Advisory Circular

Subject: **Guidelines for Developing a Manufacturer Manual**

Issuing Office:	Standards		
Activity Area:	Qualifying	AC No.:	561-002
File No.:	Z 5015-11-2	Issue No.:	01
RDIMS No.:	2326338	Effective Date:	2007/07/13

TABLE OF CONTENTS

1.0 INTRODUCTION

This Advisory Circular (AC) is provided for information and guidance purposes. It may describe an example of an acceptable means, but not the only means of demonstrating compliance with regulations and standards. This AC on its own does not change, create, amend or permit deviations from regulatory requirements nor does it establish minimum standards.

1.1 Purpose

The purpose of this AC is to assist Manufacturers in developing a Manufacturers Manual by identifying which Regulations and Standards must be addressed, explaining the intent, and providing practical examples to provide further clarification. This document has been designed to provide guidance interpreting, not replacing the *Canadian Aviation Regulations* (CAR). The "examples" are for guidance, are hypothetical, and may not apply to an organization's actual methods. This guide does not provide a complete sample manual.

1.2 Applicability

This document is applicable to Transport Canada Civil Aviation (TCCA) Safety Inspectors, Aircraft Maintenance and Manufacturing and organizations holding a Manufacturer Certificate issued in accordance with Subpart 561 of the CAR.

1.3 Description of Changes

Not Applicable

2.0 REFERENCES AND REQUIREMENTS

2.1 Reference Documents

It is intended that the following reference materials be used in conjunction with this document:

(a) Part V, Subpart 61 of the CAR—*Manufacture of Aeronautical Products;*

(b) Subpart 561 of the Standards (STD) — *Standard for Approved Manufacturers;* and

(c) AC 561-001 dated 2006-09-05 — *Implementation Procedures for Canadian Aviation Regulation Part V – Subpart 61.*

2.2 Cancelled Documents

Not applicable.

2.3 Definitions and Abbreviations

The following definitions and abbreviations are used in this document:

(a) **AC** means Advisory Circular.

(b) **AME** means Aircraft Maintenance Engineer.

(c) **AMO** means Approved Maintenance Organization.

(d) **CAR** means *Canadian Aviation Regulations*.

(e) **Certificate Holder** means the person or entity that has been issued a Manufacturer Certificate in accordance with Subsection 561.03(4) of the CAR.

(f) **DAR** means Design Approval Representative.

(g) **LEP** means List of Effective Pages.

(h) **Manual** means the manual required by Section 561.07 of the CAR.

(i) **QAP** means Quality Assurance Program.

(j) **QPP** means Quality Program Procedure.

(k) **SDR** means Service Difficulty Reports.

(l) **STD** means *Civil Aviation Regulation Standards*.

(m) **TCCA** means Transport Canada Civil Aviation.

(n) **TOC** means Table of Contents.

(o) **TP** means Testing Procedures.

(p) **VP** means Vice-President.

(q) **WSDRS** means Web Service Difficulty Reporting System.

3.0 BACKGROUND

(1) A manufacturer manual is a description of how an organization will comply with the CAR. The Manufacturer manual is a TCCA approved document that is an acceptable method of complying with the regulations, and, in many ways, can be viewed as a contract between two parties: the organization that will use the manufacturer manual and TCCA, who will provide regulatory oversight.

(2) Subsection 561.07(1) of the CAR states that, "The holder of a manufacturer certificate shall establish, maintain and require the use of a manual that must include the information set out in Section 561.07 of the Standard 561 and that sets out policies and procedures respecting the construction and inspection of the aeronautical products specified in the manufacturer certificate."

(3) The manufacturer manual describes how the manufacturer will comply with the regulations, which for the most part are not prescriptive. The manufacturer manual is the means for setting company policy, and informing its staff about company procedures.

4.0 MANUAL FORMAT

(1) The format of each manufacturer's manual may be different. The format should be easy to follow and in a logical order with the user in mind. Section 561.07 of the STD specifies what minimum information must be contained in the manual.

(2) When the manufacturer conducts activities other than those regulated under Subpart 561 of the CAR, their manual structure must clearly delineate between the TCCA approved areas and those other activities.

5.0 EXAMPLE OF MANUAL CONTENT

This AC describes an example manual in Sections 5.1 to 5.20. Each section of the AC is organized in the following manner.

(a) The CAR or STD reference is found in each Subsection title;

(b) The CAR or STD requirement is stated first (not an exact quote);

(c) The explanation of the CAR or STD requirements and why they are necessary are shown next; and

(d) To give guidance in structuring each company's manual, an abbreviated example of what each manufacturer manual might contain to fulfill the CAR requirement is provided. These represent the minimum acceptable requirements. Each manufacturer is invited to tailor the minimum requirements to best describe its operation.

5.1 Title page

(1) Paragraph 561.07(1)(b) of the STD states in part that the title page should include the following:

(a) The legal name of the certificate holder and, where that name is not the name under which the organization does business, its registered trade name; and

(b) The mailing address where different from the manufacturing site address.

(2) Explanation of the CAR

The information on the title page may include:

(i) The approval number shown on the TCCA certificate of approval;

(ii) The organization's legally registered name and registered trade name when different; and

(iii) The mailing address.

(3) Example:

123456 Canada Inc.
Acme Manufacturing Ltd.
8876 Any Street
Anytown, Ontario M2T 1H8
Phone: 123-456-7890
Fax: 123-456-7899
Email: acme@mfg.ca
Approval # 00-00

5.2 Certification Statement

(1) Paragraph 561.07(1)(a) of the STD states in part that the certification statement should include the following:

A section reserved for ministerial approval and a certification statement signed by the certificate holder confirming that the manual and any incorporated documents identified therein reflect the certificate holder's means of ensuring compliance with Subpart 561 of the CAR and STD, and instructing the staff to comply with the policies and procedures therein.

(2) Explanation of the CAR:

A statement of compliance is a written commitment by the company executive that the manual is how they plan to comply with the Regulations. The manual must include a statement of compliance signed by the certificate holder with a signature block for TCCA to indicate approval.

(3) Example:

CERTIFICATION OF COMPLIANCE

This manual, and any incorporated documents, reflects this organization's means of compliance with CAR as required by Section 561.07 and associated Standards. In cases of conflict between company policy and the regulatory requirements, the regulatory requirements shall prevail. All incorporated documents identified herein and every amendment thereto, shall meet the requirements established in this manual. The policies and procedures outlined in this manual and in all incorporated documents identified herein must be strictly adhered to at all times.

Signature of Certificate Holder:

_____

Print name _____ ***Date:*** _____

Transport Canada Approval

This manual is approved as meeting the requirements for a Manufacturer Organization pursuant to Subpart 561 of the CAR.

_____

For the Minister of Transport

Date: _____

5.3 Table of Contents

(1) Paragraph 561.07(1)(c) of the STD states in part that each manual shall include the following:

A table of contents.

(2) Explanation of the CAR:

(a) A table of contents (TOC) is used in the manual to enhance data access and information retrieval by allowing a quick scan of the entire manual when looking for a key item. A good TOC will get the reader to the first page of the topic in question. The TOC contains a list of the manual topics identified by number and manual page number.

(b) The order of the topics in the manual shown in the example below is not consistent with the order of sections within the STD, but may be more practical for some manufacturers.

(3) Example:

Table of Contents

5.4 List of Effective Pages

(1) Paragraph 561.07(1)(d) of the STD states in part that each manual shall include the following:

> A means of identifying each page of the manual that has been submitted for approval, in the form of a list effective pages, with each page numbered and either dated or marked with a revision number, alternatively, in the case of electronic manuals, an equivalent means of ensuring that the manual is complete and up to date.

(2) Explanation of the CAR:

> A List of Effective Pages (LEP) is used to ensure that every manual contains current, correct information. The LEP shows the revision status of each page. By checking the status of each page, users can ensure their information is up to date.

(3) Example:

> ***4.0 LIST OF EFFECTIVE PAGES***
>
> ***This manual includes the pages listed below at the revision status indicated.***

Page	*Revision*	*Date*	*Page*	*Revision*	*Date*
1	*0*	*1 May 2003*	*14*	*0*	*1 May 2003*
2	*0*	*1 May 2003*	*15*	*0*	*1 May 2003*
3	*0*	*1 May 2003*	*16*	*0*	*1 May 2003*
4	*0*	*1 May 2003*	*17*	*0*	*1 May 2003*
5	*1*	*1 July 2005*	*18*	*0*	*1 June 2004*
6	*0*	*1 May 2003*	*19*	*0*	*1 May 2003*
7	*0*	*1 May 2003*	*20*	*0*	*1 May 2003*
8	*0*	*1 May 2003*	*21*	*0*	*1 May 2003*
9	*0*	*1 May 2003*			
10	*2*	*1 Sept 2006*			
11	*0*	*1 May 2003*			
12	*0*	*1 May 2003*			
13	*0*	*1 May 2003*			

> ***Certificate holder signature*** _____ ***Date***_____
>
> ***For Minister of Transport*** _____ ***Date***_____

5.5 Distribution of Manual

(1) Paragraph 561.07(1)(e) of the STD states in part that each manual shall include the following:

> The process for issuance and control of amendments, including a description of the amendment distribution procedures and a reference to the list stating the title of each person who holds a copy of the manual, and the system used to ensure compliance with the requirements of Subsection 561.07(8) of the CAR.

(2) Explanation of the CAR:

> The manual should include a list stating the title of each person who holds a copy of the manual. The manual must include a procedure describing the manual distribution. The manual can be hard copy or electronic provided each person who performs work has access to the relevant portions.

(3) Example:

> ***5.0 MANUAL DISTRIBUTION***
>
> ***5.1 The person responsible for manufacturing activities is responsible for distribution of this manual, and will ensure that all holders have an updated manual. Copies are identified by serial number. The President and TCCA will hold hard copies while all others will have access through the company intranet system.***

Manual Holder	***Serial Number***
President (Certificate Holder)	***1***
Transport Canada	***2***

5.6 Manual amendment

(1) Paragraph 561.07(1)(e) of the STD states in part that each manual shall include the following:

> The process for issuance and controlling amendments, including a description of the amendment distribution procedure (…) and the system used to ensure compliance with the requirements of Subsection 561.07(8) of the CAR.

(2) Explanation of CAR:

(a) Subsection 561.07(8) requires that the person responsible for the company manual amendment system amend the manual within 30 days of being approved by TCCA. This section details the process that an organization uses to control revisions to its manufacturer manual. TCCA must approve the amendment prior to its use by the organization.

(b) A process for amendments could include:

(i) Inserting an amendment bar in the page margin to show the revised text;

(ii) Sending two copies of each amended page, including two copies of the list of effective pages, to TCCA for approval;

(iii) Distributing the amendment to all holders of the manual once the amendment is approved; and

(iv) Recording that all manuals have been amended.

(3) Example:

6.0 MANUAL AMENDMENT

6.1 The Quality Manager will amend the contents of the Manufacturing manual when:

- ***There is a change to the company policy and/or procedures***
- ***An error is noted in the manual***
- ***Transport Canada requests a change to the content.***

6.2 All amendments will be shown by inserting a vertical line in the right margin to indicate where changes in the text have been made. Each amended page will show the amendment number and date in the lower right hand corner. If an amendment requires that additional pages be inserted into the manual, these pages will bear the page number of the preceding page and be suffixed alphabetically.

6.3 Two copies of the manual amendment will be sent to TCCA by the Quality Manager for approval along with amendment instruction. When the approved amendment is received from TCCA, it will be copied by the Data Control Officer and distributed with an amendment control page (see following page for sample) in accordance with the distribution list to all manual holders. The distribution list can be found in Section 5 of this manual.

6.4 Amendments will be inserted within 30 days of the amendment date. The holder of the manual is responsible to return the control page to data control officer within the 30 day period for filing. The Data Control Officer will track and follow up for compliance.

6.5 The Quality Manager will include the manual amendment distribution process in the annual internal audit program.

AMENDMENT CONTROL PAGE

Amendment No._____ Dated: _____

Remove Pages Annotated	***Insert Pages Annotated***

Prepared by:_____Date:_____

Person Responsible for Manufacturing Activities

Manual Serial Number_____Amended by: _____

Insertion Date: _____

5.7 Description of Organization

(1) Paragraph 561.07(1)(f) of the STD states in part that each manual shall include the following:

A brief description of the organization, including the approximate size, geographic location and basic layout of the facilities.

(2) Explanation of the CAR:

It is not necessary to describe the company in detail. The intent is to provide a general description of the manufacturing facilities, where they are located and an estimate of the number of employees. Diagrams or drawings of facilities are not required but may be included for the benefit of company staff.

(3) Example:

7.0 DESCRIPTION OF ORGANIZATION

7.1 Acme Manufacturing Ltd. has been a manufacturer of quality aeronautical products since 1973 and is a proud member of the Anytown community.

7.2 Our manufacturing facility is located at 123 Acme Drive in the Aviation Industrial Park and our corporate office is at 8876 Any Street.

7.3 The manufacturing facility is a large, air-conditioned building that encompasses over 2500 square meters of floor space as well as close to 1000 square meters of product storage space. The engineering and design office is located on the second floor at the north end of the building.

7.4 We have approximately 75 employees at the Acme Drive site and 10 administration staff at the Any Street office.

5.8 Scope of Work

(1) Paragraph 561.07(1)(g) of the STD states in part that each manual shall include the following:

A description of the scope of work that is intended to be performed at each facility.

(2) Explanation of the CAR:

Specify the category or categories as defined on your Approval Limitation Record and Scope of Work that the manufacturer is approved to carry out. If there is more than one facility, each must be identified and the scope of work detailed for each.

(3) Example:

8.0 SCOPE

8.1 The organization has manufacturing approval for Aeronautical Products and Appliances. All work is carried out in our Anytown facility.

Category	*Scope*
Aeronautical Product	***Thermal Ice Protection STC SA94-xx***
	Gyroscopic Instruments ***Various approvals***
Appliances	***ELT SaveMe 406 TSO 91a***

8.2 Document LL-0101-99 contains a complete list of all products with Model, Part Number, Design approval, date, etc.

8.3 Procedures for controlling Document LL-0101-99 are found in QPP 101, which also include instructions for submitting updated copies of the list to TCCA.

5.9 Assigned Management Functions

(1) Paragraph 561.07(1)(h) of the STD states that each manual shall include the following:

Where management functions have been assigned pursuant to Subsection 561.04(6) of the CAR:

(i) The name or title of any person to whom functions have been assigned;

(ii) A description of the functions that have been assigned to each person; and

(iii) Where necessary for clarity, a chart depicting the distribution of functions.

(2) Explanation of the CAR:

(a) Subsection 561.04(6) of the CAR requires that the manual include a description of all assigned management responsibilities. The person responsible for manufacturing activities, who is appointed by the certificate holder, may be called by any title. In a small organization, the certificate holder may take responsibility for the entire operation, but in larger companies, several individuals play a role in completing one operation.

(b) There are three information requirements:

(i) The name or title of the employee who has been assigned functions.

(ii) Details of the management functions assigned to that employee.

(iii) Where applicable, a company organization chart showing to whom each employee reports.

(3) Example:

9.0 ASSIGNED MANAGEMENT FUNCTIONS

9.1 <u>Management Personnel</u>

- ***President (Certificate Holder)***
- ***Vice President of Production (Person Responsible for Manufacturing Activities)***
- ***Quality Manager***
- ***Production Manager***

9.2 <u>Duties and Responsibilities</u>

9.2.1 The President is the TCCA Manufacturing approval certificate holder.

9.2.2 The VP of Production reports to the President for all of the activities carried out as a TCCA Approved Manufacturing organization.

9.2.3 The Quality Manager reports to the VP of Production for the quality and regulatory compliance of work performed by the organization. He will ensure that internal audits are conducted at least annually and report the results to the President.

9.2.4 The Production Manager reports to the VP of Production. He will ensure that all manufacturing activities are carried out in accordance with policies and procedures defined in this manual.

9.3 Vice President of Production is responsible for:

- ***Acting as liaison between the organization and TCCA regarding manufacturing and related subjects;***
- ***Providing the organization with direction, policy respecting manufacturing;***
- ***Formulating and approving policies and procedures that will ensure proper management and efficient activities within the manufacturing organization;***
- ***The control, distribution and preservation of records;***
- ***Ensuring that personnel are competent regarding methods to be employed in the performance of work;***
- ***Ensuring that certifications have been entered in product records;***
- ***Monitoring manufacturing processes including work performed by external agencies;***
- ***Ensuring that organization personnel comply with the procedures contained in this manual;***
- ***Establishing a personnel training program;***
- ***Maintaining a record of personnel for training, ratings and qualifications;***
- ***Issuing certifying authority to personnel qualified to perform certification;***
- ***Ensuring that Service Difficulty Reports are submitted to TCCA within the required time constraints and that a filing and follow-up program is established;***
- ***Ensuring this manual and technical reference publications are up to date and amended in a timely manner;***
- ***Retention of precision tool calibration records.***

9.4 Quality Manager has been assigned the following functions:

- ***Establishing and maintaining a quality program;***
- ***Ensuring that internal audits are carried out on this manufacturer and any external agency providing services to the organization;***
- ***Developing and maintaining the training program***
- ***Retention and maintenance of personnel records***
- ***Retention of records associated to the quality program and,***
- ***Communicating all findings and results from the quality program to the VP Production.***

9.5 Production Manager has been assigned the following functions:

- ***Supervision of the manufacture of aeronautical products;***
- ***Assigning production tasks, identifying problem areas and ensuring the completion of the production processes;***
- ***Ensuring that sufficient parts, materials, special tools and equipment are available;***
- ***Ensuring that current technical data are available to, and used by personnel;***
- ***Ensuring the condition and cleanliness of the work place and equipment is maintained;***
- ***Ensuring calibration of precision tools and equipment are current prior to use;***

- ***Developing corrective action to rectify any deficiencies identified by the quality assurance program.***

5.10 Incorporated by Reference Documents

(1) Paragraph 561.07(1)(9) of the CAR states in part that each manual shall include the following:

> A manual may incorporate other documents by reference if it includes policies and procedures to control the incorporated material.

(2) Explanation of the CAR:

(a) Some activities of the organization can be more effectively addressed in documents separate from the manufacturer's manual thereby avoiding frequent amendments for routine changes in the organization. The person appointed is required to ensure that the incorporated manuals, documents or lists continue to comply with the requirements established in the policy contained in the manufacturers manual.

(b) Company policy cannot be incorporated by reference and changes to policy must be submitted for approval as a manufactures manual amendment.

(c) Lists, forms, tags, travelers, procedures and work instructions may be incorporated by reference provided the manufacturer's manual contains the associated policy. The policy statement in the manual must ensure the link to what document and where in the company documentation framework it exists.

(d) There are two typical methods of incorporating documents:

(i) The document being referenced in the text of a pertinent section of the manufacturer's manual;

(ii) A list of referenced documents displayed in the manual showing concordance between the regulatory requirements and the company's documentation framework addressing each policy.

(3) Example:

> ***10.0 INCORPORATED DOCUMENTS***
>
> ***10.1 All documents incorporated by reference to the manual are to be adhered to in the same manner as this manual. Documents whether referenced, listed, or are part of the company's documentation framework, constitute the means of compliance to the regulatory requirements.***
>
> ***10.2 Changes or amendments to documents incorporated by reference in the manual are to be submitted for review and approval to the person responsible for the manufacturing activities prior to their implementation.***
>
> ***10.3 Refer to QAP 010 Control of Documents Incorporated by Reference.***

5.11 Document & Data Control

(1) Paragraph 561.07(1)(i) of the STD states in part that each manual shall include the following:

> A description of the system to obtain and preserve regulatory, design and other technical data, and procedures to ensure they are kept up to date.

(2) Explanation of the CAR:

(a) Explain the system that makes sure any person who performs work under the manufacturer has the applicable design data, technical manuals, regulations, and is aware of any revisions to the documents. This system should be easily auditable and should address how the design, technical and regulatory information is controlled for any work that is performed. The system must be extended to include documents issued to a supplier.

(b) The persons responsible for obtaining the documents and ensuring they are kept up to date should be identified in the manual.

(c) The level of control depends on the type of document. Configuration control of in-house design data will require a comprehensive procedure compared to the control of regulatory data which could be as simple as accessing it on line.

(d) Under a licensing agreement, the holder of the type design must provide design data and changes to the design data to the manufacturer.

(e) Procedures are required to prevent loss or deterioration of design and technical data. In the case of electronic data, describe how access is limited to authorized personnel, how changes are authorized, and how data is protected and backed up.

(3) Example:

11.0 DOCUMENTATION AND DATA CONTROL

11.1 The Person Responsible for Manufacturing Activities will ensure that no work is initiated unless the appropriate design data, and the latest technical and regulatory information is on hand and available to all persons performing work.

11.2 Electronic version of the CAR will be made available to each employee, through the computer located in the library.

11.3 The Person Responsible for Manufacturing Activities will ensure that minor changes to the design data has been approved by Engineering, prior to incorporating the change in the manufacturing process documents.

11.4 Major changes to the design data would need to be approved by TCCA or an approved DAR (Design Approval Representative), prior to being incorporated into the manufacturing process documents.

11.5 The Person Responsible for Manufacturing Activities will retain the design data documents on file for as long as the aeronautical is being manufactured and is in service.

11.6 See detailed procedures for document and data control in QAP 011.

5.12 Control of Suppliers

(1) Paragraph 561.07(1)(k) of the STD states in part that each manual shall include the following:

A description of the methods used for evaluating and controlling suppliers.

(2) Explanation of the CAR:

(a) An approved manufacturer is responsible for each part embodied in its aeronautical product, and therefore must ensure that all products and services obtained from suppliers conform to approved design data. The manufacturer is obligated to extend its quality assurance system to its entire chain of supply.

(b) Where the supplier does not hold a TCCA manufacturing approval, unless the condition and conformity of the supplier produced items can be fully verified by inspection or test at the certificate holder's facilities, the manufacturer's quality audit system will have to be extended to cover the supplier's activities at his facilities. This will require the manufacturer to both evaluate the supplier's capability prior to awarding of the contract, and conduct surveillance throughout the duration of the contract.

(c) Where the supplier holds an applicable manufacturer's certificate of approval, the supplier's release certification could be acceptable for ensuring the conformity of the end product.

(d) The level of supervision, monitoring and involvement required of the manufacturer at its supplier's facilities should be dependent upon the results of an evaluation of the supplier capabilities and its continuing quality performance.

(3) Example:

12.0 CONTROL OF SUPPLIERS

12.1 Manufacturer's initial evaluation of the supplier

12.1.1 Audit

12.1.1.1 Prior to awarding a contract to an entrant supplier or a contract for a new design to an existing approved supplier, Acme's Quality Assurance will conduct an on-site audit to evaluate the supplier's capabilities (facilities, equipment, personnel) to perform the production processes, operations and tasks in accordance with the design and quality provisions of the contact.

12.1.1.2 This evaluation will also encompass the supplier's production control and quality audit systems to determine if they meet the requirements of Acme's manufacturer's manual. If during the accomplishment of the contract, the supplier intends to subcontract work to a third party, this third party shall also be subjected to Acme's evaluation of its capabilities in the same manner as described above. Only upon Acme's written consent can this third party be utilized by the supplier as a service provider. Any systemic non-conformity raised during these initial audits shall be resolved to Acme's satisfaction prior to proceed with awarding the contract.

12.1.2.1 As the next step of the supplier's approval process, Acme will proceed with providing to the supplier the design data, drawings and process specifications for a test batch of the product. Acme will have one of its inspection personnel witness the making of this test batch to insure that all in-process and final inspections are carried out. The supplier's personnel are responsible to carry a 100% inspection of the product and to issue the appropriate release documents. Acme's inspector shall review the supplier's quality records and inspect the critical features of the a pre-determined number of parts of the said test batch as specified by Acme's quality engineering department. Acme's inspector shall report back to quality engineering conformant and non-conformant products.

12.1.2.2 Upon production of a satisfactory test batch, a contract may be awarded with the condition that the supplier and the third party sign a written agreement giving to TCCA unrestricted access to their facilities and records.

12.1.3 Contract and manufacturer's supervision

12.1.3.1 For an entrant supplier, Acme's quality assurance department will ensure that the approval process is completed as per Acme's procedures and will approve the supplier to whom a contact may be awarded. The contract will include all the latest information and technical data for ensuring the product manufactured conforms to design. Continuing supervision of the supplier's production will be exercised in form of receiving inspections carried out at Acme's facilities by its inspectors. The details and complexity of receiving inspections are determined by the quality control department. Quality Assurance monitors on an ongoing basis the numbers of products rejects and non-conformances in order to assess the supplier's performance and to adjust consequently the level of supervision exercised on the supplier.

12.2 Subcontracts Provisions

12.2.1 In addition to the above, Acme Aero will retain responsibility for:

12.2.1.1. Assuring that technical information appropriate to the work is available to the subcontractor; and

12.2.1.2 That any product non-conformities raised at the supplier's facilities are reworked in accordance with an Acme approved rework scheme.

5.13 Product Traceability

(1) Paragraph 561.07(1)(l) of the STD states in part that each manual shall include the following:

A description of the methods used to identify and trace the aeronautical products during all stages of the manufacturing process and up to delivery of the product.

(2) Explanation of the CAR:

(a) All products must be traceable to its source of supply. This includes all parts used in the manufacture of the product from procurement to final delivery.

(b) The manual is required to have a description of the methods used by the company to maintain the traceability of its products throughout the production process. Documentation, markings, tags, bar code etc, that establish the identity and source of supply of a product must accompany that product throughout the production process.

(3) Example:

13.0 PRODUCT TRACEABILITY

13.1 All parts will be tracked and must be traceable to the original source of supply.

13.2 This will be accomplished in the following manner:

13.2.1 Receiving will identify each item with a unique number (Trace number) generated from the Parts Control Database.

13.2.2 The items will then be logged into stores.

13.2.3 When stores issue a kit to production, the Trace number will be transferred to the kit.

13.3 At final product assembly the information from the kits used, will be transferred to the records of the completed product.

13.4 The detailed procedure is located in QAP-013.

5.14 Production Control Systems

5.14.1 Product Conformity

(1) Paragraph 561.07(1)(j) of the STD states in part that each manual shall include the following:

A description of the controls used to ensure that the product conforms to its type design.

(2) Explanation of the CAR:

The manufacturer is required to have in place a documented system to ensure that only approved design data is used for the production of items it intends to certify as airworthy on a statement of conformity. Company documents such as work orders, inspection instructions, workmanship standards, and process specifications that describe the manufacturing process must be developed in accordance with the approved design data.

(3) Example is listed below and includes 5.14.1 and 5.14.2.

5.14.2 Process Development and Production Planning

(1) Paragraph 561.07(1)(m) of the STD states in part that each manual shall include the following:

A description of the production control system, which includes the requirements, set out in Section 561.08 of the CAR.

(2) Explanation of the CAR:

(a) Paragraph 561.08(a) of the STD requires that the company develop documented production process controls to ensure that processes are performed under controlled conditions and include documented instruction, workmanship criteria, data, suitable equipment and competent personnel.

The control of manufacturing activities requires the control of processes, which must take into consideration the following:

(A) Environmental conditions such as temperature and humidity;

(B) Controlled documents for the performance of the work;

(C) Specified workmanship standards;

(D) The use of approved data;

(E) Equipment necessary for production; and

(F) Appropriately trained personnel who perform the work.

(b) Paragraph 561.08(b) of the STD requires that a company must establish inspection and testing procedures to ensure that completed products are produced as planned.

(i) These should include:

(A) Receiving inspection/tests to verify purchased material;

(B) In-process inspection/tests to ensure continued conformity; and

(C) Final inspection/tests to verify the finished product.

(ii) Production planning must include written inspection/test instructions located appropriately throughout the production process including suppliers if applicable

(iii) A company manufacturing aircraft must establish a flight operations system to manage final testing of aircraft systems on the ground and in flight using written procedures and checklists.

(iv) A company manufacturing engines, propellers, or components must develop and conduct final inspections that verify that the item will perform as intended by conducting functional tests which simulate its intended use as described by type design.

(3) Example:

14.0 PRODUCTION CONTROL SYSTEM

14.1 <u>Product Conformity</u>

14.1.2 Products are controlled through every stage of production with the use of procedures and work instructions.

14.1.3 All documents used in the production control system are developed in accordance with approved type design data to ensure products conform. These documents may include but are not limited to:

- ***Inspection Instructions***
- ***Test Instructions***
- ***Work Orders***
- ***Process Specifications***

14.1.4 The development and distribution of these documents are controlled by procedure QAP – 014a.

14.2 <u>Process Development</u>

14.2.1 All manufacturing is conducted in accordance with the applicable work order, which as a minimum will define:

- ***The environmental conditions that may affect product quality if not controlled and / or as specified by approved design;***
- ***The controlled documents to be used, including revision level applicable to the specific work;***
- ***Workmanship instructions when not specified in the technical data;***
- ***The required technical data applicable to the work;***
- ***The sequence and stage of production where each inspection and test is to be carried out, including a description of the inspection / test being performed; and***
- ***What equipment is required when performing the work?***

14.2.2 The area Production Supervisor is responsible to ensure that the work is performed according to the work order instructions and in the establish sequence by suitably trained and qualified personnel, and that all operations of the work order have been completed before releasing the product for functional testing.

14.2.3 Functional testing is to be conducted in accordance with procedure QAP-014b and the associated checklist.

5.14.3 Equipment Calibration

(1) Paragraph 561.07(1)(p) of the STD states in part that each manual shall include the following:

A description of the policies and procedures to control inspection, measuring and test equipment traceable to applicable Canadian or international standards in accordance with section 561.08 of this STD.

(2) Explanation of the CAR:

(a) Paragraph 561.08(c) of the STD requires that the appropriate tools are used and that measuring and test equipment be accurate and calibrated.

(b) The company must establish a system of tool/instrument calibration that is based on a calibration schedule that ensures the tool / instrument is accurate before its intended use and that the measuring for accuracy device is traceable to a nationally recognized standard. The calibration system must be described in a procedure to establish what tools / instruments are included and their calibration status throughout the production process.

(c) When developing a calibration schedule, the manufacturers specified intervals should be considered in addition to what the tool is used for, how often it is used, and how it is stored and handled. Tools and instruments used daily will likely require a higher frequency of calibration than if used once a year. Tools and instruments that are suspected of being misused or damaged require calibration before being used for its intended purpose.

(3) Example:

14.4 Equipment Calibration

14.4.1 Company personnel are required to verify that all equipment has a valid calibration sticker attached prior to use.

14.4.2 All measuring devices and test equipment will:

- ***Meet any requirements published by the manufacturer of the measuring device with respect to accuracy.***
- ***Meet any calibration requirements that are published by the tool manufacturer.***
- ***Be inspected before use.***
- ***Any tool suspected of inaccuracy or damage, despite meeting any other requirements, will be taken out of service, repaired and calibrated, or replaced.***
- ***Where calibration is required, is calibrated in accordance with a national standard or recognized international standard.***
- ***Each precision tool will have a calibration sticker attached. Records relating to the calibration of the tool will be retained on file.***

14.4.3 All tools and equipment requiring calibration will be listed on a status board in the organization office. The status board will contain:

- ***Name of tool***
- ***Serial number of tool***
- ***Date last calibrated***
- ***Date next calibration due***

5.14.4 Non-conforming Product

(1) Paragraph 561.07(1)(q) of the STD states in part that each manual shall include the following:

A description of the system for the identification and control of non-conforming products along with the determination of corrective actions to be taken in accordance with section 561.08 of the STD.

(2) Explanation of the CAR:

(a) Paragraph 561.08(d) of the STD requires a system of the identification and control of non-conforming product along with the determination of corrective actions to be taken.

(b) The company must develop procedures to establish a system that prevents non-conforming material from being mixed with conforming material. The system should have a method, which identifies the non-conforming material so that it can be segregated from conforming product and disposed accordingly before re-entering the production process. This could be a tag attached to the item and/or a bin containing parts or designated area where the item is placed awaiting disposition. The company should develop a documented process that details the nature of the non-conformity and the corrective action taken.

(3) Example:

14.5 <u>Non-conforming Product</u>

14.5.1 Products found to be non-conforming is identified with a non-conforming material tag (no. NC001) and physically segregated from production. A non-conforming material form (no. NC002) is also raised, which identifies the nature of the defect, then sent to the Production Manager who along with the Quality Department will determine the disposition.

14.5.2 Control of non-conforming products is to be conducted in accordance with procedure QAP 014d.

5.15 Quality Assurance Program

(1) Paragraph 561.07(1)(n) of the STD states in part that each manual shall include the following:

A description of the quality audit system, which includes methods of audit, identification and analysis of probable root cause, and contributory causes of deficiencies identified in audit results, corrective action follow-up and record keeping.

(2) Explanation of the CAR:

(a) Section 561.09 of the CAR requires an organization must design a quality assurance program independent of the production control system, to ensure that they are following the procedures contained in the manufacturer's manual, and continue to comply with the regulations.

(b) The audit system should examine all activities carried out under the manufacturers certificate, should be scheduled in a predetermined frequency, and conducted using detailed checklists. It should help to identify areas of non-compliance, areas that need improvement, and the effectiveness of procedures. A person that has no responsibility for, and has not been involved, in the performance of the task or activity being audited must accomplish the internal audit.

(c) An organization must establish an effective corrective action process to correct deficiencies identified, by determining the cause of deficiencies, developing corrective actions that address the root cause, and implementing the corrective actions to prevent recurrence.

(d) A root cause and contributory cause analysis helps identify what, how and why something happened. If the root cause identifies inadequate policies or procedures, then the policies or procedures must be amended, and personnel be provided additional training on the amended policies or procedures. Follow-up reviews must be conducted to verify that the corrective actions were effective in preventing recurrence.

(e) An organization must identify who will be responsible for the quality assurance program, and establish a system for recording each occurrence of compliance or non-compliance, corrective actions and follow-up. The person responsible for the area where the deficiency was found is best suited for determining the corrective action.

(f) The size of an organization and its activities determines the complexity of the quality assurance program. The program must cover all activities defined or required within the approved manual.

(3) Example:

15.0 QUALITY ASSURANCE PROGRAM

15.1 The Quality Assurance Program is under the direct control of the Person Responsible for Manufacturing.

15.2 Quality assurance program will be accomplished by a continuous review of Acme Manufacturing Ltd.'s activities such as the company's approved manual, procedures, process control, methods and practices, in accordance with the following:

15.2.1 An initial audit to assess all company activities will be completed within 12 months from the date the manufacturer's certificate is issued.

15.2.1.1 The audit will be conducted using detailed Activity Area Checklists (Appendix B) to determine compliance or non-compliance to a standard, regulation or procedural requirement.

15.2.1.2 The person responsible for manufacturing activities will ensure that the company auditor has not been responsible for and has no been involved in the performance of tasks or activities for the area being audited.

15.2.1.3 Any findings will be recorded on Audit Finding Form (Appendix C).

15.2.1.4 The company auditor will forward the findings to the person responsible for manufacturing activities.

15.2.1.5 The person responsible for manufacturing activities shall distribute the findings to the appropriate manger for assessment of the findings, determining root cause, developing a corrective action plan to address the root cause including an implementation timetable, and implementing the corrective action plan.

15.2.1.6 Safety related corrective actions will be implemented immediately, and corrective actions requiring policy or procedure changes will be implemented within 30 days.

15.2.1.7 The person responsible for manufacturing activities will schedule a follow-up audit within three months of implementation of the corrective action plan.

12.2.1.8 If the follow-up indicates that the corrective action was not effective, the person responsible for manufacturing activities shall request additional corrective action, and will schedule another follow-up audit to verify the corrective actions effectiveness. Follow-up activates will be recorded on Audit Follow-up Form (Appendix D).

15.2.2 Subsequent recurring audits will be conducted within 12 months of the completion date of the previous audits. They will cover all company activities, using the Activity Area Checklists (Appendix B) and reported on Audit Report Form (Appendix E).

15.2.2.1 Previous audit findings, amendments to company documentation and procedures incorporated during the previous 12 months will be evaluated for effectiveness.

15.2.2.2 The person responsible for manufacturing activities will ensure that the company auditor has not been responsible for and has not been involved in the performance of tasks or activities for the area being audited.

15.2.2.3 Any findings will be recorded on Audit Finding Form (Appendix C).

15.2.2.4 The company auditor will forward the findings to the person responsible for manufacturing activities.

15.2.2.5 The person responsible for manufacturing activities shall distribute the findings to the appropriate manger for assessment of the findings, determining root cause, developing a corrective action plan to address the root cause including an implementation timetable, and implementing the corrective action plan.

15.2.2.6 Safety related corrective actions will be implemented immediately, and corrective actions requiring policy or procedures changes will be implemented within 30 days.

15.2.2.7 The person responsible for manufacturing activities will schedule a follow-up audit within three months of implementation of the corrective action plan.

15.2.2.8 If the follow-up indicates that the corrective action was not effective, the person responsible for manufacturing activities shall request additional corrective action, and will schedule another follow-up audit to verify the corrective actions effectiveness. Follow-up activates will be recorded on Audit Follow-up Form (Appendix D).

15.3 The CAR will be reviewed by the person responsible for manufacturing activities at each amendment for any changes that affect the organization. A record of this review will be recorded on the CAR Review Form (Appendix F). Any pertinent changes will be incorporated as applicable, by amending the policy manual, applicable procedure or training of personnel.

15.4 The Activity Area Checklists (Appendix B) will be reviewed every 12 months by the person responsible for manufacturing activities, to ensure that they remain effective and applicable.

15.5 The person responsible for manufacturing activities shall retain records of all audits conducted, corrective actions required and follow-ups completed, for no less than two years and two audit cycles.

5.16 Statement of Conformity

(1) Paragraph 561.07(1)(o) of the STD states in part that each manual shall include the following:

A description of the policies and procedures for:

(a) Authorizing persons to sign statements of conformity;

(b) Identifying those persons;

(c) Identifying the product or range of products they are authorized to certify; and

(d) Controlling the stamp issued to each person, where applicable.

(2) Explanation of the CAR:

(a) Section 561.10 of the CAR requires that anyone signing a statement of conformity for an aeronautical product, be trained and authorized by the manufacturer, the statement contain specific elements and the aeronautical product be listed in the scope of approval.

(b) The organization needs a system to assess the qualifications of each employee to determine eligibility for being authorized to sign the statement of conformity. The manufacturer's manual should describe the following criteria for the issuance of the signing authority:

(i) The specific training, experience and knowledge requirements;

(ii) Who in the organization may authorize the signatories;

(iii) What documentation is needs to substantiate the signing authority;

(iv) Where the authorized signatories records will be kept.

(c) The identity of the individuals who are authorized to sign a statement of conformity on behalf of the organization must be listed, including what particular authority they have. An individual may be qualified on all aeronautical products listed in the organization's scope of approval, or limited to specific aeronautical products.

(d) It is acceptable for the person responsible for the manufacturing activities to maintain a list of authorized individuals as a document incorporated by reference. This way, it would not be necessary to get an amendment approved by TCCA every time a new signatory is added or removed.

(3) Example:

16.0 STATEMENT OF CONFORMITY

16.1 Authority to sign a statement of conformity on behalf of Acme Manufacturing Ltd. will be granted by the person responsible for manufacturing activities when the following requirements have been met:

- ***The employee has completed a course of training in the manufacturer's policies and procedures, including requirements of this manual.***
- ***The employee has shown a combination of training and experience appropriate to the aeronautical product for which the authority is being granted.***
- ***The employee has demonstrated to the Person Responsible for Manufacturing Activities the ability to complete the assigned responsibilities by interview, practical demonstration of abilities and written exams.***
- ***The Person Responsible for Manufacturing Activities will keep the record of the employee's qualifications on file.***
- ***The Person Responsible for Manufacturing Activities will authorize each employee by means of a letter that will define the specific certification authorities held. A copy of this letter will be kept in the employee's file, and a copy will be given to the individual.***

16.2 The person responsible for manufacturing activities shall maintain a list of persons authorized to sign statements of conformity (List of Signatories – Appendix H). The list contains the following information:

- ***Name of person;***
- ***Products authorized to certify;***
- ***Date the authorization was granted;***
- ***Signature of the person; and inspection/tests***
- ***Date the authorization was withdrawn.***

16.3 The authorized signatory will confirm the aeronautical product conforms to the type design by reviewing the accompany documents (travelers, work orders, etc.) for completeness, inspect the part, and verify the part is in a condition for safe operation, prior to signing the statement of conformity.

16.4 Aeronautical products listed in the scope of approval will be certified with an Authorized Release Certificate (Form 24-0078). Procedure 24-0078 (Appendix J) contains the detailed procedures for the completion of Form 24-0078.

5.17 Training Program

(1) Paragraph 561.07(1)(r) of the STD states in part that each manual shall include the following:

A description of the training program required by section 561.11 of the CAR.

(2) Explanation of the CAR:

(a) Section 561.11 of the CAR requires that the organization's training program include initial training, updating and any other training described in Section 561.11 of the STD as well as the company policies and procedures and TCCA regulations applicable to an individual's job functions.

(b) Section 561.11 of the STD requires that all personnel involved in supervision or performance of work receive:

(i) Initial training that includes administrative, regulatory and technical responsibilities;

(ii) Update training to maintain competency and to advise of any change in responsibility at least every 3 years (unless a different frequency has been determined through the quality assurance program); and

(iii) Additional training if shown to be necessary through the quality assurance program, changes in regulatory requirements or changes to company policies and procedures.

(c) It also requires that anyone authorized to sign statements of conformity demonstrate knowledge and experience and understand their responsibilities.

(3) Example:

17.0 <u>Training Program</u>

17.1 All new employees will receive initial training in organization policy, procedures, regulatory requirements and technical topics appropriate to their job functions. The Quality Manager will conduct the initial training within the first week of employment.

17.2 Update training to ensure that personnel remain competent and are aware of any changes in responsibilities will be provided at least every three years. The Quality Manager will determine the most appropriate source for update training and may include reviewing initial training material, attending aviation seminars; the use of Aerolearn.com; AMT magazine; interaction and discussions with qualified specialist organizations; and TCCA publications.

17.3 Additional training will be carried out whenever there are regulatory rule changes or when the need is identified is identified through the internal quality assurance program. The Quality Manager will determine the need for additional training and may add it to the update training syllabus and training cycle.

17.4 Prior to authorizing an employee to sign a statement of conformity, the Quality Manager will access the individual's knowledge and experience. Renewal of signing authority is dependent on:

- ***Successfully completion of the update training course to confirm competency;***
- ***Review of the individual's annual performance appraisals by the Quality Manager; and***
- ***Interview by the Quality Manager to confirm that the individual is aware of the technical and administrative responsibilities.***

17.5 All training will be recorded in a separate file for each employee. One copy of the training record will be provided to the employee and one kept in the Quality Manager's training file. All training records will be kept for at least 3 years after the date that a person is no longer employed with Acme Aero.

5.18 Personnel Records

(1) Paragraph 561.07(1)(s) of the STD states in part that each manual shall include the following:

A description of the methods used to establish and maintain personnel records required by section 561.12 of the CAR.

(2) Explanation of the CAR:

(a) Section 561.12 requires that personnel records must be kept for at least 3 years after employment, including personal qualifications, authorizations, and training. All records of training and associated authorities must be provided to each employee.

(3) Example:

18.0 Personnel Records

18.1 The quality manager maintains a separate personnel file on all company manufacturing personnel. These personnel files will include the following:

- ***Personal data applicable to each individual***
- ***Experience (Management assignments, Temporary assignments, etc.)***
- ***Qualifications (AME License, Academic, etc.)***
- ***Training History***
- ***The authority to issue a Statement of Conformity***
- ***Signed copy of the letter accepting the management responsibilities associated with any assignment***
- ***Annual performance appraisals***
- ***All information received related to an employee's performance including attendance records, overtime reports and vacation records.***

18.2 All personnel are to advise the quality manager whenever there has been a change affecting their personnel file. Copies of all information added file will be given to the employee and an opportunity to discuss or appeal will be provided before retaining in the file.

18.3 The Quality Manager retains a current list of all approved company personnel and scope of certification authority.

All personnel records will be retained for at least 3 years after the company no longer employs the employee

5.19 Aeronautical Product Records

(1) Paragraph 561.07(1)(t) of the STD states in part that each manual shall include the following:

A description of the methods used to establish and maintain product records required by Section 561.14 of the CAR.

(2) Explanation of the CAR:

(a) Section 561.14 of the CAR requires a company to establish a record keeping system for all products produced by the company that require a manufacturing release. The record keeping system established by the company must ensure that the records are maintained for a minimum of three years following the release of the product. The Regulation also identifies the type of records to be maintained, and the security provisions of those records, by referencing Section 561.14 of the STD.

(b) The policy and procedures that establish the record keeping system should identify exactly what records the manufacturer intends to maintain. The objective is to maintain the records necessary to ensure the production process is fully capable of showing its compliance when audited. The manufacturer must show compliance to its established production control system, which not only includes the activities directly related to producing a product, but also the reworking, inspecting, all testing, and certifications throughout the process.

(c) Procedures should also describe how the records are dispersed, filed, retention period, and secured from loss and deterioration. In the case of electronic records, describe how access is limited to authorized personnel, how changes are documented, and how these records are protected and backed up.

(3) Example:

19.0 Aeronautical Product Records

19.1 The production work order package is used to record each operation performed during production. All documentation related to the work performed will be attached to the work order and form part of the work order package. The work order package contains as appropriate, detailed instructions, drawings, list of tooling required, check sheets, and other documents developed to control the production process. The work order package forms part of the quality records.

19.2 All Copies of the work order will be kept in numerical order in a filing cabinet in the Quality Assurance office. After two years, these files will be moved to the file storage area on the mezzanine and kept for an additional four years. The Production Manager will maintain a list of personnel authorized to modify electronic records. The list will include the scope of each employee's privileges. All access to electronic records will be read only with the exception of personnel whose duty requires them to modify records. Only authorized personnel will make electronic record entries. Once electronic records are saved, corrections and revisions are limited to authorized personnel only. When changes to the records are required, the ACME computer software program saves the original text and displays changes in red. The software records the name of the individual who made the change and provides a text box to record the reason for the change. Back up copies of the company's electronic records are made nightly to a secure back up tape system to prevent the loss of data.

5.20 Service Difficulty Reporting

(1) Paragraph 561.07(1)(u) of the STD states in part that each manual shall include the following:

> A description of the policies and procedures to control the collection, evaluation and reporting of defects, malfunctions and failure data pursuant to section 561.15 of the CAR.

(2) Explanation of the CAR:

(a) Section 561.15 of the CAR requires that a manufacturer must formally report service difficulties related with the products they produce. It should be noted that manufacturers are also obliged to report suspected unapproved parts that are discovered in their supply. The reporting process is described in Subpart 591 of the CAR.

(b) Service difficulties are to be reported to TCCA using form 24-0038, *Service Difficulty Report*, electronically using the TCCA web site WSDRS, or by an alternate means approved by TCCA.

(c) Policies and procedures must be established to collect product defect data and to evaluate that data to determine whether it should be reported. The evaluation criteria for determining if a defect is reportable means any defect, malfunction or failure of an aeronautical part that is likely to affect the safety of an aircraft, its occupants or other person. The description of the system should include who submits the report, when and in what format.

(3) Example:

20.0 Service Difficulty Reporting

20.1 The Quality Manager is responsible for submitting Service Difficulty Reports (SDRs) in accordance with QAP 020. Reports will be submitted to Transport Canada within 3 working days from the day the defect was first discovered using TCCA's web-based SDR program (http://www.tc.gc.ca/wsdrs/). If not all of the information is available within the three day period the Quality Manager will submit an interim report to TCCA and the report will be updated within 14 days.

20.2 All product deficiencies are to be reported on non-conformance form ACME-009 in accordance with QAP 016. Each non-conformance report is to be reviewed in accordance with the criteria set out in QAP 020 to determine if it requires reporting to TCCA. If there is any doubt if the item qualifies to be reported the Quality Manager will submit a report.

6.0 DOCUMENT REVIEW

This AC will be reviewed and amended when changes to the applicable regulations, standards or policies governing manufacturer manuals are changed or December 2011, whichever is sooner.

7.0 CONTACT OFFICE

For more information, please contact:

Standards Branch (AART)

Phone: 613-952-7974
Facsimile: 613-952-3298
E-mail: boothbj@tc.gc.ca

Suggestions for amendment to this document are invited and should be submitted via the Transport Canada Civil Aviation Issues Reporting System (CAIRS) at the following Internet address:

http://www.tc.gc.ca/CivilAviation/QualityAssurance/QA/cairs.htm

or by e-mail at: CAIRS_NCR@tc.gc.ca

Original signed by Susan Greene for

D.B. Sherritt
Director, Standards, Civil Aviation

APPENDIX A – MANUFACTURER MANUAL REVIEW CHECKLIST

The appropriate parts of Subpart 561 of the CAR and STD must be used in conjunction with this review document.

No.	Requirements	Content	Doc/Section/ Page	Comment
(1)	**Title Page** Include name of company, title of document, address (if not written elsewhere). *Paragraph 561.07(1)(b) of the STD*	**Title Page** • Title • Company name, legal name and registered trade name (where applicable) • Mailing address (where different from manufacturing site) • Manufacturer's approval number		
(2)	Certificate Statement/Manual Certification Certification Statement for the *Manual* *Subsection 561.07(1) of the CAR* *Paragraph 561.07(1)(a) of the STD*	**Certificate Statement/Manual Certification** • Statement signed by the certificate holder, indicating that the *Manual* is the holder's means of compliance. • Should contain two signature blocks: o One for the certificate holder. o One for TCCA approval.		
(3)	**Table of Contents** Table of contents. *Paragraph 561.07(1)(c) of the STD*	**Table of Contents** • List by section, chapter, etc.		
(4)	**List of Effective Pages (LEP)** A means of identifying each page of the manual *Paragraph 561.07(1)(d) of the STD*	**List of Effective Pages (LEP)** • TCCA and company signature on each LEP. • For electronic manuals, an equivalent means of ensuring that the manual is complete and up to date. • List each page number on a separate line together with the date and/or revision number. • Provide space for company and TCCA signatures.		

No.	Requirements	Content	Doc/Section/ Page	Comment
(5)	**Distribution of Manual** Description of the system used to distribute the manual. *Subsection 561.07(10) of the CAR* *Paragraph 561.07(1)(e) of the STD*	**Distribution of Manual** • Who looks after distribution? • Serialized copies. • Distribution means (who gets the copies). • Title of each manual holder. • Include TCCA as a holding a copy of the manual. • Relevant part(s) of manual to be made available to each person that performs work.		
(6)	**Manual Amendment** Process for issuance and control of amendments to the manual. *Subsection 561.07(5), (8) of the CAR* *Paragraph 561.07(1)(e) of the STD*	**Manual Amendment Procedures** • Identify company individual who is authorized to submit amendments or approval, if other than the person responsible for manufacturing activities. • Procedure to insure each manual is amended within 30 days of TCCA approval.		
(7)	**Description of Organization** A brief description of the organization. *Paragraph 561.07(1)(f) of the STD*	**Description of Organization** • Identify approximate number of employees. • Identify geographic location(s) of facilities where manufacturing will be performed (mailing address of site(s)). • Provide brief description of the layout of each facility.		
(8)	**Scope of Work** Description of the scope of work to be performed at each facility *Paragraph 561.07(1)(g) of the STD*	**Scope of Work** • Describe the aeronautical products being produced at each facility subject to TCCA approval. • May make reference to an incorporated list of Approved Aeronautical Products.		

No.	Requirements	Content	Doc/Section/ Page	Comment
(9)	**Assigned Management Function** Description of assigned management functions as described in Subpart 61. *Subsection 561.04(6) of the CAR* *Paragraph 561.07(1)(h) of the STD*	**Assigned Management Function** • Name of title of any person to who management function have been assigned. • Description of the management functions, which have been assigned to each person. • Chart depicting distribution of management functions (if necessary for clarity)		
(10)	**Incorporated Documents (if applicable)** Policies and procedures to control incorporated material. *Subsection 561.07(9) of the CAR*	**Incorporated Documents** • A policy to control incorporated material. • Procedure(s) to control incorporated material.		
(11)	**Document & Data Control** System to obtain and preserve pertinent regulatory, design and other technical data. *Paragraph 561.07(1)(i) of the STD*	**Document & Data Control** • Procedures to ensure documents and data are kept up to date. • Describe the system for obtaining documents and data. • Describe the system for preserving documents and data.		
(12)	**Control of Suppliers** Description of methods for evaluating and controlling suppliers. *Section 561.13 of the CAR* *Section 561.05 of the CAR* *Paragraph 561.07(1)(k) of the STD* *Section 561.13 of the STD* *Section 561.05 of the STD*	**Control of Suppliers** • Written agreement specifying the work to be performed. • Written agreement providing the Minister access to inspect the supplier's premises, activities and records. • Policies and procedures to evaluate and contract only to approved suppliers. • Procedures to ensure the work done by suppliers are subject to the certificate holder's supervision and the quality assurance program.		

No.	Requirements	Content	Doc/Section/ Page	Comment
		• Evaluate and monitor that the supplier has the financial and human resources necessary to perform the manufacturing activities contracted. • Procedures to ensure products conform to type design • Work subcontracted by the supplier must receive written consent from the certificate holder. • Standard or commercial parts supplier control may be limited to incoming inspection and/or test.		
(13)	**Product Traceability** Methods used to identify and trace products during all stages of the manufacturing process up to delivery. *Paragraph 561.07(1)(l) of the STD*	**Product Traceability** • Ensure procedures are established to trace products from their source of supply and throughout all stages of manufacturing.		
(14)	**Production Control System** Description of the production control system *Section 561.08 of the CAR* *Paragraph 561.07(1)(j), (m),(p), (q) of the STD* *Section 561.08 of the STD*	**Production Control System** • Identify the person assigned responsibility for the production control system, if other than the person responsible for manufacturing activities. • Controls used to ensure that the product conforms to its type design. • Process control to include: o Controlled conditions o Documented instructions o Workmanship criteria o Data, o Suitable equipment and o Competent personnel		

No.	Requirements	Content	Doc/Section/ Page	Comment
		• Inspection and testing procedures to include: o Receiving, in-process and final o Production flight tests and aircraft flight operations, including functional tests • Written instructions to: o Ensure that inspections are established throughout the production process, including those performed by suppliers. o Identify the nature of the inspections to be performed. • A system to ensure that inspection, measuring and test equipment is calibrated and traceable to applicable standards. • A system for identification and control of non-conforming product, including corrective actions to be taken. • A system to track and record inspections and test status of products and the identity of the persons who will confirm product compliance at each stage.		
(15)	**Quality Assurance Program** A description of the quality audit system. *Subsection 561.09(2), (3)(b), (5) of the CAR* *Paragraph 561.07(1)(n) of the STD* *Section 561.09 of the STD*	**Quality Assurance Program** • Describe methods of audit covering all aspects of manufacturer's activities, including identifying who conducts the audit to ensure auditor is not involved in activity. • Procedures to ensure auditor is not involved in activity being audited. • Procedures for the identification and analysis of probable root cause and contributory causes of deficiencies identified in audit results.		

No.	Requirements	Content	Doc/Section/ Page	Comment
		• Procedures for corrective action. • Procedures for follow up. • Procedures for audit system record keeping. • Procedures for distributing findings for the quality assurance program to the appropriate manager, who is responsible for the corrective action and follow up. • Establish audit intervals.		
(16)	**Statement of Conformity** A description of the procedures for authorizing persons to sign statements of conformity. *Subsection 561.10(2) of the CAR* *Subsection 561.07(1) of the CAR* *Paragraph 561.07(1)(o) of the STD* *Paragraph 561.10(2)(a) & info note of the STD* *Subpart 561 Appendix A of the STD* *Subpart 561 Appendix B of the STD*	**Statement of Conformity** • Procedure used to authorize persons to sign statements of conformity. • Identify individuals by name • Identify the product or range of products authorized to certify. • Procedure for controlling stamp assigned (if stamps used). • Procedure for the completion of the statement of conformity • Policies and procedures to authorize persons not directly employed by the manufacturer to sign a statement of conformity (see info note).		
(17)	**Training Program** A description of the training program *Section 561.11 of the CAR* *Paragraph 561.07(1)(r) of the STD* *Section 561.11 of the STD*	**Training Program** • Policy to establish and maintain a training program for initial, update and any other training to ensure the continued qualification that is appropriate to the function and approved scope of work being performed or supervised.		

No.	Requirements	Content	Doc/Section/ Page	Comment
		• Procedures to ensure the training program includes: o Initial training for awareness of technical, administrative and Regulatory responsibilities. o Update training to remain competent (*initial cycle for update training 3 years*) o Additional training when identified by the quality assurance program changes to the company procedures or CAR. • Procedures to ensure persons authorized to sign statements of conformity demonstrate level of knowledge and experience and understand their responsibilities.		
(18)	**Personnel Records** A description of the methods used to establish and maintain personnel records. *Section 561.12 of the CAR* *Paragraph 561.07(1)(s) of the STD*	**Personnel Records** • Records to be established and maintained for each person. • Records to be retained for 3 years after the end of the person's employment. • Personnel records include: o All training undertaken o All of the person's qualifications o Details in respect of the certification authorities for individuals authorized to sign a statement of conformity • Procedures to ensure that a copy of any record is provided to the person on the completion of each training activity or granting of any authorization.		

No.	Requirements	Content	Doc/Section/ Page	Comment
(19)	**Aeronautical Product Records** Description of methods used to establish and maintain product records. *Section 561.14 of the CAR* *Paragraph 561.07(1)(t) of the STD* *Section 561.14 of the STD*	**Aeronautical Product Records** • Procedures to establish and maintain records for each aeronautical product. • Records include, but are not limited to: o Production records o Inspections and tests performed to determine conformity o Rework to correct non-conforming products o Production ground and flight tests if applicable o Release certifications • Procedures to ensure hard copies are kept in a secure location to prevent loss or deterioration. • Procedures to ensure electronic records: o Are subject to approval by an authorized person prior to saving the record. o If changes are made, the reason for the change, identity of the person making the change are recorded, and original information remains available o Back up copies made and kept in a secure location to prevent loss of data in the case of a system malfunction. o Printed copies to be made available to TCCA upon request • Procedures to ensure records are retained for at least three years after the day on which a statement of conformity was signed.		

No.	Requirements	Content	Doc/Section/ Page	Comment
(20)	**Service Difficulty Reports (SDR)** Procedures used to report SDR's *Section 561.15 of the CAR* *Subpart 591 of the CAR* *Paragraph 561.07(1)(u) of the STD*	**Service Difficulty Reports (SDR)** • Procedure to control the collection, evaluation and reporting of defects, malfunctions and failure data.		