



Staff Instruction

Subject: Supplemental Type Certificates

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1.0 INTRODUCTION

1.1 Purpose

- (1) The purpose of this Staff Instruction (SI) is to provide general information and basic procedures relating to:
 - (a) the review and approval of Canadian design changes to the type design of aeronautical products through the issuance of a Supplemental Type Certificate (STC) as governed by Subpart 521 of the *Canadian Aviation Regulations* (CARs);
 - (b) the original issue of STCs and follow-on revisions; and
 - (c) Transport Canada Civil Aviation (TCCA) submission to foreign civil aviation authorities, on behalf of Canadian applicants, for the issue of corresponding foreign approvals.
- (2) This document is to be used in conjunction with SI 521-004.

1.2 Applicability

- (1) This document applies to all TCCA employees and Ministerial Delegates. This information is also available to the aviation industry for information purposes.

1.3 Description of Changes

- (1) Not applicable.

2.0 REFERENCES AND REQUIREMENTS

2.1 Reference Documents

- (1) It is intended that the following reference materials be used in conjunction with this document:
 - (a) *Aeronautics Act* (R.S., 1985, c. A-2);
 - (b) Part I Subpart 4 of the *Canadian Aviation Regulations* (CARs)—*Charges*;
 - (c) Part V, Subpart 21 of the CARs— *Approval of the Type Design or a Change to the Type Design of an Aeronautical Product*;
 - (d) Civil Aviation Directive (CAD) No. 3 —*Recovering the Incremental Costs of Providing Services Inside/Outside Canada*;
 - (e) Staff Instruction (SI) 500-018, —*Design Approval Document Transfers under CAR 521: Division VIII – Responsibilities of a Design Approval Document Holder*;
 - (f) SI 521-004, —*Changes to the Type Design of an Aeronautical Product*;
 - (g) Maintenance and Manufacturing Staff Instruction (MSI) 53, —*Review of Supplemental Instructions for Continued Airworthiness*;
 - (h) Advisory Circular (AC) 500-016, —*Establishing the Certification Basis of Changed Aeronautical Products*;
 - (i) AC 521-002,—*Type Certification Requirements of Aircraft, Engines and Propellers*;
 - (j) AC 521-005,— *Supplemental Type Certificates*;
 - (k) Policy Letter (PL) 500-002,—*Establishing the Certification Basis of Changed Aeronautical Products-Interpretation and Policy*;
 - (l) Transport Canada Publication (TP) 9155 —*Master Minimum Equipment List / Minimum Equipment List Policy and Procedures Manual*;

- (m) Notice of Proposed Amendment (NPA) 2010-021—*Approval of the Type Design or Change to the Type Design of an Aeronautical Product*;
- (n) Federal Aviation Administration (FAA) Form 8110-12, —*Application for Type Certificate, Production Certificate, or Supplemental Type Certificate*; and
- (o) European Aviation Safety Agency (EASA) Form 33, *Application for Approval of Supplemental Type Certificate*.

2.2 Cancelled Documents

- (1) As of the effective date of this document, the following documents are cancelled:
 - (a) SI 513-007, Issue 01, 2007-01-15—*Approval of Domestic Modification and Repair Designs*.
- (2) By default, it is understood that the publication of a new issue of a document automatically renders any earlier issues of the same document null and void.

2.3 Definitions

- (1) The following **definitions** are used in this document:
 - (a) **Aeronautical Product:** an aircraft, aircraft engine, aircraft propeller or aircraft appliance or part, or a component part of any of those things, including any computer system and software (Ref. *Aeronautics Act* R.S.C., 1985 c. A-2 and Section 521.01 of the CARs). This SI does not apply to products approved by a Canadian Technical Standard Order CAN-TSO design approval.
 - (b) **Certification Basis:** refers to the applicable standards as established in Section 521.157 of the CARs, as appropriate, including any special conditions—airworthiness (SCA), findings of equivalent level of safety, and exemptions applicable to the product to be certified.
 - (c) **Conformity with the Certification Basis:** demonstrating compliance with all of the applicable standards and requirements of the certification basis.
 - (d) **Delegate:** any person or class of persons authorized under the authority of Subsection 4.3(1) of the *Aeronautics Act* to perform functions on behalf of the Minister, subject to the requirements in Chapter 505 of the *Airworthiness Manual* (AWM).
 - (e) **National Aeronautical Product Approval (NAPA) System:** an automated system that provides aircraft certification staff with the tools necessary to track the certification of aeronautical products and issue the design approval documents. This system also provides a database of the projects and supporting data for this certification.
 - (f) **Standards of Airworthiness:** design requirements as defined in the AWM. For design changes, the standards of airworthiness may also be listed on the type certificate data sheet (TCDS) and may include other standards such as *Federal Aviation Regulations* (FARs) that form part of the certification basis.
 - (g) **Supplemental Type Certificate (STC):** a document, including a limited supplemental type approval (LSTA) and a supplemental type approval (STA) issued before October 10, 1996 under section 214 of the *Air Regulations* and a limited STC issued before December 1, 2009 under section 513.11 or 513.22 of the CARs issued by the Minister to record the approval of a change to the type design of:
 - (i) an aeronautical product identified in the document by a single serial number;
 - (ii) several aeronautical products of the same type or model, approved under a single type certificate and identified in the document by their serial numbers; and

- (iii) several aeronautical products of differing types or models, approved under separate type certificates and identified in the document.

Note:

With respect to (iii) above, the type certificates must refer to the same design standard, i.e. AWM Chapter 525 standard cannot be mixed with Chapters 523, 527 or 529 on the same STC.

- (h) **Type:** When used in reference to the certification of aircraft, a classification of aircraft having similar design characteristics.

(i) **Type Design:**

- (i) the drawings and specifications, and a listing of those drawings and specifications that are necessary to define the design features of an aeronautical product in compliance with the standards applicable to the aeronautical product;
- (ii) the information on dimensions, materials and manufacturing processes that is necessary to define the structural strength of an aeronautical product;
- (iii) the approved sections of the aircraft flight manual, where required by the applicable standards of airworthiness;
- (iv) the airworthiness limitations section of the instructions for continued airworthiness specified in the applicable chapters of the AWM; and
- (v) any other data necessary to allow, by comparison, the determination of the airworthiness and, where applicable, the environmental characteristics of later aeronautical products of the same type or model.

(Ref: Subpart 101.01(1) of the CARs)

3.0 BACKGROUND

- (1) With the implementation of Subpart 521 of the CARs new documents have been created to support the regulations. All guidance material such as SIs, ACs, Policy Letters that supported the previous CARs and Chapters 511, 513, 591 and 593 of the *Airworthiness Manual (AWM)* have been reviewed and the relevant material included in the 521 series ACs and SIs.
- (2) This SI is organized to mirror Sections and Subsections of Division V of Subpart 521 of the CARs, so that it can be easily read in conjunction with Subpart 521 of the CARs.
- (3) This SI is intended to be used in conjunction with AC 500-016 on the application of the *Changed Product Rule (CPR)*.
- (4) Although Subpart 521 of the CARs introduced a change in terminology in the English version from “compliance” to “conformity” this SI will be using “compliance” wherever possible to minimize confusion in this document.

Note:

In December 2010, a Notice of Proposed Amendment (NPA) to Subpart 521 of the CARs (NPA 2010-021) was introduced to revert the terminology “conform” and “conformity” back to “comply” and “compliance.”

4.0 OVERVIEW OF THE SUPPLEMENTAL TYPE CERTIFICATE PROCESS

- (1) The requirements that must be fulfilled to obtain an STC as a result of a change to a type design are defined in Divisions V, *Supplemental Type Certificates* and IV, *Changes to a Type Design* within Subpart 521 of the CARs. This SI should be used in conjunction with SI 521-004.
- (2) Sections 521.201 to 521.203 of the CARs define the requirements of an applicant for an STC. Sections 521.204 and 521.205 of Division V and 521.157 to 521.160 of Division IV of the CARs establish the certification requirements as well as the requirements for demonstrating that the change to the type design complies with all certification requirements. Sections 521.206 and 521.207 of Division V of the CARs and Section 521.161 of Division IV of the CARs define the design approval issuance and subsequent revision requirements.

5.0 PRE-APPLICATION PHASE

5.1 Application – Section 521.201

- (1) This SI applies to applications for a Canadian STC under Division V of Subpart 521 of the CARs. Refer to Division XI – *Foreign Aeronautical Products* of Subpart 521 of the CARs, for applications for the issue of a Canadian STC based on a review and validation of a foreign design approval.
- (2) Any Canadian individual or organization may apply for an STC. Canadian design approval documents are not issued directly to foreign applicants. Refer to Division XI of Subpart 521 of the CARs for more information on foreign applicants.

5.2 Eligibility Requirements – Section 521.202

- (1) Section 521.202 of the CARs requires the applicant to have or have access to the required technical capabilities specific to the design change under consideration. An applicant could meet this requirement by:
 - (a) Having a level of knowledge and capability appropriate for the design change; or
 - (b) Showing that an arrangement exists for the applicant to have access to a level of knowledge and capability appropriate for the design change.
- (2) For more detailed information on how the Minister determines technical capability, refer to AC 521-002.

6.0 PHASE I – APPLICATION AND ESTABLISHING CERTIFICATION BASIS

6.1 Application for Supplemental Type Certificate – Section 521.203

- (1) Application
 - (a) Applications for an STC are processed in accordance with the procedures defined in SI 521-004.
 - (b) For all STCs, the following applies:
 - (i) only one specific change in type design is permitted, or
 - (ii) there may be several changes in type design but they must be interrelated by the nature of the overall change.
- (2) Section 2.3 of this SI provides the definition for STC in accordance with Subpart 101 of the CARs. This definition now recognizes three distinct STC documents. The first two documents in

paragraphs 2.3(1)(g)(i) and (g)(ii) of this SI are to cater for the previous limited supplemental type certificates (LSTCs) that had been issued in the past. More specifically:

- (a) Paragraph 2.3(1)(g)(i) of this SI refers to the Single serial number STC,. This one is self-explanatory as it is meant to be an STC where the change in type design is applicable to only one specific serial number of a given type certified aeronautical product.
- (b) Paragraph 2.3(1)(g)(ii) of this SI refers to a multiple serial number STC known as a “serialized STC”. This is meant to be an STC where the change in type design is applicable to several type certified aeronautical products:
 - (i) All approved under a single type certificate; and
 - (ii) Identified by serial numbers in the STC.

Note:

Where section 101.01 of the CARs specifies “of the same type or model” it means aeronautical products of sufficiently high level of commonality in their type design so the design change can be applicable to all the serialized aeronautical products identified in the STC without any specific differences.

- (c) Paragraph 2.3(1)(g)(iii) of this SI refers to the STC as it was previously defined in Section 101.01 of the CARs. This is meant to be an STC where the change in type design is applicable to products:
 - (i) of differing “types” or “models” approved under separate type certificates; and
 - (ii) identified by “type” or “model” in the STC document.

Note:

With respect to (i) above, the type certificates must refer to the same design standard, i.e. AWM Chapter 525 standard cannot be mixed with Chapters 523, 527 or 529 in the same STC.

- (3) Conversion and re-issue of earlier approvals
 - (a) Existing LSTCs issued prior to the introduction of Subpart 521 of the CARs, remain valid and in force in their current form until they require a revision, at which time they shall be changed to, and reissued as an STC. The STC may be issued as an STC with several aeronautical products of differing types or models, approved under separate type certificates, or may be limited to a model or serial range of affected aeronautical products. For such revision, applicants must meet all of the requirements of Subpart 521 of the CARs and any new applicable standards and guidance, irrespective of the cause of the revision.

6.2 Establish Certification Basis – Section 521.204

- (1) Establishment of the certification basis is conducted in accordance with Section 521.157 of the CARs and AC 500-016.

7.0 PHASE II – ESTABLISHING MEANS OF COMPLIANCE AND TRANSPORT CANADA CIVIL AVIATION LEVEL OF INVOLVEMENT

- (1) SI 521-004 provides procedural information to TCCA employees and delegates on the process for approving modifications, This document also provides more information on establishing means of compliance and Transport Canada Civil Aviation’s (TCCA) level of involvement under Phase II.

8.0 PHASE III – DEMONSTRATE AND RECORD COMPLIANCE

8.1 Compliance With Certification Basis - Section 521.205

- (1) The applicant shall demonstrate that their product complies with the certification basis in accordance with the procedures defined in SI 521-004 (Section 521.160 of the CARs).
- (2) In addition to the compliance requirements specified in Division IV of Subpart 521 of the CARs, there are often document changes required for STCs as follows:
 - (a) Aircraft Flight Manual Supplement (AFMS);
 - (b) Instructions for Continued Airworthiness; and
 - (c) Master Minimum Equipment List (MMEL).

8.1.1 Aircraft Flight Manual Supplement

- (1) The AFMS content shall be compatible with the existing aircraft flight manual and contain information in each of the "approved" sections or state "No Change" as appropriate. AFMS approved sections usually include the following:
 - (a) limitations;
 - (b) normal procedures;
 - (c) abnormal procedures (this information may be included in normal procedures);
 - (d) emergency procedures;
 - (e) performance; and
 - (f) weight and balance. Weight and Balance data may be in another document referenced in the limitations section.
- (2) Approved information shall be identified and clearly distinguished from unapproved information. There shall be no conflict between the data required by the regulations and any unapproved additional information included.
- (3) It is desirable that descriptive information is restricted to that which will facilitate understanding of the system.
- (4) Reference shall be made to operating instructions for general operating features of a system, but operating procedures peculiar to the specific installation shall be included in the AFMS.
- (5) Where a foreign airworthiness authority approves modifications, the AFMS may include restrictions or limitations, that are appropriate for the foreign airworthiness authority operating rules or environment. These restrictions may not be applicable or appropriate in the Canadian regulatory and operating environment.
- (6) A sample AFMS format may be found in Appendix C of AC 521-004. .

8.1.2 Instructions for Continued Airworthiness

- (1) There may be a need to develop and review a supplemental ICA. Determination of the need for Supplemental ICA and their subsequent review and acceptance is found in Maintenance and Manufacturing Staff Instruction (MSI) 53. Signing off of MSI 53, Appendix A – Statement of Compliance Check Sheet is the responsibility of the Transport Canada Civil Aviation Safety Inspector (CASI). As per Sections 5.4 and 5.5 of MSI 53, this responsibility is usually granted to TCCA Aircraft Certification or to engineering delegates when specifically authorized. The signed MSI 53 check sheet is to be retained as a part of the STC project file.

- (2) Supplemental ICA documents are not approved however; an authorized TCCA manager must approve any airworthiness limitations (AWLs) contained therein.
- (3) Coordination for review of the adequacy of existing ICA documents and development, review and acceptance of any new Supplemental ICAs, and approval of any AWLs should be done early in the project to avoid delays.

8.1.3 Master Minimum Equipment List

- (1) An approved MMEL or Minimum Equipment List (MEL) is not a requirement for the issuance of an approval for a change to a type design. However, for aircraft operated in accordance with an approved MEL, dispatch with inoperative equipment/system installed through an STC is only permitted if relief is reviewed by TCCA and included in the operator's MEL. Such relief must be included in the MMEL, Transport Canada Supplement (foreign aircraft), or Transport Canada Addendum (domestic aircraft) before being added to the MEL.
- (2) MMEL relief for equipment/system installed by the aircraft manufacturer (original equipment manufacturer (OEM) relief) does not automatically extend to similar equipment/system installed through an STC (e.g. SATCOM installed by the OEM versus SATCOM installed by an STC holder).
- (3) MMEL relief for an STC must be assessed by a TCCA regional or NAC Flight Test engineer which should be done concurrently with the STC review process. If assessed by a regional engineer, after review, the engineer will provide the Flight Test division in National Aircraft Certification (NAC) with a recommendation for approval of the MMEL relief. The Flight Test division will then issue and publish on the TCCA website a revision to the aircraft type Transport Canada Supplement (foreign aircraft) or Transport Canada Addendum (domestic aircraft) containing relief for the STC.
- (4) MMEL/MEL assessments can be performed within the scope of an STC application, or performed separately by application from the applicant.
- (5) Additional guidance on MMEL/MEL is provided in TP 9155 *Master Minimum Equipment List / Minimum Equipment List Policy and Procedures Manual*.

9.0 PHASE IV – APPROVAL OF A SUPPLEMENTAL TYPE CERTIFICATE

9.1 Issuance of Supplemental Type Certificate – Section 521.206

- (1) External delegates shall not issue STCs that cover several aeronautical products of differing types or models, approved under separate type certificates.
- (2) Wherever possible, serialized STCs should be issued by an appropriately authorized delegate. This includes serialized STC projects where TCCA has some involvement such as approving AFMS, AWLs, or making findings of compliance for design paragraphs not delegated. Delegate issued STCs bear the suffix: "/D".
- (3) A sample STC is provided in Appendix A of this SI.
- (4) The certificate format and numbering system for STCs is as described in Appendix B of this SI.
- (5) An STC-specific Approval Document Checklist is provided in Appendix C of this SI. This checklist can be used in conjunction with the project checklist provided in SI 521-004.
- (6) A transmittal letter template is provided in Appendix D of this SI.
- (7) Additional guidance on the issuance of approvals for a change to a type design is provided in SI 521-004.

9.2 Approved Model List

- (1) An Approved Model List (AML) process may be appropriate to approve the installation of a change on more than one type-certificated product, provided:
 - (a) the installation instructions for the change on each type-certificated product are specific and objective;
 - (b) the evaluation of the effect of the change applies to all type-certificated products addressed by the approval; and
 - (c) demonstrations of compliance, substantiating data and necessary type design data for each of the models listed on the AML STC is provided.
- (2) An AML STC is an STC covering several aeronautical products of differing types or models, approved under separate type certificates within the same AWM Chapter and as such shall only be issued by TCCA.
- (3) An AML STC may only be issued for aircraft makes and models of a single type i.e. same or comparable design standards. For example, an AML STC may not include aircraft certified against the standards of Chapters 523 and 525 of the AWM on the same certificate.
- (4) If the modification is significant under CPR then an AML cannot be used, or if the modification is significant for a particular type, then it should be separated off to its own STC.
- (5) Additional guidance on AML STCs is provided in Appendix H of this SI.

10.0 PHASE V – POST CERTIFICATION ACTIVITIES

10.1 Change to a Type Design Approved in a Supplemental Type Certificate - Section 521.207

- (1) Revisions for the purpose of adding models, additional serial numbers, references to new or revised engineering data, or for incorporating other necessary changes or corrections, shall be annotated with a vertical bar adjacent to the right hand margin to indicate the changes on the certificate.
- (2) Aircraft Certification personnel shall not reissue:
 - (a) Certificates originally issued by a delegate; or
 - (b) Certificates originally issued by another region, unless the associated project files have been transferred to the other region.
- (3) A single STC or serialized STC may be revised to add or delete aircraft of the same type or model, approved under a single type certificate. It may also be revised to reflect related design changes.
- (4) When transferring the ownership of an aircraft, which is modified in accordance with a single serial number STC or serialized STC, the following options are available:
 - (a) Leave the modification in the aircraft and the original holder to retain responsibilities;
 - (b) Re-issue the STC to the new aircraft owner who will take on the responsibilities of the holder, and accept the obligations of Division VIII, *Responsibilities of a Design Approval Document Holder* of Subpart 521 of the CARs; or
 - (c) Remove the modification installed in accordance with the pertinent serialized STC.
- (5) For certificate transfers, refer to Section 521.357 of the CARs and SI 500-018.

11.0 APPLICATIONS TO FOREIGN AUTHORITIES**11.1 Application to a Foreign Authority for Validation of a Canadian Supplemental Type Certificate**

- (1) The following general procedures are to be followed when an applicant applies to have their Canadian STC reviewed and validated by a foreign airworthiness authority:
 - (a) The applicant shall apply to the regional aircraft certification office that issued the original STC.
 - (b) The regional office shall enter the project into National Aeronautical Product Approval (NAPA). This should be a different project number than the one used to issue the original STC.
 - (c) TCCA may forward a signed and completed application to the appropriate Civil Aviation Authority (CAA) when required, accompanied by a copy of the Canadian certificate and supporting documentation as appropriate. See Appendix G of this SI for a sample letter.
 - (d) TCCA recommendation\request for the issue of a foreign approval may accompany the data package. Additionally, agreements with certain countries may also require a Statement of Compliance to the requirements of the foreign type certificate.
 - (e) Some foreign authorities may elect to accept the Canadian STC without the issue of a corresponding foreign STC.
 - (f) The applicant is responsible to the foreign CAA on issues of fees and charges.
- (2) Additional guidance on the specific requirements of applying for STC validation from the Federal Aviation Administration (FAA) is provided in section 11.2 of this SI.
- (3) Additional guidance on the specific requirements of applying for STC validation from the European Aviation Safety Agency (EASA) is provided in section 11.3 of this SI.

11.2 Application to the Federal Aviation Administration for Review and Validation of a Canadian Supplemental Type Certificate

- (1) The applicant is to complete an FAA form 8110-12 and submit it to the TCCA regional office along with the supporting data.
- (2) The TCCA project manager is to prepare and sign an application letter to the FAA per the format given in Appendix E of this SI. This letter is to include statements of compliance to the FAA certification basis.
- (3) As a minimum, the data package sent to the FAA should include the list outlined in Appendix E of this SI.
- (4) The TCCA regional office will send the package to the FAA in the following manner:
 - (a) Helicopter STC applications are sent to the Rotorcraft Standards office – ASW-110;
 - (b) Very Light Aircraft STC applications are sent to the Chicago ACO;
 - (c) Engine STC applications are sent to the Boston Engine Certification Office;
 - (d) All other STC applications including fixed wing aircraft and appliance are sent to the New York ACO.
- (5) Applications are sent by normal Canada Post mail only. If the applicant wishes to ship by courier for expedited services, they are responsible for the extra costs or direct shipping arrangements.
- (6) Once the project is received, the assigned FAA project engineer will usually e-mail the TCCA project manager to advise of any issues or concerns. The Canadian applicant and the TCCA project manager will work together to address any issues to the satisfaction of the FAA.

- (7) Upon satisfactory review, the FAA will usually issue an FAA STC for a Canadian STC and a serial number limited FAA STC (United States Registered aircraft only) for a Canadian single serial number STC or an STC covering several serial numbers.
- (8) The FAA STC will be mailed to the originating regional office for final delivery and distribution to the applicant.
- (9) For subsequent revisions to the Canadian STC, the Bilateral Agreement Implementation Procedures For Airworthiness (IPA) provides criteria for the requirement for validation of the revisions.

11.3 Application to European Aviation Safety Agency for Review and Validation of a Canadian Supplemental Type Certificate

- (1) The applicant must complete an EASA form 33 and submit it to TCCA along with the supporting data.
- (2) The TCCA project manager will prepare and sign an application letter to EASA per the format given in Appendix F of this SI. This letter shall include statements of compliance to the EASA certification basis where an applicable type certificate exists.
- (3) The TCCA project manager will e-mail the application letter and EASA form 33 to STC@easa.europa.eu. Refer to EASA web site for any superseding address. In accordance with the new agreement on aviation safety between the European Union and Canada, all applications for validation of Canadian design approvals shall be forwarded to the EASA office by TCCA.
- (4) EASA will respond to the TCCA e-mail application, with an assignment of an EASA project manager.
- (5) The applicant should then arrange to e-mail the data package directly to the EASA project certification manager/project manager. The data package should consist of the same minimum documents as specified for a submission to the FAA.
- (6) EASA will not accept an STC with multiple Type Certificate Data Sheets (TCDSs) referenced on it. Each TCDS will have to be applied for separately. For example, if the STC has references to three different type certificates, then the applicant must apply for three separate STCs, and EASA will issue three separate approvals after type design examination.
- (7) EASA has a fee structure and they will return an estimate of the fee to the applicant based on their applicable rate. EASA will not issue a certificate until full payment is made. Fee issues are to be negotiated directly between the applicant and EASA.
- (8) After project review, the EASA project manager will usually e-mail the TCCA project manager to advise of any issues or concerns. The Canadian applicant and the TCCA project manager will work together to respond to address any issues to the satisfaction of EASA.

12.0 INFORMATION MANAGEMENT

- (1) It is not the intent that TCCA keep copies of the applicant's supporting data after the approval is issued. The holder has retention obligations under Section 521.365 and 521.366 of the CARs.
- (2) TCCA files will retain key compliance related information such as certification plans, issue papers and decision records as well as any data cited on the approval document such as flight manuals and supplements, maintenance manuals/ICAs and master document lists.
- (3) After approval is issued, TCCA will upon request by the applicant, return paper copies of supporting data or otherwise shred or erase this data.

13.0 DOCUMENT HISTORY

(1) Not applicable.

14.0 CONTACT OFFICE

Suggestions for amendment to this document are invited, and should be submitted to:

Chief, Aircraft Certification Standards (AARTC) via the following email address:

AARTInfoDoc@tc.gc.ca

[original signed by]

Jacqueline Booth
A/Director, Standards Branch
Civil Aviation
Transport Canada

Transport Canada documents or intranet pages mentioned in this document are available upon request.

APPENDIX A – SAMPLE SUPPLEMENTAL TYPE CERTIFICATE



Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

123456 Canada Inc.
Acme Aerospace Ltd.
8876 Any Street
Anytown, Alberta
M2T 1H8

Number: SH10-0**Issue No.:** 3**Approval Date:** January 12, 2010**Issue Date:** February 15, 2011**Responsible Office:**

Prairie and Northern

Aircraft/Engine Type or Model:

Pioneer H-400

Canadian Type Certificate or Equivalent:

A-459

Description of Type Design Change:

Slung Utility Basket Installation

**Installation/Operating Data,
Required Equipment and Limitations:**

Manufacture of the slung utility basket must be in accordance with Transport Canada approved Acme Aerospace Ltd. MDL-F619-203, Revision B, dated February 15, 2011, or later accepted revision.

Installation of the slung utility basket must be in accordance with Transport Canada approved Acme Aerospace Ltd. IIN-F619-203, Revision B, dated December 8, 2009, or later approved revision.

Maintenance of the slung utility basket must be in accordance with Transport Canada accepted Acme Aerospace Ltd. ICA-F619-203, Revision 0, dated December 7, 2009 or later Transport Canada accepted revision.

Operation of the slung utility basket must be in accordance with Transport Canada approved Acme Aerospace Ltd. FMS-F619-203, Revision A, dated January 12, 2010, or later Transport Canada approved revision.

Basis of Certification for this modification is Airworthiness Manual (AWM) Chapter 527 – *Normal Category Rotorcraft* at Change 527-6 (equivalent to FAR Part 27 at Amdt. 27-40), including Appendix B for IFR and Appendix C for Category A, plus FAR Part 27, Amdt 27-44 as adopted by reference. AWM Chapter 527 Appendix C – *Criteria for Category A* specifies sections of AWM Chapter 529 – *Transport Category Rotorcraft*. For these specified sections, AWM Chapter 529 at Change 529-6 (equivalent to FAR Part 29 at Amdt. 29-45) is applicable.

-End-



Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

John Q. Rollins
For Minister of Transport

APPENDIX B – CERTIFICATE FORMAT AND NUMBERING FOR SUPPLEMENT TYPE CERTIFICATES

STC FORMAT:

The following provides guidance with respect to the development of certificates. Aircraft Certification personnel will use the NAPA system to generate the appropriate design approval documents.

Sections of the Certificate	Description
This approval is issued to:	The name and address of the certificate holder as identified on the application form. The sharing of design responsibilities is not acceptable, thus the certificate must be issued in the name of one holder only.
Number:	As generated by the NAPA system. Number will be unique and reflect the region of issue (in the case of single serial number or serialized STCs), type of approval, year of issue, and the next available sequential number.
Issue No.:	As generated by the NAPA System. Next sequential number updated each time the approval is re-issued.
Approval Date:	The date that the original design change is approved. The original approval date does not change when a certificate is revised.
Issue Date:	The date of issue of the certificate, which must be equivalent to, or later than the approval date.
Responsible Office:	Atlantic, Quebec, Ontario, Prairie & Northern, Pacific or Headquarters, as applicable.
Aircraft/Engine Type or Model:	The specified type (or types), and model designations, as referenced on the applicable type certificate(s).
Registration/Serial No.:	Appropriate serial number(s), as applicable for a serialized STC. If the aircraft is not Canadian-registered, the Installer must ensure that the design change is acceptable to the Civil Aviation Authority that registered the aircraft. (Remove row if this section is not applicable).
Canadian Type Certificate or Equivalent:	Canadian TCDS reference or accepted foreign TCDS reference if no Canadian one exists.
Description of Type Design Change:	The title of the modification. This should convey the intent/affect/nature of the design change, not a marketing trade name. It also should be somewhat specific rather than general. Example – “Installation of xxx Engine” as opposed to “Powerplant Change”.
Installation / Operating Data, Required Equipment and Limitations:	To read: (Installation/Modification/Fabrication) must be in accordance with (name of document holder, master document list/document number, revision level), TCCA approved (date of

	<p>approval) *</p> <p>Also include, where applicable: Operation must be in accordance with (name of holder) Aircraft Flight Manual Supplement, (revision level), TCCA/FAA approved (date of approval) *</p> <p>Maintenance must be in accordance with TCCA accepted (name of holder) Instructions for Continued Airworthiness, (revision level), (date) **</p> <p>(References to additional installation data, maintenance manual supplement, operating limitations and placards) Separate 'Required Equipment:' and 'Limitations' subheadings may be added when deemed appropriate.</p> <p>-----</p> <p>*The phrase "or later TCCA approved revision" may be included. ** The phrase "or later TCCA accepted revision" may be included.</p> <p>-----</p> <p>Where the certificate is an STC, which is based on a foreign STC, the entry regarding installation/operating data should end with the citation "in accordance with [foreign authority] STC [STC number]." The TCCA approved or accepted date shall be used when applicable. Otherwise, the document's revision-specific date shall be used.</p> <p>Where the certificate covers various configurations, use the heading 'Configuration 1', 'Configuration 2', then list each set of installation data and required equipment.</p> <p>Where the modification converts the aircraft to a restricted category, the following note shall appear on the certificate: "With this modification incorporated, the aircraft is only eligible for the issue of a Special C of A – Restricted."</p>
<p>Certification Basis:</p>	<p>The certification basis as agreed to in the STC application process should be quoted. Also, Special Conditions - Airworthiness (SCA number), dated (date of issue of SCA), Equivalent Safety Finding or Exemption for (applicable standards/regulations), and any issue papers that form part of the certification basis.</p>
<p>End of text:</p>	<p>If continuation sheets are required, add the note '– See Continuation Sheet –'. The end of the text shall be marked: – End –</p>
<p>Signature/Seal:</p>	<p>The individual holding signing authority shall include their name and signature on a sealed certificate, on behalf of the Minister of Transport.</p> <p>TCCA project engineers should only use their names and not include professional designations or degrees held.</p> <p>If the certificate is issued by a delegate, their delegate number shall follow their name:</p>

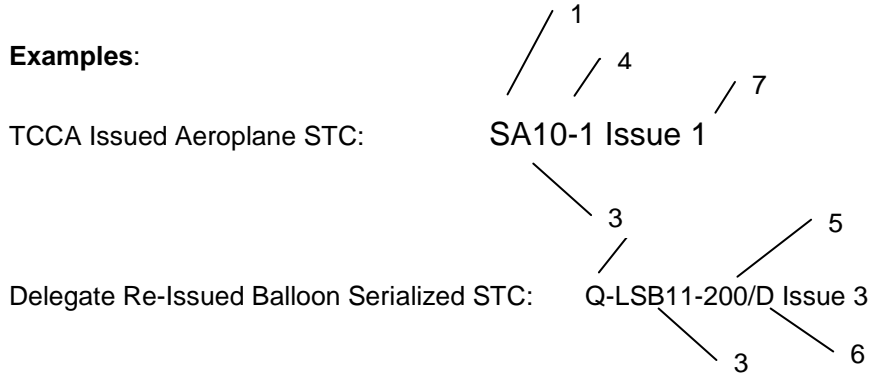
J. Smith, DAR 999
 J. Smith, DAO 99-O-01, DE 1
 J. Smith, AEO 99-Q-01, DE 1
 The person signing the certificate must have verified that compliance has been shown for all areas on the compliance program for which the approval is issued.

STC NUMBERING:

Note:

NAPA automatically assigns numbers for design approval documents.

Examples:



The number assigned to an STC, a serialized or single number STC, is comprised of the following elements:

- (1) An upper case “S” for STCs, and an “LS” for single number or serialized STCs.
- (2) For single serial number or serialized STCs, a Regional or HQ identifier as follows:

A-	Atlantic	O-	Ontario
C-	Prairie & Northern	P-	Pacific
H-	HQ	Q-	Québec

- (3) One or two upper-case letters indicating the category of aeronautical product that is eligible for the modification or repair, as follows:

A	Airplane	F	Float
AP	Appliance (CAN-TSO)	G	Glider
B	Balloon	H	Helicopter
E	Engine	P	Propeller

- (4) Two numerical digits corresponding to the year of the **approval date**.
- (5) A hyphen and sequential number, automatically generated by NAPA.
- (6) For a Delegate issued certificate, the sequential number is suffixed with, “/D”.

- (7) The appropriate issue number, beginning with 1. (Non-numeric designations such as “N/C”, “IR”, or “no revision” are **not** acceptable).

APPENDIX C – SUPPLEMENTAL TYPE CERTIFICATES DOCUMENT CHECKLIST

The following checklist will aid the quality control process for the issuance of a supplemental type certificate:

Item	Details	Yes	No	N/A
1	Is the holder legal name listed correctly?			
2	Is the issue number correct? (i.e. if the last issue was a 2, then this would be a 3).			
3	Are the approval and issue dates correct? E.g. For Issue 1, the Issue Date and Approval Date must match.			
4	Are the aeronautical product types or models listed correctly?			
5	Are the aircraft serial numbers correct if the certificate is serial number specific?			
6	Are the type certificates listed appropriate to the models listed?			
7	Is the title of the modification reflective of the design change at a fundamental level?			
8	Are the installation instructions listed accurately?			
9	Are the fabrication or manufacturing instructions listed accurately?			
10	Are the operating instructions or AFMS listed accurately?			
11	Are the maintenance instructions listed accurately?			
12	Are the dates of the documents listed on the certificates the same as the approval/acceptance dates on the actual referenced documents?			
13	Has a note been added to notify that the modification converts the aircraft to restricted category?			
14	Has the basis of certification been accurately documented in the certificate?			
15	Has the certificate been signed?			

Item	Details	Yes	No	N/A
16	Has your delegation number been identified? E.g. DAO # and DE #			
17	Has the stamp been embossed?			

APPENDIX D – LETTER FORMAT – CANADIAN HOLDERS

{Office Address}
{City, Province Postal Code}

{Date}

{Your file no.}

{Our file no.}
{Our file no. 2}

{Company Address}

SUBJECT: {Approval Number}

This **{Approval Number}** is issued in response to your application. Included with the **{Approval Number}** are the documents bearing original Transport Canada signatures.

The transfer of this **{Approval Number}** in the name of another person requires the prior approval from the Minister in accordance with section 521.357 of the *Canadian Aviation Regulations* (CAR).

Embodiment of modifications requiring certification of detail part fabrication and installation, in accordance with approved data identified on the certificate, is considered to be a maintenance activity and the requirements of subsection 571.06(4) of the CARs will apply.

A Canadian Holder is required to fulfill the responsibilities of a Design Approval Document Holder in accordance with Division VIII of subpart 521 of the CAR, including the reporting of any service difficulties experienced with their product. Therefore, should you become aware of any defect, malfunction or failure resulting from the design change, it is your responsibility to submit a Service Difficulty Report to Transport Canada.

Yours truly,

Regional Office responsible for Aircraft Certification

{Region}
{Phone: }
{E-mail:}

Enclosure(s)

**APPENDIX E – LETTER FORMAT – APPLICATION FOR FEDERAL AVIATION ADMINISTRATION
SUPPLEMENTAL TYPE CERTIFICATES**

{Office Address}
{City, Province, Postal Code}

{Date}

{Your file no.}

{Our file no.}
{NAPA file ref. }

Department of Transportation
Federal Aviation Administration
New York Aircraft Certification Office ANE-170
1600 Stewart Avenue, Suite 410, Westbury, NY 11590.

Attention: {Manager, NYACO}

SUBJECT: Application for FAA Supplemental Type Certificate {Title of Modification}

We have received an application from a Canadian resident, **{Title of design approval document holder}** for the issue of a Canadian Supplemental Type Certificate (STC) and an FAA STC to cover **{title of modification}** on **{title of aeronautical product}**.

We have reviewed the applicant's submission and certify that the design change complies with the basis of certification specified in Canadian Type Certificate **{certificate number}**. We have issued **{STC number}**, issue # **{number}**, dated **{date of certificate issue}**. We also confirm that compliance is demonstrated with FAA Type Certificate **{certificate number}**, unless additional technical conditions are applied by the FAA.

INSERT SFAR 88 PARAGRAPH WHEN APPLICABLE, I.E. FOR LARGE AIRCRAFT

Please consider this to be a formal application for an FAA STC under the provision of the Canada/U.S. Bilateral Airworthiness Agreement. In support of this application, the following are enclosed:

- 1 FAA Form 8110-12, dated **{date of FAA application}**;
- 2 Copy of Canadian STC {STC number} Issue {number}, dated {date of certificate issue};
- 3 Compliance Program, dated **{date of issue}**;
- 4 Master Drawing List/Drawing # **{number}**, Revision **{number}** dated **{date of revision}**;
- 5 Flight Manual Supplement, Transport Canada approved **{approval date}**.

(Additional supporting data, as applicable.)

Yours truly,

Regional Office responsible for Aircraft Certification

{Region}

{Phone:}

{E-mail }

enclosure(s)

**APPENDIX F – LETTER FORMAT – APPLICATION FOR EUROPEAN AVIATION SAFETY AGENCY
SUPPLEMENTAL TYPE CERTIFICATES**

{Regional header/address}

{Date}

European Aviation Safety Agency (EASA)
Programmes Department
Applications And Certifications Manager
Postfach 10 11 53
D-50452 Köln

Germany

NAPA: {file reference}

Attn: Applications and Certifications Manager

**Subject: Application for EASA Supplemental Type Certificate (STC) - Validation of Transport
Canada STC {STC number}, {description} on {aircraft / aeronautical product make
and model}**

We have received an application from the Canadian holder of the subject STC for EASA review and issue of a corresponding EASA STC.

We have reviewed the applicant's submission and hereby certify that the design change complies with the basis of certification specified in EASA Type Certificate Data Sheet (TCDS) **{TCDS number}**.

In support of this application, please find attached a copy of the Canadian STC and EASA application form 33. The applicant will supply the rest of the supporting data directly to you.

Transport Canada does not require an applicant to enter into any arrangement with a Type Certificate holder in order to grant an STC. TCCA has reviewed and confirms the applicant's justification that such an arrangement is not necessary as the information on which the application is based is adequate from the applicant's own resources. The obligations of an applicant and their technical capabilities necessary to determine compliance with the affected standards associated with a design change are outlined in section 521.202 of the *Canadian Aviation Regulations* (CARs) 521.202. The STC holder is also required to follow the requirements in Division VIII, *Responsibilities of a Design Approval Holder* of Sections 521.351 – 521.369 of the CARs (.

If you have any questions regarding this application, please contact the undersigned.

{Name and signature}

{Region}

{Phone:}

{E-mail:}

APPENDIX G – LETTER FORMAT - APPLICATION TO OTHER AUTHORITIES

{Regional header/address}

{Date}

{Address of appropriate foreign authority}

Attn: Director of Aircraft Certification Engineering

Subject: Application for Corresponding Certification of Transport Canada Supplemental Type Certificate

We have received an application from a Canadian resident, **{name of applicant}**, for the issue of a Canadian Supplemental Type Certificate (STC) and the corresponding **{country of application}** certification for **{title of modification}** on **{aircraft type}**.

We have reviewed the applicant's submission and hereby certify that the design change complies with the basis of certification specified in Canadian Type Certificate **{certificate number}**. We have therefore issued STC **{STC number}**, dated **{date of issue}**.

In support of this application, please find enclosed the following:

- (a) Foreign Form **{number}** dated **{date}** (if applicable);
- (b) Copy of STC **{STC number}** Issue **{number}** dated **{date of issue}**;
- (c) Certification Plan dated **{date of issue}**;
- (d) Master Drawing List/Drawing **{number}** Revision **{number}** dated **{date of revision}**;
- (e) Instructions for Continued Airworthiness (ICA) **{number}** Revision **{number}** dated **{date of revision}**;
- (f) Maintenance and Manufacturing Staff Instruction (MSI) 53 ICA Checklist;
- (g) Changed Product Rule Determination;
- (h) Compliance statement to SFAR 88 fuel tank safety (FAR 25.981) as applicable; and Aircraft Flight Manual Supplement, Transport Canada approved **{date of approval}**.

{Additional supporting data, as applicable}

{Any other documents listed on the Canadian approval certificate}

Please consider this to be a formal application for an equivalent {CAA} STC.

{Name and signature}

{Region}

{Phone:}

{E-mail:}

APPENDIX H – GUIDANCE ON APPROVED MODEL LIST SUPPLEMENTAL TYPE CERTIFICATES

1. A key element of the approved model list (AML) process is the use of a single set of compliance data to be applied to multiple models listed on the AML Supplemental Type Certificate (STC). The intent is to avoid duplication of testing and data gathering but still ensuring the airworthiness of the modified product. The compliance data package must be detailed enough to demonstrate compliance for all affected airworthiness standards. However, the compliance data package may be used to show compliance for multiple models on the AML STC if the similarity between the models is adequately shown and documented. The responsible Regional Aircraft Certification Office and the applicant must agree on this approach and ensure the guidelines in this Staff Instruction are applied.
2. Mixing of aircraft types, such as small airplanes, transport airplanes, rotorcraft, gliders, and balloons, may not be included in AML STCs, because of potentially significant differences in airworthiness standards and policies.
3. The AML STC certification basis may not include a combination of Chapters 523, 525, 527, or 529 *Airworthiness Manual (AWM)*. Differences between these standards may be significant, and even in instances where the standards are identical, the application of those standards may be different depending on whether a specific model is certified for instrument flight rules (IFR) operation or visual flight rules (VFR). Defining the certification basis for aircraft certified under different rules, even when they are included on the same type certificate data sheet (TCDS), will require added diligence to ensure that all applicable rules are included in the certification basis. The expected approach, when combining aircraft certified under different standards on an AML STC, would be to have all models on that AML STC meet the highest certification standards of any model on that AML STC.
4. Normal, commuter and transport category aircraft should not be included on the same AML STC, because the certification basis may be significantly different. Including restricted category with normal category aircraft on the same AML STC will require that the restricted category meet the same requirements as the normal category aircraft.
5. The AML STC applicant must clearly identify the certification basis, including amendment levels, for each of the listed models in the certification basis document for the AML STC. Because the certification basis can vary between models, each model included or added to the AML STC will require establishing its own certification basis. Each configuration of a particular model must be included in that certification basis.
6. The AML STC applicant must show the means of compliance for each of the standards listed in the certification basis for each model. Each model included in the AML STC must have the certification basis and the means of compliance to those standards included in the certification basis clearly defined and documented.
7. The AML STC applicant must determine the specific installation requirements for each model. The installation requirements must provide sufficient guidance to allow the installer to accomplish the installation and show that the installation is in compliance with the approved type design for each model on the AML STC. As part of the certification data for showing compliance, identify and address any differences in the approved models that can have an effect on the acceptability of the installation. The AML STC will require engineering data to determine proper fabrication, installation, and any other specific instructions by model type and configuration for each model listed in the AML STC list.
8. If an Aircraft Flight Manual Supplement (AFMS) is necessary, a Transport Canada Civil Aviation (TCCA) approved AFMS will be required for each model on the AML STC. An AFMS will be necessary if the installation of the item being installed by the AML STC changes performance,

emergency procedures or limitations.

9. The AML STC applicant must determine if their system has any potential negative effect on existing systems that perform required functions. In addition, the applicant must be aware of all special conditions for each rotorcraft model having systems performing critical functions and consider the impact that the introduction of their proposed system may have on these existing systems.
10. Instructions for Continued Airworthiness (ICAs) must be accepted, in accordance with TCCA Maintenance and Manufacturing Staff Instruction MSI-53 and the Airworthiness Limitation section must be approved by TCCA, for each model listed on the AML STC. The ICAs must be prepared in accordance with the requirements of Sections 523.1529, 525.1529, 527.1529 or 529.1529 of the CARs, as appropriate.
11. An AML STC does not relieve the applicant from showing compliance with all applicable regulations for each model listed in the proposed AML STC.