



**Civil Aviation
Requirements**

MCAR-Part 145 + AMC

Approved Maintenance Organization

Third Edition
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**Department of Civil Aviation
Ministry of Transport, Myanmar**

APPROVED MAINTENANCE ORGANIZATION PART 145 + AMC

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PREFACE

This requirement has been prepared for the use and guidance to get Approval for Maintenance Organization from DCA Myanmar.

MCAR 145 establishes measures to be taken and facts to be provided to get approval for Maintenance Organization. It also specifies the conditions to be met by the Organization involved in Maintenance of Myanmar Registered Aircraft.

This requirement is revised to reflect the EASA Part - 145, issued on November 2010. This Edition supersedes the previous Edition and is effective from the date printed on it.

This requirements has been issued by the Director General under authority conferred by Section 5-A (c) of the Myanmar Aircraft Act (1934).

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RECORD OF AMENDMENTS

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First Edition	2006	DCA
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145.1 GENERAL

145.1.1 APPLICABILITY

- (1) This Part prescribes the requirements for issuing approvals of Organizations to carrying out the maintenance of Myanmar Registered Aircraft and related aeronautical products and the general operating rules for an Approved Maintenance Organization (AMO). An AMO shall also comply with all the requirements prescribed in MCAR Part-M and MCAR Part-21 respectively.
- (2) The Maintenance Organizations having their principal place of business located in foreign country must have been previously approved by Civil Aviation Authority of such country.

145.1.2 DEFINITIONS

For the purpose of this Part, the following definitions shall apply –

- (1) **Accountable Manager.** The manager acceptable to DCA who has corporate Authority for ensuring that all maintenance, and modification required by the aircraft owner /operator can be financed and carried out to the standard required by DCA. The accountable manager may delegate to another person in the organization, in writing, to become the accountable manager, when so authorized by the DCA.
- (2) **Aeronautical Product.** Any aircraft, aircraft engine, propeller, or subassembly, appliance, material, part or component to be installed thereon.
- (3) **Aeroplane.** A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.
- (4) **Aircraft.** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.
- (5) **Air Operator Certificate (AOC).** A certificate authorizing an operator to carry out specified commercial air transport operations.
- (6) **Airworthiness Approval Tag (CAA form).** A tag (Model CAA Form AAT) that may be attached to a part. The tag must include the part number, serial number, and current life status of the part. Each time the part is removed from a type certificated product, a new tag must be created or the existing tag must be updated with the current life status. The Model CAA Form AAT has two distinct purposes (1) is as a certification of release to service of a part, component or assembly after maintenance, preventive maintenance, overhaul or rebuilding, and (2) the other is as shipping of a newly manufactured part.
- (7) **Airworthiness Directive.** Continuing airworthiness information that applies to the following products: aircraft, aircraft engines, propellers, and appliances. An airworthiness directive is mandatory if issued by the State of Design.
- (8) **Alteration.** The alteration of an aircraft/aeronautical product in conformity with an approved standard.
- (9) **Appropriate Airworthiness Requirements.** The comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration.
- (10) **Approved Data.** Technical information approved by the DCA.

- (11) **Article.** Any item, including but not limited to, an aircraft, airframe, aircraft engine, propeller, appliance, accessory, subassembly, system, subsystem, component, unit, product or part.
- (12) **Authorized person** means the officials of the DCA, who has responsibility for the oversight of the maintained aircraft or component.
- (13) **Calibration.** A set of operations, performed in accordance with a definite documented procedure that compares the measurement performed by a measurement device or working standard for the purpose of detecting and reporting or eliminating by adjustment errors in the measurement device, working standard, or aeronautical product tested.
- (14) **Category B1 and B2 support staff** means those category B1 and B2 staff in the base maintenance environment who do not hold necessarily whole aircraft certification privileges. They may get Certification Authorization for relevant category from the Maintenance Organization.
- (15) **Certifying staff** means personnel responsible for the release of an aircraft or a component after maintenance;
- (16) **Certification Authorization** means the authorization issued to certifying staff by the organization and which specifies the fact that they may sign certificates of release to service within the limitations stated in such authorization on behalf of the approved organization.
- (17) **Certificated Approved Maintenance Organization.** Means a maintenance organization approved by the DCA.
- (18) **Component** means any engine, propeller, part or appliance.
- (19) **Continuing airworthiness** means all of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness requirements in force and is in a condition for safe operation;
- (20) **Composite.** Structural materials made of substances, including, but not limited to, wood, metal, ceramic, plastic, fiber-reinforced materials, graphite, boron, or epoxy, with built-in strengthening agents that may be in the form of filaments, foils, powders, or flakes, of a different material.
- (21) **Computer System.** Any electronic or automated system capable of receiving, storing, and processing external data, and transmitting and presenting such data in a usable form for the accomplishment of a specific function.
- (22) **Duty.** Any task that flight or cabin crew members are required by the operator to perform, including, for example, flight duty, administrative work, training, positioning and standby when it is likely to induce fatigue.
- (23) **Duty Period.** A period which starts when a flight or cabin crew member is required by an operator to report for or to commence a duty and ends when that person is free from all duties.
- (24) **Endangers 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. Airworthiness directive overdue for compliance is also considered a hazard to flight safety.
- (25) **Facility.** A physical plant, including land, buildings, and equipment, which provide the means for the performance of maintenance of any article.
- (26) **Flight Manual.** A manual, associated with the certificate of airworthiness, containing limitations within which the aircraft is to be considered airworthy, and instructions and information necessary to the flight crew members for the safe operation of the aircraft.
- (27) **Human factors** means principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration of human performance.
- (28) **Human factors principles,** in relation to maintenance, means principles that deal with the interaction between human performance and maintenance system components that are applied to improve safety of air navigation.
- (29) **Human Performance.** Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.
- (30) **Housing.** Buildings, hangars and other structures to accommodate the necessary equipment and materials of a maintenance organization that –
- (i) Provide working space for the performance of maintenance for which the maintenance organization is certificated and rated; and
 - (ii) Provide structures for the proper protection of articles during maintenance; and
 - (iii) Provide for the proper storage, segregation, and protection of materials, parts, and supplies.
- (31) **Life-Limited Part.** Any part for which a mandatory replacement limit is specified in the type design, the Instructions for Continued Airworthiness, or the maintenance manual.
- (32) **Maintenance.** The performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.
- (33) **Maintenance Procedures Manual.** A document endorsed by the head of the maintenance organization which details the maintenance organization's structure and management responsibilities, scope of work, description of facilities, maintenance procedures and quality assurance or inspection systems which is equivalent to *Maintenance Organization's Exposition (MOE)*.
- (34) **Maintenance Programme (Program).** A document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability programme, necessary for the safe operation of those aircraft to which it applies.
- (35) **Maintenance Release.** A document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner, either in accordance with the approved data and the procedures described in the maintenance organization's procedures manual or under an equivalent system.

- (36) **Major Defect** means any condition of an aircraft or aeronautical product that has resulted in, or that may result in an unsafe condition that might seriously affect flight safety.
- (37) **Major Alteration.** Major alteration means an alteration not listed in the aircraft, aircraft engine, or propeller specifications (1) that might appreciably affect weight, balance, structural strength, performance, power-plant, operations, flight characteristics, or other qualities affecting airworthiness; or (2) that cannot be done by elementary operations.
- (38) **Major Repair.** Major repair means a repair: (1) that if improperly done might appreciably affect weight, balance, structural strength, performance, power-plant, operations, flight characteristics, or other qualities affecting airworthiness; or (2) that is not done according to accepted practices or cannot be done by elementary operations.
- (39) **Maximum Mass.** Maximum certificated take-off mass.
- (40) **Measurement Device.** A calibrated calibrator, standard, equipment or test equipment intended to be used to test, measure, or calibrate other measurement devices and/or working standards. It is not to be used to test, measure, or calibrate an aeronautical product.
- (41) **Operator.** A person, organization or enterprise engaged in or offering to engage in an aircraft operation.
- (42) **Overhaul.** The restoration of an aircraft/aeronautical product using methods, techniques, and practices acceptable to DCA, including disassembly, cleaning, and inspection as permitted, repair as necessary, and reassembly; and tested in accordance with approved standards and technical data, or in accordance with current standards and technical data acceptable to DCA, which have been developed and documented by the State of Design, holder of the type certificate, supplemental type certificate, or a material, part, process, or appliance approval under a Technical Standard Order (TSO).
- (43) **Pre-flight inspection.** The inspection carried out before flight to ensure that the aircraft is fit for the intended flight.
- (44) **Preventive Maintenance.** Simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations.
- (45) **Primary Standard.** A standard defined and maintained by a State DCA and used to calibrate secondary standards.
- (46) **Principal place of business** means the head office or the registered office of the undertaking within which the principal financial functions and operational control of the activities referred to in this Part are exercised.'
- (47) **Rebuild.** The restoration of an aircraft/aeronautical product by using methods, techniques, and practices acceptable to the DCA, when it has been disassembled, cleaned, inspected as permitted, repaired as necessary, reassembled, and tested to the same tolerances and limits as a new item, using either new parts or used parts that conform to new part tolerances and limits.
- (48) **Reference Standard.** A standard maintained by comparison with a secondary standard to be used to maintain working standards.

- (49) **Relevant aircraft and/or components.** Means those aircraft or components specified in the particular certification authorization.
- (50) **Repair.** (1)The restoration of an aeronautical product to an airworthy condition as defined by the appropriate airworthiness requirements. (2)The restoration of an aeronautical product to an airworthy condition to ensure that the aircraft continues to comply with the design aspects of the appropriate airworthiness requirements used for the issuance of the type certificate for the respective aircraft type, after it has been damaged or subjected to wear.
- (51) **Rest Period.** A continuous and defined period of time, subsequent to and/or prior to duty, during which flight or cabin crew members are free of all duties.
- (52) **Safety Management System.** A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.
- (53) **Safety Programme.** An integrated set of regulations and activities aimed at improving safety.
- (54) **Secondary Standards.** A standard maintained by comparison with a primary standard.
- (55) **Signature.** An individual's unique identification used as a means of authenticating a maintenance record entry or maintenance record. A signature may be hand-written, electronic, or any other form acceptable to the DCA.
- (56) **Specialized Maintenance.** Any maintenance not normally performed by an AMO. (e.g. tire retreading, plating, .)
- (57) **Specific Operating Provisions.** The Specific Operating Provisions describe the ratings (Class and/or Limit) in detail and will contain or reference material and process specifications used in performing repair work, along with any limitations applied to the maintenance organization.
- (58) **Standard.** An object, artefact, tool, test equipment, system, or experiment that stores, embodies, or otherwise provides a physical quantity, which serves as the basis for measurement of the quantity. It also includes a document describing the operations and process that must be performed in order for a particular end to be achieved.
- (59) **State of Design.** The State having jurisdiction over the organization responsible for the type design.
- (60) **State of Manufacture.** The State having jurisdiction over the organization responsible for the final assembly of the aircraft.
- (61) **State of Registry.** The State on which register the aircraft is entered.
- (62) **Target Level of Safety (TLS).** A generic term representing the level of risk which is considered acceptable in particular circumstances.
- (63) **Tools, Equipment and Test Equipment.** Used by an AMO for the performance of maintenance or calibration on an aircraft or aeronautical product. See also working standard.
- (64) **Traceability.** A characteristic of a calibration, analogous to a pedigree. A traceable calibration is achieved when each Measurement Device and Working Standard, in a hierarchy stretching back to the Primary Standard, was itself properly calibrated, and the results properly documented. The documentation provides the information

needed to show that all calibrations in the chain of calibrations were properly performed.

- (65) **Transfer Standard.** Any standard that is used to compare a measurement process, system, or device at one location or level with another measurement process, system or device at another location or level.
- (66) **Type Certificate.** A document issued by a Contracting State to define the design of an aircraft type and to certify that this design meets the appropriate airworthiness requirements of that State.
- (67) **Validation of a Certificate of Airworthiness.** The action taken by a Contracting State, as an alternative to issuing its own Certificate of Airworthiness, in accepting a Certificate of Airworthiness issued by any other Contracting State as the equivalent of its own Certificate of Airworthiness.
- (68) **Working Standard.** A calibrated standard that is used in the performance of maintenance and/or calibrations in any work area for the purpose of forming the basis for product acceptance or for making a finding of airworthiness (approval for release to service) to an aircraft or aeronautical product. A working standard may be maintained by comparison with primary standards, secondary standards, reference standards or transfer standards, as appropriate. A working standard is not to be used to test, measure, or calibrate other working standards or measurement devices.

145.1.3 ABBREVIATIONS

The following abbreviations are used in this part.

- (i) AAT - Approved Airworthiness Tag
- (ii) AMC - Acceptable Means of Compliance
- (iii) AMO - Approved Maintenance Organization
- (iv) DCA - Department of Civil Aviation (Myanmar)
- (v) MOE - Maintenance Organization Exposition
- (vi) PAH - Production Approval Holder
- (vii) TSO - Technical Standard Order

145.10 SCOPE

- (1) This Part establishes the requirements to be met by an organization to qualify for the issue or continuation of an approval for the maintenance of Myanmar Registered aircraft and related components.
- (2) The Certificate and Terms of Approval issued to an AMO must be available on the premises for inspection by the DCA Myanmar.

AMC 145.10 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 power plant 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 organization provided all requirements are fulfilled as defined by the DCA.
- (c) Maintenance tasks falling outside these criteria are considered to be **Base Maintenance**.
- (d) Aircraft maintained in accordance with 'progressive' type programmers should be individually assessed in relation to this paragraph. 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. Where the organization 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 Organization 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 organization.

145.15 APPLICATION

- (a) The application C.A. form 196 is available at Airworthiness Division, Department of Civil Aviation, Myanmar and
- (b) The applicant will require an application of a maintenance organization to submit the DCA together with the followings –
- (i) Its Maintenance Organization Exposition in duplicate for approval;
 - (ii) A list of the maintenance functions to be performed for it, under contract, by another AMO;
 - (iii) List of all AMO certificates and ratings pertinent to those certificates other than Myanmar;
 - (iv) Any additional information the DCA requires the applicant to submit.

Note: "an application" should be completed by the accountable manager and submit to the DCA prior to 90 days. If a request is not made within this period, AMO must follow the application procedure prescribed by DCA.

AMC 145.15 Application

The application for Initial Issue or Renewal or Amendment of an AMO C.A. form 196 should be made in a form and in a manner established by DCA.

145.20 TERMS OF APPROVAL

The AMO shall specify the scope of work deemed to constitute approval in its MOE according to MCAR.145.20.1, and MCAR 145.20.2.

145.20.1 ORGANISATION APPROVAL CLASS AND RATING SYSTEM

(1) **Category A class rating** means that the approved maintenance organization may carry out maintenance on the aircraft and any component (including engines and/or APUs), in accordance with aircraft maintenance data or if agreed by the DCA, in accordance with component maintenance data, only whilst such components are fitted to the aircraft. Nevertheless, such A-rated AMO may temporarily remove a component for maintenance, in order to improve access to that component, except when such removal generates the need for additional maintenance not eligible for the provisions of this paragraph. This will be subject to a control procedure in the maintenance organization exposition to be approved by the DCA. The limitation section will specify the scope of such maintenance thereby indicating the extent of approval.

Category A class ratings are subdivided into 'Base' or 'Line' maintenance. Such an organization may be approved for either 'Base' or 'Line' maintenance or both. It should be noted that a 'Line' facility located at a main base facility requires a 'Line' maintenance approval.

(2) **Category B class rating** means that the approved maintenance organization may carry out maintenance on the uninstalled engine and/or APU and engine and/or APU components, in accordance with engine and/or APU maintenance data or, if agreed by the DCA, in accordance with component maintenance data, only whilst such components are fitted to the engine and/or APU. Nevertheless, such B-rated AMO may temporarily remove a component for maintenance, in order to improve access to that component, except when such removal generates the need for additional maintenance not eligible for the provisions of this paragraph. The limitation section will specify the scope of such maintenance thereby indicating the extent of approval. A maintenance organization approved with a category B class rating may also carry out maintenance on an installed engine during 'base' and 'line' maintenance subject to a control procedure in the maintenance organization exposition to be approved by the DCA. The maintenance organization exposition scope of work shall reflect such activity where permitted by the DCA.

(3) **Category C class rating** means that the approved maintenance organization may carry out maintenance on uninstalled components (excluding Engines and APUs) intended for fitment to the aircraft or engine/APU. The limitation section will specify the scope of such maintenance thereby indicating the extent of approval. A maintenance organization approved with a category C class rating may also carry out maintenance on an installed component during base and line maintenance or at an engine/ APU maintenance facility subject to a control procedure in the maintenance organization exposition to be approved by the DCA. The Maintenance Organization Exposition scope of work shall reflect such activity where permitted by the DCA.

(4) **Category D class rating** is a self contained class rating not necessarily related to a specific aircraft, engine or other component. D1-NDT rating is only necessary for an AMO that carries out NDT as a particular task for another Organization. A maintenance organization approved with a class rating in A or B or C category may carry out limited NDT on products it is maintaining subject to the maintenance organization exposition containing NDT procedures, without the need for a D1 class rating.

MCAR Part-145 AMO may require approval from DCA to carry out other Specialized Services (D2, D3, D4,rating) on aircraft and products it is maintaining subject to the

AMO's exposition containing the Specialized Services Procedures, employee qualifications, training procedures and standards for that rating.

145.20.2 RATINGS OF THE AMO

The following ratings are issued under this Part –

(1) Aircraft Ratings

- A1 Aeroplanes above 5700 kg
- A2 Aeroplanes 5700 kg and below
- A3 Single engine Helicopters
- A4 Aircraft other than A1, A2 and A3

(2) Engine Ratings

- B1 Turbine
- B2 Piston
- B3 APU

(3) Components other than complete Engines or APUs (ATA Specification 2200 chapter for the category C component rating.)

	<u>Rating</u>	<u>ATA Chapters</u>
(i)	C1 Air Cond & Press	21
(ii)	C2 Auto Flight	22
(iii)	C3 Comms & Navigation	23 - 34
(iv)	C4 Doors - Hatches	52
(v)	C5 Electrical Power & Lights	24 - 33
(vi)	C6 Equipment	25 - 38 - 44 - 45 - 50
(vii)	C7 Engine - APU	49 - 71 - 72 - 73 - 74 - 75 - 76 - 77 - 78 - 79 - 80 - 81 - 82 - 83
(viii)	C8 Flight Controls	27 - 55 - 57.40 - 57.50 - 57.60 - 57.70
(ix)	C9 Fuel - Airframe	28 - 47
(x)	C10 Helicopters - Rotors	62 - 64 - 66 - 67
(xi)	C11 Helicopter - Trans	63 - 65
(xii)	C12 Hydraulic Power	29
(xiii)	C13 Indicating/Recording	31 - 42 - 46
(xiv)	C14 Landing Gear	32
(xv)	C15 Oxygen	35
(xvi)	C16 Propellers	61
(xvii)	C17 Pneumatic & Vacuum	36 - 37
(xviii)	C18 Protection Ice/Rain/Fire	26 - 30
(xix)	C19 Windows	56
(xx)	C20 Structural	53 - 54 - 57.10 - 57.20 - 57.30
(xxi)	C21 Water Ballast	41
(xxii)	C22 Propulsion Augmentation	84

(4) Specialized Services Ratings

- (i) D1 Non-Destructive Testing
- (ii) D2 Welding
- (iii) D3 Plating and Machining
- (iv) D4 Other Specialize Services (for example, Tyre Retreading, painting, ..)

145.25. FACILITY REQUIREMENTS

The MCAR-145 approved maintenance organization shall ensure that:

- (a) Facilities are provided appropriate for all planned work, ensuring in particular, protection from the weather elements. Specialized workshops and bays are segregated as appropriate to ensure that environmental and work area contamination is unlikely to occur.
 - (i) For base maintenance of aircraft, aircraft hangars are both available and large enough to accommodate aircraft on planned base maintenance.
 - (ii) For aircraft component maintenance, aircraft component workshops are large enough to accommodate the aircraft components on planned maintenance.
- (b) Office accommodation is provided for the management of the planned work referred to in paragraph (a), and certifying staff so that they can carry out their designated tasks in a manner that contributes to good aircraft maintenance standards.
- (c) The working environment including aircraft hangars, aircraft component workshops and office accommodation is appropriate for the task carried out and in particular special requirements observed. Unless otherwise dictated by the particular task environment the working environment must be such that the effectiveness of personnel is not impaired:
 - (i) Temperatures must be maintained such that personnel can carry out required tasks without undue discomfort.
 - (ii) Dust and any other airborne contamination are kept to a minimum and not be permitted to reach a level in the work task area where visible aircraft/aircraft component surface contamination is evident. Where dust/other airborne contamination results in visible surface contamination, all susceptible systems are sealed until acceptable conditions are re-established.
 - (iii) Lighting is such as to ensure each inspection and maintenance task can be carried out in an effective manner.
 - (iv) Noise shall not distract personnel from carrying out inspection tasks. Where it is impractical to control the noise source, such personnel are provided with the necessary personal equipment to stop excessive noise causing distraction during inspection tasks.
 - (v) Where a particular maintenance task requires the application of specific environmental conditions different to the foregoing, then such conditions are observed. Specific conditions are identified in the maintenance data.
 - (vi) The working environment for line maintenance is such that the particular maintenance or inspection task can be carried out without undue distraction. Therefore where the working environment deteriorates to an unacceptable level in respect of temperature, moisture, hail, ice, snow, wind, light, dust/ other airborne contamination, the particular maintenance or inspection tasks must be suspended until satisfactory conditions are re-established.
- (d) Secure storage facilities are provided for aircraft components, equipment, tools and material. Storage conditions ensure segregation of serviceable aircraft components and material from unserviceable aircraft components, material, equipment and tools. The conditions of storage are in accordance with the manufacturer's instructions to prevent deterioration and damage of stored items. Access to storage facilities is restricted to authorized personnel.

AMC 145.25 (a) Facility Requirements

1. Where the hangar is not owned by the organization, 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 programmed. 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 minimize 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 145.25 (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 the assigned tasks. In addition, as part of the office accommodation, aircraft maintenance staff should be provided with an area where they may study maintenance instructions and complete maintenance records in a proper manner.

AMC 145.25 (d) Facility Requirements

1. Storage facilities for serviceable aircraft components should be clean, well ventilated and maintained at a constant dry temperature to minimize the effects of condensation. Manufacturer’s 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 minimize damage and corrosion during storage.

145.30 PERSONNEL REQUIREMENTS

- (a) MCAR Part 145 AMO shall appoint an accountable manager who has corporate authority for ensuring that all maintenance required by the customer can be financed and carried out to the standard required by this Part. The accountable manager shall:
 - (i) Ensure that all necessary resources are available to accomplish maintenance in accordance with MCAR 145.65 (b) to support the organization approval.
 - (ii) Establish and promote the safety and quality policy specified in MCAR 145.65 (a).
 - (iii) Demonstrate a basic understanding of this Part.
- (b) MCAR Part 145 AMO shall nominate a person or group of persons, whose responsibilities include ensuring that the organization complies with this Part. Such person(s) shall ultimately be responsible to the accountable manager.
 - (i) The person or persons nominated shall represent the maintenance management structure of the organization and be responsible for all functions specified in this Part.

- (ii) The person or persons nominated shall be identified and their credentials submitted in a form and manner acceptable by DCA.
 - (iii) The person or persons nominated shall be able to demonstrate relevant knowledge, background and satisfactory experience related to aircraft or component maintenance and demonstrate a working knowledge of this Part.
 - (iv) Procedures shall make clear who deputizes for any particular person in the case of lengthy absence of the said person.
 - (c) The accountable manager under paragraph (a) shall appoint a person with responsibility for monitoring the quality system, including the associated feedback system as required by MCAR 145.65(c). The appointed person shall have direct access to the accountable manager to ensure that the accountable manager is kept properly informed on quality and compliance matters.
 - (d) MCAR Part 145 AMO shall have a maintenance man-hour plan showing that the organization has sufficient staff to plan, perform, supervise, inspect and quality monitor the organization in accordance with the approval. In addition the organization shall have a procedure to reassess work intended to be carried out when actual staff availability is less than the planned staffing level for any particular work shift or period.
 - (e) MCAR Part 145 AMO shall establish and control the competence of personnel involved in any maintenance, management and/or quality audits in accordance with a procedure and to a standard agreed by the DCA. In addition to the necessary expertise related to the job function, competence must include an understanding of the application of human factors and human performance issues appropriate to that person's function in the organization.
 - (f) MCAR Part 145 AMO shall ensure that personnel who carry out and/or control a continued airworthiness Non-Destructive Test of aircraft structures and/or components are appropriately qualified for the particular non-destructive test in accordance with the European standard EN 4179, except that DCA may accept an equivalent standard in the case of any MCAR-145 AMO located outside Myanmar. Personnel who carry out any other specialized task shall be appropriately qualified in accordance with any existing standard(s) recognized by the DCA as an appropriate standard.
- Note (i) Notwithstanding paragraph (f), personnel qualified prior to 31 December 2003 in accordance with any standard recognized by the DCA may continue to carry out and/or control such non-destructive test after 31 December 2003.
- (ii) Notwithstanding paragraph (f), those personnel qualified in Part 66 category B1 may carry out and/or control color contrast Dye Penetrant tests.
 - (g) Any MCAR 145 AMO maintaining aircraft, except where stated otherwise in paragraph (j), shall in the case of aircraft line maintenance, have appropriate aircraft type rated certifying staff qualified as category B1 and B2 in accordance with MCAR 145.35 and Part-66. In addition such organizations may also use appropriately task trained certifying staff qualified (as category 'A') in accordance with MCAR 145.35 and Part-66 to carry out minor scheduled line maintenance and simple defect rectification. The availability of such category 'A' certifying staff shall not replace the need for Part-66 category 'B1' and 'B2' certifying staff to support the category 'A' certifying staff. However, such Part-66 category 'B1' and 'B2' staff need not always be present at the line station during minor scheduled line maintenance or simple defect rectification.

- (h) Any MCAR 145 AMO maintaining aircraft, except where stated otherwise in paragraph (j) shall:
- (1) in the case of base maintenance of large aircraft, have appropriate aircraft type rated certifying staff qualified as category 'C' in accordance with MCAR 145.35 and Part-66. In addition the organization shall have sufficient aircraft type rated staff qualified as category 'B1' and 'B2' in accordance with MCAR 145.35 and Part-66 to support the category 'C' certifying staff.
 - (i) 'B1' and 'B2' support staff shall ensure that all relevant tasks or inspections have been carried out to the required standard before the category 'C' certifying staff issues the certificate of release to service.
 - (ii) The organization shall maintain a register of any such 'B1' and 'B2' support staff.
 - (iii) The category 'C' certifying staff shall ensure that compliance with paragraph (i) has been met and that all work required by the customer has been accomplished during the particular base maintenance check or work package, and shall also assess the impact of any work not carried out with a view to either requiring its accomplishment or agreeing with the operator to defer such work to another specified check or time limit.
 - (2) In the case of base maintenance of aircraft other than large aircraft have either:
 - (i) appropriate aircraft type rated certifying staff qualified as category 'B1' and 'B2' in accordance with MCAR 145.35 and Part-66 or,
 - (ii) Appropriate aircraft type rated certifying staff qualified in category 'C' assisted by 'B1' and 'B2' support staff as specified in paragraph (i).
- (i) Component certifying staff shall comply with Part-66.
- (j) By derogation to paragraph (g) and (h), MCAR-145 AMO may use certifying staff qualified in accordance with the following provisions:
- (1) For organization facilities located outside Myanmar, certifying staff may be qualified in accordance with the national aviation regulations of the State in which the organization facility is registered, subject to the conditions specified in Appendix IV to Part 145.
 - (2) For line maintenance carried out at a line station of an organization which is located outside Myanmar, the certifying staff may be qualified in accordance with the national aviation regulations of the State in which the line station is based subject to the conditions specified in Appendix IV to to Part 145.
 - (3) For a repetitive pre-flight airworthiness directive which specifically states that the flight crew may carry out such airworthiness directive, the organization may issue a limited certification authorization to the aircraft commander and/or the flight engineer on the basis of the flight crew licence held. However, the organization shall ensure that sufficient practical training has been carried out to ensure that such aircraft commander or flight engineer can accomplish the airworthiness directive to the required standard.
 - (4) In the case of aircraft operating away from a supported location the organization may issue a limited certification authorization to the commander and/or the flight engineer on the basis of the flight crew licence held subject to being satisfied that sufficient practical training has been carried out to ensure that the commander or flight engineer can accomplish the specified task to the required standard. The provisions of this paragraph shall be detailed in maintenance organization exposition procedure.

- (5) In the following unforeseen cases, where an aircraft is grounded at a location other than the main base where no appropriate certifying staff is available, the organization contracted to provide maintenance support may issue a one-off certification authorization:
- (i) to one of its employees holding equivalent type authorizations on aircraft of similar technology, construction and systems; or
 - (ii) to any person with not less than five years maintenance experience and holding a valid ICAO aircraft maintenance licence rated for the aircraft type requiring certification provided there is no organization appropriately approved under this Part at that location and the contracted organization obtains and holds on file evidence of the experience and the licence of that person. All such cases as specified in this subparagraph shall be reported to the DCA within seven days of the issuance of such certification authorization. The organization issuing one-off authorization shall ensure that any such maintenance that could affect flight safety is re-checked by an appropriately approved organization.

AMC 145.30 (a) Personnel Requirements

With regard to the accountable manager, it is normally intended to mean the chief executive officer of the approved maintenance organization, who by virtue of position has overall (including in particular financial) responsibility for running the organization. The accountable manager may be the accountable manager for more than one organization and is not required to be necessarily knowledgeable on technical matters as the maintenance organization 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 145.30 (b) Personnel Requirements

1. Dependent upon the size of the organization, the Part-145 functions may be subdivided under individual managers or combined in any number of ways.
2. The organization 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 organization where any one manager may also be the accountable manager, as determined by the DCA, 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 145.65(b). The base maintenance manager is also responsible for any corrective action resulting from the quality compliance monitoring of 145.65(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 145.65(b) and also responsible for any corrective action resulting from the quality compliance monitoring of 145.65(c).
5. The workshop manager is responsible for ensuring that all work on aircraft components is carried out to the standards specified in 145.65(b) and also responsible for any corrective action resulting from the quality compliance monitoring of 145.65(c).
6. The quality manager’s responsibility is specified in 145.30(c).

7. Notwithstanding the example sub-paragraphs 2-6 titles, the organization 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 organization 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 organization uses (e.g. licensed engineers/independent inspection/dual function supervisors etc.) so long as the quality compliance monitoring staff specified in 145.65(c)(1) remain independent.

AMC 145.30 (c) Personnel Requirements

Monitoring the quality system includes requesting remedial action as necessary by the accountable manager and the nominated persons referred to in 145.30 (b).

AMC 145.30 (d) Personnel Requirements

1. Has sufficient staff means that the organization 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 organizational stability. Contract staff, being part time or full time should be made aware that when working for the organization they are subjected to compliance with the organization's procedures specified in the maintenance organization 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 organization approved under Part-145 whereas contracted means the person is employed by another organization and contracted by that organization to the maintenance organization 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 organization 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 145.25 (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 145.25 (a) (2).
6. The quality monitoring compliance function man-hours should be sufficient to meet the requirement of 145.65(c) which means taking into account AMC 145.65(c). Where quality monitoring staff performs 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 145.30 (d).

AMC 145.30 (e) Personnel Requirements (*)

1. The referenced procedure requires amongst others that planners, mechanics, specialized 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 organization 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 organization. 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. Specialized services staff are able to carry out specialized 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 specialized 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, and then such problems will be reported to the 145.30(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, specialized services staff, supervisors and certifying staff, knowledge of organization procedures relevant to their particular role in the organization is important. The aforementioned list is not exclusive and may include other categories of personnel.
5. Quality audit staff is able to monitor compliance with Part-145 identifying non compliance in an effective and timely manner so that the organization may remain in compliance with 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;
 - Specialized 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 EASA 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 organization. The syllabus may also be adjusted to meet the particular nature of work for each function within the organization. For example:
- Small organizations 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 6, initial training should be provided to personnel within 6 months of joining the maintenance organization, but temporary staff may need to be trained shortly after joining the organization to cope with the duration of employment.
 - Personnel being recruited from another maintenance organization 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 organization's approved under Part-145 human factors training standard.
8. The purpose of human factors continuation training is primarily to ensure that staffs 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 organization on human errors in maintenance.
9. Human factors training may be conducted by the maintenance organization itself, or independent trainers or any training organizations acceptable to the DCA.
10. The Human factors training procedures should be specified in the maintenance organization exposition.
11. Additional training in fuel tank safety as well as associated inspection standards and maintenance procedures should be required for maintenance organizations' technical personnel, especially technical personnel involved in the compliance of CDCCL tasks.
- (*) EASA guidance is provided for training to maintenance organization personnel in Appendix IV to AMC to EASA 145.A.30 (e) and EASA 145.B.10 (3)

AMC 145.30 (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 145.45 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 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 authorize 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 NDT board, all examinations should be conducted by personnel or organizations 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 will be developed, such as, but not limited to thermography and shearography, which are not specifically addressed by EN 4179. Until the time this agreed standard is established, such methods should be carried out in accordance with the particular equipment manufacturer's recommendations including any training and examination process to ensure competence of the personnel in the process.
7. Any maintenance organization approved under Part-145 that carries out NDT should establish NDT specialist qualification procedures detailed in the exposition and accepted by the DCA.
8. Boroscopy and other techniques such as de-lamination coin tapping are non destructive inspections rather than non destructive testing. Notwithstanding such differentiation, the maintenance organization should establish an exposition procedure accepted by the DCA to ensure that personnel who carry out and interpret such inspections are properly trained and assessed for their competence in the process. Non destructive inspections, not being considered as NDT by Part-145 are not listed in class rating D1.
9. The referenced standards, methods, training and procedures should be specified in the maintenance organization 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.
11. In this context officially recognized standard means those standards established or published by an official body whether having legal personality or not, which are widely recognized by the air transport sector as constituting good practice.

AMC 145.30 (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, DCA 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 145.50 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 re-fitment 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 in-flight 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 DCA as a simple task.
- q. Inspection for and removal of de-icing/anti-icing fluid residues, including removal/ closure of panels, cowls or covers or the use of special tools.
- r. Replacement of any other component as agreed by the DCA 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 145.30 (h) (1) Personnel Requirements

The category 'B1' and 'B2' support staffs do not need to hold a certifying staff authorization in accordance with 145.35(b) but the organization may use such appropriately authorized certifying staff to satisfy the requirement.

AMC 145.30 (j) (4) Personnel Requirements

1. For the issue of a limited certification authorization the commander or flight engineer should hold either a valid air transport pilots license (ATPL), commercial pilots license (CPL) or flight engineer (F/EL) license in accordance with JAR-FCL, or a national equivalent acceptable to the competent authority on the aircraft type. In addition the limited certification authorization is subject to the maintenance organization exposition containing procedures to address the personnel requirements of 145.30 (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 MOE and be accepted by the DCA.

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 re-fitment of quick access inspection panels.
 - c. Role changes e.g. stretcher fit, dual controls, FLIR, doors, photographic equipment,
 - d. Inspection for and removal of de-icing/anti-icing fluid residues, including removal/ closure of panels, cowls or covers that are easily accessible but not requiring the use of special tools.
 - e. Any check/replacement involving simple techniques consistent with this AMC and as agreed by the DCA.
- (ii) Holders of a valid JAR FCL Flight engineer's license or a national equivalent acceptable to the competent authority, on the aircraft type may only exercise this limited certification authorization privilege when performing the duties of a flight engineer. In addition to paragraph 2(i) (a) to (e) 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 external lights.
 - 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 in-flight 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 authorization should have a finite life of twelve months subject to satisfactory recurrent training on the applicable aircraft type.

AMC 145.30 (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 authorization should only be considered for issue by the quality department of the contracted organization after it has made a reasoned judgment that such a requirement is appropriate under the circumstances and at the same time maintaining the required airworthiness standards. The organization's quality department will need to assess each situation individually prior to the issuance of a one-off authorization
3. A one-off authorization 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 145.30 (j) (5)(i) Personnel Requirements

In those situations where the requirement for a one-off authorization to issue a CRS for a task on an aircraft type for which certifying staff does not hold a type-rated authorization has been identified, the following procedure is recommended:

1. Flight crew should communicate full details of the defect to the operator's supporting maintenance organization. If necessary, the supporting maintenance organization will then request the use of a one-off authorization from the quality department.
2. When issuing a one-off authorization, the quality department of the organization should verify that:
 - a) Full technical details relating to the work required to be carried out have been established and passed on to the certifying staff.
 - b) The organization has an approved procedure in place for coordinating and controlling the total maintenance activity undertaken at the location under the authority of the one-off authorization.
 - c) The person to whom a one-off authorization is issued has been provided with 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 organization, communicated to the one-off authorization holder.
 - d) The person holds authorizations of equivalent level and scope on other aircraft type of similar technology, construction and systems.
3. The one-off authorization 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 MCAR Part-145 AMO maintenance facility.

AMC 145.30 (j)(5)(ii) Personnel Requirements

This paragraph addresses staff not employed by the maintenance organization who meets the requirements of 145.30(j) (5). In addition to the items listed in AMC 145.30 (j)(5)(i), paragraph 1, 2(a), (b), (c) and 3 the quality department of the organization may issue such one-off authorization providing full qualification details relating to the proposed certifying personnel are verified by the Quality Department and made available at the location.

145.35 CERTIFYING AND CATEGORY 'B1' AND 'B2' SUPPORT STAFF

- (a) In addition to the appropriate requirements of MCAR 145.30 (g) and (h), the MCAR part 145 AMO shall ensure that certifying staff and category 'B1' and 'B2' support staff have an adequate understanding of the relevant aircraft and/or components to be maintained together with the associated organization procedures. In the case of certifying staff, this must be accomplished before the issue or re-issue of the certification authorization.
- (b) Excepting those cases listed in MCAR 145.30 (j) the AMO may only issue a certification authorization to certifying staff in relation to the basic categories or subcategories and any type rating listed on the aircraft maintenance license as required by Part-66, subject to the license remaining valid throughout the validity period of the authorization and the certifying staff remaining in compliance with Part-66.

- (c) MCAR part 145 AMO shall ensure that all certifying staff and category 'B1' and 'B2' support staff are involved in at least six months of actual worked in an aircraft or component maintenance environment and has either exercised the privileges of the certification authorization and/or has actually carried out maintenance on at least some of the aircraft type systems specified in the particular certification authorization experience in any consecutive two year period.
- (d) MCAR part 145 AMO shall ensure that all certifying staff and category 'B1' and 'B2' support staff receive sufficient continuation training in each two year period to ensure that such staff has up-to-date knowledge of relevant technology, organization procedures and human factor issues.
- (e) MCAR part 145 AMO shall establish a programme for continuation training for certifying staff and category 'B1' and 'B2' support staff, including a procedure to ensure compliance with the relevant paragraphs of MCAR 145.35 as the basis for issuing certification authorizations under this Part to certifying staff, and a procedure to ensure compliance with Part 66.
- (f) Except where any of the unforeseen cases of MCAR 145.30 (j)(5) apply, the organization shall assess all prospective certifying staff for their competence, qualification and capability to carry out their intended certifying duties in accordance with a procedure as specified in the exposition prior to the issue or re-issue of a certification authorization under this Part.
- (g) When the conditions of paragraphs (a), (b), (d), (f) and, where applicable, paragraph (c) have been fulfilled by the certifying staff, the organization shall issue a certification authorization that clearly specifies the scope and limits of such authorization. Continued validity of the certification authorization is dependent upon continued compliance with paragraphs (a), (b), (d) and where applicable, paragraph (c).
- (h) The certification authorization must be in a style that makes its scope clear to the certifying staff and any authorized person who may require to examine the authorization. Where codes are used to define scope, the organization shall make a code translation readily available.
- (i) The person responsible for the quality system shall also remain responsible on behalf of the MCAR part 145 AMO for issuing certification authorizations to certifying staff and category 'B1', 'B2' and 'A'. After having sufficient review of experience this person can issue relevant certification Authorization to foreign licence holder, if this foreigner has validation of his/her license from Myanmar DCA. Such person may nominate other persons to actually issue or revoke the certification authorizations in accordance with a procedure as specified in the MOE.
- (j) MCAR part 145 AMO shall maintain a record of all certifying staff and category 'B1' and 'B2' support staff, which shall contain:
 - (i) the details of any aircraft maintenance license held under Part 66;
 - (ii) all relevant training completed;
 - (iii) the scope of the certification authorizations issued, where relevant; and
 - (iv) Particulars of staff with limited or one-off certification authorizations.

MCAR part 145 AMO shall retain the record for at least three years after the staff referred to in this paragraph have ceased employment with the organization or after the authorization has been withdrawn. In addition, upon request, the maintenance organization shall furnish the staff referred to in this paragraph with a copy of their personal record on leaving the organization. The staff referred to in this paragraph shall be given access on request to their personal records as detailed above.

- (k) MCAR part 145 AMO shall provide certifying staff with a copy of their certification authorization in either a documented or electronic format.
- (l) Certifying staff shall produce their certification authorization to any authorized person within 24 hours.
- (m) The minimum age for certifying staff and category 'B1', 'B2' support staff is 21 years.

AMC 145.35 (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 organization procedures means that the person has received training and has relevant maintenance experience on the product type and associated organization procedures such that the person understands how the product functions, what are the more common defects with associated consequences.
2. The organization should hold copies of all documents that attest to qualification, and to recent experience.

AMC 145.35 (b) Certifying Staff and Category 'B1' and 'B2' Support Staff

The organization issues the certification authorization when satisfied that compliance has been established with the appropriate paragraphs of Part-145 and Part-66. In granting the certification authorization the maintenance organization approved under Part- 145 needs to be satisfied that the person holds a valid Part-66 aircraft maintenance license and may need to confirm such fact with the competent authority of the Member State that issued the license.

AMC 145.35 (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 organization 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 organization 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 145.35(d) and may be split into a number of separate elements. 145.35(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 organization on human errors in maintenance. This means that in the case of an organization that maintains aircraft with few relevant quality audit findings, continuation training could be limited to days rather than weeks, whereas a similar organization with a number of relevant

quality audit findings, such training may take several weeks. For an organization 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 organization exposition unless such training is undertaken by an organization approved under Part-147 when such details may be specified under the approval and cross referenced in the maintenance organization exposition.

AMC 145.35 (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 145.35 (j).

AMC 145.35 (f) Certifying Staff and Category 'B1' and 'B2' Support Staff

1. As stated in 145.35(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 organization.
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 organization and was a certifying person in that organization then the organization 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 license and/or any authorization held. This should be followed by a confirmation check with the organization(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 organization. This latter point may reveal a need for product type differences training.

AMC 145.35 (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 authorization
 - h. Scope of the authorization
 - i. Date of first issue of the authorization
 - j. If appropriate- expiry date of the authorization
 - k. Identification Number of the authorization
2. The record may be kept in any format but should be controlled by the organization's quality department. This does not mean that the quality department should run the record system.
 3. Persons authorized to access the system should be maintained at a minimum to ensure that records cannot be altered in an unauthorized manner or that such confidential records become accessible to unauthorized persons.
 4. The DCA is an authorized person when investigating the records system for initial and continued approval or when the DCA has cause to doubt the competence of a particular person.

145.40 EQUIPMENT, TOOLS AND MATERIAL

- (a) The MCAR part 145 AMO must have the necessary equipment, tools and material to perform the approved scope of work;
 - (i) Where the manufacturer specifies a particular tool or equipment, the organization shall use that tool or equipment, unless the use of alternative tooling or equipment is agreed by the DCA via procedures specified in the exposition.
 - (ii) Equipment and tools must be permanently available, except in the case of any tool or equipment that is so infrequently used that its permanent availability is not necessary. Such cases shall be detailed in an exposition procedure.
 - (iii) An organization approved for base maintenance shall have sufficient aircraft access equipment and inspection platforms/docking such that the aircraft can be properly inspected.
- (b) MCAR part 145 AMO shall ensure that all tools, equipment and particularly test equipment, as appropriate, are controlled and calibrated according to an officially recognized standard at a frequency to ensure serviceability and accuracy. Records of such calibration and traceability to the standard used shall be kept by the organization.
- (c) Equipment, tools, material, and airworthiness and maintenance data should be available for completion of the scope of activities included in the approval granted by the DCA. The MCAR part 145 AMO should show that all tools and equipment as specified in the approved data can be made available when needed.
 - i) Much of the tooling and equipment associated with aircraft maintenance is subject to periodic calibration. The calibration procedures should be acceptable to the DCA and the actual standards themselves traceable to international standards acceptable to the State concerned.
 - ii) All tools and equipment that are required to be controlled in terms of servicing or calibration should be clearly identified and listed in a control register including any personal tools and equipment that the organization agrees can be used. Where the manufacturer specifies a particular tool and equipment, then that tool or equipment should be used, unless otherwise agreed by the DCA, in a particular case via a procedure specified in the approved maintenance organization's procedures manual.

- iii) The control of these tools and equipment requires that the approved maintenance organization has a procedure to inspect/maintain and, where appropriate, calibrate such items on a regular basis and indicate to users that the item is within any inspection or service calibration time-limit.
- iv) A clear system of labeling 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 tools and equipment together with a record of calibrations and standards used.
- v) Inspection, maintenance and calibration on a regular basis should be in accordance with the equipment manufacturer's instructions except otherwise as accepted by the DCA.

AMC 145.40 (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 organization agrees can be used.

AMC 145.40 (b) Equipment, Tools and Material

1. The control of these tools and equipment requires that the organization 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 labeling 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 organization can show by results that a different time period is appropriate in a particular case.
3. In this context officially recognized standard means those standards established or published by an official body whether having legal personality or not, which are widely recognized by the air transport sector as constituting good practice.

145.42 ACCEPTANCE OF COMPONENTS

- (a) All components shall be classified and appropriately segregated into the following categories:
 - (i) Components which are in a satisfactory condition, released on an EASA Form 1 or equivalent acceptable authorized released documents.
 - (ii) Unserviceable components which shall be maintained in accordance with part 145.
 - (iii) Unsalvageable components which are classified in accordance with MCAR 145.42.
 - (d).
 - (iv) Standard parts used on an aircraft, engine, propeller or other aircraft component when specified in the manufacturer's illustrated parts catalogue and/or the maintenance data.

- (v) Material both raw and consumable used in the course of maintenance when the MCAR Part-145 AMO is satisfied that the material meets the required specification and has appropriate traceability. All material must be accompanied by documentation clearly relating to the particular material and containing conformity to specification statement plus both the manufacturing and supplier source.
- (b) Prior to installation of a component, the MCAR part-145 AMO shall ensure that the particular component is eligible to be fitted when different modification and/or airworthiness directive standards may be applicable.
- (c) MCAR part- 45 AMO may fabricate a restricted range of parts to be used in the course of undergoing work within its own facilities provided procedures are identified in the exposition.
- (d) Components which have reached their certified life limit or contain a non-repairable defect shall be classified as unsalvageable and shall not be permitted to re-enter the component supply system unless certified life limits have been extended or a repair solution has been approved or accepted by the DCA.

AMC 145.42 (a) Acceptance of Components

1. A document equivalent to an EASA Form 1 may be:
 - a) A release document issued by an organization under the terms of a bilateral agreement signed by the European Community;
 - b) A release document issued by an organization approved under the terms of a JAA bilateral agreement until superseded by the corresponding agreement signed by the European Community;
 - c) A JAA Form One issued prior to 28 November 2004 by a JAR 145 organization 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 organization 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 organization approved by a competent authority in accordance with its national regulations.
2. For acceptance of standard parts, raw material and consumable material refer to Myanmar Aircraft Rule, Schedule III, and Section E, para(2) and/or AMC M.A.501 (c) and AMC M.A.501 (d).

AMC 145.42 (b) Acceptance of Components

The EASA Form 1 or equivalent identifies the status of an aircraft component. Block 12 'Remarks' on the EASA Form 1 in some cases contains vital airworthiness related information which may need appropriate and necessary actions. The receiving organization should be satisfied that the component in question is in satisfactory condition and has been appropriately released to service. In addition, the organization 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 (Service Bulletin). Care should also be taken in ensuring compliance with applicable airworthiness directives, the status of any life-limited parts fitted to the aircraft component as well as Critical Design Configuration Control Limitations.

AMC 145.42 (c) Acceptance of Components

1. The agreement by the competent authority for the fabrication of parts by the approved maintenance organization should be formalized through the approval of a detailed procedure in the Maintenance Organization 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 organization;
3. All necessary data to fabricate the part should be approved either by the DCA or the type certificate (TC) holder or Part-21 design organization approval holder or supplemental type certificate (STC) holder;
4. Items fabricated by an organization approved under Part-145 may only be used by that organization 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 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 organization 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 organization 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 organization 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 organization the organization can not fabricate the part unless the TC/STC-holder gives an approved alternative.
7. Examples of fabrication under the scope of a 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 DCA.

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 DCA.

8. Where a TC-holder or an approved production organization 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 organization's identity should be marked on the part for traceability purposes.

AMC 145.42 (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 organizations 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.

145.45 MAINTENANCE DATA

- (a) MCAR part 145 AMO shall hold and use applicable current maintenance data in the performance of maintenance, including modifications and repairs. "Applicable" means relevant to any aircraft, component or process specified in MCAR part 145 AMO approval class rating schedule and in any associated capability list. In the case of maintenance data provided by an operator or customer, the organization shall hold such data when the work is in progress, with the exception of the need to comply with MCAR 145.55(c).
- (b) For the purposes of this Part, applicable maintenance data shall be:
 - (i) Any applicable requirement, procedure, airworthiness directive, airworthiness notice or information issued by the DCA.

- (ii) Any applicable airworthiness directive issued by the original type certificate authority of the aircraft or component.
- (iii) Any applicable data, such as but not limited to, maintenance and repair manuals, issued by an organization under the approval of the Authority including type certificate and supplementary type certificate holders and any other organization approved to publish such data by the related Authority.
- (iv) Unless specified otherwise by DCA, any applicable data, such as but not limited to, maintenance and repair manuals, issued by an organization under the approval or authority of the original type certificate Authority.
- (v) Any applicable standard, such as but not limited to, maintenance standard practices recognized by the DCA as a good standard for maintenance;
- (vi) Any applicable data issued in accordance with paragraph (d).
- (c) MCAR part 145 AMO shall establish procedures to ensure that if found, any inaccurate, incomplete or ambiguous procedure, practice, information or maintenance instruction contained in the maintenance data used by maintenance personnel is recorded and notified to the author of the maintenance data.
- (d) MCAR part 145 AMO may only modify maintenance instructions in accordance with a procedure specified in the MOE, where it can be shown that such modified maintenance instruction results in equivalent or improved maintenance standards and subject to the type-certificate holder being informed. Maintenance instructions for the purposes of this sub-paragraph means instructions on how to carry out the particular maintenance task. MCAR Part 145 AMO may not carry out the engineering design of repairs and modifications under this sub paragraph (d).
- (e) MCAR part 145 AMO shall provide a common work card or work sheet system to be used throughout relevant parts of the organization. In addition, the organization shall either transcribe accurately the maintenance data contained in paragraphs (b) and (d) onto such work cards or worksheets or make precise reference to the particular maintenance task or tasks contained in such maintenance data. Work cards and worksheets may be computer generated and held on an electronic database subject to both adequate safeguards against unauthorized alteration and a back-up electronic database which shall be updated within 24 hours of any entry made to the main electronic database. Complex maintenance tasks shall be transcribed onto the work cards or worksheets and subdivided into clear stages to ensure a record of the accomplishment of the complete maintenance task.
 Where the MCAR part 145 AMO provides a maintenance service to an aircraft operator who requires their work card or worksheet system to be used then such work card or worksheet system may be used. In this case, MCAR part 145 AMO shall establish a procedure to ensure correct completion of the aircraft operators' work cards or worksheets.
- (f) The AMO shall ensure that all applicable maintenance data is readily available for use when required by maintenance personnel.
- (g) MCAR part 145 AMO shall establish a procedure to ensure that maintenance data it controls is kept up to date. In the case of operator/customer controlled and provided maintenance data, the MCAR part 145 AMO shall be able to show that either it has written confirmation from the operator/customer that all such maintenance data is up to date or it has work orders specifying the amendment status of the maintenance data to be used or it can show that it is on the operator/customer maintenance data amendment list.

AMC 145.45 (b) Maintenance Data

1. Except as specified in sub-paragraph 5, each maintenance organization approved under Part 145 should hold and use the following minimum maintenance data relevant to the organization's approval class rating. All maintenance related Implementing Rules, associated AMCs and approval specifications, all applicable national maintenance requirements and notices which have not been superseded by the DCA 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 as well as Critical Design Configuration Control Limitations.
2. In addition to sub-paragraph 1, an organization 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 subparagraph 1, an organization 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 testing (NDT) 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 organization 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 organization only approved in class rating category D-Specialized services, should hold and use all applicable specialized service(s) process specifications.

AMC 145.45 (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 approved maintenance organization 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 organization 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 organization exposition.

AMC 145.45 (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 Important.

Note: Critical Design Configuration Control Limitations (CDCCL) is airworthiness limitations. Any modification of the maintenance instructions linked to CDCCL constitutes an aircraft modification that should be approved in accordance with Part-21.

AMC 145.45 (e) Maintenance Data

1. The maintenance organization should:
 - transcribe accurately the maintenance data onto such work cards or worksheets, or
 - make precise reference to the particular maintenance task(s) contained in such maintenance data, which already identifies the task as a CDCCL where applicable.
2. Relevant parts of the organization means with regard to aircraft base maintenance, aircraft line maintenance, engine workshops, mechanical workshops and avionic workshops. Therefore, engine workshops for example should have a common system throughout such engine workshops that may be different to that in the aircraft base maintenance.
3. The work-cards 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 a task, it may be necessary to use supplementary work-cards or worksheets to indicate what was actually accomplished by each individual person.

AMC 145.45 (f) Maintenance Data

1. 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.
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.

AMC 145.45 (g) Maintenance Data

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. Special attention should be given to TC

related data such as certification life-limited parts, airworthiness limitations and Airworthiness Limitation Items (ALI), etc.

145.47 PRODUCTION PLANNING

- (a) MCAR part 145 AMO shall have a system and competent personnel to the amount and complexity of work to plan the availability of all necessary personnel, tools, equipment, material, maintenance data and facilities in order to ensure the safe completion of the maintenance work.
- (b) The planning of maintenance tasks, and the organizing of shifts, shall take into account human performance limitations.
- (c) When it is required to hand over the continuation or completion of maintenance tasks for reasons of a shift or personnel changeover, relevant information shall be adequately communicated between outgoing and incoming personnel.

AMC 145.47 (a) Production Planning

- 1. Depending on the amount and complexity of work generally performed by the maintenance organization, the planning system may range from a very simple procedure to a complex organizational set-up including a dedicated planning function in support of the production function.
- 2. For the purpose of this Part, 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, organizing maintenance teams and shifts and provides 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.

AMC 145.47 (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.

AMC 145.47 (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 formalized process for exchanging information between outgoing and incoming persons and a planned shift overlap and a place for such exchanges to take place.

145.50 CERTIFICATION OF MAINTENANCE

- (a) A Certificate of Release to Service shall be issued by appropriately authorized certifying staff on behalf of the MCAR Part 145 AMO when it has been verified that all maintenance ordered has been properly carried out by the organization in accordance with the procedures specified in MCAR145.70, Maintenance Organization Exposition taking into account the availability and use of the maintenance data specified in MCAR145.45 and that there are no non-compliances which are known to endanger flight safety.
- (b) Certificate of Release to Service shall be issued before flight at the completion of any maintenance. Certificate of Release to Service must contain;
 - (i) basic details of the maintenance carried out including detailed reference of the approved data used;
 - (ii) the date such maintenance was completed, aircraft current status and next maintenance due.
 - (iii) the identity including approval reference of the MCAR-145 AMO and certifying staff issuing such certificate.
 - (iv) the limitations to airworthiness or operations. (if any)
 - (v) The certificate of release to service should contain the following statement:
"The work recorded above has been carried out in accordance with the Myanmar Civil Aviation Requirements Part 145 for the time being in force and in that respect the Aircraft/Equipment is considered fit for Release to Service."
- (c) New defects or incomplete maintenance work orders identified during the above maintenance shall be brought to the attention of the aircraft operator for the specific purpose of obtaining agreement to rectify such defects or completing the missing elements of the maintenance work order. In the case where the aircraft operator declines to have such maintenance carried out under this paragraph, paragraph (e) is applicable.
- (d) Certificate of Release to Service shall be issued at the completion of any maintenance on a component whilst off the aircraft. The authorized release certificate such as "EASA Form 1" constitutes the component certificate of release to service. When the MCAR Part 145 AMO maintains a component for its own use, an "EASA Form 1" may not be necessary depending upon the organization's internal release procedures defined in the exposition.
- (e) By derogation to paragraph (a), when the MCAR Part 145 AMO is unable to complete all maintenance ordered, it may issue a certificate of release to service within the approved aircraft limitations. The MCAR Part 145 AMO shall enter such fact in the aircraft certificate of release to service before the issue of such certificate.

- (f) By derogation to paragraph (a) and MCAR 145.42, when an aircraft is grounded at a location other than the main line station or main maintenance base due to the non-availability of a component with the appropriate release certificate, it is permissible to temporarily fit a component without the appropriate release certificate for a maximum of 30 flight hours or until the aircraft first returns to the main line station or main maintenance base, whichever is the sooner, subject to the aircraft operator agreement and said component having a suitable release certificate but otherwise in compliance with all applicable maintenance and operational requirements. Such components shall be removed by the above prescribed time limit unless an appropriate release certificate has been obtained in the meantime under paragraph (a) and MCAR 145.42.

AMC 145.50 (a) Certification of Maintenance

'Endangers 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.

AMC 145.50 (b) Certification of Maintenance

1. The certificate of release to service should contain the following statement:
"The work recorded above has been carried out in accordance with the **Myanmar Civil Aviation Requirements Part 145** for the time being in force and in that respect the Aircraft/ Equipment is considered fit for Release to Service." Reference should also be made to the Part-145 approval number.
2. It is acceptable to use an alternate abbreviated certificate of release to service consisting of the following statement 'Part-145 release to service' instead of the full certification statement specified in paragraph 1. When the alternate abbreviated certificate of release to service is used, the introductory section of the technical log should include an example of the full certification statement from paragraph 1.
3. The certificate of release to service should relate to the task specified in the (S)TC holder's or operator's instructions or the aircraft maintenance program which itself may cross-refer to maintenance data.
4. 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.
5. When extensive maintenance has been carried out, it is acceptable for the certificate of release to service to summarize the maintenance as long as there is a unique cross reference to the work package containing full details of maintenance carried out. Dimensional information should be retained in the work-pack record.

AMC No.1 to 145.50 (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 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 organization to users.

It can only be issued by organizations approved by the particular competent authority within the scope of the approval. The certificate may be used as a rotatable tag by utilizing the available space on the reverse side of the certificate for any additional information and dispatching the item with two copies of the certificate so that one copy may be eventually returned with the item to the maintenance organization.

The alternative solution is to use existing rotatable tags and also supply a copy of the certificate. 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 organizations approved under Part-145 and the item needs a certificate for the previous maintenance process carried out for the next maintenance organization approved under Part-145 to accept the item for subsequent maintenance processes. In such a case, a clear statement of limitation should be endorsed in Block 12.

AMC No.2 to 145.50 (d) Certification of Maintenance

1. A component which has been maintained off the aircraft needs the issuance 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. When an organization maintains a component for use by the same organization, an EASA Form 1 may not be necessary depending upon the organization’s internal release procedures defined in the maintenance organization exposition.
2. In the case of the issue of EASA Form 1 for components in storage before Part-145 and Part-21 became effective and not released on an EASA Form 1 or equivalent in accordance with 145.42(a) or removed serviceable from a serviceable aircraft or an aircraft which has 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.
 - . Maintained by an unapproved Organization.
 - 2.2. An appropriately rated maintenance organization approved under Part-145 may issue an EASA Form 1 as detailed in this AMC subparagraph 2.5 to 2.9, as appropriate, in accordance with procedures detailed in the exposition as approved by the competent authority. The appropriately rated organization 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 AMC No.2 only, appropriately rated means an organization 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 14b and stating ‘Inspected’ in block 11. In addition, block 12 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 12. 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 organization acceptable to the competent authority at that time may be issued with an EASA Form 1 by an appropriately rated maintenance organization 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 organization manual.
- Note: 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 organization and subjected to a check for incorporated airworthiness directives, repairs and modifications and inspected/ tested in accordance with the maintenance data to establish satisfactory condition and, if relevant, all seals, lubricants and life-limited parts should be replaced. Upon satisfactory completion after reassembly, an EASA Form 1 may be issued stating what was carried out and the reference of the maintenance data 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 with an EASA Form 1 by an appropriately rated organization subject to compliance with this subparagraph.

- (a) The organization 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 maintenance data.
- (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 serialized 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 with an EASA Form 1 if the components are leased or loaned from the maintenance organization 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 with an EASA Form 1 by a maintenance organization approved under Part-145 subject to compliance with this subparagraph.

- (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 organization 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 organization 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 organization responsible for certifying any removed component should ensure 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 organization 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 the manufacturer's recommendations.
- 2.8. Used aircraft components maintained by organizations not approved in accordance with Part-145. For used components maintained by a maintenance organization not approved under Part-145, due care should be taken before acceptance of such components. In such cases an appropriately rated maintenance organization 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 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 145.50.
- 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 deemed 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 12.

AMC 145.50 (e) Certification of Maintenance

1. Being unable to establish full compliance with sub-paragraph Part-145.50(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 145.50(e) requires such operator to be informed in the case where full compliance with 145.50(a) cannot be achieved within the operator's 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 the competent authority of the State of Registry or State of Operator, as appropriate. In case of doubt concerning such a decision of the operator, the approved maintenance organization should inform its competent authority on such doubt, before issuing the certificate of release to service. This will allow this competent authority to investigate the matter with the competent authority of the State of Registry or the State of Operator as appropriate.

3. The procedure should draw attention to the fact that 145.50(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 145.30(b) should be kept informed in writing of such possible non-compliance situations and this should be included in the procedure.

AMC 145.50 (f) Certification of Maintenance

1. Suitable release certificate means a certificate which clearly states that the aircraft component is serviceable; that clearly specifies the organization releasing said component together with details of the authority under whose approval the organization works including the approval or authorization 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.

145.55 MAINTENANCE RECORDS

- (a) MCAR Part 145 AMO shall record all details of maintenance work carried out and retain records necessary to prove that all requirements have been met for issuance of the Certificate of Release to Service, including subcontractor's release documents.
- (b) MCAR Part 145 AMO shall provide a copy of each Certificate of Release to Service to the aircraft operator, together with a copy of any specific approved repair/modification data used for repairs/modifications carried out.
- (c) MCAR Part 145 AMO shall retain a copy of all detailed maintenance records and any associated maintenance data for three years from the date the aircraft or component to which the work relates was released from the MCAR Part 145 AMO;

- (i) the records under this paragraph shall be stored in a safe way with regard to fire, flood and theft.
- (ii) Computer backup discs, tapes etc. shall be stored in a different location from that containing the working discs, tapes etc., in an environment that ensures they remain in good condition.
- (iii) Where an MCAR Part 145 AMO terminates its operation, all retained maintenance records covering the last two years shall be distributed to the last owner or customer of the respective aircraft or component or shall be stored as specified by the DCA.

Note: Where an AOC Holder contracts a MCAR Part 145 organization to keep the aircraft operator's certificates of release to service and any associated data, the retention period will be that required by MCAR Part 1 AOC Requirements and not that specified by in MCAR 145.55 (c).

AMC 145.55 (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.

145.60 OCCURRENCE REPORTING

- (a) The MCAR Part 145 AMO shall report to the DCA, the state of registry and the organization responsible for the design of the aircraft or component any condition of the aircraft or component identified by the MCAR Part 145 AMO that has resulted or may result in an unsafe condition that hazards seriously the flight safety.
- (b) The MCAR Part 145 AMO shall establish an internal occurrence reporting system as detailed in the MOE to enable the collection and evaluation of such reports, including the assessment and extraction of those occurrences to be reported under paragraph (a). This procedure shall identify adverse trends, corrective actions taken or to be taken by the MCAR Part 145 AMO to address deficiencies and include evaluation of all known relevant information relating to such occurrences and a method to circulate the information as necessary.
- (c) The MCAR Part 145 AMO shall make such reports in a form and manner established by the DCA and ensures that they contain all pertinent information about the condition and evaluation results known to the organization.
- (d) Where MCAR Part 145 AMO is contracted by a commercial operator to carry out maintenance, MCAR Part 145 AMO shall also report to the operator any such condition affecting the operator's aircraft or component.
- (e) MCAR Part 145 AMO shall produce and submit such reports as soon as practicable but in any case within 72 hours of the MCAR Part 145 AMO identifying the condition to which the report relates.

AMC 145.60 (a) Occurrence Reporting

AMC 20-8 General Acceptable Means of Compliance for Airworthiness of Products, Parts and Appliances provides further guidance on occurrence reporting.

AMC 145.60 (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 organization 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.

145.65 SAFETY, TRAINING, QUALITY POLICY, MAINTENANCE PROCEDURES AND QUALITY SYSTEM

- (a) MCAR Part-145 AMO shall establish a safety, training and quality policy for the organization to be included in the exposition under MCAR 145.70.
- (b) MCAR Part-145 AMO shall establish maintenance procedures agreed by the DCA taking into account human factors and human performance to ensure good maintenance practices and compliance with this Part which shall include a clear work order or contract such that aircraft and components may be released to service in accordance with MCAR 145.50.
 - (i) The maintenance procedures under this paragraph apply to MCAR 145.25 to MCAR 145.95.
 - (ii) The maintenance procedures established or to be established by the organization under this paragraph shall cover all aspects of carrying out the maintenance activity, including the provision and control of specialized services and lay down the standards to which the MCAR Part 145 AMO intends to work.
 - (iii) With regard to aircraft Line and Base maintenance, the MCAR Part 145 AMO shall establish procedures to minimize the risk of multiple errors and capture errors on critical systems, and to ensure that no person is required to carry out and inspect in relation to a maintenance task involving some element of disassembly/ reassembly of several components of the same type fitted to more than one system on the same aircraft during a particular maintenance check. However, when only one person is available to carry out these tasks then the organization's work card or worksheet shall include an additional stage for re-inspection of the work by this person after completion of all the same tasks.
 - (iv) Maintenance procedures shall be established to ensure that damage is assessed and modifications and repairs are carried out using data approved by DCA or an approved Part-21 Design Organization, as appropriate.
- (c) MCAR Part 145 AMO shall establish a quality system that includes the following:
 - (i) Independent audits in order to monitor compliance with required aircraft/aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft/aircraft components. In the small organizations the independent audit part of the quality system may be contracted to another organization approved under this Part or a person with appropriate technical knowledge and proven satisfactory audit experience; and
 - (ii) A quality feedback reporting system to the person or group of persons specified in MCAR 145.30(b) and ultimately to the accountable manager that ensures proper and timely corrective action is taken in response to reports resulting from the independent audits established to meet paragraph (i).

- (d) The MCAR 145 AMO must establish a safety management system acceptable to the DCA, that:
- (i) Identifies safety hazards and assesses controls and mitigates risks;
 - (ii) Ensures that remedial actions necessary to maintain an acceptable level of safety are implemented
 - (iii) Provides for continuous monitoring and regular assessment of the safety level achieved; and
 - (iv) Aims to make continuous improvement to the overall level of safety.
 - (v) A safety management system shall clearly define lines of safety accountability throughout the organization, including a direct accountability for safety on the part of the accountable manager and MCAR145.30 senior persons.
- (e) The MCAR 145 AMO must establish a Training Policy acceptable to the DCA, that:
- (i) The AMO shall have an employee training program and that consists of indoctrination, initial, recurrent training, specialized and remedial training.
 - (ii) The AMO shall develop and update its training program based on the job tasks associated with its scope of capabilities.
 - (iii) The training program shall ensure that each employee assigned to perform maintenance, preventive maintenance, or alterations, and inspection functions is capable of performing the assigned task, plus if applicable, a procedure to ensure compliance with the DCA requirements.
 - (iv) the AMO must ensure that all receive sufficient continuation training in each 2 year period to ensure that such certifying staff have up to date knowledge of relevant technology, organization procedures and human factor issues.
- (f) The AMO shall document, in a form and manner acceptable to the DCA, the individual employee training required under this section. Training records for individual must be retained for a minimum of two years from the date the employee leaving AMO.

AMC 145.65(a) Safety, Training, Quality Policy, Maintenance Procedures and Quality System

The safety and quality policy should as a minimum include a statement committing the organization to:

- Recognize safety as a prime consideration at all times
- Apply Human factors principles
- Encourage personnel to report maintenance related errors/incidents
- Recognize that compliance with procedures, quality standards, safety standards and regulations is the duty of all personnel
- Recognize the need for all personnel to cooperate with the quality auditors.

AMC 145.65(b) Safety, Training, Quality Policy, Maintenance Procedures and Quality System

1. Maintenance procedures should be held current such that they reflect best practice within the organization. It is the responsibility of all organization's employees to report any differences via their organization'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 145.65(b)(2) Safety, Training, Quality Policy, Maintenance Procedures and Quality System

Specialized services include any specialized activity, such as, but not limited to nondestructive testing requiring particular skills and/or qualification. 145.30(f) covers the qualification of personnel but, in addition, there is a need to establish maintenance procedures that cover the control of any specialized process.

AMC 145.65(b)(3) Safety, Training, Quality Policy, Maintenance Procedures and Quality System

1. The purpose of this procedure is to minimize 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 re-fitment 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 145.60,
 - 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 unauthorized personnel (i.e. temporary staff, trainee) should be checked by authorized 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 signoff relates to one step in the maintenance process and is therefore different to the release to service of the aircraft. "Authorized personnel" means personnel formally authorized by the maintenance organization approved under Part-145 to sign-off tasks. Authorized personnel are not necessarily "Certifying Staff".
4. The maintenance organization should ensure that when carrying out a modification, repair or maintenance, Critical Design Configuration Control Limitations are not compromised; this will require the development of appropriate procedures where necessary by the maintenance organization. The maintenance organization should pay particular attention to possible adverse effects of any wiring change to the aircraft, even a change not specifically associated with the fuel tank system. For example, it should be common practice to identify segregation of

fuel gauging system wiring as a Critical Design Configuration Control Limitation. Maintenance organizations can prevent adverse effects associated with wiring changes by standardizing maintenance practices through training, rather than by periodic inspection. Training should be provided to end indiscriminate routing and splicing of wire and to provide comprehensive knowledge of critical design features of fuel tank systems that would be controlled by a Critical Design Configuration Control Limitation. EASA guidance is provided for training to maintenance organization personnel in an Appendix IV to be added to AMC to Part-145. The maintenance of ignition prevention features is necessary for the inherent safety and reliability of an aircraft's fuel tank system. The aircraft cannot be operated indefinitely with the failure of an ignition prevention feature. The failure will have a direct adverse effect on operational safety. It could prevent the continued safe flight and landing of the aircraft or cause serious or fatal injury to the occupants. The fuel system review required will identify ignition prevention features of the design. The failure of any of these features may not immediately result in an unsafe condition, but it may warrant certain maintenance to support continued airworthiness.

AMC 145.65(c) (1) Safety, Training, Quality Policy, Maintenance Procedures and Quality System

1. The primary objectives of the quality system are to enable the organization to ensure that it can deliver a safe product and that organization 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 organization'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 145.50 (a) requirements 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 organizations 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 subparagraphs 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 II approval class rating as specified in the approval schedule issued to the particular organization. It therefore follows for example that a maintenance organization approved under Part-145 with a capability to maintain aircraft, repair engines, brakes and autopilots would need to carry out four complete audit sample checks each year except as specified otherwise in subparagraphs 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 organization, that is an organization with a maximum of 10 personnel actively engaged in maintenance, chooses to contract the independent audit element of the quality system in accordance with 145.65(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 organization has line stations listed as per 145.75 (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 145.65 (c)(1) by up to 100% provided that there are no safety related findings and subject to being satisfied that the organization 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 organization approved under Part-145, being an organization 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 organization approved under Part-145, being an organization 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. Organizations 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 organization or a qualified and competent person approved by the competent authority.

AMC 145.65(c)(2) Safety, Training, 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 organization 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 145.65(c) (1) subparagraph 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 145.65(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 organizations 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 noncompliance.
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 145.65(c) (1) sub-paragraph 9 audits time periods, whichever is the longer.

145.70 MAINTENANCE ORGANIZATION EXPOSITION (MOE)

- (a) MCAR PART 145 AMO shall provide the DCA with a maintenance organization exposition, containing the following;
 - (i) A statement signed by the accountable manager confirming that the maintenance organization exposition and any referenced associated manuals define the organization's compliance with this Part and will be complied with at all times. When the accountable manager is not the chief executive officer of the AMO then such chief executive officer shall countersign the statement;
 - (ii) the organization's safety, training and quality policy as specified by MCAR 145.65;
 - (iii) the title(s) and name(s) of the persons nominated under MCAR 145.30(b);
 - (iv) the duties and responsibilities of the persons nominated under MCAR145.30(b), including matters on which they may deal directly with the DCA on behalf of the MCAR PART-145 AMO;
 - (v) an organization chart showing associated chains of responsibility between the persons nominated under MCAR145.30(b);
 - (vi) a list of certifying staff and B1 and B2 support staff;
 - (vii) a general description of manpower resources;
 - (viii) a general description of the facilities located at each address specified in the MCAR PART 145 organization's approval certificate;
 - (ix) a specification of the MCAR PART-145 organization's scope of work relevant to the extent of approval;
 - (x) the notification procedure of MCAR145.85 for MCAR PART-145 organization's changes;
 - (xi) the maintenance organization exposition amendment procedure;
 - (xii) the procedures and quality system established by the MCAR PART-145 AMO under MCAR 145.25 to MCAR 145.90;

- (xiii) a list of commercial operators, where applicable, to which the MCAR PART-145 AMO provides an aircraft maintenance service;
 - (xiv) a list of subcontracted organizations, where applicable, as specified in MCAR 145.75(b);
 - (xv) a list of line stations, where applicable, as specified in MCAR145.75(d);
 - (xvi) a list of contracted organizations, where applicable.
- (b) The exposition shall be amended as necessary to remain an up-to-date description of the MCAR PART-145 AMO. The exposition and any subsequent amendment shall be approved by the DCA.
- (c) Notwithstanding paragraph (b) minor amendments to the exposition may be approved through an exposition procedure (hereinafter referred to as “indirect approval”).
- (d) Copies of all amendments to the maintenance organization exposition shall be furnished promptly to all organizations or persons to whom the exposition has been issued.

AMC 145.70 (a) Maintenance Organization Exposition

The following information should be included in the maintenance organization exposition_

The information specified in 145.70(a) subparagraphs (6) and (12) to (16) inclusive, whilst a part of the MOE, 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 as long as all applicable subjects are covered. Where an organization 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 the subject matter can be found in the exposition. The exposition should contain information, as applicable, on how the maintenance organization complies with Critical Design Configuration Control Limitations’ (CDCCL) instructions. Small maintenance organizations 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 organization exposition. The maintenance organization 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 organization exposition, both internally and externally.

PART 0 GENERAL ORGANISATIONS

This section is reserved for those maintenance organizations approved under Part-145 .

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 organization chart
- 1.6 List of certifying staff and B1 and B2 support staff
- 1.7 Manpower resources
- 1.8 General description of the facilities at each address intended to be approved

- 1.9 Organizations intended scope of work
 - 1.10 Notification procedure to the competent authority regarding changes to the organization'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 L2 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 including inspection for/removal of de-icing/anti-icing fluid residues, 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 QUALITY SYSTEM PROCEDURES

- 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 & 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 organizations' procedures
- 3.11 Qualification procedure for specialized 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 Contracting operators
- 4.2 Operator procedures and paperwork
- 4.3 Operator record completion

PART 5

- 5.1 Sample of documents
- 5.2 List of Subcontractors as per 145.75 (b)
- 5.3 List of Line maintenance locations as per 145.75 (d)
- 5.4 List of contracted organizations as per 145.70 (a)(16)

PART 6 OPERATORS MAINTENANCE PROCEDURES

This section is reserved for those maintenance organizations 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 organizations 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 the time as harmonization 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 is reserved for those Part-145 approved maintenance organizations who are also approved as a TCCA AM 573 maintenance organization. The content of this Part reflects the difference between Part-145 and AM 573 and will change over the time as harmonization 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.

145.75 PRIVILEGES OF THE ORGANISATION

In accordance with the exposition, the MCAR Part-145 AMO shall be entitled to carry out the following tasks:

- (a) Maintain any aircraft and/or related component for which it is approved and identified in the approval certificate and in the exposition;
- (b) Arrange for maintenance of any aircraft or related component for which it is approved at another organization that is working under the quality system of the MCAR Part-145 AMO. This refers to work being carried out by an organization not it-self appropriately approved to carry out such maintenance under this Part and is limited to the work scope permitted under MCAR 145.65(b) procedures. This work scope shall not include a base maintenance check of an aircraft or a complete workshop maintenance check or overhaul of an engine or engine module;
- (c) Maintain any aircraft or any related component for which it is approved at any location subject to the need for such maintenance arising either from the un-serviceability of the aircraft or from the necessity of supporting occasional line maintenance, subject to the conditions specified in the Exposition;
- (d) Maintain any aircraft and/or related component for which it is approved at a location identified as a line maintenance location capable of supporting minor maintenance and only if the MCAR 145 organization's exposition both permits such activity and lists such locations;
- (e) Issue certificates of release to service in respect of completion of maintenance in accordance with MCAR 145.50.

AMC 145.75 (b) Privileges of the Organization

1. Working under the quality system of an organization appropriately approved under MCAR Part-145 (sub contracting) refers to the case of one organization, 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 specialized service as a subcontractor for an organization appropriately approved under MCAR Part-145. To be appropriately approved to subcontract the organization should have a procedure for the control of such subcontractors as described below. **Any approved maintenance organization that carries out maintenance for another approved maintenance organization within its own approval scope is not considered to be subcontracting for the purpose of this paragraph.**

NOTE: For those organizations 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 organization. It is therefore recommended that any listing of contracted or sub-contracted maintenance organizations 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 MCAR PART-145

3.1 The fundamental reasons for allowing an organization approved under Part-145 to sub-contract certain maintenance tasks are:

- (a) To permit the acceptance of specialized 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 MCAR 145.75(b) by organizations 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 organizations intend to use the sub-contract organization.
- (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 MCAR 145.75(b) by organizations not appropriately approved under Part-145 when it is unrealistic to expect direct approval by the DCA. The determination of unrealistic is as per sub-Para (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 organization's products undergoing maintenance should meet Part-145 requirements for the duration of that maintenance and it remains the organization's responsibility to ensure such requirements are satisfied.

3.3 For the criteria specified in sub-paragraph 3.1 the organization 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 organization 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 organization 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 authorize the use of such subcontractors, DCA will need to be satisfied that the organization has the necessary expertise and procedures to control such sub-contractors.

3.5 An organization working outside the scope of its approval schedule is deemed to be not approved. Such organization may in this circumstance operate only under the sub-contract control of another organization approved under Part-145.

3.6 Authorization to sub-contract is indicated by the DCA accepting the maintenance organization exposition containing a specific procedure on the control of sub-contractors.

4. PRINCIPAL PROCEDURES FOR THE CONTROL OF SUB-CONTRACTORS NOT APPROVED UNDER MCAR PART-145

4.1 Pre-audit procedure should be established whereby the maintenance organizations' subcontract control section, which may also be the MCAR 145.65(c) quality system independent audit section, should audit a prospective subcontractor to determine whether those services of the subcontractor that it wishes to use meets the intent of Part-145.

4.2 The organization approved under MCAR Part-145 needs to assess to what extent it will use the sub-contractor's facilities. As a general rule the organization 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 subcontractor as long as such tools, equipment and personnel meet the requirement of MCAR Part-145. In the case of sub-contractors who provide specialized services it may for practical reasons be necessary to use their specialized services personnel, approved data and material subject to acceptance by the organization approved under MCAR Part-145.

- 4.3 Unless the sub-contracted maintenance work can be fully inspected on receipt by the organization approved under MCAR Part-145 it will be necessary for such organization to supervise the inspection and release from the sub-contractor. Such activities should be fully described in the organization procedure. The organization will need to consider whether to use its own staff or authorize the sub-contractor's staff.
- 4.4 The certificate of release to service may be issued either at the sub-contractor or at the organization facility by staff issued a certification authorization in accordance with MCAR 145.30 as appropriate, by the organization approved under MCAR 145. Such staff would normally come from the organization approved under MCAR 145 but may otherwise be a person from the sub-contractor who meets the approved organization certifying staff standard which itself is approved by the DCA via the maintenance organization exposition. The certificate of release to service and the EASA Form 1 will always be issued under the maintenance organization 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 subcontractors who do not meet the MCAR Part-145 requirements.
- 4.6 The MCAR 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 MCAR Part-145 organization and the sub-contractor should contain a provision for DCA and EASA standardization team staff to have right of access to the sub-contractor.

145.80 LIMITATIONS ON THE ORGANISATION

- (a) MCAR Part-145 AMO shall only maintain an aircraft or component for which it is approved when all the necessary facilities, equipment, tooling, material, maintenance data and certifying staff are available.
- (b) Part-145 AMO shall use only aircraft components/parts/materials acceptable to DCA.

AMC 145.80 Limitations on the Organization

This paragraph is intended to cover the situation where the larger organization may temporarily not hold all the necessary tools, equipment etc., for an aircraft type or variant specified in the organization's approval. This paragraph means that DCA 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 organization to reacquire tools, equipment etc., before maintenance on the type may recommence.

145.85 CHANGES TO THE ORGANISATION

MCAR Part-145 AMO shall notify the DCA of any proposal to carry out any of the following changes before such changes take place to enable the DCA to determine continued compliance with this Part and to amend, if necessary, the approval certificate,

except that in the case of proposed changes in personnel not known to the management beforehand, these changes must be notified at the earliest opportunity:

- (i) the name of the organization;
- (ii) the main or additional locations of the organization;
- (iii) the accountable manager and any of the persons nominated under MCAR 145.30(b);
- (iv) the facilities, equipment, tools, material, procedures, work scope or certifying staff that could affect the approval.

145.90 CONTINUED VALIDITY

- (a) The MCAR Part 145 AMO certificate issued to an organization is effective for one year from the date of issue provided that the organization remains in compliance with this part unless otherwise surrendered, superseded, suspended or revoked.
- (b) The certificate that is expired, surrendered, superseded, suspended or revoked must be returned to DCA

145.95 FINDINGS

- (a) When during audits or by other means evidence is found showing non-compliance with the requirements of this Part, DCA shall take the following actions_
 - 1. *For level 1 findings*, [any significant non-compliance with this requirements which lowers the safety standard and hazards seriously the flight safety] immediate action shall be taken by DCA to revoke, limit or suspend in whole or in part, depending upon the extent of the finding, the maintenance organization approval, until successful corrective action has been taken by the AMO.
 - 2. *For level 2 findings*, [any non-compliance with this requirements which could lower the safety standard and possibly hazard the flight safety] the corrective action period granted by DCA must be appropriate to the nature of the finding but in any case initially must not be more than three months. In certain circumstances and subject to the nature of the finding, DCA may extend the three month period subject to a satisfactory corrective action plan agreed by DCA.
- (b) Action shall be taken by the DCA to suspend in whole or part the approval in case of failure to comply within the timescale is granted by the DCA.

145.97 EQUIVALENT SAFETY CASE

- (a) DCA may exempt an AMO from a requirement in this Part, when satisfied that a situation exists not envisaged by MCAR Part-145 Requirements and subject to compliance with any supplementary condition(s) that DCA considers necessary to ensure equivalent safety.
- (b) DCA may exempt an organization from Requirements in this Part, on individual case by case permission basis only subject to compliance with any supplementary condition(s), DCA considers necessary to ensure equivalent safety.

