



**ACCEPTABLE MAINTENANCE
ORGANIZATION [AMO] PROCEDURES MANUAL**

Purpose—

- A. This Advisory Circular (AC) provides information and guidance material for all Approved Maintenance Organizations (AMO) certificate holders or applicants under the Rwanda Aviation Regulation Part 5; and to develop and evaluate a Maintenance Organizations Procedures Manual (MOPM) and Quality Assurance Manual (QAM).
- B. This AC should be treated as a guide for development and evaluation of the MOPM and QAM required by Part 5 of the Rwanda civil aviation Regulations. It does NOT provide a complete sample manual for all AMO holders. The examples included illustrate one of many possible ways to comply with the regulations.

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- Advisory Circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.
- Where an AC is referred to in a 'Note' below the regulation, the AC remains as guidance material,
- ACs should always be read in conjunction with the referenced regulations.

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SECTION 1 GENERAL

1.1 STATUS OF THIS ADVISORY CIRCULAR

This is the [2]2017 issuance of this AC.

1.2 BACKGROUND

- A. The International Civil Aviation Organization has included Standards and Recommended Practices in Annex 6 (Parts 1 and 3) regarding the approval of maintenance organizations. Rwanda issues regulatory requirements in RCAR Part 5 in support of those international requirements.
- B. A well-developed system as evidenced by the MOPM and QAM manuals has been found to have a direct and positive effect on a maintenance organization. This AC includes requirements of the regulations and recommended international aviation maintenance industry practices presented in a manner that should allow the maintenance organization to develop an acceptable manual.

1.3 APPLICABILITY

This AC is applicable to those organizations seeking the approval as an AMO for the maintenance, preventive maintenance and modifications of aircraft and aircraft components.

1.4 RELATED REGULATIONS

The following regulations are directly applicable to the guidance contained in this advisory circular—

- Part 3, Original Certification: Aircraft and Components
- Part 4, Continuing Airworthiness
- Part 5, AMO Certification & Administration
- Part 12, AOC Certification & Administration

1.5 RELATED PUBLICATIONS

For further information on this topic, individuals, instructors and examiners are invited to consult the following publications—

- 1) International Civil Aviation Organization (ICAO)—
 - ◆ Annex 6, Part 1, International Commercial Air Transport – Aeroplanes
 - ◆ Annex 6, Part 3, International Commercial Air Transport – Helicopters
 - ◆ Document 9760, Airworthiness Manual

Copies may be obtained from Document Sales Unit, ICAO, 999 University Street, Montreal, Quebec, Canada H3C 5H7.

1.6 DEFINITIONS & ACRONYMS

1.6.1 DEFINITIONS

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

- 1) **Acceptable.** Data is acceptable when it meets the requirements of the applicable regulations.
- 2) **Accountable Manager.** The person designated by the certificated AMO who is responsible for and has the authority over all AMO operations that are conducted under Part 5. This person's duties include ensuring that AMO personnel follow the regulations and serving as the primary contact with RCAA.
- 3) **Approved.** Approved by the Director General unless used with reference to another person. Approval is granted to an AMO when the information, such as a process specification or rating, is listed on the operations specifications (OpSpecs).

- 4) **Article.** An aircraft, airframe, aircraft engine, propeller, appliance, or component part.
 - 5) **Contracting.** Entering into an agreement between two or more persons for the performance of maintenance functions on an article.
 - 6) **Correction.** An action taken to eliminate a detected nonconformity. For AMO holders electing to use an International Organization for Standardization (ISO 9000) quality system, a correction may involve repair or rework and may be made in conjunction with a corrective action.
 - 7) **Corrective Action.** An action taken to eliminate the cause of a detected non-conformity or other undesirable condition to prevent its re-occurrence. For AMO holders' electing to use an ISO 9000 or similar system, the undesirable condition may include potential regulatory violations, which differs from a nonconformity requiring correction.
 - 8) **Designated Engineering Representative (DER).** A private person designated by Director General to act as its representative for examining, inspecting, and testing aircraft and related data. A DER may recommend approval or approve data within the limitations of his or her certificate of authority.
 - 9) **Directly in Charge.** Responsible for the work of a certificated AMO facility that performs maintenance, preventive maintenance, modifications, or other functions affecting aircraft airworthiness. A person directly in charge doesn't need to physically observe and direct each worker constantly, but must be available for consultation on matters requiring instruction or decision from higher authority.
 - 10) **Line Maintenance—**
 - (a) Any unscheduled maintenance resulting from unforeseen events; or
 - (b) Scheduled checks that contain servicing and/or inspections that do not require specialized training, equipment, or facilities.
 - 11) **Maintenance.** Inspection, overhaul, repair, preservation, and the replacement of parts, excluding preventive maintenance.
 - 12) **Maintenance Function.** A step or series of steps in the process of performing maintenance, preventative maintenance, or modifications, which result in approving an article for return to service.
 - 13) **Major Modification.** A modification not listed in the aircraft, aircraft engine, or propeller specifications that—
 - (a) Might appreciably affect weight, balance, structural strength, performance, power plant operation, flight characteristics, or other qualities affecting airworthiness; or
 - (b) Is not done according to accepted practices or cannot be done by elementary operations.
 - 14) **Major Repair.** A repair that—
 - (a) If improperly done, might appreciably affect weight, balance, structural strength, performance, power plant operation, flight characteristics, or other qualities affecting airworthiness; or
 - (b) Is not done according to accepted practices or cannot be done by elementary operations.
 - 15) **Operations Specifications (OpSpecs).** The official document that describes the authorizations, ratings, and limitations of the AMO.
 - 16) **Preventive Action.** An action taken to eliminate the cause of a potential nonconformity or other potentially undesirable situation.
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- ◆ For AMO holders electing to use an ISO 9000 system, preventative action is taken to prevent an occurrence, whereas corrective action is taken to prevent a re-occurrence.
 - ◆ For an AMO using a system, preventative action is taken to remove or improve a process to prevent potential future occurrences of a non-conformance.
- 17) **Preventive Maintenance.** Simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations.
 - 18) **Procedure.** A series of steps that must be performed in a specific order to ensure proper completion.
 - 19) **Quality Assurance Manual (QAM).** A manual that describes the inspection and quality control procedures used by the AMO.
 - 20) **Rating.** A statement that, as a part of the AMO holder's certificate, describes the special conditions, privileges, or limitations issued under Part 5.
 - 21) **MOPM,** a manual that describes the procedures and policies of an AMO holder's operations.
 - 22) **Required Inspection Item (RII).** An item of maintenance that, if not performed properly or if improper parts or materials utilized, it could result in a failure, malfunction, or defect, endangering the safe operation of the aircraft.
 - ◆ An RII must be inspected by a trained, qualified, and authorized inspector.
 - ◆ The inspector must be listed on the AMO holder's roster but can't be the same individual who performed the work.
 - 23) **Supervisor.** A person who directs the work performed under the AMO holder's certificate and Operation Specifications.

1.6.2 ACRONYMS & ABBREVIATIONS

For the purpose of this AC the following acronyms and abbreviations apply—

- 1) **AD** = Airworthiness Directives
- 2) **AMO** = Approved Maintenance Organization
- 3) **DER** = Designated Engineering Representative
- 4) **EASA** = European Aviation Safety Authority
- 5) **FAA** = United States Federal Aviation Administration
- 6) **FSS** = Flight Safety Services
- 7) **ICAO** = International Civil Aviation Organization
- 8) **MOPM** = Maintenance Organization Procedures Manual
- 9) **NDT** = Non-Destructive Testing
- 10) **NIST** = National Institute of Standards and Technology ,
- 11) **OpSpecs** = Operations Specifications
- 12) **QAM** = Quality Assurance Manual
- 13) **RCAA** = Rwanda Civil Aviation authority
- 14) **RII** = Required Inspection Item
- 15) **SB** = Service Bulletin
- 16) **SUP** = Suspected Unapproved Part

SECTION 2 THE MANUAL(S)

- A. The maintenance organization may have several manuals or documents that are part of its quality control, MOPM, and training manual system.

- The basic regulatory requirements for manual content are listed in Part 5.
- The additional methodology and elements of each requirement will be discussed in detail in this AC.

- The applicant/certificate holder may combine portions into one section or chapter of the manual system.

- B. The AMO holder's manual(s) must remain current and be accessible for use by AMO personnel, as required by Part 5.

The manual(s) may contain more procedures than required by the regulations for the certificate holder to describe the AMO holder's overall functions, responsibilities, and quality control procedures.

- C. Procedures described in the manual(s) should ensure that the AMO could satisfactorily perform maintenance in accordance with its rating(s).

- In that regard, AMO with a Limited Specialized Service Rating would have different procedures in its manual system criteria than an AMO with a Class 3 Airframe Rating.
- Each manual system should be developed based upon the ratings authorized and the size and complexity of the AMO.

- D. The checklist in Appendix B may be used to assist the applicant/certificate holder in reviewing the content of its manual(s).

- E. The applicant/certificate holder may submit the manual(s) to RCAA on paper or by an electronic medium.

- The MOPM may be submitted together with related documents, such as the application forms and maintenance technician applications, to RCAA.
- If the AMO submits the manual electronically, the AMO should discuss the format, software, and revision procedures with RCAA before submittal.



All submissions will require a cover letter.

- F. The AMO should follow the procedures described in its manual when submitting revisions to an existing manual (Refer to Manual Revision and Control).

2.1 MOPM ELEMENTS

The following are considered MOPM elements—

- 1) A statement signed by the accountable manager confirming that the maintenance organisation procedures manual and any referenced associated manuals defined the AMO holder'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 must countersign the statement;
- 2) The AMO holder's safety and quality policy: A description of the independent quality assurance system to monitor compliance with and adequacy of the procedures (or a system of inspection to ensure that maintenance is properly performed, aircraft and components are properly certified for released for service and to include procedures for self-evaluations, including methods and frequency of such evaluations, and procedures for reporting results to the accountable manager for review and action;
- 3) The title(s) and name(s) of the senior person(s) accepted by RCAA;
- 4) The duties and responsibilities of all postholders including matters on which they may deal directly with Authority on behalf of the AMO;

- 5) An organisation chart showing associated chains of responsibility of the senior person(s);
- 6) A list of certifying staff;
- 7) A general description of manpower resources;
- 8) A general description of facilities located at each address specified in the AMO operations specifications;
- 9) A specification of the AMO holder's scope of work relevant to the extent of work authorised;
- 10) The notification procedure for AMO organisation changes;
- 11) The AMO holder's maintenance organization procedures manual amendment procedure;
- 12) A description of the method used for the completion and retention of maintenance records to show that all requirements for the signing of a return to service have been met;
- 13) A description of the procedure for preparing the return to service and the circumstances under which the release is to be signed;
- 14) A description of the additional procedures for complying with an operator's maintenance procedures and requirements;
- 15) (A description of the procedure for receiving, amending and distributing within the maintenance organization all necessary airworthiness data from the type certificate holder or type design organization;
- 16) A description of the procedures used to establish the competence of maintenance personnel;
- 17) A general description of the organization's facilities;
- 18) A description of the procedures for complying with the service information reporting requirements of Part 4;
- 19) The AMO holder's procedures and quality system;
- 20) A list of AOC holders, if appropriate, to which the AMO provides an aircraft maintenance service;
- 21) A list of organizations related to the maintenance;
- 22) A list of line maintenance facilities, base maintenance, equipment maintenance;
- 23) A list of contracted organisations; and
- 24) Training program for maintenance personnel, certifying staff and organization designees.

2.2 QAM ELEMENTS

The following are considered QAM elements—.

- 1) Revision procedures and notifying RCAA.
- 2) Qualifying and surveillance of non-licensed persons performing maintenance,
- 3) Preventative maintenance, or modification for the AMO.
- 4) Establishing and maintaining proficiency of inspection personnel.

- 5) Establishing and maintaining current technical data.
- 6) Inspection System—
 - ◆ Incoming raw material inspection
 - ◆ Preliminary inspection
 - ◆ Hidden damage inspection
 - ◆ Final inspection and return to service
- 7) Calibration of measuring and test equipment, including intervals of calibration.
- 8) Corrective action.
- 9) Samples of inspection forms and instructions for completion (may be a separate manual).

2.3 PORTIONS RECOMMENDED FOR MOST MANUALS

The following elements are required for most manuals—

- 1) Table of Contents.
- 2) List of Effective Pages.
- 3) Record of Revisions.

2.4 COMBINING PORTIONS OF MOPM & QAM

A. The following chart illustrates one of several possible combinations that applicants/certificate holders could use to structure a single manual system.

- It includes the procedures required in both the MOPM and the QAM.
- Other combinations may be possible depending upon the ratings, size, and complexity of the AMO.
- The manual's content must include the applicable procedures required by the regulations, but may be formatted in any manner easily understood by employees of the AMO.

- A Part 5 AMO that also holds an AOC certificate may refer to sections of its AOC approved maintenance program in its Part 5 manuals.
- If the manuals are structured in this manner, those sections must adhere to Part 5 regulatory requirements.
- The affected sections would apply to aircraft listed on the AOC Ops Specs or to other third party AOC holders or aircraft owners that are serviced by the certificate holder.

B. The AMO should include a table to show that its manual system meets the requirements of Part 5.

2.5 IDENTIFICATION & CONTROL OF SECTIONS

A. Sequential numbering of the manual(s) from front to rear may cause difficulty for the revision process.

- A minor revision to one of the first pages may cause a change in the content of each successive page.
- RCAA advises the AMO to divide the manual into several sections, so that a revision to one page of a section does not affect the entire manual.

- Most AMO holders are divided into sections of similar subject matter.
- For instance, one section of the manual may contain all of the procedures related to the inspection system.

B. The AMO may establish these sections or the sections may be contained within an established industry format (such as ISO).

C. The sample formats included in this chapter contain a few examples of the many possible methods used for identification.

- The sections may consist of several similar individual procedures grouped together through a common numbering system, or several similar procedures described in narrative format within a section.
 - Regardless of the method used, each section must be identified and controlled.
- D. Many MOPM sections are controlled using a table of contents.
- The table of contents lists each section of the manual and the location in the manual.
 - Some AMO holders have elected to reissue a complete section of the manual if any page within that section is revised.
 - The table of contents for those facilities may indicate revision status for each section, rather than each page.
- E. Some AMO holders are controlled using a master document control list.
- This document lists each procedure and the revision status of that procedure.
 - A unique number and revision status should identify each procedure within the manual system.
 - If a page within a procedure is revised, the entire procedure is reissued. In this system, each procedure is identified and controlled, rather than each section.
- F. The procedures to control sections of the manual should address (as applicable)—
- 1) Identification.
 - 2) Revision status.
 - 3) Page numbering.
 - 4) Issue date.
 - 5) Approvals of internal personnel responsible for the manual and revisions.

2.6 EXAMPLE COMBINATION OF MOPM & QAM ELEMENTS

- A. Example of possible combinations—

MOPM Manual Element	–	QAM Manual Element	–	Possible Chapter/ Section title
● Training program, revision; notifying RCAA,	+	● Establishing and maintaining proficiency of inspection personnel	=	● Training
● Maintaining and revising contract information	+	● Qualifying and surveilling non-licensed persons	=	● Contracting
● Manual revision, RCAA notification, identification and control of sections.	+	● Manual revision and RCAA notification	=	● Manual Control
● Records and record keeping system	+	● Establishing and maintaining current technical data	=	● Document Control
● As Required	+	● As required	=	● Other Sections

- B. Additional combinations that work effectively within the facility and are acceptable to RCAA FSS may be included in the manual system.

2.7 SAMPLE PROCEDURE FORMATS

- A. The following samples are provided to help the manual author determine a possible format for the procedures in the manual system. These are only four examples of many possible formats. Part 5 sets forth the requirements for content, not format.
- B. The format used for the procedures in the manual should fit the size and complexity of the facility. If there are existing procedure manuals in the facility, the manual writer may wish to include the same format in the AMO holders.

If facility employees are accustomed to a particular format, the manual writer should continue to use that format.

2.7.1 SAMPLE NARRATIVE PROCEDURE FORMAT

- A. The advantages of the narrative procedure format includes each of the required elements of a procedure in a narrative format. This format is easy to write, as long as the author remembers to include all of the elements. This format is usually easy for the reader to understand and requires no special training for the author or reader.
- B. The disadvantages include that narrative can easily become too complex or wordy. The author may fail to include all of the required elements of the procedure.
- The narrative must be presented in a logical sequence so the reader can easily understand the flow of the procedure.
- C. The following page excerpt provides example of narrative procedure format—

Rwanda Aeromotive C.
325 Silverback Road
Kigali, Rwanda

Section: 5
Page: 3
Revision: 1
Date: 11/14/2001

PRELIMINARY INSPECTION

The Chief Inspector (**WHO**) of the repair station is responsible for the performance of appropriate inspections, including functional and nondestructive tests. This inspection will be conducted on the hangar floor or in the inspection area (**WHERE**) for components. This will ensure that all units (**WHAT**) delivered to the repair station for maintenance are inspected to determine the state of preservation and any defects. This inspection will be recorded on the Preliminary Inspection Form 567 (**RECORD**) with any discrepancies noted. The form must be attached to the work order and will remain with the applicable inspection records until the unit is released for service. Forms 123 and 789 will be used to record the results of the functional and nondestructive tests. Those forms will show the work order number and will be routed, attached to the work package.

HOW

2.7.2 SAMPLE STANDARD PRACTICES FORMAT

The Standard Practice format assigns responsibility as part of each procedure. The narrative should be written in a format easily understood by the person who uses and must follow the procedure. Note that the format also includes revision status, issue date, and page numbering. The reason and scope may be used to state the company policy or objective.

RWANDA AEROMOTIVE STANDARD OPERATING PROCEDURE 123

Title: Receiving Inspection Page 1 of 4

Revision: A Issue Date: November 12, 2001

Reason: To ensure consistent quality of incoming raw material.

Scope: Applies to all raw material shipments received. This procedure does not apply to incoming parts received for repair.

Responsibility: The receiving inspector is responsible for inspecting all incoming raw materials.

Procedure:

1. The receiving inspector will visually inspect the container (if used) and/or material for any shipping or handling damage.
2. The receiving inspector will immediately report any shipping or handling damage to the purchasing department.
3. Compare the purchase order (copy located in receiving file) with the shipping document to ensure the material is correct.
4. Etc.

2.7.3 SAMPLE ISO PROCEDURE FORMAT

The previous format is often used for procedures included in an ISO 9000 quality system document.

Note that space is provided to document approval and release of the document (part of a document control system).

The Remainder Of This Page Intentionally Left Blank

- Terms used within the procedure are defined. Additional documents associated with this procedure are listed.
- The format is structured—perhaps too structured—for some organizations.
- The procedure follows a standard numbering system for each portion of the procedure, allowing for precise reference for paragraphs that may be discussed or revised.
- Work instructions and records may follow the same numbering convention (i.e., QP 4.12, WI 4.12-1, and Form 4.12-A).
- Forms may be included within the procedure or in a separate forms section of the manual system.

John Smith Overhaul & Repair Quality Procedure—Control of Inspection, Measuring, and Test Equipment QP 4.11			
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Approval	Approval	Revision/Date	Reason for Change
John Smith, Sr.	Jane Doe	Original—04/01/2000	Original issue
John Smith, Sr.	Jane Doe	A—06/15/2000	Added gage request form

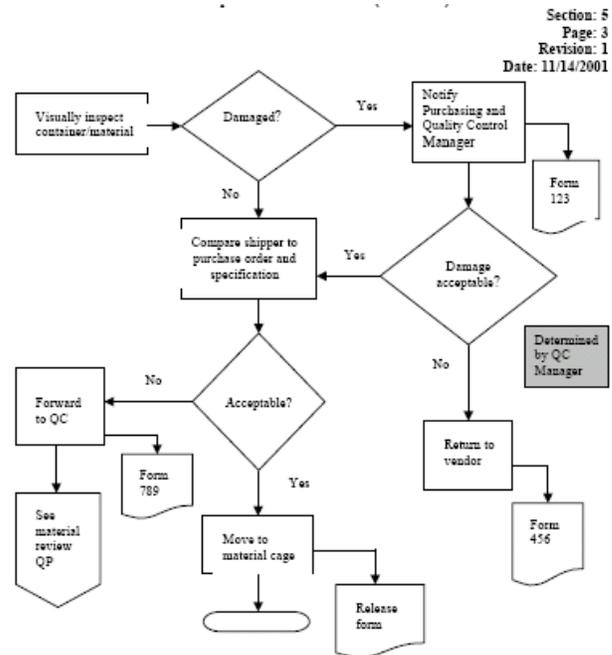
- 1.0 Purpose: To ensure that all precision tools and equipment are properly calibrated, identified, and maintained.
- 2.0 Scope: This procedure applies to all employees who use inspecting, measuring, and testing equipment, and those who calibrate that equipment.
- 3.0 Responsibility: The Director of Quality is responsible for ensuring that all inspecting, measuring, and testing equipment is calibrated and traceable. Only trained and qualified personnel are permitted to adjust and calibrate equipment.
- 4.0 Reference Documents:
 - 4.1 QAP 15.0, Inspection and Test Status
 - 4.2 MIL-STD-120 Gage Inspection
 - 4.3 Work Instruction (WI) 4.11-1 through WI 4.11-20
- 5.0 Definitions:
 - 5.1 Accuracy of Measurement: The closeness of the agreement between the result of a measurement and the conventional true value of the measurement.
 - 5.2 Uncertainty of Measurement: The result of the evaluation aimed at characterizing the range within the true value of a measurement. It's estimated to lie generally within a given likelihood.
 - 5.3 Etc.
 - 5.4 Etc.
- 6.0 Procedure:
 - 6.1 The gage calibration technician will maintain a computerized list of all precision tools and equipment using the Gage Control software program.
 - 6.2 During the first week of the month, the gage technician should run the "Calibration Required" report, listing all tools and equipment that must be calibrated before the end of the month.

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2.7.4 SAMPLE FLOW CHART PROCEDURE FORMAT

2.7.4.1 Introduction

- A. The flowchart illustrates another possible method of presenting a procedure. Although the sample illustrates a simple procedure, complex processes could be presented using a flowchart.
- The person using the manual would need to be familiar and comfortable with flowcharts and flowchart symbols.
- B. The flowchart process may also be used to develop a procedure that was not previously documented.
- The procedure could be initially drawn on paper using a flowchart, and then described using the narrative format in the manual.
 - This process works well when the users of the manual are more comfortable with narrative procedures rather than flowcharts.



- C. Another possible use of the flowchart is to verify if a narrative procedure will work. This process is essentially the opposite of the process previously described.
- While reading the narrative of the procedure, a flowchart is created to visually represent the various steps.
- D. A flowchart can also be used during a process audit.
- The auditor creates a flowchart while reviewing the performance of a particular process.
 - The auditor then compares the process he or she observed with the process described in the manual.
 - Any differences may be noted in the auditor's report.

- A review of the completed flowchart will show any redundant or missing steps.
- This type of format requires the reader to have some familiarity with flow charts, but can be easily understood by someone who understands the format.
- Because the flow charts contain fewer words than other formats, the process can be read and understood quickly.
- This format takes longer to develop unless the author has specific software for the purpose.

SECTION 3 MANUAL REVISION & CONTROL

The following information is usually included in Chapter 1 of the manual.

3.1 PROCEDURES FOR REVISION

3.1.1 SETUP OF MANUAL SECTION

- A. The MOPM and the QAM must contain procedures for revising the manual(s) and notifying RCAA for approval of the revisions.

- B. This section of the manual must contain procedures to control the original submission of the manual and subsequent revisions.
- The procedures should ensure that persons issued a manual receive revisions.
- C. The manual must include a description of the system used to identify and control sections of the manual. The format and structure of this system is not specified by the regulation.
- This flexibility will accommodate the technological changes that permit AMO holders to maintain and revise the manuals in different formats and manners.

AMO employees may require training on the content of the revisions, especially if a standard operating procedure or inspection procedure is changed.

3.1.2 CONTENTS OF REVISION PROCEDURES

Regardless of the media used for the manual, the procedures for making revisions should include—

- 1) Who, by title, is responsible for making revisions?
- 2) Who will submit revisions to RCAA for review and acceptance?
- 3) How will the AMO incorporate changes to revisions found not acceptable to RCAA, which do not conform to applicable regulations?
- 4) How will the AMO correct any maintenance/administrative actions performed under revisions that were found not acceptable to RCAA?
- 5) How will the revisions be distributed and made available within electronic systems, and how will RCAA receive its revisions?
- 6) Accountability—how will the facility ensure that each manual holder or designated location receives each revision?
- 7) Identification of each revision to the text on each affected page.
 - ◆ For example, a vertical bar in the margin or other suitable method may indicate the revised portion of text.

3.2 PROVISIONS FOR CONTROL

- A. If the manual is in paper format, the revision and control part of the manual should contain the following (or equivalent) information—
- 1) Procedures for revising the MOPM and notifying its RCAA of revisions, including how the RCAA will be notified of revisions.
 - 2) Provisions for selecting the revision number, the date of the revision, the pages revised, and a place for the person making the revisions to the assigned manual to sign or initial.
 - 3) Manual control number and assignment.
 - ◆ Each manual should have a unique number assigned to it and the name of the individual, department, or group assigned to that particular manual.
 - ◆ The manual procedure should identify who will maintain a master distribution list that contains the manual number, assigned individual, and revision status.

- An acknowledgment form is a common method of tracking the receipt and insertion of the revision by the manual holder, which ensures accountability
- With this method, after receiving a revision—
 - Each manual holder inserts the revised pages into the manual,
 - Records incorporation of the revision in the record of revisions, and
 - returns the signed acknowledgment form to the person responsible for manual control.

3.3 ELECTRONIC FORMAT

3.3.1 MAINTAINING ELECTRONIC DOCUMENTS

- A. The manual(s) may be maintained on a computer network or other electronic medium, such as a floppy disk or compact disk.
- B. If the manual is maintained on a network server, the following concerns must be addressed in the procedures—
 - 1) Security = How will the AMO ensure that only authorized personnel make any changes? Who (by title) will be authorized to make those changes and how is that person authorized?
 - 2) Access = Have the employees been trained to access the manual on the network? Is access protected by passwords? Do all of the supervisors and inspectors have access to the manual?
 - 3) Revisions = How will the user know that the manual has been revised, and the content of that revision?
 - 4) Availability = How will the AMO ensure that the current manual(s) are available for all shifts?
- C. If the manual is maintained on a floppy or compact disk, the following concerns must be addressed in the procedures—
 - How will the manual and any subsequent revisions be distributed? How will receipt of the revision be documented?
 - Is the software used for writing the manual compatible with the software used by all manual holders, including RCAA?
 - Are all of the manual holders trained on the procedures necessary to access the manual at their workstations?
 - How can station personnel verify the currency of the disks before use?

3.4 RCAA ACTIONS

All AMO document submissions, regardless of the media used, must be accompanied by a cover letter that describes the submission and is signed by an appropriate manager.

- 1) RCAA inspectors will either accept or reject the manual revision.
 - 2) The RCAA inspector will, by letter, inform the AMO of acceptance or rejection.
 - 3) The letter will address the manual title, manual date, and revision number.
 - 4) If the manual is rejected, RCAA inspector will—
 - (a) Provide a detailed explanation of the deficiencies and
 - (b) Advise the AMO not to perform maintenance if the rejected manual procedures are in use.
-

SECTION 4 ORGANIZATION, DUTIES & RESPONSIBILITIES

The following information is usually contained in Chapter 3 of the manual.

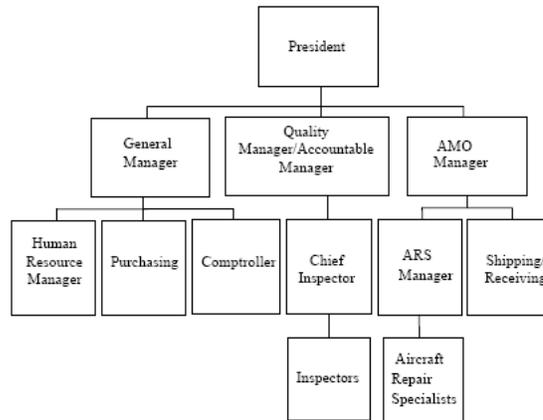
4.1 ORGANIZATION CHART

- A. The organization chart identifies (by title only) each management position with authority to act on behalf of the AMO.
- B. Ensure that the following concerns are addressed in the manual procedures.

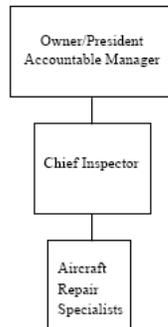
If the AMO performs work for AOC holders under Part 12 and is performing RII, RCAA requests that the organization chart reflect the separation between the maintenance and inspection departments.

- Are the titles and reporting structure for the organization chart appropriate for the facility?
- Are the titles for the positions the same throughout the manual?
- Is each management position with authority to act on behalf of the AMO identified?
- Is an accountable manager designated?

4.1.1 EXAMPLE: COMPLEX AMO



4.1.2 EXAMPLE: SMALL AMO



4.2 DUTIES & RESPONSIBILITIES

4.2.1 SETUP OF SECTION

A. This section may be combined with the organization chart as one section/chapter of a manual system.

If the AMO documents its procedures in a format that includes a Responsibility section in each procedure, it will not need to have a separate Duties and Responsibilities section.

B. This section includes the area of responsibility assigned to each management position and the duties, responsibilities, and authority of each management position.

- The AMO must ensure that the duties and responsibilities are appropriate and that the positions exist within the company.
- Although not required by the regulation, many AMO holders choose to include duties and responsibilities beyond the required management personnel.
- As a matter of standard practice, positions described in the organizational chart should be included in the duties and responsibilities section to ensure consistency.

4.2.2 CONTENT & FORMAT

A. Duties and responsibilities that are outside the scope of the management, but are part of the regulatory requirements, should be described in this section of the manual.

- For example, equipment maintenance, approval for return to service, applications for maintenance technician, and so forth.

B. Only titles, not names, should appear in this section. Titles should be the same as on the organization chart and elsewhere in the manual.

C. Titles used in the following format samples are only examples.

4.2.2.1 Sample: Narrative Format

Owner/President: The Owner/President is responsible for the overall operation of (name of the AMO) in accordance with the applicable RCARs.

- The Owner/President's duties include maintaining an adequate and knowledgeable staff to plan, perform, supervise, and inspect the work being performed on civil aviation articles.
- The Owner/President may delegate all duties to the qualified persons as necessary. However, such delegation does not relieve the Owner/President of the overall responsibility.

4.2.2.2 Sample: Outline/List Format

Quality Manager: The Quality Manager reports to the President and is responsible for managing the AMO quality control system. The duties of the Quality Manager include—

- 1) Supervising all inspection personnel.
- 2) Maintaining a current file of pertinent technical data, including RCARs, specifications, manufacturer's maintenance manuals, Service bulletins (SB), Airworthiness Directives (AD), and other data acceptable to or approved by RCAA.
- 3) Ensuring the proper execution of required RCAA forms.

4.2.2.3 Sample: ISO/Industry Format

A. The duties and responsibilities may be addressed in the management responsibility section of the manual.

- B. The following questions or concerns are offered as a guide and are intended to help the facility initiate the procedures in its manual—
- 1) Do the duties and responsibilities include the areas of responsibility assigned to each management position?
 - 2) Do the duties and responsibilities indicate the reporting structure (to what other position does each report)?
 - 3) Does the narrative describe the job function(s) that person performs (i.e., calibration, training, personnel management)?
 - 4) Do the procedures ensure that the duties and responsibilities of supervisory and inspection personnel are performed in their absence?
 - 5) Does the manual have a procedure to determine if a supervisor or inspector is qualified for any delegated duties?
- C. Consider the following when assigning duties and responsibilities within the AMO—
- 1) Is each supervisor licensed?
 - 2) Are persons with approval for return to service authority licensed?

- These questions should not be considered all-inclusive.
- Each facility is unique and therefore may require additional procedures to verify regulatory requirements and the needs of the AMO.

SECTION 5 MOPM & QAM ELEMENTS

The following information is usually included in Chapter 4 of the manual.

5.1 PERSONNEL ROSTER

5.1.1 GENERAL POLICIES

- A. Personnel rosters are lists of individuals within the AMO—
- Who are authorized to perform certain functions, such as approval for return to service or signing off required inspection items, or
 - That hold certain management and supervisory positions.
- B. The AMO must maintain a personnel roster or rosters that list managers, supervisors, inspectors, including RII inspectors, and those individuals authorized to approve an article for return to service.
- RCARs do not specify the format of the rosters.
 - Each AMO may develop its own roster format, as long as it contains all of the appropriate names.
- C. The rosters do not need to be included in the manual, but the procedures for maintaining and revising the rosters must be in the manual.
- The procedure must describe how the roster will be changed within 5 business days of the termination, reassignment, change in duties or scope of assignment, or addition of any personnel.
- D. It may be appropriate for the AMO to develop a combination roster. Such a roster would include—

These lists can be maintained in paper or electronic format, but must be accessible for review and inspection by RCAA.

If the rosters are not included in the manual, the procedure should describe where the rosters would be located.

- 1) Initials,
- 2) Signatures,
- 3) Stamp numbers,
- 4) License numbers, or
- 5) Any other information specified by the company or RCAA.

This information is used to designate the authority of inspection or supervisory personnel who can sign/stamp off work documents or approve articles for return to service.

5.1.2 EMPLOYMENT SUMMARIES

The AMO must also maintain employment summaries for each person whose name appears on the rosters.

- Employment summaries of supervisors, inspectors, and persons responsible for return to service may be in the national language.

5.1.3 CONTENT OF ROSTER PROCEDURES

The following questions should be answered during development of the procedures concerning the rosters—

- 1) Who is responsible (by title) for maintaining the rosters in current condition?
- 2) Has an alternate been designated?
- 3) Where will the rosters be located?
- 4) How will the rosters be revised within 5 business days?
- 5) Is authority to approve an article for return to service shown on the rosters?
- 6) Who is responsible for designating those individuals, and how are those individuals designated?
- 7) Are the managers, supervisors, inspectors, and persons authorized to approve articles for return to service all listed on the rosters?
- 8) Are the supervisors licensed, and with what type of license if located outside of Rwanda?
- 9) Are the persons authorized to approve articles for return to service licensed?
- 10) Are there employment summaries for each person on the roster?

5.1.4 EXAMPLE ROSTER FORMATS

Name and Title	License Type & Number	Signature and Initials	Stamp	Authorization
John Smith Chief Inspector	AMT 345678	John Smith,		A, B, C
Jane Doe Receiving Inspector	ARS 654321	Jane Doe, JD		B
David Goodeye Final Inspector	ARS 89123	David Goodeye, DG		A, C
Etc.				

Explanation of Authorization:

- A—Authorized to approve articles for return to service
- B—Authorized to sign for a specific inspection
- C—Authorized to sign for in-process and final inspection

Section: III Date Completed: 11/13/2001 Revision No. 1
Personnel
Title: Chief Inspector/Aircraft Repair Specialist
Authorized Signature: Kyle R. Bowman
INAVIC PEL License No. 0012345-ARS
Authorized to Sign: Log books and other approvals for return to service, Malfunction and Defect Reports

5.2 OPERATIONS, HOUSING, FACILITIES, EQUIPMENT & MATERIALS

5.2.1 OPERATIONS

- A. This section of the manual should include a general description of the AMO operations.
- The description could be in a narrative, flow-chart or other format.
- The manual should describe how the AMO operates, from receiving an article for maintenance to approval for return to service.
- B. Any/all standard operating procedures developed for the facility could be included, such as contract/purchase order review, human resources, equipment and facilities maintenance, technical data, document control, and so forth.

5.2.2 HOUSING & FACILITIES

- A. This section should include a description of the housing and facilities, and a drawing showing the floor plan of the facility.
- B. The drawing could include the entrance(s), parking areas, and street locations. The drawing and description may include the type of heating, lighting, equipment location, shop areas, electrical, and compressed air outlets.
- C. A description of any facilities used for spray painting, avionics, instruments, engine or airframe repair, or any other work that would have special requirements should be included.

5.2.3 EQUIPMENT & MATERIALS

- A. The AMO must have the equipment, tools, and materials necessary to perform the maintenance in accordance with Part 5.
- B. The equipment, tools, and materials must be located on the premises and under the AMO holder's control when the work is being done.
- C. Some of this equipment may be very expensive and the AMO may rarely use it.
- If the AMO does not own the equipment and it is not kept at the facility, the manual must describe how the equipment is obtained (i.e., lease, rental, etc.).
 - The manual should also describe the procedure for ensuring the equipment is on the premises and under the AMO holder's control at the time the work is being performed.
- D. This section of the manual should also describe where the equipment is likely to be used and how the AMO will comply with special handling requirements for sensitive tools and equipment.
- Some test benches and special equipment may require calibration/verification after relocation.

- This section of the manual should describe how the AMO ensures that required calibration/ verification is performed before using the equipment to perform maintenance or modification on civil aviation articles.
 - The MOPM should identify which department is responsible for calibrating leased tools and equipment.
- E. The MOPM must include a description of the equipment used to perform maintenance.
- For example, if the facility includes a machining area, then a generic description of the types of machines located in that area should be included in the manual.
 - The description should not be so specific that updating equipment would result in a manual revision.
 - The equipment, tools, and materials must be those recommended by the manufacturer of the article or must be at least equivalent to those recommended by the manufacturer and accepted by RCAA.
 - The AMO may refer to a list of equipment maintained for other purposes, such as a list kept by the accounting department for tax purposes.
 - The list must be available for review by RCAA. The list need not include the cost of the equipment or any other financial or business information.

5.2.4 EQUIVALENT TOOLS & EQUIPMENT

- A. If the AMO will be using equipment, tools, or materials other than those recommended by the manufacturer, the manual must explain the procedure it will use for determining equivalency of equipment, tools, and materials.

This section is not intended to discuss industry standard tools and equipment (i.e., wrenches, multi-meters, sockets, etc.) that are manufactured to a recognized industry standard.

- To determine equivalency, compare the technical requirements of the special equipment or test apparatus recommended by the manufacturer with the proposed replacements.
 - The equipment or test apparatus may look different, be made of different materials, be a different color, and so forth.
 - However, the equipment or test apparatus must be capable of performing all necessary tests and checking all required parameters of the articles.
 - The level of accuracy should be equal to or better than that recommended by the manufacturer of the equipment/tools.
 - Reverse engineering must include the data, drawings, testing, or reports necessary to determine that the article is equivalent to the article recommended by the manufacturer.
 - The basis of equivalency is the requirement that the article meet the manufacturer's standards and specifications in all respects regarding tolerances, repeatability, and accuracy.
 - AMO holders should review the specific requirements of part 5 before developing equivalent tools and equipment.
- B. Standard industry practice establishes that each piece of special equipment or test apparatus have a unique part number and serial number to identify it within the AMO holder's inventory system.
- Whether the equipment or apparatus is obtained from the manufacturer or produced by the AMO, it should be identified in the system for calibration and tracking purposes.

5.2.5 CONTENT QUESTIONS REGARDING HOUSING & EQUIPMENT

- A. The following questions or concerns are offered as a guide and are intended to help initiate the procedures for describing the housing, facilities, and equipment in the manual(s).

- Each facility is unique and therefore may require additional procedures to verify regulatory requirements and needs of the AMO.
- These questions should not be considered all-inclusive.

- 1) Does the manual include a description of how the AMO operates?

- 2) Does the manual include a drawing of the housing, identifying the various work facilities within the building(s) and giving a narrative description of the construction of the housing and facilities?
- 3) Does the description and/or layout identify areas with special requirements?
- 4) Does the description include a generic overview of the equipment?
- 5) When leasing or renting equipment, does the manual contain procedures describing the lease/rent process and who is responsible for managing the program, including the required calibration/verifications?
- 6) How does the AMO ensure that the equipment is in place and under the facility's control when the work is performed?
- 7) If the AMO is using special equipment or tools other than those recommended by the manufacturer, does the manual include procedures for determining equivalency?
- 8) Does the manual include a description of the stock room/area, how inventory is requisitioned for particular jobs, and how shelf life inventory is maintained?

5.3 CAPABILITY LIST

A certificated AMO with a limited rating may perform maintenance, preventive maintenance, or modifications on an article if it is listed on a current capability list acceptable to the RCAA or on the AMO holder's OpSpecs.

5.3.1 MANUAL CONTENTS REGARDING CAPABILITY LISTS

- A. If the AMO chooses to use a capability list, the MOPM must—
 - 1) Contain procedures for revising the list and notifying RCAA;
 - 2) Include how often RCAA will be notified of revisions;
 - 3) Contain the procedures for the self-evaluation required under Part 5 for revising the capability list;
 - 4) Describe the methods and frequency of such evaluations; and
 - 5) Contain the procedures for reporting the results to the appropriate manager for review and action.
- B. The capability list itself may be included as a part of the MOPM or as a separate document; however, the procedures for revising the list and for performing the self-evaluation must be in the manual.

5.3.2 SELF-EVALUATION

- A. The individual performing the required self-evaluation should have the following qualifications—
 - 1) Experience with performing evaluations (or audits if that is the method selected by the AMO).
 - 2) An understanding of the requirements of Part 5.
 - 3) Knowledge of the maintenance requirements for the particular make/model of article to be added to the list.
- B. The individual should follow the procedures in the MOPM, using the checklists, working documents, and forms to record the self-evaluation.

The checklists and forms may need to be customized for each self-evaluation.

-
- C. The self-evaluation should ensure that the AMO has the following—
- 1) The appropriate limited rating.
 - 2) Adequate housing and facilities.
 - 3) Recommended tools, equipment, and materials, or equivalent.
 - 4) Approved and current technical data.
 - 5) Sufficient qualified personnel.
- D. The individual conducting the self-evaluation must record the results and report them to the appropriate manager or management team for review and approval.
- The procedures should describe the acceptance process for the company officials and RCAA.
 - The procedure used to revise the list should describe the method used to indicate any changes made to the list.
 - Any deficiencies found during the self-evaluation must be corrected before the article can be added to the capability list.
 - When the self-evaluation establishes satisfactory results, the capability list may be revised.
 - The AMO should keep records of the self-evaluation on file for the period specified in the manual.
- E. The procedures for revising the list and notifying RCAA should include the title of the person responsible for maintaining the list and communicating any revisions to RCAA.
- If the self-evaluation was satisfactory, the capability list may be revised. The revised list and any other necessary technical data can be submitted with a cover letter within 5 business days to the PI at RCAA.
 - The PI will review the revisions and, if the revisions are satisfactory, signify acceptance by signing and dating the appropriate document.

5.3.3 UPDATING THE CAPABILITY LISTS

- A. Capability list currency can be shown by a list of effective pages or equivalent document, which is signed by the authorized representative of the AMO and RCAA.
- B. If the AMO no longer wishes to maintain an article on its capability list, the article should be deleted.
- The AMO must have the necessary tools, equipment, housing, facilities, and trained personnel to maintain articles on the capability list at the time the work is performed.
 - The procedures in the manual should describe how to delete articles from the list and how to forward the revised list to RCAA for acceptance.
 - The AMO may choose to audit the capability list on a regular basis to ensure that it continues to have the housing, facilities, equipment, and technical data that meet all necessary requirements to maintain the articles listed in the document.
 - Whenever equipment, tooling, personnel, and data must be obtained in order to perform the maintenance or modification on an article that is going to be added to the capabilities list, the AMO must explain how it will ensure these items will be available when the work is being performed.
- C. If the capability list is maintained on electronic media, the AMO will need to work with RCAA to ensure compatibility of the media, equipment and software with that of the RCAA.
- Revision procedures will need to address documentation of approval by the company as well as acceptance by RCAA.

5.3.3.1 Content Questions regarding Capabilities Lists

The following questions or concerns are offered as a guide and are intended to help initiate the procedures in the manual—

- 1) What is the title of the person who will maintain the capability list?
 - 2) How will the self-evaluation be performed?
-

- 3) Who will perform the self-evaluation?
- 4) How will the self-evaluation be documented?
- 5) How will results of the self-evaluation be reported to management and how will management review the addition of capabilities to the list?
- 6) How will items be added to and deleted from the list?
- 7) How are changes clearly indicated on the document?
- 8) If electronic media is used, is the hardware and software compatible with that of the RCAA?
- 9) Where and by whom will self-evaluation reports be maintained?
- 10) How long are self-evaluation reports maintained?

5.4 TRAINING PROGRAM REVISION

- A. AMO holders that already have a training program and those that need to develop one may use the information in this advisory circular as a reference.
- When the training program requirement goes into effect, the MOPM must include procedures for revising the training program.
 - It must also include procedures for submitting those revisions to RCAA for approval.
- B. The procedures should address who will be responsible for managing the training program and who will be responsible for ensuring that revisions are submitted to RCAA for review and approval.
- Procedures should include the instructions for approval by the AMO before submission to RCAA, as well as provisions for RCAA PI's approval of the program and its revisions.
- C. The procedures should address how often the program will be reviewed to determine if it is current and adequate for the type of maintenance being performed at the facility.
- Because the advancements in technology can cause aviation maintenance to change rapidly, a periodic review of training needs would be appropriate.
 - The procedures should include who will be responsible for planning recurrent training and any new training that may be necessary.
- AMO holders that have established a management review program should include the training program for review during that meeting.
- D. The training program may be documented as a section of the MOPM, or as a separate document within the manual system.
- If the training program is a separate document, it must be separately submitted and approved by RCAA.
- E. The following questions or concerns are offered as a guide and are intended to help the AMO initiate the procedures in its manual(s).
- 1) Who is responsible for submitting the initial training program and its revisions to the RCAA?
 - 2) When will the revision be submitted?
 - 3) How will the revision be approved (include the company approval as well as RCAA)?
 - 4) How often will the training program be reviewed for currency and completeness?
 - 5) Who will perform the review?
 - 6) How will revisions be recorded and implemented?
 - 7) How will the revised text be identified?

5.5 WORK PERFORMED AT ANOTHER LOCATION

- A. Part 5 permits an AMO to perform work away from its fixed location on a temporary basis under two circumstances—
- 1) When a special circumstance arises, or
 - 2) When it is necessary to perform such work on a recurring basis. Part 5 permits temporarily working away from the AMO holder's fixed location due to a special circumstance, as determined by RCAA.
 - ◆ An example would be an aircraft on the ground or in preparation for a ferry flight.
 - ◆ Work performed at another location normally does not include working outside the domicile country where the AMO is located.
 - ◆ Work performed outside the domicile country as a special circumstance may be authorized.
 - ◆ If it is necessary to perform work outside its domicile country, the AMO should obtain any required approvals from the country where the work is to be performed.
 - ◆ The MOPM will need to include a procedure on notifying the local RCAA when these special circumstances arise in order to obtain RCAA's approval in each instance.
 - ◆ A manual procedure for the work performed will not be necessary.
- B. The MOPM procedures should address the following—
- 1) The method used for identifying the customer and the—
 - (a) Description of the work requested or anticipated,
 - (b) Location at which the work will be performed,
 - (c) Type of material, equipment, and personnel that will be required to perform the anticipated work,
 - (d) Way the material, equipment, and personnel will be transported, and
 - (e) Precautions that will be taken to ensure that the material and equipment are adequate for the work that actually needs to be performed.
 - 2) The title of the person who will notify RCAA.
 - 3) How the notification will be made.
 - 4) How the approval/denial will be recorded and stored.
- C. Part 5 permits work away from an AMO holder's fixed location when it is necessary to perform such work on a recurring basis.
- Examples of a recurring need would be an AMO that performs fuel tank maintenance and the work can only be performed on the aircraft away from the AMO holder's fixed base, or the installation of aircraft seats after refurbishment.
- D. These are examples only; other AMO holders may have their own unique circumstances that require the performance of maintenance functions away from their fixed base.
- A manual procedure for work performed is required if the AMO performs work at another location on a recurring basis.
 - The MOPM must include procedures for accomplishing maintenance, preventive maintenance, modifications, or specialized services at a place other than the AMO holder's fixed location. This business practice will provide flexibility and mobility to meet industry needs and not be restricted "only" to special circumstances.
- E. The manual procedures should address the following—
- 1) Describe the preparations and conditions to be met before performing any work away from the AMO.
 - 2) Who is responsible for supervising the maintenance performed at another location?
-

- 3) Are the appropriate sections of the MOPM available at the remote site?
 - 4) How does the facility ensure that adequate housing, facilities, tools, equipment, personnel, and current technical data are available at the site? If materials, tools, and equipment must be transported, how will their calibration be ensured?
 - 5) If persons unfamiliar with the work to be performed are used, does an individual licensed under Part 7 supervise the work?
 - 6) When and how is the article inspected? Is the inspector qualified and authorized (on the roster)?
 - 7) How is the work recorded? Do the records meet the requirements of Part 4 and 5?
 - 8) Are the forms at the AMO the same as those used at the other location?
 - 9) Who is responsible for transporting and storing the records? Where will they be stored?
 - 10) How does the facility ensure that each location stays in compliance with its manual and Part 5?
- F. Additionally, work that is to be performed at another location does not include other authorizations, such as having a line maintenance authorization to perform work for an AOC.
- G. Work performed at locations away from their fixed base allows AMO holders the flexibility to meet industry needs and to be mobile when necessary.
- AMO holders must still maintain a permanent fixed location even if the majority of their work is done at another facility.

- Continuous, uninterrupted operations at another location without applying for an AMO or satellite certificate at that location is not allowed..
- A combination of storing equipment, tools, parts, etc., and having AMO personnel permanently positioned at a site and performing maintenance on a daily basis away from its permanent fixed base indicates a continuous, uninterrupted operation.
- AMO holders operating in this fashion no longer meets the intent of Part 5.
- If the AMO is to continue its operations in this manner, then it must apply for certification as a satellite or stand-alone AMO.

5.6 PERFORMING WORK FOR AOC HOLDERS

- A. Some AMO holders perform maintenance, preventive maintenance, or modifications for AOC holders conducting operations under Part 12. In this case, this section of the manual must describe the procedures to ensure that maintenance is performed in accordance with the AOC holder's program and maintenance manual.
- B. These procedures must ensure that the AOC has provided the AMO with the information necessary to ensure compliance with this requirement.
 - The AOC may provide the AMO with the applicable sections of its maintenance program or manuals at the time the work is performed.
 - On the other hand, the purchase order or other contractual documents from the AOC could clearly state the source of the data (manufacturer's or AOC holder's manual) used to perform the requested maintenance along with any other requirements of its program or maintenance manual.
 - Again, the operator may provide the AMO with the applicable sections of its inspection program or clearly outline the requirements on the purchase order.
- C. The procedures should identify who is responsible (by title) for keeping all of the operators' data current, and where these manuals/sections will be located if retained at the AMO.
 - The procedures also must explain what AOC must be available to maintenance personnel when the work is performed.
 - Additional procedures will be required to ensure that purchase orders are thoroughly reviewed. This review will be necessary to ensure that the AOC has clearly specified what technical data to use for performing the maintenance.

- Employees may need additional training to properly perform this review.
 - The traveler or work-order system of the AMO may be used to integrate this information into the quality control system.
- D. If the AMO transfers requirements from the AOC operator to its maintenance personnel by special instructions on the work order or traveler, that section of the quality control system must clearly explain how this is accomplished.
- E. The AMO performing maintenance for an AOC must have an organization adequate to perform the work.
- This includes the ability to distinguish the work performed for different operators.
 - Additionally, if the AMO is performing RII inspections the organizational structure must provide separation of maintenance and inspection personnel.
- F. The AOC, not the AMO, determines the maintenance actions that are RII.
- If the AMO holder's inspectors are authorized to perform RII for the AOC, the AOC must ensure that the inspectors are trained on the AOC holder's RII procedures, including how the inspection is performed and recorded.
- G. The inspectors performing RII for the AOC must be qualified and authorized by the AOC.
- 1) This authorization is usually in written format, often a card carried by the inspector. The authorization may need to be renewed, depending on the AOC holder's procedures.
 - 2) The procedures in the MOPM should include—
 - (a) Who will maintain a list of current RII inspectors,
 - (b) How an inspector is added to the list, and
 - (c) Where the list is located.
- H. The AMO should request information from the AOC operator pertaining to at least the following issues—
- 1) RII.
 - 2) Training requirements for the work being performed on the operator's behalf, including who will provide the training.
 - 3) Maintenance duty time requirements.
 - 4) Special maintenance or modification instructions per engineering orders, build lists, and other methods, techniques, and practices in the operator's manual per Part 4
 - 5) record-keeping requirements, including who is responsible for maintaining the files.

5.7 LINE MAINTENANCE

- A. RCAA may authorize a certificated AMO to perform line maintenance for an AOC conducting operations under Part 12, provided that—
- The AMO performs the maintenance in accordance with the operator's manual, if applicable, and approved maintenance program.
 - The AMO has the necessary equipment, trained personnel, and technical data to perform the line maintenance.
 - The AMO holder's OpSpecs include an authorization to perform line maintenance.
- B. If the AMO is going to perform line maintenance, its manual must include procedures to ensure that the necessary equipment, technical data, and trained personnel are available before the maintenance can be performed.

- C. This should include who, by title, will be responsible for ensuring that the necessary equipment, technical data, and trained personnel will be available when the work is being performed.
- D. The AMO holder's training program can be conducted in coordination with the AOC. The specific training an employee receives should be recorded in the employee's training record.
- The procedure will need to include who, by title, is responsible to ensure that training is conducted and recorded.
 - The AMO should maintain a list of individuals who are trained by the AOC to perform line maintenance.
 - Although AOC maintenance requirements may be incorporated into the AMO holder's training program, the AMO must follow its training program requirements with respect to conducting the training, recording the training in employee training records, and qualifying those individuals authorized to perform line maintenance for an AOC.
- AOC training does not relieve the AMO from the requirement to ensure its personnel are trained for the maintenance it is rated to perform.
- E. Addressing the following concerns (if applicable) will initiate development of the procedures for performing maintenance for an AOC—
- 1) Who is responsible (by title) for keeping a file of the AOC holder's procedures, including the necessary technical data?
 - 2) Who is responsible (by title) for review and amendment of purchase orders for complete and correct instructions? Is that person trained?
 - 3) Who will maintain the list of current RII inspectors?
 - 4) Does the MOPM include procedures to ensure that the necessary equipment, trained personnel, and technical data will be available for line maintenance?
 - 5) Who is responsible for coordinating the training program with the AOC?
 - 6) Does the AMO roster include authorization for individuals performing line maintenance and RII?
 - 7) How does the AMO ensure that personnel comply with its manual and appropriate sections of the AOC holder's manual – regardless of location?

5.8 CONTRACT MAINTENANCE INFORMATION

- A. The MOPM must contain procedures for maintaining and revising the contract maintenance information required by Part 5.
- B. This information is required for contracting to both certificated and non-certificated facilities.
- The information required includes the approved maintenance function to be contracted and the name of each outside facility to which the AMO contracts such maintenance.
- C. If the contracted facility is certificated, the information must include the type of certificate and ratings.
- The QAM/section should describe the system and procedures used for qualifying and surveilling non-certificated persons who perform maintenance, preventive maintenance, or modifications for the AMO.
 - These procedures may be contained in one manual or in separate documents that are part of the manual system.

- D. An AMO must have the material and equipment necessary to perform the functions appropriate to its rating.
- However, it need not have the tools and equipment for functions it is authorized to contract out pursuant to its RCAA-approved list of maintenance functions.
- An AMO may contract maintenance functions to certificated facilities and non-certificated sources only if the maintenance functions are approved by RCAA.
- E. The AMO must request approval before it can contract a maintenance function. If RCAA approves the contracted maintenance function, the AMO can determine who will perform the maintenance.
- 1) The types of maintenance functions that the AMO may wish to have approved fall into two categories—
 - ◆ First, the types of maintenance functions that must be contracted because the AMO does not have the housing, facilities, materials, or equipment available on its premises and under its control. (These may include plating, heat treatment, special NDT or inspection, or the maintenance or modification of components or sub-assemblies.)
 - ◆ This list should be categorized broadly, such as specialized services or components of articles for which the maintenance organization has the overall rating.
 - 2) The AMO may also wish to provide a list of those maintenance functions for which it has the housing, facilities, equipment, and materials “in-house,” but may need to contract to another facility because of workload or emergency situations.
 - ◆ For example, an airframe rated AMO may have the capability to perform maintenance or modification on landing gear, but if the in-house facility cannot accomplish the work scope within a specified time, it may want to contract that work to another facility.
 - ◆ It would not be able to contract the work unless the maintenance function of landing gear maintenance was on its RCAA-approved list.
 - 3) Additionally, the AMO may wish to provide a method for which a maintenance function can be added to its RCAA-approved list on an emergency basis.
 - ◆ This would be accomplished by explaining how the maintenance function would be added and how RCAA approval would be obtained in a short period of time.

The AMO should coordinate closely with its principal inspector and its local RCAA regarding these emergency procedures.
- F. Before contracting out a function, the AMO should establish—
- 1) Procedures to obtain approval for the maintenance function.
 - 2) Procedures to qualify the contractor.
 - 3) Procedures to surveil the contractor if it is not a certificated AMO.
 - 4) A list of contractors and procedures to properly maintain that list.
 - 5) Technical training on contracted functions for receiving inspection personnel.
 - 6) Procedures for receiving inspections that provide enough technical detail to determine acceptability of an article.

5.8.1 CONTRACTING TO RCAA-CERTIFICATED FACILITIES

- A. If an AMO contracts a maintenance function to another RCAA-certificated AMO, the AMO performing the maintenance function is responsible for approval for return to service of maintenance performed on each article.
- The originating AMO must determine that the contractor AMO is properly rated to perform the maintenance.

- Items received from a certificated facility must be properly processed through the AMO holder's receiving inspection procedures, since the AMO is ultimately responsible for all the work performed on parts used in the maintenance of the articles being approved for return to service.

5.8.2 CONTRACTING TO NON RCAA-CERTIFICATED FACILITIES

- A. If the AMO contracts to non-RCAA-certificated facilities, the AMO must ensure that—
 - 1) The non-RCAA-certificated facility follows a quality control program equivalent to RCAA-certificated AMO holder's system with respect to the work being performed for the certificated AMO;
 - 2) The work is satisfactory by verified testing and/or inspection; and
 - 3) The article is airworthy with respect to the work performed by the non-certificated source.
- B. The AMO is responsible for approving for return to service any article on which work has been performed and for ensuring its airworthiness.
 - 1) Inspection procedures within the manual must enable the AMO to determine the airworthiness of the work performed on each article received.
 - 2) If the AMO cannot determine the quality of the contracted work by inspection or test, the work can be contracted only to an RCAA-certificated facility that is able to inspect the work performed for compliance with Part 4.
- C. Procedures in the MOPM should include the title of the person responsible for the contract maintenance program. The procedures must also include provisions for maintaining the contracting information in a format acceptable to RCAA. The information is not required to be in the manual, but if included, it must identify the—
 - Name of each outside contracted facility.
 - Maintenance function(s) contracted to each facility.
 - Type of certificate and ratings, if any, held by that facility.
- D. The procedures in the MOPM must describe how the non-RCAA-certificated facility is initially qualified.
 - It also should describe how the AMO ensures that the non-RCAA-certificated facility continues to follow the quality control program for the work being performed on the AMO holder's behalf.
- E. Procedures for coordinating communication between the AMO and the contracted source should be established.
- F. If the AMO performs any maintenance for an AOC, the procedures should explain any special requirements (such as performing the work in accordance with the AOC holder's program).
- G. Procedures should describe how the AMO would address any problems that relate to quality or delivery.
- H. Any recurring problems should be addressed in the corrective action program.

5.8.3 RCAA INSPECTIONS

- A. Maintenance contracts with non-RCAA-certificated facilities must include provisions that allow RCAA to make an inspection and observe the non-certificated facility's work on that article.
 - The MOPM should include procedures to ensure that contracts contain the provision for RCAA inspections.
 - The individual in charge of the contract maintenance program or a delegated assistant/auditor may be required to accompany RCAA during these inspections.
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- These inspections will determine if the AMO is able to continue to contract the maintenance function(s) to a non-certificated source.
- B. The following questions or concerns are offered as a guide and are intended to help initiate the procedures in the MOPM(s)—
- 1) Who, by title, is responsible for the contract maintenance program?
 - 2) What is the title of the person responsible for maintaining the list of contract maintenance functions?
 - 3) What is the title of the person responsible for maintaining the list of facilities to which maintenance functions are contracted?
 - 4) What is the title of the person responsible for forwarding revisions of the lists to RCAA?
 - 5) How will RCAA approve additions to the list of maintenance functions?
 - 6) When will RCAA be notified of revisions to the list?
 - 7) How will RCAA be notified?
 - 8) If the list is maintained on electronic media, does RCAA have compatible hardware and software to review/refer to the contract maintenance list and procedures?
 - 9) Who will maintain current copies of the AMO Certificates and OpSpecs for the certificated contract facilities (initial as well as revisions)?
 - 10) Do the contract provisions for non-RCAA-certificated facilities include provisions for RCAA inspection?
 - 11) How will non-RCAA-certificated maintenance contract providers be qualified?
 - 12) How often will the AMO surveil the non-RCAA-certificated sources?
 - 13) Are the auditors that inspect contract maintenance sources trained?
 - 14) How is the receiving inspection performed on articles returned after maintenance from certificated and non-certificated sources?
 - 15) Are the receiving inspectors properly trained?
 - 16) Do the receiving inspectors have the appropriate technical data to determine airworthiness?
 - 17) What criteria are used to determine if the contracted source is meeting all requirements?
.Are discrepancies with contracted sources included in the AMO holder's corrective action program?

SECTION 6 PROFICIENCY OF INSPECTION PERSONNEL

6.1 REQUIREMENTS OF INSPECTION PERSONNEL

- A. This section of the manual must include procedures for establishing and maintaining proficiency of inspection personnel. Part 5 requires the AMO to ensure that inspection personnel are thoroughly familiar with the following—
- Applicable regulations.
 - Inspection methods, techniques, practices, aids, equipment, and tools used to determine the airworthiness of the article.
- B. Inspection personnel must also be proficient in using the various types of inspection equipment and visual inspection aids appropriate for the article being inspected. Inspectors must be listed on a roster.
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- C. Procedures in this section of the manual should address how the AMO will establish the qualifications of the inspection personnel.
- The AMO should coordinate closely with its principal inspector and its local RCAA regarding these emergency procedures.
- D. This initial qualification may be based on testing or previous experience or training.
- E. If the inspector has previous experience, the employment records should describe the type of inspections and maintenance work performed, methods and techniques used, and total years of experience as an inspector, as required by Part 5.
- The procedure should establish the minimum amount of experience required before an inspector can be listed on the roster, and who by job title will make that determination.
- F. The procedures should also describe how inspectors become qualified through “on-the-job training” (OJT) and/or formal classroom training.
- This training may be described in this section of the manual or in the section describing the training program for all AMO personnel.
 - Training should include initial qualification as well as recurrent training or testing to maintain proficiency. Inspection personnel may also require additional special training in new techniques.
 - This may be necessary after additional components are added to the ratings or capabilities of the AMO or when new inspection aids or techniques are applied.
 - Inspectors performing Nondestructive Testing (NDT) may need to meet the qualification requirements of other industry standards, such as eye exams.
- G. Inspection personnel need current technical data to properly perform their tasks. They need to understand current specifications involving inspection tolerances, limitations, procedures established by the manufacturer, SBs, and ADs.
- Inspection personnel also need to be familiar with the MOPM and QAM for the AMO, as well as the applicable federal aviation regulations.
 - Procedures in the manual should address where the technical data is located, who is responsible for maintaining the current data, and how the inspectors will be made aware of changes.
- H. If the person performing the final inspection is also authorized to approve an article for return to service, that person must be licensed under Part 5 for AMO holders located within Rwanda.
- If the AMO is located outside Rwanda, the person authorized to perform a final inspection and approve an article for return to service must meet the requirements of Part 5.
 - If final inspection personnel are authorized to approve an article for return to service, procedures in the manual will need to address how they are authorized and qualified.
- I. The following questions or concerns are offered as a guide and are intended to help initiate the procedures in the QAM—.
- How does the AMO establish minimum qualifications for inspection personnel? What is the title of the person making this determination?
 - How will the inspector maintain proficiency? What methods are used?
 - Do the records of training indicate the method, length, instructor, and dates? Are they current?
 - Do the employment records of the inspectors describe any previous experience?
 - Is the necessary current technical data available and accessible for the inspectors?
 - What is the title of the person responsible for ensuring that inspectors maintain proficiency?
 - Are the inspectors listed on the roster?
 - Do the inspectors read, write, and understand English and/or Rwandaese, depending on the location?
 - Are the persons performing RII inspections and approvals for return to service certificated under Part 5 (if in Rwanda)?
 - Will the inspectors require any special training, such as NDT?

- Who will be responsible for the training? How will the AMO ensure that NDT personnel continue to meet any required industry standards?

SECTION 7 CURRENT TECHNICAL DATA

- A. This section of the manual must contain the procedures for ensuring that current technical data is available for the scope of work the AMO is performing. Part 5 requires each person performing maintenance, modification, or preventive maintenance to use the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual, Instructions for Continued Airworthiness (ICA), or other methods, techniques, or practices acceptable to RCAA.
- B. Part 5 states that a certificated AMO may not approve for return to service any article unless the maintenance, preventive maintenance, or modification was performed in accordance with the applicable approved technical data or data acceptable to RCAA.
- C. The technical data used by AMO holders could include any of the following—
- RCAA technical data (such as ADs, Type Certificate Data Sheets, etc.).
 - Manufacturer's technical data (such as maintenance manuals and SBs).
 - Engineering data (such as DER-approved data or data developed by the AMO and approved by RCAA).
- D. The data used by the AMO to perform a specific maintenance function must be current and available to maintenance and inspection personnel when the maintenance is being performed.
- The procedures should ensure that someone in the facility is responsible for maintaining the technical data in a current condition.
 - Status of the manuals may be confirmed by making periodic phone calls to the manufacturer, etc.
 - The procedures should ensure that any subscriptions to required technical data are renewed as necessary.
 - The procedure should describe how the revised technical data will be inserted into existing documents and how the appropriate individuals in the AMO will be notified about revisions.
- E. In some AMO holders, the technical data is issued in the form of controlled documents. Procedures for these facilities will need a complete description of the document control system, including distribution, accountability, and availability. Document control procedures may include—
- Approval of the documents before distribution.
 - Identification of changes.
 - Provisions to ensure that relevant versions of applicable documents are available at points of use.
 - Provisions to ensure that documents of external origin are identified and controlled.
 - Procedures to prevent the use of obsolete documents.
- F. Larger AMO holders may include provisions for distributing data from a master library to individuals or shop libraries throughout the facility.
- The procedure must ensure accurate and timely distribution of the material.
- G. Additional procedures will need to address—
- 1) Who revises the shop library documents,
 - 2) How the documents are revised, and
 - 3) How the information is distributed.

- H. AMO holders that are associated with or part of a production approval holder facility often use the manufacturer's drawings and data to perform maintenance. This data may not meet the requirements of Part 5.
- I. These facilities should also be cautioned that the parts manufactured by the production side of the facility cannot be used by the AMO unless the parts are RCAA-approved through a
- Parts Manufacturer Authorization (PMA),
 - Technical Standard Order (TSO),
 - Type Certification (TC), or
 - Other means.
- J. Technical data used by AMO holders located outside Rwanda may be translated into the national language. If the data requires translation before distribution, the procedures must ensure an accurate, timely, and complete translation.
- 1) Provisions should be made for quality control personnel to review and approve the translated material before distribution.
 - 2) The technical data that needs to be translated may include graphs, diagrams, or other visual aids.
 - 3) The AMO must retain in English any data that demonstrates compliance with the requirements of Part 5.
- K. Those facilities that use computer software for component testing (of airborne systems or equipment, avionics systems, engines, etc.) will need to include procedures describing how revisions/updates are made and how the current software is distributed.
- Distribution and revision of software is often handled by a group other than those responsible for revision and distribution of paper documents.
- The procedures will need to address system security to prevent inadvertent changes to the software and methods to ensure that only the current revision/version of the software is used.

7.1 QUESTIONS

- A. The following questions or concerns are offered as a guide and are intended to help initiate the procedures in the manual.
- 1) What is the title of the person responsible for revising and maintaining the technical data?
 - 2) How does the AMO ensure that the data is current?
 - 3) How is the technical data distributed throughout the company?
 - 4) How does the AMO ensure that current technical data is available to the staff?
 - 5) What is the title of the person responsible for control and distribution of the documents from a master library to the shop/office libraries located in the facility?
 - 6) If the technical data requires translation, who is responsible for performing the translation and quality checks? How will the data be revised and distributed?
 - 7) If the AMO uses computer software for component testing, who is responsible for maintaining the software, and how are revisions made and distributed?

SECTION 8 INSPECTION & QUALITY CONTROL SYSTEM

- A. This section of the manual must include a description of the system and the procedures used for—

- Inspecting incoming raw materials to ensure acceptable quality.
- Performing preliminary inspections of all articles that are maintained.
- Inspecting all articles involved in an accident for hidden damage.
- Performing the final inspection and approval for return to service of maintained articles.

B. The concerns or questions in the following paragraphs are offered as a guide and are intended to help initiate the inspection procedures in the QAM.

8.1 GENERAL

- A. Describe the inspection system in detail, from establishing the purchase of aviation articles and how that material is inspected upon receipt, receiving customer's articles, progressing through each inspection step, and ending in final inspection and approval for return to service.
- B. Describe each step in a format easily understood by the employees. A flowchart may be helpful in developing these procedures.
- C. This section should also describe the system for controlling and documenting the work in process (work order system).

8.2 REPORTING MALFUNCTIONS OR DEFECTS

A. Part 5, requires the AMO to notify RCAA within 96 hours after discovering any failure, malfunction, or defect of an article.

- This report must be in a format acceptable to RCAA. Many AMO holders use a Malfunction or Defect Report, to comply with this requirement. Information for completion of this form maybe found in AC 04-007.
- The regulation also states that the AMO may submit a Service Difficulty Report—Aeronautical Equipment, for aircraft operated by AOC holders under Part 12.



The AMO should not report the same failure, malfunction, or defect using more than one report.

B. The manual should contain procedures describing how the report will be completed and forwarded to RCAA.

A copy of each form and instructions for its completion should be included in the forms section of the manual.

8.3 CONTINUITY OF INSPECTION RESPONSIBILITY

The applicant must include procedures for ensuring that the responsibilities and duties of its inspectors are properly performed if they cannot complete the task. If the facility uses multiple shifts, include procedures to ensure a continuing responsibility for maintenance in progress with status books, shift change logs, or similar documents.

8.4 RECEIVING POLICY

A. This section of the manual should address the procedures used for accepting consumable materials and customer parts.

Procedures included within this section will depend on the size, complexity, and ratings of the facility.

- The manual should describe generally how material is ordered, stocked, and requisitioned for maintenance or modification purposes.
- A general description of how the stock room operates with respect to handling and storage should be included in this section.
- Additionally, this section may include the method for handling, storing, and using shelf life items and materials.

- B. Procedures should include visual inspection of the container and contents for shipping damage, packing, and proper paperwork.
- This section should include procedures to assist receiving personnel in performing their tasks, whether the article was satisfactory or damaged when it was received.
 - The procedures would normally include how receiving personnel document or record damage due to improper handling and the title of the person notified of the damage.
 - The description of the procedure may include the routing of materials and parts.
- C. Receiving personnel may need to review paperwork received with articles maintained by other facilities contracted by the AMO or parts received from foreign manufacturers (refer to AC 004-04, Aeronautical Replacement Parts).
- The procedures should address the required contents of the documentation (forms, travelers, certifications, etc.) received from the contracted facility.
- D. The contracting section of this AC has further information on contracting maintenance functions. The procedure should also cover how parts are stored and requisitioned for particular work.

8.5 HANDLING OF PARTS

Part 5 requires the AMO to provide sufficient space to segregate articles and materials stocked for installation from those articles undergoing maintenance, preventive maintenance, or modifications.



Throughout the maintenance cycle, care will be necessary when handling parts and components undergoing maintenance.

- 1) The procedures in the manual should emphasize that personnel will always need to exercise caution when handling aviation articles.
- 2) These procedures may be contained in one section of the manual or may be spread out through several sections of the manual.
- 3) The procedures may discuss segregation and protection of parts, avoiding metal-to-metal contact, contamination, and preservation.
- 4) Moving articles from one area of the AMO to another requires procedures to ensure that articles are not damaged in transit. Facilities that maintain sensitive electronic equipment will need to describe the necessary precautions to be taken for static discharge.

8.5.1 TAGGING & IDENTIFICATION

- A. All articles undergoing maintenance within the facility should be identified in some manner depending on the size, complexity, and ratings of the AMO.
- Many facilities attach colored tags or work orders to the part.
 - The objective of identification is to ensure that the status of any article can be easily determined.
 - Articles awaiting repairs may be identified differently than those that are repaired.
 - Articles that are deemed non-repairable should be clearly identified, and may need to be stored in a segregated area within the facility.
 - Parts in the store room(s) will need to be identified to ensure traceability to an approved source.

8.5.2 INCOMING INSPECTION

- A. The QAM/section must include procedures that describe the incoming inspection of raw materials used by the AMO for maintenance, preventive maintenance, or modification.

These materials could include hardware, sheet metal, welding rods, etc., as well as component parts.

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- B. The procedures should define what is considered raw material and describe how the material will be inspected.
 - C. Procedures should describe the disposition/action taken when an item passes or fails inspection.
 - D. The manual should also include procedures for handling suspected unapproved parts.
 - Some raw materials may require specific documentation or certifications that must be kept on file by the AMO.
 - E. Procedures should address how this documentation is reviewed and filed.
 - Sometimes, raw materials are received in lots that are released from stock in smaller units, such as weld wire, NDT fluids and films, and coating powders.
 - F. For such situations, the manual will need to include procedures that insure traceability of the material back to the original lot. The procedures should address the following, as applicable—
 - What is the title of the person(s) performing these inspections?
 - How will the inspection be performed? Does the inspection include visual, NDT, or dimensional tolerances (if applicable)?
 - What technical data will be necessary to perform this inspection?
 - Is the material checked for damage, identification, and preservation?
 - Does the material have any shelf life limitations? If so, the procedures need to address how the material will be identified and controlled.
 - Describe the action taken if the material meets specification, as well as what action is taken if the material does not meet specification.
 - Does the facility have an area for proper storage of raw materials? Will the material require a secure area until released for use? Will the material require any special environmental considerations during storage?
 - How is the material identified if acceptable or not acceptable?
 - Do the materials require any special testing requirements? If so, what procedures are followed to perform those tests? How is the testing performed?
 - What is the disposition of incoming inspection records?
 - How does the AMO ensure traceability of materials received in lots, such as weld wire, coating powders, and so forth?
 - What are the procedures for detecting and reporting suspected unapproved parts?

8.5.3 PRELIMINARY INSPECTION

- A. The procedures must address what—
 - 1) Constitutes a preliminary inspection,
 - 2) How that inspection will be performed, and
 - 3) How the article will be identified throughout the repair cycle.
 - B. This inspection is usually an evaluation of an article to determine the customer requested work scope and the required maintenance or modification actions. Compliance with SBs and ADs should also be determined.
 - This inspection may involve a tear-down or disassembly if the article is an engine, module, propeller, accessory, or subassembly of a larger component.
 - The results of this inspection should be documented and may need to be communicated to the customer.
 - The forms used to record this inspection should identify the article until the maintenance/repair cycle is completed.
 - For some AMO holders this may include attaching the form to the article while it is still in the repair cycle.
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- C. For other AMO holders that use more electronic means, such as bar codes, may not need to physically attach the form but another type of identification so that the status of the article can be determined as needed.
- D. Any defects or discrepancies noted during this inspection will need to be connected with corrective actions taken during the maintenance, using a discrepancy numbering system or similar arrangement. The AMO should notify the customer of any defects that are outside the scope of the customer's authorized repair. Maintenance providers are responsible only for the work they are contracted to perform, not for all the work that needs to be performed. The procedures should address the following—
 - Who (by title) will perform this inspection?
 - How will the inspection be performed?
 - When is this inspection performed?
 - Is the AMO properly rated to perform this maintenance?
 - Does the inspection include a functional test before disassembly?
 - How will the inspection be recorded?
 - If the inspection reveals discrepancies, how are they recorded?
 - How does the AMO record corrective actions taken to correct any discrepancies?
 - Do the records show the relationship between the discrepancies found and the corrective action taken?
 - How is the customer notified of discrepancies found that are outside of the contracted work scope? How are those discrepancies resolved?
 - Is the record of this inspection made part of the work order file (work package)?
 - How is traceability of life limits and/or time since overhaul documented?
 - How are the parts identified if acceptable and if not acceptable?
 - What are the procedures to ensure the records (work package) are kept with the parts?
 - Is there a procedure to ensure that current technical data is available before inspection?
 - What are the procedures for detecting and reporting unapproved parts?
 - Is there a procedure for reporting failures, malfunctions, or defects of an article?

8.5.4 HIDDEN DAMAGE INSPECTION

- A. This inspection is required on parts that have been involved in an aircraft accident.
 - The inspection includes a search for any secondary damage that could result from an accident, such as fire or heat damage.
 - This inspection is often recorded on the same form used for the preliminary inspection.
 - Sometimes the AMO is not notified that an article has been involved in an aircraft accident. Inspection personnel should be experienced enough with the article to recognize damage that is suspicious.
- B. The AMO could then initiate communications with the customer regarding damage history of the article. The hidden damage inspection should address the following—
 - 1) Who (by title) will perform the inspection?
 - 2) How will the inspection be recorded?
 - 3) If defects are noted, where will they be recorded?
 - 4) Does the inspection include areas adjacent to obvious damage?
 - 5) Who will communicate with the customer?
 - 6) Is the record of this inspection made part of the work order file?

8.6 IN-PROCESS INSPECTION

- A. These inspections may take place during various stages of disassembly, repair, and reassembly of an article. These inspections are usually described in the maintenance
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manuals or other ICA used to perform the maintenance or modification and called out on the work order, traveler, or router.

- Usually, they require the services of a qualified inspector to perform a visual, dimensional, or non-destructive test.
- The inspection may require functional tests and/or precision test equipment. Persons performing these inspections should be qualified and listed on the roster.

- B. If the article has been shipped to another facility for contracted maintenance, the inspection process must include an inspection of the contracted maintenance function performed. The inspector may also review the documentation received from the vendor, such as certification(s) or other maintenance records required by Part 4.



If a non-certificated person performed the maintenance, an inspection and/or test is required to determine whether the maintenance was performed satisfactorily.

- Who (by title) will perform the inspection?
- Are the inspectors listed on the roster?
- How will the inspection be recorded?
- If defects or discrepancies are noted, where will they be recorded?
- Do the procedures allow steps to be performed out of sequence? If so, how is this authorized and recorded?
- If the in-process inspection is not satisfactory, does the manual have procedures governing rework? Any rework must be performed in accordance with approved or acceptable technical data.
- Does the system include provisions for recording the names of the inspector and the person who performed the work?
- Are the records of this inspection made part of the work order (records package)?
- Who determines when an in-process inspection is performed, and how is that determined?
- Do the procedures describe the inspection of an article and review of documentation for maintenance performed by a contracted facility?

8.6.1 FINAL INSPECTION

- A. This inspection is performed on each article before it is approved for return to service. Final inspection should include a review of documents used during the maintenance (travelers, inspection sheets, discrepancy sheets, etc.) as well as an inspection of the article.
- B. The AMO may develop a checklist to ensure that all activities related to final inspection are performed. The individual performing this inspection must meet the requirements of Part 5, which requires the person to be thoroughly familiar with the applicable regulations and the inspection methods, techniques, practices, aids, equipment, and tools used to determine airworthiness of the article.
- C. The person must be proficient in using the various types of inspection equipment and visual inspection aids appropriate for the article being inspected. Only an employee licensed under Part 7 is authorized to sign off on final inspections and maintenance releases for the AMO.
- Who (by title) will perform the inspection?
 - How will the inspection be recorded?
 - If the final inspection is not satisfactory, does the facility have procedures governing rework? Any rework must be performed in accordance with approved or acceptable technical data.
 - Is the inspector qualified and licensed?
 - Before the final airworthiness determination is made, are all other maintenance, inspection forms, electronic media, and records checked for completion? How is this indicated?
 - Is the final inspector authorized on the roster of inspection personnel?
 - How is the inspection performed?
 - Once the final inspection is completed, how are the parts identified?
 - Are the final inspection personnel familiar with the regulations and the inspection techniques?

- Do the final inspectors have access to current technical data?
- Are procedures included for when the final inspection results in accepting the part and when it results in rejection of the part?
- If the AMO performs 100-hour and/or annual inspections, are procedures included for addressing the use of inspection cards and/or forms, checklists, etc., to record the inspection and correct any discrepancies? Are procedures for deferral of inoperative equipment if the operator has an RCAA-approved minimum equipment list also included?
- If the maintenance performed was a major repair or major modification, are procedures included to ensure that the inspector who inspects the article and approves it for return to service is trained, qualified, and authorized?

SECTION 9 WORK SIGN-OFF

A. Many AMO holders use rubber stamps or electronic media instead of signatures to annotate the completion of a task on a traveler, work order, process sheet, inspection sheet, or similar document.

- The intent of the stamp or electronic sign-off is to ensure traceability to the name of the person who performed or inspected the work.
- The stamp or electronic sign-off used is often more legible than hand-written initials.

B. If the AMO chooses to use stamps or electronic media, it should have a control program that addresses the following—

- Who issues the stamps, badges or authorizations?
- What procedures are used to ensure that the method used can be traced to the individual who issued the authorization (a list of names and stamps, or similar document)?
- Are there procedures to check that the stamps, if used, are still legible?
- Are there procedures to ensure that the stamp, badge, or authorization is returned to or revoked by the responsible manager upon termination or re-assignment of an employee?
- Are procedures and training on the security of the system used (stamps or electronic)?

C. Exemptions from the regulations will no longer be required to use electronic media because Part 5 allows the use of electronic systems.



The AMO must have procedures that fully describe the system and its use.

9.1 MAINTENANCE RELEASE & APPROVAL FOR RETURN TO SERVICE

A. The maintenance release document must meet the requirements of Part 4.

- Many AMO holders have chosen to use their own designed form incorporating the regulatory requirements for a maintenance release.
- Those facilities that are Joint Aviation Authorities (EASA) certificated must use EASA-required form.

B. Articles returned to EASA member countries must use the EASA form required for maintenance release.

C. Regardless of the format, the contents must include—

- 1) A description (or reference to data acceptable to RCAA) of the work performed.
 - ◆ In either case there must be enough information provided so that a person unfamiliar with the work would be able to determine the extent of the maintenance and/or modification performed.
 - ◆ If the AMO is also EASA-certificated, the maintenance release must include the revision status of the technical data used to perform the work.
 - ◆ The maintenance release also should include a record of the parts used, particularly if the maintenance involved the substitution of parts, such as PMA parts.
- 2) The date the article is approved for return to service.
- 3) The name of the person who performed the work (in this case the AMO).

- 4) The name of the individual authorized by the AMO to approve the article for return to service.
- D. As required by Part 5, the personnel authorized to sign maintenance releases for AMO holders must be licensed under Part 7—
- 1) If the maintenance was performed on an article that is life-limited, include the total time and total cycles.
 - 2) If the article requires periodic overhaul under an air AOC or commercial operator's maintenance program, include the time since overhaul.
- E. If the AMO is performing maintenance for an AOC, the AMO should follow the maintenance release procedures described in the AOC holder's manual. The forms and procedures may differ from those the AMO normally uses.
- F. The approval for return to service may be a separate document, included in the work order, or entered into the aircraft maintenance records.
- If the maintenance was a major repair, the AMO may use a work order to record the work and approve the article for return to service (Refer to AC 04-007 for details).
 - If the maintenance performed was a major modification, the AMO must use an RCAA-approved form to record the work and approve the work performed for return to service.
 - AC 04-007 provides a sample form and instructions.
 - If the AMO chooses to use the sample form and instructions as their own, a copy of the form and instructions for its completion should be included in the forms section of the manual.
- G. Procedures for approval for return to service should include the following (as applicable)—
- Who (by title) is authorized to complete the form? How is the individual authorized?
 - Is the person licensed under in accordance with ICAO Annex 1 and/or RCAR Part 7?
 - Do the procedures ensure that a qualified and authorized person can assume the responsibilities of this task if the person who normally performs it is not available (e.g., sick, on vacation, etc.)?
 - Does the maintenance release include or reference a list of approved parts?
 - How does the AMO ensure that it approves for return to service only those articles for which it is rated?
 - How does the AMO determine if the repair or modification is major? If the maintenance was a major repair or major modification, how will it be recorded?
 - Who (by title) is authorized to complete the Major Repair and Modifications form, and how is that person authorized?
 - What records are given to the customer, and what records are maintained on file at the AMO?
 - Have the people that complete the approval for return to service been trained for this position? Is the training documented?

9.2 REQUIRED RECORDS & RECORD-KEEPING

- A. The MOPM must include a description of the required records and the record-keeping system used to obtain, store, and retrieve those records. The records must be in Rwandaese and English and comply with Part 4.
- B. Part 4 describes the content, form, and disposition of maintenance, preventive maintenance, and modification records. The content must include—
- 1) A description of the work performed,
 - 2) The date the work was completed, and
 - 3) The name of the person performing the work.



It also must include the signature, license number, and type of license of the person approving the work for return to service.

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- C. For major repairs made in accordance with an RCAA-approved manual or other approved data, the AMO may use the customer's work order to record the repair or use the RCAA-approved form.
- The AMO must use an RCAA-approved form to record major modifications.
 - Instructions for completion of the form shall be similar in content as the sample in AC 04-007.
- D. Records may be in different formats depending on the type of work performed.
- Samples of the various forms that are part of the AMO holder's records must be included in the manual or can be maintained in a separate "forms" manual.
- E. Maintenance record entries for an AOC should be completed in accordance with the AOC holder's procedures. The entries may include the use of forms specifically required by the air AOC. The procedures, forms, and records may differ from those normally used.
- F. The procedures should describe the contents of the facility's work package, if applicable. This work package may include a traveler or router that describes each step of the maintenance or modification performed.
- G. It may contain areas for the signatures or identifiers such as stamps, bar codes, badge numbers, and electronic signatures of the person performing the work and of the inspector.
- H. If the facility performs aircraft inspections, the records should include the checklist used to perform the inspections, discrepancy lists, and corrective actions needed and/or taken, including compliance with any ADs and/or SBs.
- I. If the AMO performs repairs in accordance with DER-approved technical data, a copy of the RCAA-approved form used should be included in the records package.
- J. DER-approved technical data will normally require additional RCAA approval when used for major modifications.
- K. Supplemental forms in a work package may include, but are not limited to—
- A list of replacement parts.
 - Inspection methods sheets.
 - SB and/or AD compliance sheets.
 - Copies of manufacturer's technical data.
 - Functional test and/or calibration results.
- L. The AMO must provide a copy of the maintenance release to the owner/operator. If the AMO chooses to use their own form as a maintenance release, the records must include a copy of the completed form.
- The procedures should describe who would review the records for accuracy and completeness before approval for return to service, unless that information is included elsewhere in the manual.
- M. Records must be made available to RCAA and the MOT Board. Records should be organized for easy retrieval.
- Procedures should describe the location of the records and the system used to retrieve those records.
 - Some AMO holders store records in a remote location.
 - The manual must include procedures describing its retention interval and retrieval process.
- Storage provisions should include environmental protection as well as security.
- N. The procedures should include the title of the person responsible for maintaining the records for the AMO and where the records will be located.
- The records must be maintained for at least 2 years from the date the article was approved for return to service.
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- The customer purchase order or contract may require storage for a longer period of time.

9.3 ELECTRONIC RECORD-KEEPING SYSTEMS

- A. When constructing an electronic record-keeping system, several elements must be considered and addressed in the MOPM or within the directions for use of the electronic system.
- 1) Those directions must be available to each person using the system.
 - 2) The electronic system must ensure confidentiality of the information and ensure that it is not alterable in an unauthorized way.
- B. Before introducing an electronic system, a computer operation procedures manual should be established. The manual should include the following—
- 1) Procedures for making required records available to the MOT and/or RCAA personnel.
 - ◆ An employee or a representative who is familiar with the computer system may need to assist RCAA personnel in accessing the computerized information.
 - ◆ The computer system must be capable of producing paper copies of the viewed information at the Administrator's request.
 - 2) A procedure for conducting a review of the computerized personal identification codes system to prevent password duplication (if applicable).
 - 3) Procedures for periodic audits of the computer system to ensure the integrity of the system and each workstation.
 - 4) A procedure to ensure that any records for an aeronautical product are transferred to the owner/operator with the required information in an acceptable format, either electronically or on paper.
 - 5) A description of the training procedure and requirements needed for access to the computerized system.
 - 6) Procedures addressing periodic backup of records and files.
- C. The AMO must provide a copy of the procedures for implementing an electronic record-keeping system to RCAA.
- D. Addressing the following questions or concerns (as applicable) will help the AMO develop procedures for this section. The AMO may need to develop additional procedures, depending on the size and complexity of the facility.
- 1) Who (by title) is responsible for maintaining the record-keeping system?
 - 2) What documents are included in a typical records package? What additional forms may be included?
 - 3) Where are the records stored?
 - 4) What method is used to organize the records?
 - 5) Are the records easily retrieved?
 - 6) Who (by title) reviews records for accuracy and completeness before approval for return to service? Is the individual trained?
 - 7) If an RCAA-approved form is used, does the AMO include a completed copy in the records package?
 - 8) If electronic records are used, procedures for security, backup, and retrieval of files must be established.

- 9) Are the records in English, and do they meet (at a minimum) the requirements of Part 5.
- 10) What records will be provided to the owner/operator?
- 11) How will the AMO process records received from contractors?
- 12) Are procedures included for distribution and storage of RCAA-approved forms used to record completion of major repairs and modifications?
- 13) How does the AMO document any special inspections, such as hydrostatic tests, functional tests, and so forth?

9.4 CALIBRATION OF MEASURING & TEST EQUIPMENT

- A. Part 5 requires that the AMO QAM contain the procedures used for calibrating and test equipment, including the intervals at which the equipment will be calibrated.
- B. Part 5 states that a certificated AMO must ensure that all test and inspection equipment and tools used to determine airworthiness of articles are calibrated to a standard acceptable to RCAA.
- C. This section of the manual should explain the AMO system for controlling and performing calibration of the precision tools and test equipment used to make airworthiness determinations, sometimes referred to as Measuring Tools and Equipment (MTE).
 - The AMO is responsible for the calibration program, whether calibration is performed in-house or contracted to outside sources.
 - The calibration must be traceable to a standard acceptable to RCAA, which includes those recommended by the manufacturer and the National Institute of Standards and Technology (NIST) or other national authority.
 - The measuring equipment must be calibrated at regular intervals, which are established by the manufacturer or the AMO.
 - The AMO should maintain records of the calibration for at least 2 years.
- D. The AMO should maintain a list of calibrated equipment by name, model or part number, serial number, date of calibration, and next calibration due date.
 - If the AMO allows employee-owned measuring and test equipment to be used in the facility, these tools must be included in the calibration system.
 - Many facilities choose to maintain the calibration system records and techniques on a computer.
 - A computerized list enables those facilities to manage a large list of equipment requiring periodic calibration.
 - The individual performing the calibration will need to have experience and/or training on the computer system as well as on calibration techniques.
- E. Personnel calibrating tools and equipment will need to have the knowledge, training, or experience necessary to ensure proper calibration.
 - Records of the training or experience will need to be in each employee's training file or employment summary.
- F. Procedures will need to address how and when the equipment is recalled for calibration and the title of the person responsible for ensuring that the equipment is returned to the calibration technician.
 - The procedures should also describe how the facility determines calibration status of a new tool or piece of equipment before it is put into service.

9.5 CALIBRATION RECORDS

- A. Calibration records should include the following—
 - 1) The name of the person who performed the calibration.
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- 2) Date of calibration.
 - 3) Date next calibration is due.
 - 4) The standard used to perform the calibration.
 - 5) The method used to perform the calibration.
 - 6) The results of the calibration.
- B. The results of the calibration should include the actual readings of the equipment at the test points.
- If the station intends to revise calibration intervals, pass or fail notations will not suffice.
 - The calibration interval cannot be increased without sufficient recorded data points (calibration history) to justify a change.
 - The procedures should state the title of the person responsible for maintaining the records and where the records will be maintained.
- C. If the AMO calibrates its own equipment, a series of gage calibration techniques should be developed.
- These techniques should describe exactly how the tool or equipment is calibrated, including the standard used, test points, accuracy required, and records.
 - The techniques could be those recommended by the manufacturer or an industry standard acceptable to RCAA.
 - The technique may include provisions to safeguard the equipment from adjustments that would invalidate results (tamper proofing).
- D. Calibrated equipment should be identified in some manner to prevent the inadvertent use of non-calibrated equipment in the maintenance process.
- E. The identification usually includes the—
- 1) Serial number or other identification,
 - 2) Date of last calibration,
 - 3) Date calibration is due, and the name or initials of the person who performed the calibration.
- It is important that the equipment's serial number can be identified if the label is removed or lost.
- F. All calibrated tools and equipment should be protected from damage and deterioration during handling, maintenance, and storage.
- G. The facility may use some equipment that does not require calibration if that equipment is not used to make airworthiness determinations.
- H. The procedures should describe how that equipment is identified and controlled.
- I. Other equipment may have limited calibration, and the limitations should be clearly marked on the equipment or label.

9.5.1 QUESTIONS

- A. The following questions or concerns are offered as a guide and are intended to help initiate the calibration procedures in the QAM.
- 1) Who (by title) is responsible for the calibration system?
 - 2) What is the basis for the test intervals (manufacturer, standard industry practice, etc.)?
 - 3) Is the calibration technique recommended by the manufacturer or standard industry practice?
 - 4) How is calibrated equipment identified?

- 5) Is the calibration technique documented?
- 6) What procedure is used to change calibration intervals?
- 7) Are actual calibration results recorded to justify changes to calibration intervals?
- 8) Is calibration of tools traceable to NIST or manufacturer's standards, or an accepted foreign or international standard?
- 9) If foreign equipment is used, is the calibration standard acceptable to RCAA?
- 10) Do the procedures ensure that equipment is removed from service and calibrated when due?
- 11) Do the procedures include recall of the product inspected if the measuring equipment was out of tolerance when calibrated?
- 12) How is equipment handled if it is not submitted for calibration when it is due (i.e., lost or overdue)?
- 13) How is calibration recorded? Are actual results recorded at each test point?
- 14) If the AMO uses automated test equipment, is it included in the calibration system?
- 15) Does the procedure describe the information on the calibration label of the equipment?
- 16) How is equipment that must be calibrated before each use identified and recorded?
- 17) How is equipment that does not require calibration identified?
- 18) What are the procedures for calibration of employee-owned tools?
- 19) Do the procedures address the acceptance of new precision test equipment into the inventory?
- 20) Do the procedures address calibration performed by an outside contractor?
- 21) Do the procedures address calibration requirements, standards, documentation, and traceability of tools that the AMO has leased?
- 22) Who (by title) is responsible for records of calibration received from outside contractors?
- 23) Do the procedures describe the review of the contracted calibration facility's records for traceability, accuracy, and acceptability?
- 24) .Is the person performing the calibration qualified? Do the training records or employment records reflect his or her qualifications?
- 25) Does the equipment used to perform the calibration have the required accuracy?
- 26) If the facility includes an engine or auxiliary power unit test cell, does the manual include procedures for correlation, calibration, and limitations, if any?
- 27) For facilities that perform NDT, does the manual include procedures for certification of company-manufactured NDT standards (if any are used)?

9.6 TAKING CORRECTIVE ACTION ON DEFICIENCIES

- A. Part 5 states that the QAM must include procedures used for taking corrective action on deficiencies.
 - Corrective action is taken to remedy an undesirable situation.
 - The correction of deficiencies is normally an integral part of an AMO holder's improvement process, and could include revisions to procedures that were not working properly.
 - B. Corrective action would be applicable in two situations—
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- 1) Before the article is approved for return to service, and
 - 2) After the article has been approved for return to service.
- C. The MOPM should describe the system by which reworks are identified and corrected before an article is approved for return to service. In these cases, a review of the housing, facilities, equipment, personnel qualifications, and procedures should ensure that the deficiency was not a systemic problem.
- If the review indicates that the procedure is deficient, the corrective action should include a thorough review and improvement of the procedure.
 - If the review indicates that the personnel lacked training or qualifications, corrective action should remedy the deficiency. In either event, the procedures must address how reworks are documented.
- D. After the article is approved for return to service, the AMO may avail itself of the self-disclosure program addressed by AC 01-004, Voluntary Disclosure Reporting Program. This AC describes the procedures for voluntary reporting of potential violations of the regulations.
- Once an article is approved for return to service, discrepancies are often evidence of a potential violation of the regulations
 - Therefore, the AMO should carefully review the referenced AC for the appropriate method of notifying RCAA.
 - Irrespective of the use of the self-disclosure program, the AMO should have a procedure for ensuring the quality of the work performed and for handling customer returns or complaints.

9.6.1 EXAMPLES OF CORRECTIVE ACTIONS

The following scenarios are presented as examples of the intended use of a corrective action program—

9.6.1.1 Scenario 1

- A. During the final inspection process of an aircraft in the maintenance organization for a major inspection, the chief inspector performs a review of the paperwork.
- During that review, the inspector discovers that one of the discrepancies found during the inspection has not been corrected.
 - Further review of the paperwork reveals that no repairs were performed to correct this discrepancy.
 - Discussions held with the mechanics working on the aircraft reveal that a part is on order to complete the repair.
 - The chief inspector asks why no one wrote on the paperwork that the part is on order.
 - One of the mechanics replied that there are no instructions anywhere that direct them where to write that a part is on order.
 - The procedure requires the mechanic to describe the actions taken to clear the discrepancy, and to sign in the appropriate block.
 - The procedure does not address what action to take if a part is on order.
- B. What first appeared as a failure of the mechanic to write that a part is on order turned out to be a lack of written procedures in the manual. By taking the time to develop a written procedure for the mechanics to follow, the AMO corrected the deficiency.

9.6.2 SCENARIO 2

- A. The AMO overhauls “widgets,” which are components of a turbine engine. Part of the overhaul process involves application of a special coating to the bore of the widget, followed by machining to final diameter. The AMO contracts the application of this coating to another facility.
- During the machining operation, several areas of the coating are chipped completely off the bore. Since this condition is unacceptable, the bore must be stripped and re-coated. After experiencing this condition on several parts, the AMO conducts an investigation into the root cause.

- A review of the machining process indicated all recommended procedures were followed. The AMO, in coordination with the contracted facility, conducted a review of the process used to apply the coating.
 - The investigation revealed a malfunction of the spray equipment, allowing the coating to be applied incorrectly. The spray equipment was repaired and adjusted, eliminating the problem. What first appeared as a machining problem turned out to be an application problem.
- By taking the time to conduct a thorough investigation into the root cause, future problems were eliminated.
- B. Inadequate procedures, environment, working conditions, training, instructions, or resources may be factors for many deficiencies that are attributed to human error. The involvement of personnel from several levels within the organization (if appropriate) will contribute to the program and ensure quality.
- C. Corrective action requires that the root cause or causes of the discrepancy be investigated and determined in order to eliminate such causes.
- 1) The investigation must be fact-based and typically begins with an analysis of the potential causes of the discrepancy.
 - 2) It is usually helpful to have a small team of informed and involved individuals associated with the article/process.
 - 3) Although human factors may play a part, focus should be placed on physical factors, such as workplace environment, facilities, equipment, and tooling; process factors, such as clarity of instructions; and training/understanding of methodology for the work to be properly accomplished.
 - 4) Flow or process diagrams of the maintenance process for the affected article are a typical starting place.
- D. Typically, each item in the process, and interactions between such items, are questioned and analyzed in an attempt to determine which either caused or contributed to the ultimate deficiencies.
- Often the interactions result in a cumulative effect that results in the deficiency. Once each potential weakness is identified, the individual/team analyzes each item to correct the findings.
 - The product is checked to determine whether the corrective action has accomplished the elimination of the deficiency/discrepancy.
- E. A documented procedure for taking corrective action on deficiencies should answer the following—
- What is the title of the person responsible for the program?
 - How is the root cause of the problem determined? Will any interim steps need to be taken to prevent delivery of deficient products while the corrective action is implemented?
 - Who (by title) will initiate corrective action?
 - How much time will be allowed for the corrective action to be implemented?
 - Who (by title) will perform a follow-up audit of the corrective action to ensure that it was effective?
 - What records will be maintained of the cause and corrective action taken?
- F. For those facilities that elect to conduct regularly scheduled management review meetings, the investigation, cause, and corrective actions taken to prevent recurrence of discrepancies should be a topic of discussion during those meetings.

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APPENDIX A

Developing AMO Forms

- A. Part 5 requires that the QAM contain a sample of the inspection and maintenance forms and the instructions for completing such forms. Or, the manual may refer to a separate forms manual, which provides examples of the forms with instructions.
- B. The forms included in this section should be samples of any form, tag, and label described in the procedures within the AMO Manuals.
- The instructions for completing the form may be on the form or on a separate document.
 - The number and content of the forms will depend on the size of the AMO and the complexity and the variety of the articles for which the AMO is rated.
 - Revisions or additions to the form section of the manual should follow the documented revision procedures.
- C. Some factors to consider when developing instructions for completing a form are—
- How should the form be introduced (at what point during the maintenance process), and when should it be completed?
 - Who is the person or department responsible for starting the form, who will contribute to its completion, and who will finish all required entries on the form?
 - How will the form be completed?
 - What is the purpose of the form and how will it fit into the system?
 - How should revisions to the form be accepted/approved before release (if applicable)?
 - How will the form fit into the record-keeping system?
 - Which detailed inspection forms and checklists should be used when performing annual, 100-hour, progressive or other approved inspection programs, or engine overhaul inspection sheets? These need not be included in the manual. These forms should be referenced in the manual, and instructions for completing these forms (if required) may be in a separate document.
 - Do forms that are used for multiple operations or work have adequate space and appropriate instructions, including specific assignment of responsibility, to ensure that they can be filled out properly?
 - Do the instructions direct the user to write N/A (not applicable) or N/R (not required), and initial/date any blocks on the form that are not used?
 - Will retention and storage be done in Part 5.
- G. No examples of forms are offered in this AC because forms must be developed to fit the needs of each AMO.

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APPENDIX B

Checklist for Manual Development

The following checklist is provided as a guide for reviewing the completed manual(s). This checklist was not developed to be all-inclusive and should be modified to fit the type of operation and complexity of the maintenance organization. Some suggested items may not be applicable to all maintenance organizations.

A. Manual Revision and Control

- 1) Who (by title) will be responsible to initiate, write, and submit revisions to the RCAA for review and acceptance?
- 2) What actions and/or procedures will be initiated by the maintenance organization if the RCAA finds that the submitted revisions are unacceptable?
- 3) How and where is the acceptance of the manual noted, including how the RCAA will receive its revisions?
- 4) How will the revisions be distributed?
- 5) Does the procedure ensure that each manual holder receives each revision?
- 6) Will the revised text of each affected page be clearly identified?
- 7) Do the procedures include control of sections of the manual, such as identification, revision status, page numbering, issue date, and approvals/acceptance?
- 8) Do the procedures to control sections of the manual address (as applicable) identification, revision status, page numbering, issue date, and approvals of internal personnel responsible for the manual and revisions?

B. Organization

- 1) Does the manual include an organizational chart that shows (by title) each manager with authority to act on behalf of the maintenance organization?
- 2) Are the titles for the positions the same throughout the manual?
- 3) Does the organizational chart show separation of maintenance and inspection departments (if applicable)?

C. Personnel

- 1) Does the manual describe the duties and responsibilities, including the area of responsibility assigned, of each management position?
 - 2) Does the narrative describe what each person does?
 - 3) Do the procedures ensure that their duties and responsibilities are performed in each person's absence?
 - 4) Does the manual include procedures for maintaining and revising the rosters required by RCAR PART 5?
 - 5) Does the manual include procedures for maintaining the employment summaries for each person whose name is on the roster?
 - 6) Does the manual include procedures for applying for additional maintenance technician and for maintaining the licenses?
 - 7) Does the manual include a procedure for surrendering Maintenance Technician Licenses when required by Part 7?
-

- 8) Do the employment summaries meet the requirements of §RCAR Part 5?

D. Operations, Housing & Facilities

- 1) Does the manual describe the facility's floor plan, shops, and equipment?
- 2) Is a description of the facility (narrative) included?
- 3) Is the operation of the maintenance organization described?
- 4) Are any special environmental conditions addressed?
- 5) Does the description include a generic overview of the type of equipment?
- 6) If the maintenance organization leases or rents equipment, does the manual contain procedures describing the lease/rent process and who is responsible for managing the program?
- 7) How does the maintenance organization ensure the equipment is in place and under its control when the work is performed?
- 8) If the maintenance organization is using special equipment or tools other than those recommended by the manufacturer, does the manual include procedures for determining equivalency?
- 9) Does the manual include a description of the stock room, how inventory is requisitioned for particular jobs, and how shelf life inventory is maintained?

E. Capability List (CL)

- 1) Who (by title) will maintain the CL?
- 2) How will the self-evaluation be performed?
- 3) Who (by title) will perform the self-evaluation?
- 4) How is the self-evaluation documented?
- 5) Do the checklists and forms address all of the applicable requirements of RCAR Part 5 e.g., housing, facilities, equipment, tools, technical data, and personnel)?
- 6) How will results of the self-evaluation be reported to management?
- 7) Does the procedure describe how items are added to and deleted from the list?
- 8) Are changes to the list clearly indicated on the document?
- 9) If electronic media is used, are the hardware and software compatible with that of the RCAA?

F. Training Program Revision

- 1) Who (by title) is responsible for submitting training program revisions to the RCAA?
- 2) When will the revision be submitted?
- 3) What are the procedures for submitting revisions to the RCAA for approval?
- 4) How often will the training program be reviewed for currency and completeness?
- 5) Who (by title) is responsible for performing the review?
- 6) How will revisions be recorded and implemented?
- 7) How will the revised text be identified?

G. Work Performed at Another Location (Special Circumstance)

- 1) The types of, and limitations on, the work that would be considered special circumstances (e.g., emergency repairs, aircraft on the ground, and ferry flight preparation).
- 2) The estimated length of time away from the fixed location.
- 3) The procedure to ensure adequate personnel are chosen, including the person(s) responsible for performing, supervising, inspecting (including inspections regarding receiving/incoming, preliminary, hidden damage, in-process, and final), and approving the work for return to service.
- 4) If necessary, the procedure for ensuring the location will have the necessary housing and facilities for accomplishing the work.
- 5) The procedure for transporting any equipment, tools, materials, and data to the work site.
 - ◆ If the equipment, tools, materials, and/or data will be obtained at the location, include the procedure used for ensuring they are received and controlled under the maintenance organization's quality system for the duration of their work.
- 6) The procedures used for storing any equipment, tools, materials, and data for the duration of the project.
- 7) The procedure used in notifying the RCAA of the request to work away and what type of information will be included in the request.
 - ◆ Examples of information could include identifying the customer and describing the work requested or anticipated, and the location at which the work will be performed.
- 8) The title of the person who will notify the RCAA of the special circumstance and how that notification will be made.
- 9) How the maintenance organization will receive the RCAA's determination of acceptance or denial for the request to work away from the fixed location for the special circumstance.

H. Work Performed at Another Location (Recurring Work)

If the maintenance organization intends to perform work at another location on a recurring basis, include procedures for accomplishing maintenance, preventive maintenance, alterations, or specialized services at a place other than the maintenance organization's fixed location. The manual procedures should address the following:

This business practice will provide flexibility and mobility to meet industry needs and not be restricted "only" to special circumstances.

- 1) Procedures for generating work orders from the maintenance organization's fixed location for the scope, nature, and location, and extent of work anticipated away from the location.
- 2) Procedures for communication between and among personnel in the field and the maintenance organization's fixed location. The communication methodology needs to ensure the ability to transmit voice and data on a consistent basis. The ability to transmit verbal instruction and written documents is essential to establishing and maintaining continuous compliance with Part 4 and 5.
- 3) Procedures for analyzing the qualifications of and dispatching or obtaining personnel required for the scope and type of work anticipated and performed. Consider the following:
 - ◆ General knowledge (through training and experience) and capability requirements;

- ◆ The requirement for individual certification for supervisors and persons authorized to approve work for return to service; and
 - ◆ Ensuring persons performing inspection activities are listed on the roster and meet the requirements of Part 5.
- 4) Procedures for ensuring employment summaries and rosters are kept current and that the MOPM reflects the appropriate duties, responsibilities, and authority of management (supervisory, inspection, and approval for return to service personnel) for persons authorized to work away from the fixed location.
 - 5) Procedures for verifying the extent and nature of available housing and facilities; if inadequate, method (lease/borrow) for obtaining the housing and facilities necessary for compliance with Part 4.
 - 6) Procedures for dispatching or obtaining the calibrated equipment needed to make final airworthiness determinations on the work performed.
 - 7) Procedures for providing or obtaining necessary equipment, tools, and tooling needed to accomplish the work scope.
 - 8) Procedures for providing or obtaining the necessary maintenance data (maintenance manuals, overhaul manuals, instructions for continued airworthiness (ICA), Service Bulletins (SB), Supplemental Type Certificate (STC) data, and other information pertinent to the maintenance, preventive maintenance, and modification activities that is acceptable to or approved by the RCAA).
 - 9) Procedures for providing or obtaining the proper replacement items (e.g., parts, subassemblies) and materials (e.g., raw metals, solvents) and services (e.g., heat treat, welding).
 - ◆ If the items are not dispatched from the fixed location, include the procedures used for receiving, performing incoming inspection, handling, and storage of items that will be used or installed.
 - 10) If hazardous material (hazmat) may or will be involved, the procedure for ensuring proper compliance with Part 5 regarding an employer training program and air carrier notification.
 - 11) Procedures for performing initial, in-process, and final inspections of the articles being worked on, if different from the procedures used at the fixed location.
 - ◆ If different forms are used to record activities, they would be included in the forms section of the maintenance organization's manual.
 - 12) Procedures for tracking and recording maintenance performed for the owner of the article being maintained (e.g., logbook) and for the maintenance organization.
 - ◆ If different maintenance records will be used for the maintenance organization, they should be included in the forms section of the maintenance organization's manual.
 - 13) Procedures to ensure the applicable sections of the MOPM are current and available at the location where the work is being performed, and that the work is being performed in accordance with procedures in the manual.

I. Work Performed at Another Location (Using Mobile Units)

If the work away from the fixed location will be performed using mobile units, the following additional procedures should also be addressed:

- 1) Method for determining the location of each unit.

Part 5 does not allow continuous, uninterrupted operations at another fixed or permanent location (facility) without applying for a new maintenance organization or satellite certificate at that location.

- 2) Method for specifying and updating a point of contact (POC) for each unit.
- 3) Procedures describing how often the maintenance organization will conduct audits of the units to ensure compliance with Part 5 and the method for reporting the results to the applicable manager for review and action, if necessary.

J. Maintenance Performed for an AOC Holder

- 1) Who is responsible (by title) for keeping a file of the AOC holder's procedures, including the necessary technical data?
- 2) Who is responsible (by title) for review and amendment of purchase orders for complete and correct instructions? Is that person trained?
- 3) How does the maintenance organization maintain a current list of Required Inspection Item (RII) inspectors? Who maintains the list?
- 4) Does the MOPM include procedures to ensure that the necessary equipment, trained personnel, and technical data will be available for line maintenance?
- 5) Does the manual describe the training program for AOC holder maintenance and RII?

K. Contract Maintenance Information

- 1) Who (by title) is responsible for the contract maintenance program?
- 2) Who (by title) is the individual maintaining the list of contracted facilities and contract maintenance functions?
- 3) How will the list of contractors be made available to the RCAA?
- 4) When and how will the responsible Flight Standards office be notified of revisions to the list?
- 5) How will the maintenance organization determine if the contracted facility is properly rated?
- 6) Do the contract provisions for non-RCAA-certificated facilities include provisions for RCAA inspection?
- 7) How does the maintenance organization qualify and audit RCAA-certificated and noncertificated entities?
- 8) Are the individuals who inspect contract maintenance entities trained?
- 9) How do the receiving inspectors inspect articles returned after maintenance from RCAA-certificated and noncertificated entities? Are they trained?
- 10) Are discrepancies with contracted entities included in the corrective action program?

L. Proficiency of Inspection Personnel

- 1) How are minimum qualifications for inspection personnel established? Who makes this determination?
 - 2) How will the inspector maintain proficiency? Training? On-the-job training (OJT)? What methods are used?
 - 3) Do the records of training indicate the method, length, instructor, and dates? Are they current?
 - 4) Who is responsible for ensuring that inspectors maintain proficiency?
 - 5) Does the final inspector authorize approval for return to service? If so, is this inspector licensed under Part 7 (if the maintenance organization is located within Rwanda.)?
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- 6) Will the inspectors require any special training, (i.e., Nondestructive Testing (NDT))? Who will be responsible for the training? How will inspectors continue to meet any required industry standards?

M. Current Technical Data

- 1) Who (by title) is responsible for revising and maintaining the technical data?
- 2) How does the maintenance organization ensure that the technical data is current?
- 3) How is the technical data distributed throughout the company?
- 4) How does the maintenance organization ensure that current technical data is available to the staff?
- 5) Who (by title) is responsible for control and distribution of the technical documents?
- 6) If the technical data requires translation, who (by title) is responsible for performing the translation and quality checks? How will the data be revised and distributed?
- 7) If computer software is used for component testing, how are revisions made and distributed? Who (by title) is responsible for ensuring that the software is operating properly and that the

N. Inspection System (General)

- 1) Does the manual include procedures for reporting malfunctions or defects?
- 2) Does the manual contain procedures that ensure continuity of inspection responsibility?
- 3) Does the manual contain procedures for segregation of repairable from nonrepairable articles?
- 4) Does the manual include a procedure for tagging or identifying articles, including repairable and nonrepairable articles?

O. Receiving Policy

- 1) Who (by title) performs the inspection, and how is it performed?
- 2) How is the inspection recorded?
- 3) What actions are required if the container and/or material was damaged?
- 4) How is the material routed for proper storage?
- 5) What is the required documentation from contracted facilities?

P. Incoming Inspection

- 1) Who (by title) will perform this inspection?
 - 2) How will the inspection be performed? What technical data will be necessary to perform this inspection?
 - 3) Does the manual include procedures for control of items that have shelf life limitations?
 - 4) Do the procedures describe the action taken if the material meets specification, as well as what action is taken if the material does not meet specification?
 - 5) How is the material identified if acceptable or not acceptable?
 - 6) Do the materials require any special testing requirements? If so, what procedures are followed to perform those tests? How is the testing performed?
 - 7) What is the disposition of incoming inspection records?
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- 8) How is traceability of materials received in lots, such as weld wire and coating powders, ensured?
- 9) Does the manual contain procedures for suspected unapproved parts (SUP) formal training, detecting and reporting SUP?

Q. Preliminary Inspection

- 1) Who (by title) will perform this inspection, and how will it be performed?
- 2) When is this inspection performed?
- 3) How will the inspection be recorded?
- 4) If the inspection reveals discrepancies, how are they recorded?
- 5) How is corrective action taken to correct any discrepancies?
- 6) Do the records show the relationship between the discrepancies found and the corrective action taken?
- 7) Is the record of this inspection made part of the work order file (work package)?
- 8) How is traceability of life limits and/or time since overhaul ensured?
- 9) How are the parts identified if acceptable and if not acceptable?
- 10) Does the manual include procedures to ensure that the records (work package) are kept with the parts?
- 11) Does the manual include a procedure to ensure that current technical data is available before inspection?
- 12) Does the manual include procedures for detecting and reporting unapproved parts?
- 13) Does the manual include a procedure for reporting failures, malfunctions, or defects of an article?

R. Hidden Damage Inspection

- 1) Who (by title) will perform the inspection?
- 2) How will the inspection be recorded?
- 3) If defects are noted, where will they be recorded?
- 4) Does the inspection include areas adjacent to obvious damage?
- 5) Who will communicate with the customer?
- 6) Is the record of this inspection made part of the work order file?

S. In-Process Inspection

- 1) Who (by title) will perform the inspection, and how is it performed?
 - 2) How will the inspection be recorded?
 - 3) If defects or discrepancies are noted, where will they be recorded?
 - 4) Do the procedures allow steps to be performed out of sequence? If so, how is this authorized and recorded?
 - 5) If the in-process inspection results are not satisfactory, does the manual have procedures governing rework?
 - 6) Do the forms used in the inspection system record both the name of the person who performed the work and the inspector?
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- 7) Are the records of this inspection made part of the work order (records package)?
- 8) Who determines when an in-process inspection is performed and how is that determined?
- 9) Do the procedures describe the inspection of an article and review of documentation for maintenance performed by a contracted facility?

T. Final Inspection

- 1) Who (by title) will perform the inspection?
- 2) How will the inspection be recorded?
- 3) If the final inspection is not satisfactory, does the manual have procedures governing rework?
- 4) Before the final airworthiness determination is made, are all other maintenance, inspection forms, and records checked for completion? How is this indicated?
- 5) How is the inspection performed?
- 6) After the final inspection is completed, how are the articles identified?
- 7) Does the manual include procedures for when the final inspection results in accepting or rejecting the article?
- 8) If the maintenance organization performs 100-hour and/or annual inspections, does the manual include procedures addressing the use of inspection cards and/or forms, checklists, etc., to record the inspection and correction of any discrepancies? Where the operator has an RCAA-approved minimum equipment list (MEL), are procedures for the deferral of inoperative equipment included?
- 9) If the maintenance performed was a major repair or major alteration, does the manual include procedures to ensure that the inspector who inspects the article and approves it for return to service is trained, qualified, and authorized?

U. Work Signoff

- 1) Who (by title) issues the stamps, badges, or authorizations?
- 2) Do the procedures ensure that the method used can be traced to the individual who was issued the authorization (a list of names and stamps or similar document)?
- 3) Does the manual include procedures to check that the stamps (if used) are still legible?
- 4) Do the procedures ensure that the stamp, badge, or authorization is returned to or revoked by the responsible manager after termination or reassignment of an employee?
- 5) Does the training include security procedures for the system used (stamps or electronic)?

V. Approval for Return to Service

- 1) Does the form meet the requirements of Part 5?
 - 2) Who (by title) is authorized to complete the form? How is he or she authorized?
 - 3) Do the procedures ensure that a qualified and authorized person can assume the responsibilities of this task if the person who normally performs it is not available (e.g., is sick or on vacation)?
 - 4) Does the maintenance release document include or reference a list of approved parts?
 - 5) Do the procedures ensure that only those articles for which the maintenance organization is rated are approved for return to service?
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- 6) Do the procedures describe how the maintenance organization will determine if the repair or alteration is major? If the maintenance was a major repair or major alteration, do the procedures describe how it will be recorded?
- 7) Who (by title) is authorized to complete RCAA Form 523, Major Repair and Modification (Airframe, Powerplant, Propeller, or Appliance), and how is that person authorized?
- 8) What records are given to the customer, and what records are maintained on file at the maintenance organization?

W. Required Records and Recordkeeping

- 1) Who (by title) is responsible for maintaining the recordkeeping system?
- 2) What documents are included in a typical records package? What additional forms may be included?
- 3) Where are the records stored?
- 4) Who (by title) reviews records for accuracy and completeness before approval for return to service? Is the individual trained?
- 5) If the maintenance organization uses electronic records, does the manual describe the procedures, including security, backup, and retrieval?
- 6) Are the records in English, and do they meet (at a minimum) the requirements of Part 4?
- 7) What records will be provided to the owner/operator?
- 8) How will the maintenance organization process records received from contractors?
- 9) Are procedures for distribution and storage of RCAA Form 523 included?
- 10) How are records of any special inspections, such as hydrostatic tests, functional tests, and so forth, processed?

X. Calibration of Measuring and Test Equipment

- 1) Who (by title) is responsible for the calibration system?
 - 2) What is the basis for the test intervals, such as manufacturer, standard industry practice, and so forth?
 - 3) Is the calibration technique recommended by the manufacturer or standard industry practice?
 - 4) How is calibrated equipment identified?
 - 5) Is the calibration technique documented?
 - 6) What procedure is used to change calibration intervals?
 - 7) Are actual calibration results recorded to justify changes to calibration intervals?
 - 8) Do the procedures ensure that calibration is traceable to the National Institute of Standards and Technology (NIST), the manufacturer, or an acceptable foreign or international standard?
 - 9) Do the procedures ensure that equipment is removed from service and calibrated when due?
 - 10) Do the procedures include recall of any product inspected if the measuring equipment was out of tolerance when the work was performed?
 - 11) How is equipment that is not submitted for calibration when it is due handled (e.g., when it is lost or overdue)?
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- 12) How is calibration recorded? Are the actual results at each test point recorded?
- 13) If automated test equipment is used, is it included in the calibration system?
- 14) Does the procedure describe the information on the calibration label of the equipment?
- 15) How is equipment that must be calibrated before each use identified and recorded?
- 16) How is equipment that does not require calibration identified?
- 17) Do the procedures address the acceptance of new precision test equipment into the inventory?
- 18) Do the procedures address calibration performed by an outside contractor?
- 19) Do the procedures address calibration of employee-owned tools?
- 20) Who (by title) is responsible for records of calibration received from outside contractors?
- 21) Do the procedures address calibration requirements, standards, documentation, and traceability of tools that the maintenance organization has leased?
- 22) Do the procedures describe the review of the contracted calibration facility's records for traceability, accuracy, and acceptability?
- 23) If the facility includes an engine or auxiliary power unit (APU) test cell, does the manual include procedures for correlation, calibration, and limitations, if any?
- 24) If NDT is performed, does the manual include procedures for certification of company-manufactured NDT inspection standards (if any are used)?

Y. Taking Corrective Action on Deficiencies

- 1) Who (by title) is responsible for the program?
- 2) How is the root cause of the problem determined?
- 3) Who (by title) will initiate corrective action?
- 4) How much time will be allowed to implement the corrective action?
- 5) Who (by title) will perform a followup audit of the corrective action to ensure that it was effective?
- 6) What records will be maintained of the cause and corrective action taken?

End of Advisory Circular

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