319/A320/A321 (CFM56)	Antonov AN38 (Allied TPE 331)
Airbus A319/A320/A321 (V2500)	Antonov AN72 (IPD-36)
	Antonov AN124 (IP/L-D18)

ATR 42/72 (PW 120)	Boeing B777- 200/300 (PW 4000)
B Ae 146 / RJ (Avco-Lyc ALF 500 Series)	Boeing B777- 200/300 (RR RB211Trent)
B Ae ATP (PW 120)	Bombardier DHC- 6 (PW PT6)
B Ae 1-11 (RR Spey)	Bombardier DHC- 7 (PW PT6)
B Ae 125 (RR Viper)	Bombardier DHC- 8-100/200/300 (PW 120)
B Ae 125 (Allied TFE 731)	Bombardier DHC- 8-400 (PW 150)
BAe/Hawker 125 (PW305)	Bombardier CL 600 (Avco-Lyc ALF502)
B Ae 748 (RR Dart)	Bombardier CL 601 (GE CF34)
B Ae 1000 (PW PLU 305)	Bombardier CL 600-2B16 (GE CF34)
B Ae Jetstream 31/32/41 (Allied TPE 331)	Bombardier CL-600-2B19 (GE CF34)
Beech 300 (PW PT6)	Bombardier CL-600-2C10 (GE CF34)
Beech 350 (PW PT6)	Bombardier CL-600-2D24 (GE CF34)
Beech 1900 (PW PT6)	Bombardier BD700-1A12 (BRR BR710)
Beech 400 (PW JT15)	-
Boeing B707/720 (PW JT3D)	Canadair CL 215 (PW R2800)
Boeing B707 (RR Conway)	Canadair CL 415 (PW 123)
Boeing B717-200 (BRR BR715)	Canadair CL 44 (RR Tyne)
Boeing B727 (PW JT8D)	Casa 212 (Allied TPE 331)
Boeing B727 (RR Tay)	Casa 235 ( GE CT7)
Boeing B737-100/200 (PW JT8D)	Cessna 525 (Will FJ 44)
Boeing B737- 300/400/500 (CFM56)	Cessna 550/560 (PW JT15D)
Boeing B737- 600/700/800/900 (CFM 56)	Cessna 550/560 (PW 530)
Boeing B747- 100 (PW JT9D)	Cessna 560 (PW 545)
Boeing B747- 100 (GE CF6)	Cessna 650 (Allied TFE 731)
Boeing B747SP (RR211)	Cessna 750 (Allison AE 3000)
Boeing B747SP (PW JT9D)	Consolidated PBY-5A (PW R1830)
Boeing B747- 200/300 (PW JT9D)	Convair 240/340/440 (PW R2800)
Boeing B747- 200/300 (RR RB211)	Convair 540/580 (Allison 501)
Boeing B747- 200/300 (GE CF6)	Convair 600/640 (RR Dart)
Boeing B747- 400 (PW JT9D)	
Boeing B747- 400 (PW 4000)	Dassault Falcon 10/100 (Allied TFE 731)
Boeing B747- 400 (RR RB211)	Dassault Falcon 20 (GE CF700)
Boeing B747- 400 (GE CF6)	Dassault Falcon 20 (Allied TFE 731)
Boeing B757- 200/300 (RR RB211)	Dassault Falcon 200 (Allied ATF 3-6)
Boeing B757- 200/300 (PW 2000)	Dassault Falcon 50 (Allied TFE 731)
Boeing B767- 200/300 (PW JT9D)	Dassault Falcon 900 (Allied TFE 731)
Boeing B767- 200/300 (RR RB211)	Dassault Falcon 2000 (Allied CFE 738)
Boeing B767- 200/300/400 (GE CF6)	De Havilland DH 114 (DH Gipsy Queen)
Boeing B767- 200/300 (PW 4000)	
Boeing B777- 200/300 (GE 90)	

Dornier DO 228 (Allied TPE 331)  
Dornier DO 328 (PW 119)  
Dornier DO 328 (PW 306)

Embraer EMB 110 (PW PT 6)  
Embraer EMB 120 (PW 118)  
Embraer EMB 135/145 (Allison  
AE3007)

Fairchild SA 226/227/228 (Allied  
TPE 331)  
Fairchild SA 227 Metro III (PW PT6)  
Fokker F27/FH227 (RR Dart)  
Fokker F50 (PW 125)  
Fokker F28 (RR Spey)  
Fokker F70 (RR Tay)  
Fokker F100 (RR Tay)

Gates Learjet 23 (CJ610)  
Gates Learjet 24 (CJ610)  
Gates Learjet 25 (CJ610)  
Gates Learjet 31 (Allied TFE 731)  
Gates Learjet 35 (Allied TFE 731)  
Gates Learjet 36 (Allied TFE 731)  
Gates Learjet 45 (Allied TFE 731)  
Gates Learjet 55 (Allied TFE 731)  
Gates Learjet 60 (PW 305)  
Gulfstream I (RR Dart)  
Gulfstream II & III (RR Spey)  
Gulfstream IV (RR Tay)  
Gulfstream V (BRR BR710)

HP Herald (RR Dart)  
IAI 1121/1123 (CJ610)  
IAI 1124 (Allied TFE 731)  
IAI 1125 (Allied TFE 731)

Ilyushin IL-14 (Ash 82)  
Ilyushin IL-18 (Ivchenko)  
Ilyushin IL-62 (Kuznetsov)  
Ilyushin IL-62 (Soloviev)  
Ilyushin IL-76/78 (Aviadvigatel)  
Ilyushin IL-86 (Samara)  
Ilyushin IL-86 (Aviadvigatel)

Ilyushin IL-86 (CFM 56)  
Ilyushin IL-96 (Aviadvigatel)  
Ilyushin IL-96M (PW 2337)  
Ilyushin IL-114 (Klimov)  
Ilyushin IL-114PC (PW 127)

Junkers JU 52 (BMW 132)

Let 410 (MW M601)  
Let 610 (GE CT7)  
Lockheed L100 (Allison T56)  
Lockheed L188 (Allison 501)  
Lockheed L382 (Allison 501)  
Lockheed L1011 (RR RB211)  
Lockheed Jetstar (PW JT12)  
Lockheed Jetstar (Allied TFE 731)

McD DC3 (PW R1830)  
McD DC4 (PW R2000)  
McD DC6 (PW R2800)  
McD DC7 (Wright R3350)  
McD DC8 (PW JT3D)  
McD DC8 (CFM56)  
McD DC8 (RR Conway)  
McD DC9 (PW JT8D)  
McD DC10 (GE CF6)  
McD DC10 (PW JT9D)  
McD MD80 (PW JT8D)  
McD MD90 (V2500)  
McD MD11 (GE CF6)  
McD MD11 (PW 4000)  
Mitsubishi MU-300 (PW JT15)

PLZ M-28 Mielec (Rzeszow TW-10)  
PLZ M-28 Mielec (PW PT6)

Rockwell Sabreliner (PW JT12)  
Rockwell Sabreliner (GE CF700)  
Rockwell Sabreliner (Allied TFE  
731)Saab 340 (GE CT-7)  
Saab 2000 (Allison AE2100)  
Shorts 330/360 (PW PT6)

Tupolev TU 134 (Soloviev)

Tupolev TU 154 (Kusnetsov)  
Tupolev TU 154 (Soloviev)  
Tupolev TU 204 (Aviadvigatel)  
Tupolev TU 204 (RR RB211)

Yakolev Yak-40 (Ivchenko)  
Yakolev Yak-42 (Ivchenko)

2. Aeroplanes with a maximum take-off mass less than 5700 kg and eligible to type examination and group ratings

[To be completed]

3. Helicopters with a maximum take-off mass of 3175 kg and above, and/or requiring type training and individual type rating:

Bell 214 (GE CT7)  
Boeing BV234 (Avco Lyc 5512 )

Mil Mi-17 (Isotov TV3)  
Mil Mi-26 (Lotarev D-136)

Eurocopter AS 321/330 (Turmo)  
Eurocopter AS 332/332L/L1 (Makila)  
Eurocopter AS 332 L2 (Makila)  
EH 101 (GE CT700)

PZL W3A Swidnik (Rzeszow TW-10)

Sikorsky S55 (Wright Cyclone)  
Sikorsky S58 (Wright Cyclone)  
Sikorsky S58T (PW PT6)  
Sikorsky S61 (GE CT58)  
Sikorsky S64 (PW JTFD 12)  
Sikorsky S70 (GE CT700)

Kamov KA-25 (Glushenkov)  
Kamov KA-26 (Vedeneyev)  
Kamov KA-27 (Isotov)

Mil Mi-6 (Soloviev)  
Mil Mi-8 (Isotov TV2)  
Mil Mi-10 (Soloviev)

Westland Wessex (RR Gnome)  
Westland W30 (RR Gem)

[To be expanded]

4. Helicopters with a maximum take-off mass less than 3175 kg and eligible to type examination and group ratings.

[To be completed]



**APPENDIX II**

**Aircraft Type Practical Experience  
List of Tasks**

## **Appendix II - Aircraft type practical experience list of tasks**

### **Time limits/Maintenance checks**

100 hour check (general aviation aircraft).  
“B” or “C” check (transport category aircraft).  
Review records for compliance with airworthiness directives.  
Review records for compliance with component life limits.  
Procedure for Inspection following heavy landing.  
Procedure for Inspection following lightning strike.

### **Dimensions/Areas**

Locate component(s) by station number.  
Perform symmetry check.

### **Lifting and Shoring**

Assist in :  
Jack aircraft nose or tail wheel.  
Jack complete aircraft.  
Sling or trestle major component.

### **Levelling/Weighing**

Level aircraft.  
Weigh aircraft.  
Prepare weight and balance

amendment.

Check aircraft against equipment list.

### **Towing and Taxiing**

Tow aircraft.  
Be part of aircraft towing team.

### **Parking and mooring**

Tie down aircraft.  
Park, secure and cover aircraft.  
Position aircraft in dock.  
Secure rotor blades.

### **Placards and Markings**

Check aircraft for correct placards.  
Check aircraft for correct markings.

### **Servicing**

Refuel aircraft.  
Defuel aircraft.  
Check tire pressures.  
Check oil level.  
Check hydraulic fluid level.  
Check accumulator pressure.  
Charge pneumatic system.  
Grease aircraft.  
Connect ground power.  
Service toilet/water system  
Perform pre-flight/daily check

## **Vibration and Noise Analysis**

Analyse helicopter vibration problem.  
Analyse noise spectrum.

## **Air Conditioning**

Replace combustion heater.  
Replace outflow valve.  
Replace vapour cycle unit.  
Replace air cycle unit.  
Replace cabin blower.  
Replace heat exchanger.  
Replace pressurisation controller.  
Clean outflow valves.  
Check operation of air conditioning/heating system  
Check operation of pressurisation system  
Troubleshoot faulty system

## **Auto flight**

Install servos.  
Rig bridle cables  
Replace controller.  
Replace amplifier.  
Check operation of auto-pilot.  
Check operation of auto-throttle.  
Check operation of yaw damper.  
Check and adjust servo clutch.  
Perform autopilot gain adjustments.  
Perform mach trim functional check.  
Troubleshoot faulty system.  
  
Check autoland system  
Check flight management systems  
Check stability augmentation system

## **Communications**

Replace VHF com unit.  
Replace HF com unit.  
Replace existing antenna.  
Replace static discharge wicks.  
Check operation of radios.  
Perform antenna VSWR check.  
Perform Selcal operational check.  
Perform operational check of passenger address system.  
Functionally check audio integrating system.  
Repair co-axial cable.  
Troubleshoot faulty system.

## **Electrical Power\**

Charge lead/acid battery.  
Charge ni-cad battery.  
Check battery capacity.  
Deep-cycle ni-cad battery.  
Replace generator/alternator.  
Replace switches.  
Replace circuit breakers.  
Adjust voltage regulator.  
Amend electrical load analysis report.  
Repair/replace electrical feeder cable.  
Troubleshoot faulty system

## **Equipment/Furnishings**

Replace carpets  
Replace crew seats.  
Replace passenger seats.  
Check inertia reels.  
Check seats/belts for security.  
Check emergency equipment.  
Check ELT for compliance with regulations.  
Repair toilet waste container.  
Repair upholstery.  
Change cabin configuration.

## **Fire protection**

Check fire bottle contents.  
Check operation of warning system.  
Check cabin fire extinguisher contents.  
Check lavatory smoke detector system.  
Install new fire bottle.  
Replace fire bottle squib.  
Troubleshoot faulty system.  
Inspect engine fire wire detection systems

## **Flight Controls**

Replace horizontal stabiliser.  
Replace elevator.  
Replace aileron.  
Replace rudder.  
Replace trim tabs.  
Install control cable and fittings.  
  
Replace flaps.  
Replace powered flying control unit  
Replace flat acuator  
Adjust trim tab.  
Adjust control cable tension.

Check control range and sense of movement.  
Check for correct assembly and locking.  
Troubleshoot faulty system.

### **Fuel**

Replace booster pump.  
Replace fuel selector.  
Replace fuel tank cells.  
Check filters.  
Flow check system.  
Check calibration of fuel quantity gauges.  
Check operation feed/selectors  
Troubleshoot faulty system.

### **Hydraulics**

Replace engine driven pump.  
Replace standby pump.  
Replace accumulator.  
Check operation of shut off valve.  
Check filters.  
Check indicating systems.  
Perform functional checks.  
Troubleshoot faulty system.

### **Ice and rain protection**

Replace pump.  
Replace timer.  
Install wiper motor.  
Check operation of systems.  
Troubleshoot faulty system.

### **Indicating/recording systems**

Replace flight data recorder.  
Replace cockpit voice recorder.  
Replace clock.  
Replace master caution unit.  
Replace FDR.  
Perform FDR data retrieval.  
Troubleshoot faulty system.  
Implement ESDS procedures  
Inspect for HIRF requirements

### **Landing Gear**

Build up wheel.  
Replace main wheel.  
Replace nose wheel.  
Replace shimmy damper.  
Rig nose wheel steering.

Replace shock strut seals.  
Replace brake unit.  
Replace brake control valve.  
Bleed brakes.  
Test anti skid unit.

Test gear retraction.  
Change bungees.  
Adjust micro switches.  
Charge struts.  
Troubleshoot faulty system.  
Test outbrake system

### **Lights**

Repair/replace rotating beacon.  
Repair/replace landing lights.  
Repair/replace navigation lights.  
Repair/replace interior lights.  
Repair/replace emergency lighting system.  
Perform emergency lighting system checks.  
Troubleshoot faulty system

### **Navigation**

Calibrate magnetic direction indicator.  
Replace airspeed indicator.  
Replace altimeter.  
Replace air data computer.  
Replace VOR unit.  
Replace ADI.  
Replace HSI.  
Check pitot static system for leaks.  
Check operation of directional gyro.

Functional check weather radar.  
Functional check doppler.  
Functional check TCAS.  
Functional check DME  
Functional check ATC Transponder  
Functional check flight director system.  
Functional check inertial nav system.  
Complete quadrantal error correction of ADF system.  
Update flight management system database.  
Check calibration of pitot static instruments.  
Check calibration of pressure altitude reporting system.

Troubleshoot faulty system  
Check marker systems  
Compass replacement direct/indirect  
Check Satcom  
Check GPS  
Test AVM

### **Oxygen**

Inspect on board oxygen equipment.  
Purge and recharge oxygen system.  
Replace regulator.  
Replace oxygen generator.  
Test crew oxygen system.  
Perform auto oxygen system  
deployment check.  
Troubleshoot faulty system.

### **Pneumatic systems**

Replace filter.  
Replace compressor.  
Recharge dessicator.  
Adjust regulator.  
Check for leaks.  
Troubleshoot faulty system.

### **Vacuum systems**

Replace vacuum pump.  
Check/replace filters.  
Adjust regulator.  
Troubleshoot faulty system.

### **Water/Waste**

Replace water pump.  
Replace tap.  
Replace toilet pump.  
Troubleshoot faulty system.

### **Central Maintenance System**

Retrieve data from CMU.  
Replace CMU.  
Perform Bite check.  
Troubleshoot faulty system.

### **Airborne Auxiliary power**

Install APU.  
Inspect hot section.  
Troubleshoot faulty system.

### **Structures**

Sheet metal repair.  
Fibre glass repair.  
Wooden repair.  
Fabric repair.  
Recover fabric control surface.  
Treat corrosion.  
Apply protective treatment.

**Doors**Rig/adjust locking mechanism.  
Adjust air stair system.  
Check operation of emergency exits.  
Test door warning system.  
Troubleshoot faulty system.

### **Windows**

Replace windshield.  
Replace window.  
Repair transparency.

### **Wings**

Skin repair.  
Recover fabric wing.  
Replace tip.  
Replace rib.  
Check incidence/rig.

### **Propeller**

Assemble prop after transportation.  
Replace propeller.  
Replace governor.  
Adjust governor.  
Perform static functional checks.  
Check operation during ground run.  
Check track.  
Check setting of micro switches.  
Dress out blade damage.  
Dynamically balance prop.  
Troubleshoot faulty system.

### **Main Rotors**

Install rotor assembly.  
Replace blades.  
Replace damper assembly.  
Check track.  
Check static balance.  
Check dynamic balance.  
Troubleshoot.

### **Rotor Drive**

Replace mast.  
Replace drive coupling.  
Replace clutch/freewheel unit  
Replace drive belt.  
Install main gearbox.  
Overhaul main gearbox.  
Check gearbox chip detectors.

### **Tail Rotors**

Install rotor assembly.  
Replace blades.  
Troubleshoot.

### **Tail Rotor Drive**

Replace bevel gearbox.  
Replace universal joints.  
Overhaul bevel gearbox.  
Install drive assembly.  
Check chip detectors.

### **Rotorcraft flight controls**

Install swash plate.  
Install mixing box.  
Adjust pitch links.  
Rig collective system.  
Rig cyclic system.  
Rig anti-torque system.  
Check controls for assembly and locking.  
Check controls for operation and sense.  
Troubleshoot faulty system.

### **Power Plant**

Build up ECU.  
Replace engine.  
Repair cooling baffles.  
Repair cowling.  
Adjust cowl flaps.  
Repair faulty wiring.  
Troubleshoot.

### **Piston Engines**

Remove/install reduction gear.  
Check crankshaft run-out.  
Check tappet clearance.  
Check compression.  
Extract broken stud.  
Install helicoil.  
Perform ground run.

Establish/check reference RPM.  
Troubleshoot.

### **Turbine Engines**

Replace module.  
Hot section inspection.  
Engine ground run.  
Establish reference power.  
Trend monitoring/gas path analysis.  
Troubleshoot.

### **Fuel and control, piston**

Replace engine driven pump.  
Adjust AMC.  
Adjust ABC.  
Install carburettor/injector.  
Adjust carburettor/injector.  
Clean injector nozzles.  
Replace primer line.  
Check carburettor float setting.  
Troubleshoot faulty system.

### **Fuel and control, turbine**

Replace FCU.  
Replace engine driven pump.  
Clean/test fuel nozzles.  
Clean/replace filters.  
Adjust FCU.  
Troubleshoot faulty system.

### **Ignition systems, piston**

Change magneto.  
Change ignition vibrator.  
Change plugs.  
Test plugs.  
Check H.T. leads.  
Install new leads.  
Check timing.  
Check system bonding.  
Troubleshoot faulty system.

### **Ignition systems, turbine**

Check glow plugs/ignitors.  
Check H.T. leads.  
Check ignition unit.  
Replace ignition unit.  
Troubleshoot faulty system.

### **Engine Controls**

Rig thrust lever.  
Rig RPM control.

Rig mixture HP cock lever.  
Rig power lever.  
Check control sync (multi-eng).  
Check controls for correct assembly and locking.  
Check controls for range and sense of operation.  
Adjust pedestal micro-switches.  
Troubleshoot faulty system.

### **Engine Indicating**

Replace engine instruments(s).  
Replace oil temperature bulb.  
Replace thermocouples.  
Check calibration.  
Troubleshoot faulty system.

### **Exhaust, piston**

Replace exhaust gasket.  
Inspect welded repair.  
Pressure check cabin heater muff.  
Troubleshoot faulty system.

### **Exhaust, turbine**

Change jet pipe.  
Change shroud assembly.  
Install trimmers.

### **Oil**

Change oil.  
Check filter(s).  
Adjust pressure relief valve.  
Replace oil tank.  
Replace oil pump.  
Replace oil cooler.  
Replace firewall shut off valve.  
Perform oil dilution.  
Troubleshoot faulty system.

### **Starting**

Replace starter.  
Replace start relay.  
Replace start control valve.  
Check cranking speed.  
Troubleshoot faulty system.

### **Turbines, piston engines**

Replace PRT.  
Replace turbo-blower.

Replace heat shields.  
Replace waste gate.  
Adjust density controller.

### **Engine water injection**

Replace water/methanol pump.  
Flow check water/methanol system.  
Adjust water/methanol control unit.  
Check fluid for quality.  
Troubleshoot faulty system

### **Accessory gear boxes**

Replace gearbox.  
Replace drive shaft.  
Check chip detector.

## **Annex V**

### **Guidance Material to Part-66**

#### **SECTION A**

##### **GM 66.A.20(a) Privileges**

1. The following titles shown against each category designator below are intended to provide a readily understandable indication of the job function:

Category A: Line maintenance certifying mechanic.

Category B1: Maintenance certifying technician - mechanical.

Category B2: Maintenance certifying technician - avionic.

Category C: Base maintenance certifying engineer.

The titles adopted by each competent authority may differ from those shown to reflect titles used in the national language for the above functions but the designators A, B1, B2 and C are required by 66.A.20.

2. Individual aircraft maintenance licence holders need not be restricted to a single category. Provided that each qualification requirement is satisfied, any combination of categories may be granted.

##### **GM 66.A.20(a) Privileges**

1. Tasks permitted by 66.A.20 (a) 1. to be certified under the category A certification authorisation as part of minor scheduled maintenance or simple defect rectification are as specified in Part 145 and agreed by the **competent authority**. Part 145 contains a typical example list of such tasks.

2. For the purposes of category A minor scheduled line maintenance means any minor check up to but not including the A check where functional tests can be carried out by the aircrew to ensure system serviceability. In the case of an aircraft type not controlled by a maintenance programme based upon the A/B/C/D check principle, minor scheduled line maintenance means any minor check up to and including the weekly check or equivalent.

3. The category B1 licence also permits the certification of work involving avionic systems, providing the serviceability of the system can be established by a simple self-test facility, other on-board test systems/equipment or by simple ramp test equipment. Defect rectification involving test equipment which requires an element of decision making in its application - other than a simple go/no-go decision - cannot be certified. The category B2 will need to be qualified as category A in order to carry out simple mechanical tasks and be able to make certifications for such work.

4. The category C certification authorisation permits certification of scheduled base maintenance by the issue of a single certificate of release to service for the complete aircraft after the completion of all such maintenance. The basis for this certification is that the maintenance has been carried out by competent mechanics and

both category B1 and B2 staff have signed for the maintenance under their respective specialisation. The principal function of the category C certifying staff is to ensure that all required maintenance has been called up and signed off by the category B1 and B2 staff before issue of the certificate of release to service. Category C personnel who also hold category B1 or B2 qualifications may perform both roles in base maintenance.

### **GM 66.A.20(b)3. Privileges**

1. Holders of a **Part-66** aircraft maintenance licence may not exercise certification privileges unless they have a general knowledge of the language used within the maintenance environment including knowledge of common aeronautical terms in the language. The level of knowledge should be such that the licence holder is able to:

- read and understand the instructions and technical manuals in use within the organisation;
- make written technical entries and any maintenance documentation entries, which can be understood by those with whom they are normally required to communicate;
- read and understand the maintenance organisation procedures;
- communicate at such a level as to prevent any misunderstanding when exercising certification privileges.

2. In all cases, the level of understanding should be compatible with the level of certification privileges exercised.

### **GM 66.A.25(a) Basic knowledge requirements**

The levels of knowledge are directly related to the complexity of certifications appropriate to the particular 66.A.1 category, which means that category A must demonstrate a limited but adequate level of knowledge, whereas category B1 and B2 must demonstrate a complete level of knowledge in the appropriate subject modules.

Category C certifying staff must meet the relevant level of knowledge for B1 or B2.

### **GM 66.A.30(a) Basic knowledge requirements**

Maintenance experience on operating aircraft means the experience of being involved in maintenance tasks on aircraft which are being operated by airlines, air taxi organisations, *etc.* The point being to gain sufficient experience in the environment of commercial maintenance as opposed to only the training school environment. Such experience may be combined with approved training so that periods of training can be intermixed with periods of experience rather like the apprenticeship.

### **GM 66.A.40 Continued validity of the aircraft maintenance licence**

Validity of the Part-66 aircraft maintenance licence is not affected by recency of maintenance experience whereas the validity of the 66.A.20 privileges is affected by maintenance experience as specified in 66.A.20(a)

### **GM 66.A.45(d) Type/task training and ratings**

1. The required duration of practical training must be accepted on a case by case basis by the competent authority prior to the type rating endorsement. It is strongly recommended that the agreement on the practical training duration be reached before

the training starts. For applicants from a Part-145 organisation, the required duration may be approved through the organisation's MOE procedures.

2. While it is not feasible to establish a formula giving the required training duration in all cases, the following may be used as a guideline:

(a) For a first type training course with no recent recorded maintenance experience four months practical training is required.

(b) Some factors that may lead to a reduction in the maximum duration of 4 months practical training required are as follows:

-experience on aircraft type of a similar technology, construction and systems including engines;

-recency on type;

-the quantity of the practical experience. For example experience gained will depend upon the environment e.g. line maintenance environment with one aircraft per week would permit limited experience compared with the constant base maintenance check environment;

-the quality of the practical experience. The type of tasks carried out. These tasks should reflect, at a minimum, those tasks specified by the practical training needs matrix developed by the organisation approved under Part-147.

3. The minimum two weeks practical training is normally required for all type training courses. This includes the addition of similar type ratings on a Part-66 licence (differences courses). There may be cases where the practical differences training required is less than two weeks for example an engineer with a Part-66 type license in category B2 on an Airbus A330 with PW 4000 engines who takes a differences course to an Airbus A330 with Rolls Royce Trent engines.

It should be noted however that while AMC 66.A.45(d) specifies a practical training duration between 2 weeks and 4 months, in the case of a structured OJT performed at line stations, due to the availability of aircraft its duration may need be subsequently extended in order to fulfil the required list of supervised tasks.

4. Except in those cases where the Part-147 organisation determines the practical training required it is the responsibility of the maintenance organisation to determine that the duration of practical training is commensurate with the candidates' recency and experience. However, in either case the Member State must satisfy itself that the practical training is of sufficient duration before adding a type rating.

Limited avionics system training should be included in the category B1 type training as the B1 privileges include the replacement of avionic line replaceable units. Electrical systems should be included in both categories type training.

#### **GM 66.A.45(f) Type/task training and ratings**

The examinations in respect of category B1 or B2 or C aircraft type ratings may be conducted by training organisations appropriately approved under Part-147, the Member State or an organisation accepted by the Member State to conduct such examination.

#### **GM 66.A.45(d) and (e) Type/task training and ratings**

Part-66 Appendix III type training levels are based upon [ATA 104](#) (Air Transport Association) corresponding type training levels.

**Guidance to 66.A.70 Conversion provisions**

For example a technical limitation could be where a person holds a pre Part-66 national licence or authorisation limited to the release of the airframe and engine but not the electrical power system. This person would be issued with an Part-66 aircraft maintenance licence in the B1 category with a limitation excluding electrical power systems.

## **SECTION B PROCEDURE FOR COMPETENT AUTHORITIES**

### **GM 66.B.115(b)**

Where the maintenance organisation approved under Part-145 conducts the practical training, it must confirm to the competent authority that the trainee has been assessed and has successfully completed the practical elements of type training course to satisfy the requirements of 66.A.45(c). The competent authority is required to agree how the practical elements are assessed, for example under a procedure as agreed by the competent authority or on a case by case basis.

### **GM 66.B.120**

The competent authority will not be carrying out any investigation to ensure that the licence holder is in current maintenance practice as this is a matter for the maintenance organisation approved under Part 145 in ensuring validity of the Part 145 certification authorisation.

### **GM 66.B.200 Examination by the competent authority**

1. Questions may be prepared in the national language but the use of aviation English is recommended wherever possible.
2. The primary purpose of essay questions is to determine that the candidate can express themselves in a clear and concise manner and can prepare a concise technical report for the maintenance record, which is why only a few essay questions are required.
3. Oral type questions may not be used as the primary means of examination because of the difficulty in establishing consistency of standards between examiners or day to day.  
Nothing however prevents the competent authority from meeting potential certifying staff for the purpose of ensuring they understand their obligations and responsibilities in the application of maintenance Parts.
4. For pass mark purposes, the essay questions should be considered as separate from the multiplechoice questions.
5. Multiple choice question (MCQ) generation.

The following principles should be observed when developing multiple choice question:

- (a) The examination should measure clearly formulated goals. Therefore the field and depth of knowledge to be measured by each question must be fully identified.
- (b) All the questions should be of the multiple choice type with three alternative answers.
- (c) Questions that require specialised knowledge of specific aircraft types, should not be asked in a basic licence examination.
- (d) The use of abbreviations and acronyms should generally be avoided. However where needed, only internationally recognised abbreviations and acronyms

should be used. In case of doubt use the full form, e.g. angle of attack = 12 degrees instead of  $a = 12^\circ$ .

- (e) Questions and answers should be formulated as simply as possible: the examination is not a test of language. Complex sentences, unusual grammar and double negatives should be avoided.
  - (f) A question should comprise one complete positive proposition. No more than 3 different statements should appear among the suggested responses otherwise the candidate may be able to deduce the correct answer by eliminating the unlikely combinations of statements.
  - (g) Questions should have only one true answer.
  - (h) The correct answer should be absolutely correct and complete or, without doubt, the most preferable. Responses that are so essentially similar that the choice is a matter of opinion rather than a matter of fact should be avoided. The main interest in MCQs is that they can be quickly performed: this is not achieved if doubt exists about the correct answer.
  - (i) The incorrect alternatives must seem equally plausible to anyone ignorant of the subject. All of the alternatives should be clearly related to the question and of similar vocabulary, grammatical construction and length. In numerical questions, the incorrect answers should correspond to procedural errors such as corrections applied in the wrong sense or incorrect unit conversions: they must not be mere random numbers.
  - (j) Calculators are not allowed during examination. Therefore all calculations should be feasible without a calculator. Where a question involves calculations not feasible without a calculator, such as  $\sqrt{10}$ , then the question should specify the approximate value of  $\sqrt{10}$ .
  - (k) Questions must be referred to Part-66 Appendix I examination syllabus.
6. Essay question generation

(a) The purpose of the essay is to allow the competent authority to determine if candidates can express themselves in a clear and concise manner in the form of a written response, in a technical report format using the technical language of the aviation industry. The essay examination also allows to assess, in part, the technical knowledge retained by the individual and with a practical application relevant to a maintenance scenario.

(b) Questions should be written so as to be broad enough to be answered by candidates for all licence category or sub-categories (Cat A, B1 & B2) and comply with the following general guidelines.

- the question topic selected should be generic, applicable to mechanical as well as avionic licence categories and have a common technical difficulty level as indicated in Part -66, Appendix I.
  
- cover technology applicable to most areas of aircraft maintenance.
  
- reflects common working practises.
  
- it is not type or manufacturer specific and avoids subjects which are rarely found in practice.
  
- when drafting a question there is need to ensure consideration is given to the limited practical experience that most candidates will have.

(c) In order that the questions and the marking procedures are as consistent as possible, each question and model answer, with the required key areas required (see below) should be reviewed independently by at least 2 technical staff.

(d) When raising questions the following must be considered:

- each essay question will have a time allowance of 20 minutes.
  
- a complete A4 side is provided for each question and answer, if required the answer can be extended onto the reverse side of the page.
  
- the question should be such that the answer expected will be at the level shown for that subject in the module syllabus.
  
- the question should not be ambiguous but should seek a broad reply rather than be limited in scope for answer.
  
- the question should lend itself to be written in a technical report style, in a logical sequence (*beginning , middle and end*), containing the applicable and relevant technical words needed in the answer.

- do not ask for drawings/sketches to support the essay.
- the question must be relevant to the category and level of difficulty listed in the syllabus, e.g. a description of a typical general aviation system may not be acceptable for a typical commercial aeroplane.
- subject to obvious constraints in relation to the topic being addressed the question should have a strong bias towards the practical maintenance of a system/component and the answer should show an understanding of normal and deteriorated conditions of an aircraft and its systems.

Variations on alternative possible answers which have not been thought of, may have to be taken into account to aid the examiner when marking. If considered relevant, the model answer should be amended to include these new points.

(e) Because of the difficulty in marking an essay answer using key points only, there is a need for the way in which the report was written to be assessed and taken into consideration.

(f) The total points for each question will add up to 100 and will need to reflect both the combination of the technical (key point) element and the report style element.

(g) Each key point will be graded upon its importance and have point weighting allocated to it. The total weight will represent 60% of the mark.

(h) Key points are the 'important elements' that may be knowledge or experience-based and will include other maintenance orientated factors such as relevant safety precautions or legislative practices if applicable. Excessive reference to the need for MM referral or safety checks may be considered wasteful.

(i) The question answer will be analysed for the clarity and manner in which the essay report is presented and have a weighting allocated to it which will represent 40% of the mark.

(j) The answer should show the candidate's ability to express himself in technical language. This includes readability of the language, basic grammar and use of terminology.

(k) The report starts in the beginning and has logical process to reach a conclusion.

(l) Supporting diagrams should not be encouraged but if used should supplement the answer and not replace the need for a broad text answer.

(m) The report should not be indexed, itemised or listed.

(n) Within reason the candidate should not be penalised for incorrect spelling.

(o) A zero mark should only be given in exceptional circumstances. Even if the student misunderstands the question and gives an answer to a different question, a

sympathetic mark even if only for the report style should be given, this could up to the maximum percentage allowed.

(p) The two allocated marks should be added together and written into the answer paper.

(q) If a question answer resulting in a borderline failure is principally due to “written report errors,” the paper should be discussed and the mark agreed if possible with another examiner.

## **Annex IV**

### **Acceptable Means of Compliance to Part-147**

#### **SECTION A**

##### **AMC 147.A.100(i) Facility requirements**

1. For approved basic maintenance training courses this means holding and ensuring reasonable access to copies of all Parts and national aviation legislation, examples of typical aircraft maintenance manuals and service bulletins, airworthiness directives, aircraft and component records, release documentation, procedures manuals and aircraft maintenance programmes.
2. Except for the Parts and national aviation regulations, the remainder of the documentation should represent typical examples for both large and small aircraft and cover both aeroplanes and helicopters as appropriate. Avionic documentation should cover a representative range of available equipment. All documentation should be reviewed and updated on a regular basis.

##### **AMC 147.A.105 Personnel requirements**

1. The larger maintenance training organisation (an organisation with the capacity to provide training for 50 students or more) should appoint a training manager with the responsibility of managing the training organisation on a day to day basis. Such person could also be the accountable manager. In addition, the organisation should appoint a quality manager with the responsibility of managing the quality system as specified in paragraph 147.A.130(b) and an examination manager with the responsibility of managing the relevant Part147 Subpart C or Subpart D examination system. Such person(s) may also be an instructor and/or examiner.
2. The smaller maintenance training organisation (an organisation with the capacity to provide training for less than 50 students) may combine any or all of the sub-paragraph (1) positions subject to the competent authority verifying and being satisfied that all functions can be properly carried out in combination.
3. When the organisation is also approved against other Parts which contain some similar functions then such functions may be combined.

##### **AMC 147.A.105(b)and (g) Personnel requirements**

With the exception of the accountable manager, an EASA Form 4 should be completed for each person nominated to hold a position required by 147.A.105(b). An example of an EASA Form 4 is included in Appendix 2.

##### **AMC 147.A.105(f) Personnel requirements**

Any person currently accepted by the competent authority in accordance with national aviation regulations in force prior to Part 147 coming into force may continue to be accepted in accordance with 147.A.35(f)

##### **AMC 147.A.105(h) Personnel requirements**

Updating training should normally be of 35 hours duration but may be adjusted to the scope of training of the organisation and particular instructor/examiner.

##### **AMC 147.A.115(c) Instructional equipment**

1. An appropriate selection of aircraft parts means appropriate in relation to the particular subject module or sub-module of Part-66 being instructed. For

example the turbine engine module should require the provision of sufficient parts from different types of turbine engine to show what such parts look like, what the critical areas are from a maintenance viewpoint and to enable disassembly/assembly exercises to be completed.

2. Appropriate aircraft, engines, aircraft parts and avionic equipment means appropriate in relation to the particular subject module or sub-module of Part-66 being instructed. For example category B2 avionic training should require amongst other equipment, access to at least one type of installed autopilot and flight director system such that maintenance and system functioning can be observed and therefore more fully understood by the student in the working environment.

3. "Access" may be interpreted to mean, in conjunction with the facilities requirement of 147.A.100(d), that there may be an agreement with a maintenance organisation approved under Part 145 to access such parts, etc.

**AMC 147.A.120(a) Maintenance training material**

Training course notes, diagrams and any other instructional material should be accurate. Where an amendment service is not provided a written warning to this effect should be given.

**AMC 147.A.130(b) Training procedures and quality system**

1. The independent audit procedure should ensure that all aspects of Part-147 compliance should be checked at least once in every 12 months and may be carried out as one complete single exercise or subdivided over a 12-month period in accordance with a scheduled plan.

2. In a small maintenance training organisation the independent audit function may be contracted to another maintenance training organisation approved under Part-147 or a competent person acceptable to the competent authority. Where the small training organisation chooses to contract the audit function it is conditional on the audit being carried out twice in every 12 month period with one such audit being unannounced.

3. Where the maintenance training organisation is also approved to another Part requiring a quality system, then such quality systems may be combined.

4. When training or examination is carried out under the sub-contract control system:

(i) a pre audit procedure should be established whereby the Part 147 approved maintenance training organisation' should audit a prospective sub-contractor to determine whether the services of the sub-contractor meet the intent of Part 147.

(ii) a renewal audit of the subcontractor should be performed at least once every 12 months to ensure continuous compliance with the Part-147 standard.

(iii) the sub-contract control procedure should record audits of the sub-contractor and to have a corrective action follow-up plan.

5. The independence of the audit system should be established by always ensuring that audits are carried out by personnel not responsible for the function or procedure being checked.

**AMC 147.A.135 Examinations**

1. Examinations may be computer or hard copy based or a combination of both.
2. The actual questions to be used in a particular examination should be determined by the examination staff.

**AMC 147.A.140 Maintenance training organisation exposition**

1. A recommended format of the exposition is included in Appendix 1.
2. When the maintenance training organisation is approved in accordance with any other Part which also requires an exposition, the exposition required by the other Part may form the basis of the maintenance training organisation exposition in a combined document., as long as the other exposition contains the information required by 147.A.140 and a cross reference index is included based upon Appendix I.
3. When training or examination is carried out under the sub-contract control system the maintenance training organisation exposition should contain a specific procedure on the control of sub-contractors as per Appendix 1 item 2.18 plus a list of sub-contractors as required by 147.A.140 (a)12 and detailed in Appendix I item 1.7.
4. The competent authority may approve a delegated exposition approval system for all changes other than those affecting the approval.

**AMC Part 147.A.145(d) Privileges of the maintenance training organisation**

1. When training or examination is carried out under the sub-contract control system it means that for the duration of such training or examination, the Part-147 approval has been temporarily extended to include the sub-contractor. It therefore follows that those parts of the sub-contractor's facilities, personnel and procedures involved with the Part-147 approved maintenance training organisation's students should meet requirements of Part-147 for the duration of that training or examination and it remains the Part-147 organisation's responsibility to ensure such requirements are satisfied.
2. The maintenance training organisation approved under Part-147 is not required to have complete facilities and personnel for training that it needs to sub-contract but it should have its own expertise to determine that the sub-contractor meets the Part-147 standards. Particular attention should be given to ensuring that the training that is delivered also meets the requirements of Part 66 and the aircraft technologies as appropriate.
3. The contract between the maintenance training organisation approved under Part-147 and the sub-contractor should contain:
  - a provision for the Agency and the competent authority to have right of access to the sub-contractor;
  - a provision for the sub-contractor to inform the Part-147 approved maintenance training organisation of any change that may affect its Part-147 approval, before any such change takes place.

**AMC 147.A.200 The approved basic training course**

For the purpose of this paragraph, a training hour means 60' training, without pauses.

**AMC 147.A.200(b) The approved basic training course**

Each licence category or subcategory basic training course may be subdivided into modules or sub-modules of knowledge and may be intermixed with the practical training elements subject to the required time elements of 147.A.200 (f) to (k) inclusive being satisfied.

**AMC 147.A.200(d) The approved basic training course**

1. Where the maintenance training organisation approved under Part-147 contracts the practical training element either totally or in part to another organisation in accordance with 147.A.100(d), the organisation in question should ensure that the practical training elements are properly carried out.

2. At least 30% of the practical training element should be carried in an actual maintenance working environment.

**AMC 147.A.200(g) The approved basic training course**

Typical conversion durations are given below:

(a) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in subcategory A1 to subcategory B1.1 or B2 should not be less than 1600 hours and for conversion from holding a Part-66 aircraft maintenance licence in subcategory A1 to subcategory B1.1 combined with B2 should not be less than 2200 hours. The course should include between 60% and 70% knowledge training.

(b) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in subcategory B1.1 to B2 or category B2 to B1.1 should not be less than 600 hours, and should include between 80% and 85% knowledge training.

(c) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in subcategory B1.2 to subcategory B1.1 should not be less than 400 hours, and should include between 50% and 60% knowledge training.

(d) The approved basic training course to qualify for conversion from holding a Part-66 aircraft maintenance licence in one subcategory A to another subcategory A should not be less than 70 hours, and should include between 30% and 40% knowledge training.

**AMC 147.A.205 Basic knowledge examinations**

The competent authority may accept that the maintenance training organisation approved under Part-147 can conduct examination of students who did not attend an approved basic course at the organisation in question.

**AMC 147.A.210(a) Basic practical assessment**

Where the maintenance training organisation approved under **Part-147** contracts the practical training element either totally or in part to another organisation in accordance with 147.A.100(d) and chooses to nominate practical assessors from the other organisation, the organisation in question should ensure that the basic practical assessments are carried out.

**AMC 147.A.210(b) Basic practical assessment**

An assessed pass for each student should be granted when the practical assessor is satisfied that the student meets the criteria of 147.A.200(e). This means that the student has demonstrated the capability to use relevant tools/equipment/test equipment as specified by the tool/equipment/test equipment manufacturer and the use of maintenance manuals in that the student can carry out the required inspection/testing without missing any defects, can readily identify the location of components and is capable of correct removal/fitment/adjustment of such components. The student is only required to carry out enough inspection/testing and component removal/fitment/adjustments to prove capability. The student should also show an appreciation of the need to ensure clean working conditions and the observance of safety precautions for the student and the product. In addition, the student should demonstrate a responsible attitude in respect to flight safety and airworthiness of the aircraft.

**AMC 147.A.300 Aircraft type/task training**

1. Aircraft type training may be sub-divided in airframe type training, powerplant type training, or avionic systems type training. A maintenance training organisation approved under Part-147 may be approved to conduct airframe type training only, powerplant type training only or avionics systems type training.
2. Airframe type training means type training including all relevant aircraft structure and systems excluding the powerplant.
3. Powerplant type training means type training on the bare engine, including the build-up to a quick engine change unit.
4. The interface of the engine/airframe systems should be addressed by either airframe or powerplant type training.
5. Avionic systems type training means type training on avionics systems covered by but not necessarily limited to ATA (Air Transport Association) chapters 22, 23, 25, 27, 31, 33, 34, 45, 46, 73 and 77 or equivalent.

## **SECTION B PROCEDURE FOR COMPETENT AUTHORITIES**

### **AMC 147.B.10 (a) Competent authority - General**

1. In deciding upon the required organisational structure, the competent authority should review the number of certificates to be issued, the number and size of potential Part-147 approved maintenance training organisations within that Member State, as well as the level of civil aviation activity, number and complexity of aircraft and the size of the Member State's aviation industry.
2. The competent authority should retain effective control of important surveillance functions and not delegate them in such a way that Part-147 organisations, in effect, regulate themselves in airworthiness matters.
3. The set-up of the organisational structure should ensure that the various tasks and obligations of the competent authority are not relying on individuals. That means that a continuing and undisturbed fulfilment of these tasks and obligations of the competent authority should also be guaranteed in case of illness, accident or leave of individual employees.

### **AMC 147.B.10 (b) Competent authority – Qualification and training**

1. competent authority surveyors should have:
  - 1.1 practical experience and expertise in the application of aviation safety standards and safe operating practices;
  - 1.2 comprehensive knowledge of:
    - a. relevant parts of implementing rules, certification specifications and guidance material;
    - b. the competent authority's procedures;
    - c. the rights and obligations of a surveyor;
    - d. quality systems;
    - e. continuing airworthiness management.
  - 1.3 training on auditing techniques.
  - 1.4 five years relevant work experience to be allowed to work as a surveyor independently. This may include experience gained during training to obtain the 1.5 qualification.
  - 1.5 a relevant engineering degree or an aircraft maintenance or training qualification with additional education. 'relevant engineering degree' means an engineering degree from aeronautical, mechanical, electrical, electronic, avionic or other studies relevant to the maintenance and continuing airworthiness of aircraft/aircraft components.
  - 1.6 knowledge of a relevant sample of aircraft types

- 1.7 knowledge of maintenance training standards.
2. In addition to technical competency, surveyors should have a high degree of integrity, be impartial in carrying out their tasks, be tactful, and have a good understanding of human nature.
3. A programme for continuation training should be developed that ensures that the surveyors remain competent to perform their allocated tasks.

### **AMC 147.B.10 (c) Competent authority - Procedures**

The documented procedures should contain the following information:

- (a) The Member State's designation of the competent authority(ies).
- (b) The title(s) and name(s) of the manager(s) of the competent authority and their duties and responsibilities.
- (c) Organisation chart(s) showing associated chains of responsibility of the senior persons.
- (d) A procedure defining the qualifications for staff together with a list of staff authorised to sign certificates.
- (e) A general description of the facilities.
- (f) Procedures specifying how the competent authority(ies) ensure(s) compliance with Part-147.

### **AMC 147.B.20 Record-keeping**

1. The record-keeping system should ensure that all records are accessible whenever needed within a reasonable time. These records should be organized in a consistent way through out the competent authority (chronological, alphabetical order, etc.).
2. All records containing sensitive data regarding applicants or organisations should be stored in a secure manner with controlled access to ensure confidentiality of this kind of data.
3. All computer hardware used to ensure data backup should be stored in a different location from that containing the working data in an environment that ensures they remain in good condition. When hardware- or software-changes take place special care should be taken that all necessary data continues to be accessible at least through the full period specified in 147.B.20.

### **AMC 147.B.110(a) Approval procedure**

- 1 The audit should be conducted on the basis of checking the facility for compliance, interviewing personnel and sampling any relevant training course for its conduct and standard.

- 2 The audit report should be made on an EASA Form 22 (see appendix III).

**AMC 147.B.110(b) Approval procedure**

The date each finding was rectified should be recorded together with the reference document.

**AMC 147.B.130(b) Findings**

1. In the case of a level 2 finding, the competent authority may give up to 6 months notice of the need for rectification. Dependent upon the seriousness of the level 2 finding(s) the competent authority may choose a notice period less than 6 months.
2. When the competent authority chooses to allow 6 months, the initial notification should be of 3 months duration to the quality manager followed by the final 3 months notice to the accountable manager.

## **APPENDIX I**

### **Maintenance training organisation exposition (MTOE)**

1. The following subject headings form the basis of the MTOE required by JAR-147.65.
2. Whilst this format is recommended it is not mandatory to assemble the MTOE in this manner as long as a cross reference index is included in the MTOE as an appendix and the Part 1 items remain in Part 1.
3. Part 2, 3 and 4 material may be produced as separate detailed manuals subject to the main exposition containing the part 2, 3 and 4 fundamental principles and policy on each item. It is then permitted to delegate the approval of these separate manuals to the senior person but this fact and the procedure should be specified in paragraph 1.10.
4. Where an organisation is approved in accordance with any other Part(s) which require an exposition it is acceptable to combine the exposition requirements by merging the Part 1 items and adding the parts 2, 3 and 4. When this method is used it is essential to include the cross reference index of Part 4 item 4.3.

#### **PART 1 – MANAGEMENT**

- 1.1. Corporate commitment by accountable manager
- 1.2. Management personnel
- 1.3. Duties and responsibilities of management personnel, instructors, knowledge examiners and practical assessor
- 1.4. Management personnel organisation chart
- 1.5. List of instructional and examination staff  
Note: A separate document may be referenced
- 1.6. List of approved addresses
- 1.7. List of sub-contractors as per 147.A.145(d)
- 1.8. General description of facilities at paragraph 1.6 addresses
- 1.9. Specific list of courses approved by the competent authority
- 1.10. Notification procedures regarding changes to organisation
- 1.11. Exposition and associated manuals amendment procedure

#### **PART 2 – TRAINING AND EXAMINATION PROCEDURES**

- 2.1. Organisation of courses
- 2.2. Preparation of course material
- 2.3. Preparation of classrooms and equipment
- 2.4. Preparation of workshops/maintenance facilities and equipment
- 2.5. Conduct of basic knowledge & practical training

- 2.6. Records of training carried out
- 2.7. Storage of training records
- 2.8. Training at locations not listed in paragraph 1.6
- 2.9. Organisation of examinations
- 2.10. Security and preparation of examination material
- 2.11. Preparation of examination rooms
- 2.12. Conduct of examinations
- 2.13. Conduct of basic practical assessments
- 2.14. Marking and record of examinations
- 2.15. Storage of examination records
- 2.16. Examinations at locations not listed in paragraph 1.6
- 2.17. Preparation, control & issue of basic training course certificates
- 2.18. Control of sub-contractors

### PART 3 – TRAINING SYSTEM QUALITY PROCEDURES

- 3.1. Audit of training
- 3.2. Audit of examinations
- 3.3. Analysis of examination results
- 3.4. Audit and analysis remedial action
- 3.5. Accountable manager annual review
- 3.6. Qualifying the instructors
- 3.7. Qualifying the examiners
- 3.8. Records of qualified instructors & examiners

### PART 4 – APPENDICES

- 4.1. Example of documents and forms used
- 4.2. Syllabus of each training course
- 4.3. Cross reference Index - if applicable

**APPENDIX II**

**EASA Form 4**

**[COMPETENT AUTHORITY]**

Details of Management Personnel required to be accepted as specified in Part-.....

- 1. Name:
- 2. Position:
- 3. Qualifications relevant to the item (2) position:
- 4. Work experience relevant to the item (2) position:

Signature: ..... Date: .....

On completion, please send this form under confidential cover to the competent authority.

Competent authority use only  
Name and signature of authorised competent authority staff member accepting this person:

Signature: ..... Date: .....

Name: ..... Office: .....



\*delete where applicable

**9) PART-147 APPROVAL RECOMMENDATION REPORT EASA FORM 22**

**Part 2: Part-147 Compliance Audit Review**

The five columns may be labelled & used as necessary to record the approved training/examinations, facility, including subcontractor's, reviewed. Against each column used of the following Part-147 subparagraphs please either tick (√) the box if satisfied with compliance or cross (X) the box if not satisfied with compliance and specify the reference of the Part 4 finding next to the box or enter N/A where an item is not applicable, or N/R when applicable but not reviewed.

Para	Subject					
147.A.1 00	Facility requirements	<input type="checkbox"/>				
147.A.1 05	Personnel requirements	<input type="checkbox"/>				
147.A.1 10	Records	<input type="checkbox"/>				
147.A.1 15	Instructional equipment	<input type="checkbox"/>				
147.A.1 20	Maintenance training material	<input type="checkbox"/>				
147.A.1 25	Records	<input type="checkbox"/>				
147.A.1 30	Training procedures and quality system	<input type="checkbox"/>				
147.A.1 35	Examinations	<input type="checkbox"/>				
147.A.1 45	Privileges	<input type="checkbox"/>				

147.A.1 Changes  
50

<input type="checkbox"/>					
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147.A.2 Approved basic training  
00 course

<input type="checkbox"/>					
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147.A.2 Basic knowledge  
05 examinations

<input type="checkbox"/>					
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147.A.2 Basic practical assessment  
10

<input type="checkbox"/>					
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147.A.2 Aircraft type/task training  
10

<input type="checkbox"/>					
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147.A.3 Examinations and  
05 assessments

<input type="checkbox"/>					
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Competent authority surveyor  
(s):

Signature(s):

Competent authority office:

Date of Form 22 part 2 completion:

10)  
11) **PART-147 APPROVAL RECOMMENDATION REPORT EASA FORM 22**  
12)

**PART 3: Compliance with Part-147 maintenance training organisation exposition (MTOE)**

Please either tick (√) the box if satisfied with compliance; or if not satisfied with compliance and specify the reference of the Part 4 finding; or enter N/A where an item is not applicable; or N/R when applicable but not reviewed.

Part 1 **MANAGEMENT**

- |      |                          |  |
|------|--------------------------|--|
| 1.1  | <input type="checkbox"/> | Corporate commitment by accountable Manager  |
| 1.2  | <input type="checkbox"/> | Management personnel   |
| 1.3  | <input type="checkbox"/> | Duties and responsibilities of management personnel, instructors, knowledge examiners and practical assessor |
| 1.4  | <input type="checkbox"/> | Management personnel organisation chart  |
| 1.5  | <input type="checkbox"/> | List of instructional and examination staff  |
| 1.6  | <input type="checkbox"/> | List of approved addresses   |
| 1.7  | <input type="checkbox"/> | List of sub-contractors as per 147.A.145(d)  |
| 1.8  | <input type="checkbox"/> | General description of facilities of paragraph 1.6 addresses   |
| 1.9  | <input type="checkbox"/> | Specific list of courses approved by the competent authority   |
| 1.10 | <input type="checkbox"/> | Notification procedures regarding changes to organisation  |
| 1.11 | <input type="checkbox"/> | Exposition and associated manuals amendment procedures   |

Part 2 **TRAINING AND EXAMINATION PROCEDURES**

- |     |                          |   |
|-----|--------------------------|---|
| 2.1 | <input type="checkbox"/> | Organisation of courses                                       |
| 2.2 | <input type="checkbox"/> | Preparation of course material                                |
| 2.3 | <input type="checkbox"/> | Preparation of classrooms and equipment                       |
| 2.4 | <input type="checkbox"/> | Preparation of workshops/maintenance facilities and equipment |
| 2.5 | <input type="checkbox"/> | Conduct of basic knowledge & practical training               |
| 2.6 | <input type="checkbox"/> | Records of training carried out                               |
| 2.7 | <input type="checkbox"/> | Storage of training records                                   |
| 2.8 | <input type="checkbox"/> | Training at locations not listed in paragraph 1.6             |
| 2.9 | <input type="checkbox"/> | Organisation of examinations                                  |

13) **PART-147 APPROVAL RECOMMENDATION REPORT EASA FORM 22**

**PART 3: Compliance with Part-147 maintenance training organisation exposition (MTOE)**

- |      |                          |   |
|------|--------------------------|---|
| 2.10 | <input type="checkbox"/> | Security and preparation of examination material                    |
| 2.11 | <input type="checkbox"/> | Preparation of examination rooms                                    |
| 2.12 | <input type="checkbox"/> | Conduct of examinations   |
| 2.13 | <input type="checkbox"/> | Conduct of basic practical assessments                              |
| 2.14 | <input type="checkbox"/> | Marking and record of examinations                                  |
| 2.15 | <input type="checkbox"/> | Storage of examination records                                      |
| 2.16 | <input type="checkbox"/> | Examinations at locations not listed in paragraph 1.6               |
| 2.17 | <input type="checkbox"/> | Preparation, control & issue of basic training course certificates. |
| 2.18 | <input type="checkbox"/> | Control of sub-contractors.   |

Part 3      **TRAINING SYSTEM QUALITY PROCEDURES**

- |     |                          |   |
|-----|--------------------------|---|
| 3.1 | <input type="checkbox"/> | Audit of training                             |
| 3.2 | <input type="checkbox"/> | Audit of examinations                         |
| 3.3 | <input type="checkbox"/> | Analysis of examination results.              |
| 3.4 | <input type="checkbox"/> | Audit and analysis remedial action            |
| 3.5 | <input type="checkbox"/> | Accountable manager annual review             |
| 3.6 | <input type="checkbox"/> | Qualifying the instructors                    |
| 3.7 | <input type="checkbox"/> | Qualifying the examiners                      |
| 3.8 | <input type="checkbox"/> | Records of qualified instructors & examiners. |

Part 4      **APPENDICES**

- |     |                          |  |
|-----|--------------------------|--|
| 4.1 | <input type="checkbox"/> | Example of documents and forms used.   |
| 4.2 | <input type="checkbox"/> | Syllabus of each training course.      |
| 4.3 | <input type="checkbox"/> | Cross reference Index - if applicable. |

Date of Form 22 part 3 completion:

MTOE reference:

MTOE amendment:

Competent authority audit staff:

Signature(s):

Competent authority office:

Date of Form 22 part 3 completion:

**Part 4: Findings regarding Part-147 compliance status**

Each level 1 and 2 finding should be recorded whether it has been rectified or not and should be identified by a simple cross reference to the Part 2 requirement. All non-rectified findings should be copied in writing to the organisation for the necessary corrective action.

Part 2 or 3 ref.	Audit reference(s):  Findings	L e v e l	Corrective action		
			Date Due	Date Closed	Reference

**15) PART-147 APPROVAL RECOMMENDATION REPORT EASA FORM 22**

**Part 5: M.A. Subpart F approval or continued approval or change recommendation**

Name of organisation:

Approval reference:

Audit reference(s):

Applicable Part-147 amendment status:

The following Part-147 scope of approval is recommended for this organisation:

Or, it is recommended that the Part-147 scope of approval specified in EASA Form 11 referenced ..... be continued.

Name of recommending competent authority surveyor:

Signature of recommending competent authority surveyor:

Competent authority office:

Date of recommendation:

Form 22 review (quality check) :

Date:

**APPENDIX IV**

**EASA Form 12**

<b>EASA FORM 12</b> <b>Page 1 of 2</b>	<b>APPLICATION FOR PART-147</b> <b>INITIAL / CHANGE OF APPROVAL</b>
<p>Registered Name &amp; Address of Applicant:</p> <p>Trading Name (if different): Addresses Requiring Approval:</p> <p>Tel No:.....Fax No.....E Mail.....</p>	
<p>Scope of Part-147 Approval Relevant to This Initial */ Change of * Application ( See other side for training course designators to be used):</p> <p>Basic Training:</p> <p>Type Training:</p> <p>Does the organisation hold approval under Part-21 * / Part-145 * / Part-M *</p> <p>* Cross out whichever is not applicable</p>	
<p>Name &amp; Position of Accountable Manager: Signature of Accountable Manager: Date of Application: Please send this form with any required fee to be paid under National Legislation to your National Aviation Authority</p>	<p>This space for official use</p>

## **Annex VII**

### **Guidance Material to Part-147**

#### **SECTION A**

##### **GM to 147.A.10 General**

Such an organisation may conduct business from more than one address and may hold more than one Part approval.

##### **GM to 147.A.100(i) Facility requirements**

Where the organisation has an existing library of regulations, manuals and documentation required by another Part it is not necessary to duplicate such a facility subject to student access being under controlled supervision.

##### **GM to 147.A.105 (c) Personnel requirements**

The maintenance training organisation should have a nucleus of permanently employed staff to undertake the minimum amount of maintenance training proposed but may contract, on a part-time basis, instructors for subjects which are only taught on an occasional basis.

##### **GM to 147.A.105 (f) Personnel requirements**

It is recommended that potential instructors be trained in instructional techniques.

##### **GM to 147.A.105(g) Personnel requirements**

Examiners should demonstrate a clear understanding of the examination standard required by Part-66 and have a responsible attitude to the conduct of examinations such that the highest integrity is ensured.

##### **GM to 147.A.105(h) Personnel requirements**

1. Records should show for each instructor/examiner when the updating training was scheduled and when it took place.
2. The updating training may be subdivided during the 24 months into more than one element and may include such activities as attendance at relevant lectures and symposiums.

##### **GM to 147.A.110 Records of instructors, examiners and assessors**

Instructors, knowledge examiners and practical assessors should be provided with a copy of their terms of reference.

##### **GM to 147.A.115(a) Instructional equipment**

1. Synthetic training devices are working models of a particular system or component and include computer simulations.
2. A synthetic training device is considered beneficial for complex systems and fault diagnostic purposes.

##### **GM to 147.A.130 (b) Training procedures and quality system**

1. The primary objective of the quality system is to enable the training organisation to satisfy itself that it can deliver properly trained students and that the organisation remains in compliance with Part 147.
2. The independent audit is a process of routine sample checks of all aspects of the training organisation's ability to carry out all training and examinations to

the required standards. It represents an overview of the complete training system and does not replace the need for instructors to ensure that they carry out training to the required standard.

3. A report should be raised each time an audit is carried out describing what was checked and any resulting findings. The report should be sent to the affected department(s) for rectification action giving target rectification dates. Possible rectification dates may be discussed with the affected department(s) before the quality department confirms such dates on the report. The affected department(s) should rectify any findings and inform the quality department of such rectification.

4. A large training organisation (an organisation with the capacity to provide training for 50 students or more) should have a dedicated quality audit group whose sole function is to conduct audits, raise finding reports and follow up to ensure that findings are being rectified. For the small training organisation (an organisation with the capacity to provide training for less than 50 students) it is acceptable to use competent personnel from one section/department not responsible for the function or procedure to check the section/department that is responsible subject to the overall planning and implementation being under the control of the quality manager.

5. The management control and follow up system should not be contracted to outside persons. The principal function is to ensure that all findings resulting from the independent audit are corrected in a timely manner and to enable the accountable manager to remain properly informed of the state of compliance. Apart from rectification of findings the accountable manager should hold routine meetings to check progress on rectification except that in the large training organisation such meetings may be delegated on a day to day basis to the quality manager as long as the accountable manager meets at least once per year with the senior staff involved to review the overall performance.

#### **GM to 147.A.135 Examinations**

The competent authority will determine when or if the disqualified examiner may be reinstated.

#### **GM to 147.A.145 (d) Privileges of the maintenance training organisation**

1. The pre audit procedure should focus on establishing compliance with the training and examination standards set out in Parts 147 66.

2. The fundamental reason for allowing a maintenance training organisation approved under Part-147 to sub-contract certain basic theoretical training courses is to permit the approval of maintenance training organisations which may not have the capacity to conduct training courses on all Part-66modules.

3. The reason for allowing the subcontracting of training modules 1 to 6 and 8 to 10 only is, most of the related subjects can generally also be taught by training organisations not specialised in aircraft maintenance and the practical training element as specified in 147.A.200 does not apply to them. On the contrary training modules 7 and 11 to 17 are specific to aircraft maintenance and include the practical training element as specified in 147.A.200. The intent of the “limited subcontracting” option as specified in 147.A.145 is to grant Part-147 approvals only to those organisations having themselves at least the capacity to teach on aircraft maintenance specific matters.

## **SECTION B PROCEDURE FOR COMPETENT AUTHORITIES**

### **GM to 147.B.100 (a) General**

Variation of the Part-147 approval means either the need to amend the schedule of approved training courses or the need to approve or accept 147.A.150 changes.

### **GM to 147.B.110 Approval procedure**

1. A meeting should be arranged between the applicant and the Member State who issue Part-147 approvals to determine if the applicant's training activities justify the investigation for issue of Part-147 approval and to ensure that the applicant understands what needs to be done for Part-147 approval. This meeting is not intended to establish compliance but rather to see if the activity is a Part-147 activity.
2. Assuming that the applicant's activities come within the scope of Part-147 approval, instructions should be sent to the competent authority staff requesting that an audit of the applicant be carried out and when satisfied that compliance has been established, a recommendation for the issue of approval should be submitted to the competent authority staff who grant approval unless these are the same staff. The competent authority should determine how and by whom the audit shall be conducted. For example, if the applicant is a large training organisation, it will be necessary to determine whether one large team audit or a short series of small team audits or a long series of single person audits is most appropriate for the particular situation. A further consideration in the case of a combined Part-145/147 organisation is the possibility to combine the audits.
3. It is not necessary to sample all basic and type training courses that will be approved, but it is necessary to sample, as appropriate, one basic and one type training course for as long as is necessary to establish that training is conducted in an appropriate manner, except that the minimum sampling time for the course being sampled should not be less than 3 hours. Where no training course is being conducted during the audit, arrangements should be made to return at a later date to sample the conduct of a training course.
4. Where it is intended that the maintenance training organisation may conduct training and examinations away from the maintenance training organisation address(es) in accordance with 147.A.145(c), then a sample audit should be carried out by the competent authority from time to time of the process to ensure that procedures are followed. For practical reasons such sample audits will need to be carried out when training is being conducted away from the maintenance training organisation address(es).
5. It is not necessary to sample all examinations associated with a training course, but it is necessary to sample, as appropriate, one basic and one type training course examination
6. The auditing surveyor should ensure that they are always accompanied throughout the audit by a senior member of the organisation making application for Part-147 approval. Normally this should be the proposed quality manager. The reason for being accompanied is to ensure that the organisation is fully aware of any findings during the audit. In any case, the proposed quality manager/senior member of the organisation must be debriefed at the end of the audit visit on the findings made during the audit.

7. There will be occasions when the auditing surveyor may find situations in the applicant's organisation on which he/she is unsure about compliance. In this case, the organisation must be informed about possible non-compliance at the time of audit and the fact that the situation will be reviewed before a decision is made. The organisation must be informed of the decision within 2 weeks of the audit visit in writing if the decision is a confirmation of non-compliance. If the decision is a finding of being in compliance, a verbal confirmation to the organisation will suffice.

**GM to 147.B.115 Variation procedure**

1. A change of name of the maintenance training organisation requires the organisation to submit a new application as a matter of urgency stating that only the name of the organisation has changed including a copy of the organisation exposition with the new name. On receipt of the application and the organisation exposition, the competent authority should reissue the approval certificate valid only up to the current expiry date.

2. A name change alone does not require the competent authority to audit the organisation, unless there is evidence that other aspects of the maintenance training organisation have changed

3. A change of accountable manager requires the maintenance training organisation to submit such fact to the competent authority as a matter of urgency together with the amendment to the Accountable Manager exposition statement.

4. A change of any of the senior personnel specified in 147.A.105(b) or the examination staff in 147.A.105 (e) requires the maintenance training organisation to submit a Form 4 in respect of the particular person to the competent authority. If satisfied that the qualifications and experience meet the standard required by Part-147, the competent authority should indicate acceptance in writing to the maintenance training organisation.

5. A change in the maintenance training organisation's exposition requires the competent authority to establish that the procedures specified in the exposition are in compliance with the intent of Part-147 and then to establish if these are the same procedures intended for use within the training facility.

6. Any change of location of the maintenance training organisation requires the organisation to make a new application to the competent authority together with the submission of an amended exposition. The competent authority will follow the procedure specified in 147.B.110 (a) and (b) in so far as the change affects such procedure before issuing a new Part-147 approval certificate valid for a new recommended 2 year period or with a new issue date for continuous approvals.

7. The complete or partial re-organisation of a training organisation will require the re-audit of those elements that have changed.

8. Any additional basic or aircraft type training courses requires the maintenance training organisation to make a new application to the competent authority together with the submission of an amended exposition. For basic training extensions, an additional sample of new examination questions relevant to the modules associated with the extension being sought will be required to be submitted. The competent authority will follow the procedure of paragraph 2 in so far as the change affects such procedures unless the competent authority is satisfied that the maintenance training organisation has a well-controlled procedure to qualify such change when it is not necessary to conduct the audit elements of the paragraph 2 procedure.