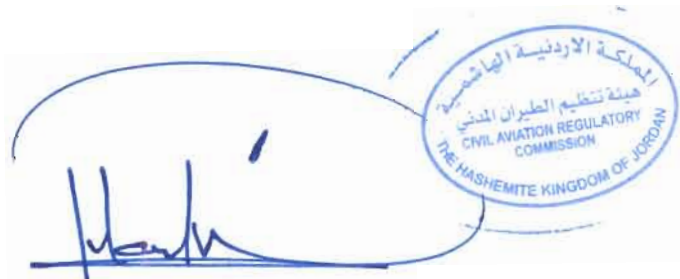


## Part-DMO

### Unmanned Aircraft Maintenance and Continuing Airworthiness Organization

This new part of the Jordanian Civil Aviation Regulation is hereby issued under the authority and provisions of the Jordanian Civil Aviation Law No. (41) 2007 and its amendments.



**Capt. Haitham Misto**  
**Chief Commissioner/CEO**  
**Civil Aviation Regulatory Commission**

## Record of Revisions

Amendment No.	Effective Date	Subpart	Paragraph
Initial issue	Nov 2020	All	All



## Table of Contents

Record of Revisions .....	ii
Table of Contents .....	iii
<b>Subpart A - General.....</b>	<b>1</b>
DMO.010    Scope.....	1
DMO.015    Introduction.....	1
DMO.020    Application.....	1
DMO.025    Abbreviations.....	1
DMO.030    Extent of approval.....	2
DMO.035    Definitions.....	2
<b>Subpart B - Unmanned Aircraft Maintenance.....</b>	<b>4</b>
DMO.040    Maintenance and continuing airworthiness organization manual .....	4
DMO.050    Facilities.....	4
DMO.060    Personnel requirements.....	6
DMO.070    Certifying staff and airworthiness review staff.....	8
DMO.080    Components, equipment and tools.....	10
DMO.090    Maintenance data .....	11
DMO.100    Maintenance work orders.....	12
DMO.110    Maintenance standards.....	12
DMO.120    Unmanned aircraft certificate of release to service.....	12
DMO.130    Component certificate of release to service .....	12
DMO.140    Maintenance and airworthiness review records .....	13
<b>Subpart C - Unmanned Aircraft Continuing Airworthiness Organization.....</b>	<b>14</b>
DMO.141    Mandated airworthiness and safety measures .....	14
DMO.142    Data for modifications and repairs.....	14
DMO.143    Aircraft continuing airworthiness record system .....	14
DMO.144    Occurrence reporting.....	15
DMO.145    Unmanned aircraft airworthiness review .....	15
DMO.150    Privileges of the organization .....	16
DMO.160    Organizational review .....	17
DMO.170    Changes to the DMO.....	18
DMO.180    Continued validity of approval .....	18
DMO.190    Findings.....	18

## Subpart A General

### DMO.010 Scope

This Part establishes the requirements to be met by an organization to qualify for the issue or continuation of an approval for the maintenance and continuing airworthiness of unmanned aircraft and components to be installed therein. The organization shall specify the scope of work deemed to constitute approval in its exposition. One or more of the following classes shall be specified in the organization exposition as per JCAR Part –DDP (Appendix I, II, III, IV and V).

### DMO.015 Introduction

An unmanned aircraft maintenance and continuing airworthiness organization shall be an organization or part of an organization registered as a legal entity.

Such an organization may conduct business from more than one address and may hold more than one Part approval.

### DMO.020 Application

- (a) An application for an approval or for the change of an existing approval shall be made on a form and in a manner established by CARC.
- (b) An application for an approval or change to an approval shall include the following information:
  - (1) the registered name and address of the applicant;
  - (2) the address of the organization requiring the approval or change to the approval;
  - (3) the intended scope of approval or change to the scope of approval;
  - (4) the name and signature of the accountable manager; and
  - (5) the date of application.

### DMO.025 Abbreviations

CARC	Civil Aviation Regulatory Commission
DMO	Drones Maintenance Organization
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
DDP	Drones Design & Production
MTOM	Maximum Take-Off Mass

### **DMO.030 Extent of approval**

- (a) An organization involved in activities subject to this Part shall not exercise its activities unless approved by CARC.
- (b) The maintenance organization's and continuing airworthiness manual referred to in point DMO.040 shall specify the scope of work deemed to constitute approval.
- (c) An approved maintenance and continuing airworthiness organization (DMO) may fabricate, in conformity with maintenance data, a restricted range of parts for the use in the course of undergoing work within its own facilities, as identified in the maintenance continuing airworthiness organization manual.

### **DMO.035 Definitions**

For the purposes of this Part, the following definitions apply:

- (a) 'unmanned aircraft' (UA) means any aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board;
- (b) 'equipment to control unmanned aircraft remotely' means any instrument, equipment, mechanism, apparatus, appurtenance, software or accessory that is necessary for the safe operation of a unmanned aircraft other than a part and which is not carried on board that unmanned aircraft;
- (c) 'unmanned aircraft system' ('UAS') means an unmanned aircraft and the equipment to control it remotely;
- (d) 'manufacturer' means any natural or legal person who manufactures a product or has a product designed or manufactured, and markets that product under their name or trademark;
- (e) 'technical specification' means a document that establishes technical requirements to be fulfilled by a product, process or service;
- (f) 'direct remote identification' means a system that ensures the local broadcast of information about an unmanned aircraft in operation, including the marking of the unmanned aircraft, so that this information can be obtained without physical access to the unmanned aircraft;
- (g) 'geo-awareness' means a function that, based on the data provided, detects a potential breach of airspace limitations and alerts the remote pilots so that they can take effective immediate and action to prevent that breach;
- (h) 'certifying staff' means personnel responsible for the release of an unmanned aircraft or a component after maintenance;
- (i) '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;
- (j) 'maintenance' means any one or combination of the following activities: overhaul, repair, inspection, replacement, modification or defect rectification of an unmanned aircraft or component, with the exception of pre-flight inspection;

- (k) ‘organization’ means a natural person, a legal person or part of a legal person. Such an organization may be established at more than one location within the territory of Jordan;
- (l) ‘pre-flight inspection’ means the inspection carried out before flight to ensure that the unmanned aircraft is fit for the intended flight;
- (m) “critical maintenance task” means a maintenance task that involves the assembly or any disturbance of a system or any part on an unmanned aircraft or its related components that, if an error occurred during its performance, could directly endanger the flight safety.

## **Subpart B**

### **Unmanned Aircraft Maintenance**

#### **DMO.040 Maintenance and continuing airworthiness organization manual**

- (a) The maintenance and continuing airworthiness organization shall provide a manual containing at least the following information:
  - (1) a statement signed by the accountable manager to confirm that the organization will continuously work in accordance with this Part,
  - (2) the organization's scope of work,
  - (3) the title(s) and name(s) of person(s) referred to in DMO.060(b),
  - (4) an organization chart showing associated chains of responsibility between the person(s) referred to in point DMO.060(b),
  - (5) a list of certifying staff and, if applicable, airworthiness review staff and staff responsible for the development and processing of the maintenance program, with their scope of approval,
  - (6) a list of locations where maintenance and continuing airworthiness is carried out, together with a general description of the facilities,
  - (7) procedures specifying how the maintenance organization ensures compliance with this Part, and;
  - (8) the maintenance and continuing airworthiness organization manual amendment procedure(s).
- (b) The maintenance and continuing airworthiness organization manual and its amendments shall be approved by CARC.
- (c) Notwithstanding point (b) minor amendments to the manual may be approved through a procedure (hereinafter called indirect approval).

#### **DMO.050 Facilities**

The organization shall ensure that:

- (a) Facilities are provided for all planned work, specialized workshops and bays are segregated as appropriate, to ensure protection from contamination and the environment.
- (b) Office accommodation is provided for the management of all planned work including in particular, the completion of maintenance records.
- (c) Secure storage facilities are provided for unmanned aircraft, components, equipment, tools and material. Storage conditions shall ensure segregation of unserviceable components and material from all other components, material, equipment and tools. Storage conditions shall be in accordance with the manufacturers' instructions and access shall be restricted to authorized personnel.

- (1) Where facility is not owned by the DMO, it may be necessary to establish proof of tenancy. In addition, sufficiency of facility space to carry out planned maintenance should be demonstrated by the preparation of a projected unmanned aircraft facility visit plan. The facility visit plan should be updated on a regular basis. Unmanned aircraft maintenance facility may not be required where maintenance can more appropriately be performed outside. For complex repairs or component maintenance suitable approved workshops should be provided. The facilities and environmental conditions required for inspection and maintenance should be defined in the DMO manual.
- (2) Protection from the weather elements relates to the normal prevailing local weather elements that are expected throughout any twelve-month period. Unmanned aircraft and its component workshop structures should be to a standard that prevents the ingress of rain, hail, ice, snow, wind and dust etc. Workshop floors should be sealed to minimize dust generation.
- (3) Aircraft maintenance and continuing airworthiness review staff should be provided with an area where they may study maintenance instructions and complete continuing airworthiness records in a proper manner.
- (4) It is acceptable not to have access to dedicated workshops. Depending on the scope of work, other facilities are acceptable as long as protection is ensured from inclement weather and contamination. This may include, for example, working in the field or in non-aviation premises (closed or not). These facilities do not need to be individually approved by CARC as long as the DMO manual describes for each type of facility the scope of work, the tooling and equipment available, and the permitted environmental conditions (weather, contamination).
- (5) The organization should include, as part of the periodic internal organizational review, a sampling of the compliance with these conditions during certain maintenance events. It is acceptable to combine any or all of the office accommodation requirements into one office subject to the staff having sufficient room to carry out assigned tasks.
- (6) Storage facilities for unmanned aircraft serviceable components should be secure, clean, well-ventilated and maintained at an even dry temperature to minimize the effects of condensation. Manufacturer's storage recommendations shall be followed for those unmanned aircraft and components identified in such published recommendations.
- (7) Adequate storage racks shall be provided and suitable enough for unmanned aircraft and components and provide sufficient support for unmanned aircraft and components such that the unmanned aircraft and component is not damaged during storage.
- (8) All unmanned aircraft and components, wherever practicable, should remain packaged in their boxes protective material to minimize damage and corrosion during storage. A shelf life control system should be utilized and identity tags used to identify components.
- (9) Segregation means storing unserviceable components in a separate secured location from serviceable components.



- (10) Segregation and management of any unserviceable component should be ensured according to the pertinent procedure approved to that organization.
- (11) Procedures should be defined by the organization describing the decision process for the status of unserviceable components. This procedure should identify at least the following:
  - (i) role and responsibilities of the persons managing the decision process;
  - (ii) description of the decision process to choose between maintaining, storing or mutilating a component;
  - (iii) traceability of decision.
- (12) Once unserviceable components or materials have been identified as unsalvageable, the organization shall establish secure areas in which to segregate such items and to prevent unauthorized access. Unsalvageable components should be managed through a procedure to ensure that these components receive the appropriate final disposal, disposal of unmanned aircraft shall be approved by CARC prior to its disposal. The person responsible for the implementation of this procedure should be identified.

## **DMO.060 Personnel requirements**

- (a) The organization shall appoint an accountable manager accepted by CARC, who has corporate authority for ensuring that all maintenance and continuing airworthiness required by the customer can be financed and carried out to the standard required by this Part and ensure that the DMO can deliver an airworthy and a safe product and that approved maintenance organization remains in compliance with the requirements of this Part. With regard to the accountable manager, it is normally intended to mean the chief executive officer of the maintenance and continuing airworthiness 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. When the accountable manager is not the chief executive officer, CARC 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.
- (b) A person or group of persons accepted by CARC shall be nominated with the responsibility of ensuring that the organization is always in compliance with this Part. Such person(s) shall be ultimately responsible to the accountable manager.
- (c) All point (b) persons shall be able to show relevant knowledge, background and appropriate experience related to unmanned aircraft and related components maintenance and continuing airworthiness.
- (d) The organization shall have appropriate staff for the normal expected contracted work. The use of temporarily sub-contracted staff is permitted in the case of higher than normally expected contracted work and only for personnel not issuing a certificate of release to service.

- (e) The qualification of all personnel involved in maintenance, continuing airworthiness reviews and development of maintenance programs shall be demonstrated and recorded.
- (f) Personnel who carry out specialized tasks such as welding, non-destructive testing/inspection other than color contrast shall be qualified in accordance with an officially recognized standard.
- (g) The maintenance and continuing airworthiness organization shall have sufficient certifying staff to issue certificates of release to service and carry out airworthiness review for unmanned aircraft and components provided.
- (h) Dependent upon the size of the organization, the functions may be subdivided under individual managers or combined in any number of ways.
- (i) The maintenance and continuing airworthiness organization shall have, dependent upon the extent of approval, an unmanned aircraft maintenance and continuing airworthiness manager, a person responsible for the organizational review, a workshop manager all of whom shall be accepted by CARC and report to the accountable manager. Any manager may also be the accountable manager, and may also be the aircraft maintenance and continuing airworthiness manager or the workshop manager.
- (j) The unmanned aircraft maintenance and continuing airworthiness manager is responsible for ensuring that all maintenance and continuing airworthiness required to be carried out, plus any defect rectification carried out during aircraft maintenance, is carried out to the design, quality and aviation safety standards specified in this Part. The unmanned aircraft maintenance and continuing airworthiness manager is also responsible for any corrective action resulting from the DMO.160 organizational review.
- (k) The workshop manager is responsible for ensuring that all work on unmanned aircraft components is carried out to the standards specified in this Part and also responsible for any corrective action resulting from the DMO.0160 organizational review. The organization may adopt any title for the foregoing managerial positions but shall identify to CARC the titles and persons chosen to carry out these functions.
- (l) All nominated persons shall, be expected to satisfy CARC that they possess the appropriate experience and qualifications which are listed in paragraphs (1) to (5) below and accepted by CARC. All nominated persons shall have:
  - (1) practical experience and expertise in the application of aviation safety standards and safe maintenance and continuing airworthiness practices,
  - (2) comprehensive knowledge of:
    - (i) Part-DDP, Part-DMO, aviation law and any associated requirements and procedures;
    - (ii) the maintenance and continuing airworthiness organization manual
  - (3) Three years aviation experience of which at least one year should be practical maintenance experience,
  - (4) knowledge of the relevant classes(s) of unmanned aircraft maintained and continuing airworthiness. This knowledge may be demonstrated by documented evidence or by an assessment performed by CARC, this

assessment should be recorded. Training courses should be as a minimum a general familiarization, and could be imparted by a training organization or by the manufacturer, and;

- (5) knowledge of maintenance standards.
- (m) All staff are subjected to compliance with the organization's procedures specified in the maintenance and continuing airworthiness organization manual relevant to their duties.
- (n) To have sufficient staff means that the maintenance and continuing airworthiness organization employs or contracts staff directly, even on a volunteer basis, for the anticipated maintenance workload. Temporarily sub-contracted means the person is employed by another organization and contracted by that organization to the maintenance and continuing airworthiness organization.
- (o) Personnel involved in maintenance and continuing airworthiness shall be 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.
- (p) Adequate initial and recurrent training shall be provided and recorded to ensure continued competence.
- (q) Non-destructive testing means such testing specified by the maintenance data for in service unmanned aircraft /unmanned aircraft components for the purpose of determining the continued fitness of the product to operate safely, appropriately qualified means to level 1, 2 or 3 as defined by European Standard EN 4179, as amended, dependent upon the non-destructive testing function to be carried out.

### **DMO.070 Certifying staff and airworthiness review staff**

- (a) Certifying staff and airworthiness review staff can only exercise their privileges, if the organization has ensured:
  - (1) that certifying staff and airworthiness review staff can demonstrate that they meet the requirements of this Part,
  - (2) that certifying staff and airworthiness review staff have an adequate understanding of the relevant unmanned aircraft and/or unmanned aircraft component(s) to be maintained together with the associated organization procedures,
  - (3) Certifying staff and airworthiness review staff hold engineering degree (aeronautics, mechanical, avionics, maintenance, electrical, electronics, mechatronics and industrial) or Aircraft Maintenance License,
  - (4) practical experience and expertise in the application of aviation safety standards and safe maintenance and continuing airworthiness practices,
  - (5) comprehensive knowledge of:
    - (i) Part-DDP and Part-DMO and any associated requirements and procedures
    - (ii) the maintenance and continuing airworthiness organization manual

- (6) Three years aviation experience of which at least one year should be practical maintenance experience, and;
  - (7) knowledge of the relevant classes(s) of unmanned aircraft maintained and continuing airworthiness.
- (b) The maintenance and continuing airworthiness organization shall record all details concerning certifying staff and airworthiness review staff and maintain a current list of all certifying staff and airworthiness review staff together with their scope of approval as part of the organization's manual.
- (c) Certifying staff and airworthiness review staff shall have:
- (1) Adequate understanding of the relevant unmanned aircraft and/or unmanned 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 unmanned aircraft class and associated organization procedures such that the person understands how the product functions, what are the more common defects with associated consequences.
  - (2) All prospective certifying staff and airworthiness review staff are required to be assessed for competence, qualification and capability related to intended duties. Competence and capability can be assessed by having the person work under the supervision of another competent person for sufficient time to arrive at a conclusion. The person need not be assessed against the complete spectrum of intended duties. When the person has been recruited from another approved maintenance and continuing airworthiness organization and was a certifying staff or airworthiness review staff in that organization then it is reasonable to accept a written confirmation from the previous organization.
  - (3) The organization shall hold copies of all documents that attest to qualification, and to recent experience.
- (d) The following minimum information as applicable shall be kept on record in respect of each certifying person:
- (1) name;
  - (2) date of birth;
  - (3) training on unmanned aircraft;
  - (4) recurrent training;
  - (5) experience;
  - (6) qualifications relevant to the approval;
  - (7) scope of the authorization and personal authorization reference;
  - (8) date of first issue of the authorization;
  - (9) if appropriate, expiry date of the authorization.
- (e) The following minimum information, as applicable, shall be kept on record in respect of each airworthiness review person:
- (1) name;
  - (2) date of birth;

- (3) training on unmanned aircraft;
  - (4) certifying staff authorization;
  - (5) experience as certifying staff on unmanned aircraft;
  - (6) qualifications relevant to the approval (knowledge of relevant parts of Part-DMO and Part-DDP and knowledge of the relevant airworthiness review procedures);
  - (7) scope of the airworthiness review authorization and personal authorization reference;
  - (8) date of the first issue of the airworthiness review authorization; and
  - (9) if appropriate, expiry date of the airworthiness review authorization.
- (f) Persons authorized to access the system shall 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.
- (g) CARC shall be granted access to the records upon request.

### **DMO.080 Components, equipment and tools**

- (a) The organization shall:
- (1) hold the equipment and tools specified in the maintenance data described in point DMO.090 or verified equivalents as listed in the maintenance and continuing airworthiness organization manual as necessary for day-to-day maintenance within the scope of the approval; and,
  - (2) demonstrate that it has access to all other equipment and tools used only on an occasional basis.
- (b) Once the applicant for DMO approval has determined the intended scope of approval for consideration by CARC, it will be necessary to show that all tools and equipment as specified in the maintenance data can be made available when needed.
- (c) All such tools shall be clearly identified and listed in a control register including any personal tools and equipment that the organization agrees can be used.
- (d) For tools required on an occasional basis, the organization shall ensure that they are controlled in terms of servicing or calibration as required.
- (e) Tools and equipment shall be controlled and calibrated to an officially recognized standard. Records of such calibrations and the standard used shall be kept by the organization.
- (f) The organization shall inspect, classify and appropriately segregate all incoming tools, equipment, components, standard parts and materials.
- (g) 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 labelling all tooling, equipment and test equipment is therefore necessary giving information on when the next inspection or service or calibration is due and if the item is unserviceable for any other reason

where it may not be obvious. A register should be maintained for all the organization's precision tooling and equipment together with a record of calibrations and standards used.

- (h) Inspection, service or calibration on a regular basis shall be in accordance with the equipment manufacturers' instructions except where the DMO can show by results that a different time period is appropriate in a particular case.
- (i) 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.

### **DMO.090 Maintenance data**

- (a) The DMO shall hold and use applicable current maintenance data specified by the unmanned aircraft or component in the performance of maintenance including modifications and repairs, including but not limited to the following data:
  - (1) the characteristics of the UA including but not limited to the:
    - (i) class of the UA;
    - (ii) UA mass (with a description of the reference configuration) and the maximum take-off mass (MTOM);
    - (iii) general characteristics of allowed payloads in terms of mass dimensions, interfaces with the UA and other possible restrictions;
    - (iv) equipment and software to control the UA remotely;
    - (v) reference of the transmission protocol used for the direct remote identification emission;
    - (vi) sound power level;
    - (vii) and a description of the behavior of the UA in case of a loss of data link;
  - (2) clear operational instructions;
  - (3) procedure to upload the airspace limitations;
  - (4) maintenance instructions;
  - (5) troubleshooting procedures
  - (6) operational limitations (including but not limited to meteorological conditions and day/night operations); and
  - (7) appropriate description of all the risks related to unmanned aircraft operations.
- (b) In the case of customer provided maintenance data, it is only necessary to have such data when the work is in progress. When an organization uses customer provided maintenance data, the scope of approval indicated in the maintenance and continuing airworthiness organization manual should be limited to the individual unmanned aircraft covered by the contracts signed with those customers unless the organization also holds its own complete set of maintenance data for that type of the unmanned aircraft or component.

### **DMO.100 Maintenance work orders**

- (a) Before the commencement of maintenance a written work order shall be agreed between the organization and the organization or unmanned aircraft owner requesting maintenance to clearly establish the maintenance to be carried out. Maintenance work orders 'A written work order' may take the form of, but not limited to, the following:
  - (1) A formal document or form specifying the work to be carried out. This form may be provided by the maintenance organization undertaking the work, or by the owner/operator himself;
  - (2) An entry in the unmanned aircraft log book specifying the defect that needs to be corrected.

### **DMO.110 Maintenance standards**

- (a) all maintenance including modifications and repairs shall be carried out in accordance with the requirements of the manufacturer of the unmanned aircraft or component maintenance data.
- (b) an error capturing method shall be implemented after the performance of any critical maintenance task, in the maintenance and continuing airworthiness organization manual it should be identified the error-capturing methods, the critical maintenance tasks, the training and qualification of staff applying error-capturing methods, and how the DMO ensures that its staff is familiar with critical maintenance tasks and error-capturing methods.

### **DMO.120 Unmanned aircraft certificate of release to service**

- (a) At the completion of all required unmanned aircraft maintenance in accordance with this Part an unmanned aircraft certificate of release to service shall be issued.
- (b) No unmanned aircraft can be released to service unless a certificate of release to service is issued at the completion of any maintenance, when satisfied that all maintenance required has been properly carried out, by:
  - (1) appropriate certifying staff on behalf of the DMO; or
  - (2) certifying staff in compliance with the requirements laid down in this Part.
- (c) A certificate of release to service is necessary before flight and at the completion of any defect rectification.

### **DMO.130 Component certificate of release to service**

- (a) At the completion of all required component maintenance in accordance with this Part, a component certificate of release to service shall be issued.
- (b) The component certificate release to service document may be generated from a computer database. An unmanned aircraft component which has been maintained off the unmanned aircraft requires the issuance of a certificate release to service for such maintenance and another certificate release to service in regard to being installed properly on the unmanned aircraft when such action occurs.

## **DMO.140 Maintenance and airworthiness review records**

- (a) The DMO shall record all details of work carried out. Records necessary to prove all requirements have been met for the issue of the certificate of release to service including the subcontractor's release documents and for the issue of any airworthiness review and recommendation shall be retained.
- (b) The DMO shall provide a copy of each certificate of release to service to the unmanned aircraft owner, together with a copy of any specific repair/modification data used for repairs/modifications carried out.
- (c) The DMO shall retain a copy of all maintenance records and any associated maintenance data for three years from the date the unmanned aircraft or unmanned aircraft component to which the work relates was released from the DMO. In addition, it shall retain a copy of all the records related to the issue of recommendations and airworthiness review for three years from the date of issue and shall provide a copy of them to the owner of the unmanned aircraft.
- (d) The records under this point shall be stored in a manner that ensures protection from damage, alteration, and theft.
- (e) All computer hardware used to ensure backup shall be stored in a different location from that containing the working data in an environment that ensures they remain in good condition.
- (f) Where an approved maintenance organization terminates its operation, all retained maintenance records covering the last three years shall be distributed to the last owner or customer of the respective unmanned aircraft or component or shall be stored as specified by CARC.
- (g) Maintenance and airworthiness review records shall be:
  - (1) Properly executed and retained records provide owners, operators and maintenance personnel with information essential in controlling unscheduled and scheduled maintenance, and troubleshooting to eliminate the need for re-inspection and rework to establish airworthiness.
  - (2) The prime objective is to have secure and easily retrievable records with comprehensive and legible contents. The unmanned aircraft record shall contain basic details of all serialized unmanned aircraft components and all other significant unmanned aircraft components installed, to ensure traceability to such installed unmanned aircraft component documentation and associated maintenance data.
  - (3) The maintenance record can be either a paper or computer system or any combination of both. The records shall remain legible throughout the required retention period.
  - (4) Paper systems should use robust material which can withstand normal handling and filing.
  - (5) Computer systems may be used to control maintenance and/or record details of maintenance work carried out. Computer systems used for maintenance shall have at least one backup system which shall be updated at least within 24 hours of any maintenance. Each terminal is required to contain program safeguards against the ability of unauthorized personnel to alter the database.
- (h) Maintenance records shall refer to the revision status of the data used.



## **Subpart C**

### **Unmanned Aircraft Continuing Airworthiness Organization**

#### **DMO.141 Mandated airworthiness and safety measures**

Any applicable CARC or manufacturer mandated airworthiness and safety measures in immediate reaction to an airworthiness or a safety problem on the unmanned aircraft or component must be carried out within the requirements of that mandatory requirement, unless otherwise specified by CARC.

#### **DMO.142 Data for modifications and repairs**

Damage shall be assessed and modifications and repairs carried out using as appropriate:

- (a) data approved by the manufacturer; or
- (b) data approved by CARC.

A person or DMO repairing an unmanned aircraft or component shall assess the damage against published approved repair data and the action to be taken if the damage is beyond the limits or outside the scope of such data. This could involve any one or more of the following options; repair by replacement of damaged parts, requesting technical support from the manufacturer and finally CARC approval of the particular repair data.

#### **DMO.143 Aircraft continuing airworthiness record system**

- (a) At the completion of any maintenance, the certificate of release to service required by the DMO shall be entered in the aircraft continuing airworthiness records. Each entry shall be made as soon as practicable but in no case more than 30 days after the day of the maintenance action.
- (b) The aircraft continuing airworthiness records shall consist of:
  - (1) an unmanned aircraft logbooks and log cards for any service life limited component as appropriate, and,
  - (2) the operator's technical log.
- (c) The unmanned aircraft type, model designation, serial number, class, the date, together with total flight time and/or flight cycles and/or landings, as appropriate, shall be entered in the unmanned aircraft logbooks.
- (d) The unmanned aircraft continuing airworthiness records shall contain the current:
  - (1) status of airworthiness measures mandated by CARC or manufacturer in immediate reaction to a safety problem;
  - (2) status of modifications and repairs;
  - (3) status of compliance with maintenance program;
  - (4) status of service life limited components;
  - (5) mass and balance report;
  - (6) list of deferred maintenance.

## **DMO.144 Occurrence reporting**

- (a) Any person or organization responsible in accordance with this Part shall report to CARC, the organization responsible for the design or manufacturer and the operator, as applicable, any identified condition of an unmanned aircraft or component.
- (b) Reports shall be made in a manner established by CARC and contain all pertinent information about the condition known to the person or DMO.
- (c) Where the person or DMO maintaining the unmanned aircraft or component is contracted by an owner or an operator to carry out maintenance, the person or the DMO maintaining the unmanned aircraft or component shall also report to the owner or the operator any such condition affecting the owner's or the operator's unmanned aircraft or component.
- (d) Reports shall be made as soon as practicable, but in any case within 72 hours of the person or DMO identifying the condition to which the report relates.

## **DMO.145 Unmanned aircraft airworthiness review**

- (a) To ensure the validity of the unmanned aircraft airworthiness certificate an airworthiness review of the unmanned aircraft and its continuing airworthiness records shall be carried out periodically.
- (b) An airworthiness review certificate is issued by CARC on completion of a satisfactory airworthiness review. The airworthiness review certificate is valid for one year.
- (c) An airworthiness review certificate cannot be issued nor extended if there is evidence or reason to believe that the unmanned aircraft is not airworthy or safe.
- (d) DMO contracted to perform the maintenance on the unmanned aircraft may, if appropriately approved, perform the airworthiness review and issue the corresponding airworthiness review recommendation, subject to the DMO nominates airworthiness review staff accepted by CARC and complying with all the following requirements:
  - (1) The airworthiness review staff hold a certifying staff authorization for the corresponding unmanned aircraft.
  - (2) The airworthiness review staff have at least three years of experience as certifying staff.
  - (3) The airworthiness review staff are independent from the continuing airworthiness management process of the unmanned aircraft being reviewed.
  - (4) The airworthiness review staff have acquired knowledge of Part-DDP and Part-DMO.
  - (5) The airworthiness review staff have acquired proven knowledge of the procedures of the DMO relevant to the airworthiness review and issue of the airworthiness review recommendation.
  - (6) The airworthiness review staff have been formally accepted by CARC after having performed an airworthiness review under the supervision of CARC or under the supervision by another organization's accepted airworthiness review staff in accordance with a procedure approved by CARC.

- (7) the airworthiness review staff have performed at least one airworthiness review in the last twelve- month.
- (e) The airworthiness review includes a full documented review of the unmanned aircraft records.
- (f) The airworthiness review includes a physical survey of the unmanned aircraft.
- (g) An airworthiness review recommendation is issued, on behalf of the DMO, by an authorized person who performed the airworthiness review when satisfied that:
  - (1) the airworthiness review has been completely and satisfactorily carried out;
  - (2) the maintenance on unmanned aircraft has been reviewed; and
  - (3) there is no non-compliance which is known to endanger flight safety.
- (h) The manual or exposition of the DMO describes all the following:
  - (1) The procedures for the performance of airworthiness reviews and the issue of the corresponding airworthiness review recommendation.
  - (2) The names of the certifying staff authorized to perform airworthiness reviews and issue the corresponding airworthiness review recommendation.
  - (3) The procedures for the review of the maintenance program.
- (i) an airworthiness review certificate is issued by CARC based on an acceptable airworthiness review recommendation issued, on behalf of the DMO, by the authorized person who performed the airworthiness review, if CARC finds out that the airworthiness review carried out by the DMO is not satisfactory, CARC shall carry out an airworthiness review on the unmanned aircraft.

### **DMO.150 Privileges of the organization**

The DMO approved in accordance with this Part, may:

- (a) maintain any unmanned aircraft and/or component for which it is approved at the locations specified in the approval certificate and the maintenance and continuing airworthiness organization manual;
- (b) arrange for the performance of specialized services under the control of the maintenance organization at another organization appropriately qualified, subject to appropriate procedures being established as part of the maintenance and continuing airworthiness organization manual approved by CARC;
- (c) maintain any unmanned aircraft and/or component for which it is approved at any location subject to the need of such maintenance arising either from the unserviceability of the unmanned aircraft or from the necessity of supporting occasional maintenance, subject to the conditions specified in the maintenance and continuing airworthiness organization manual;
- (d) issue certificates of release to service on completion of maintenance;
- (e) if specifically approved to do so, perform airworthiness reviews and issue the corresponding recommendations;
- (f) the organization shall only maintain an unmanned aircraft or component for which it is approved when all the necessary facilities, equipment, tooling, material, maintenance data and certifying staff are available.

- (g) a DMO approved in accordance with this Part may manage the continuing airworthiness of unmanned aircraft and issue an airworthiness review recommendation for unmanned aircraft as listed on the approval certificate, if specifically approved to so.

Work may be carried out by another organization which is not appropriately approved under this Part to carry out specialized maintenance services, such as, but not limited to, non-destructive testing, surface treatment, heat-treatment, welding, fabrication of specified parts for minor repairs and modifications, etc., without the need of DMO approval for those tasks. The requirement that the organization performing the specialized services must meet an officially recognized standard or, otherwise, it should be acceptable to CARC (through the approval of the maintenance and continuing airworthiness organization manual). The DMO should investigate the capability of the subcontracted organization (including qualifications, facilities, equipment and materials) and ensure that such organization:

- (1) Receives appropriate maintenance instructions and maintenance data for the task to be performed;
  - (2) Properly records the maintenance performed in the DMO airworthiness records;
  - (3) Notifies the DMO for any deviation or non-conformity, which has arisen during such maintenance.
- (h) The certificate of release to service may be issued either at the subcontractors or at the organization facility by authorized certifying staff, and always under the DMO organization reference. Such staff would normally come from the DMO but may otherwise be a person from the subcontractor who meets the DMO certifying staff standard which itself is approved by CARC via the maintenance and continuing airworthiness organization manual. Subcontracted specialized services organizations should be listed in the maintenance and continuing airworthiness organization manual of the DMO together with their qualifications, and the associated control procedures.

## **DMO.160 Organizational review**

To ensure that the approved maintenance organization continues to meet the requirements of this Part, it shall organize, on a regular basis, organizational reviews. The primary objectives of the organizational review are to enable the DMO to ensure that it can deliver an airworthy and a safe product and that approved maintenance organization remains in compliance with the requirements of this Part. The DMO shall identify:

- (a) the person responsible for the organizational review who shall meet the requirements of DMO.060(1);
- (b) the frequency of the reviews;
- (c) the scope and content of the reviews;
- (d) the persons accomplishing the reviews who shall meet the requirements of DMO.070(a);
- (e) the procedure for planning, performing and processing review findings; and,
- (f) the procedure for ensuring corrective actions are carried out in the appropriate time frame.

## **DMO.170 Changes to the DMO**

In order to enable CARC to determine continued compliance with this Part, the DMO shall notify CARC of any proposal to carry out any of the following changes, before such changes take place:

- (a) the name of the organization;
- (b) the location of the organization;
- (c) additional locations of the organization;
- (d) the accountable manager;
- (e) any of the persons specified in point DMO.060(b);
- (f) the facilities, equipment, tools, material, procedures, work scope, certifying staff and airworthiness review staff that could affect the approval. In the case of proposed changes in personnel not known to the management beforehand, these changes shall be notified at the earliest opportunity. CARC shall be given adequate notification of any proposed changes in order to enable the maintenance organization to remain approved if agreed by CARC during negotiations about any of the specified changes. Without this paragraph the approval would automatically be suspended in all cases;
- (g) accidents or incidents involving personnel, unmanned aircraft, safety threat and any occurrence related to the DMO.

## **DMO.180 Continued validity of approval**

- (a) DMO approval shall be issued for two years. It shall remain valid subject to:
  - (1) the organization remaining in compliance with this Part, in accordance with the provisions related to the handling of findings as specified under point DMO.190, and;
  - (2) CARC being granted access to the organization to determine continued compliance with this Part, and;
  - (3) the approval not being surrendered or revoked;
- (b) Upon surrender or revocation, the approval certificate shall be returned to CARC.

## **DMO.190 Findings**

- (a) A level 1 finding is any significant non-compliance with Part-DMO requirements which lowers the safety standard and hazards seriously the flight safety.
- (b) A level 2 finding is any non-compliance with the Part-DMO requirements which could lower the safety standard and possibly hazard the flight safety.
- (c) After receipt of notification of findings, the holder of the DMO approval shall define a corrective action plan and demonstrate corrective action to the satisfaction of CARC within a period agreed with CARC.