

**IMPLEMENTATION PROCEDURES FOR THE
TECHNICAL ARRANGEMENT ON AVIATION MAINTENANCE
BETWEEN CAAS AND TRANSPORT CANADA**

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1. **GENERAL.** Advisory Circulars (ACs) are issued by the Civil Aviation Authority of Singapore (CAAS) and contain information about standards, practices and procedures acceptable to the Authority. The revision number of the AC is indicated in parenthesis in the suffix of the AC number.

2. **PURPOSE.** This Advisory Circular (AC) is issued to provide information and guidance relating to the Technical Arrangement on Aviation Maintenance (TA-M) between the Civil Aviation Authority Singapore and Transport Canada Civil Aviation (TCCA). This document provides:
 - a) Procedures for the acceptance of maintenance organisations under the terms of the Technical Arrangement;

 - b) Guidelines for Air Operator Certificate (AOC) Holders and Approved Maintenance Organisations (AMO) contracting for or providing maintenance in accordance with the Technical Arrangement; and

 - c) Guidelines to maintenance organisations presently approved or accepted by either authority, on the transition to the new working arrangements.

3. **APPLICABILITY.** This AC applies to any organisation intending to perform work under the Technical Arrangement or to any organisation intending to contract work to an organisation

performing work under the Technical Arrangement.

4. **CANCELLATION.** This is the first Advisory Circular issued on this subject.
5. **EFFECTIVE DATE.** This Advisory Circular is effective on 10 February 2003.
6. **REFERENCES.** SAR-145; Technical Arrangement on Aviation Maintenance between CAAS and Transport Canada Civil Aviation.
7. **INTRODUCTION.** On 7 February 2003, the Civil Aviation Authority Singapore and Transport Canada Civil Aviation signed a Technical Arrangement – Maintenance (TA-M). The TA-M allows for the reciprocal acceptance of maintenance organisations qualifying under the terms of the Technical Arrangement.

TCCA presently has several Foreign Approved Maintenance Organisation (FAMO) approvals in effect in Singapore and CAAS has foreign approved maintenance organisations performing work under a Grant of Approval. This arrangement replaces the approval/acceptance of maintenance organisations under these requirements. All other applicable articles remain in force.

8. SINGAPORE REGULATORY REQUIREMENTS

The *Singapore Airworthiness Requirements Part 145* (SAR-145) requires Singapore aircraft and aircraft components to be maintained by a maintenance organisation appropriately approved in accordance with the SAR-145. The SAR-145 also contains a provision to allow the acceptance of a maintenance organisation located outside Singapore.

By signing the TA-M, CAAS acknowledges that maintenance organisations, approved in accordance with CAR 573 and qualifying under the terms of this TA-M are considered equivalent to a Singapore maintenance organisation approved under the SAR-145.

9. CANADIAN REGULATORY REQUIREMENTS

Canadian Aviation Regulations (CARs) Part VII subpart 6 (CAR 706) and Standards 726 require that Canadian registered aircraft and components operated in commercial air service be maintained by an Approved Maintenance Organisation (AMO) approved under CAR 573.

CAR 706 and CAR 573 include provisions for the acceptance of maintenance performed on Canadian registered aircraft and components by foreign maintenance organisations where an agreement or arrangement, such as the Canada-Singapore TA-M, is in force.

By signing the TA-M, TCCA acknowledges that maintenance organisations, approved in accordance with SAR 145 and qualifying under the terms of this TA-M are considered equivalent to a Canadian maintenance organisation approved under CAR 573.

10. TRANSITION FOR ORGANISATIONS CURRENTLY HOLDING CAAS OR TCCA APPROVALS

Current foreign approvals authorising Canadian organisations to perform maintenance on Singapore aeronautical products and authorising Singapore organisations to perform maintenance on Canadian aeronautical products will expire upon the organisations' compliance with the procedures outlined in this Advisory Circular.

SAR-145 organisations located in Singapore and currently holding a Transport Canada Civil Aviation foreign approved maintenance organisation (FAMO) approval should notify the CAAS of their intention to seek recognition under the terms of the TA-M.

CAR 573 organisations located in Canada and currently holding a SAR-145 maintenance organisation approval should notify TCCA of their intention to seek recognition under the terms of the TA-M.

11. CAAS ACCEPTANCE OF CANADIAN CAR 573 ORGANISATIONS

CAR 573 maintenance organisations located in Canada and intending to perform work on Singapore aeronautical products should follow the procedures detailed below.

- 1) All applications for recognition under the TA-M should be sent to:

The Director
Aircraft Maintenance and Manufacturing Branch (AARP)
Transport Canada Civil Aviation Directorate
330 Sparks Street, Floor 2
Ottawa, Ontario,
Canada K1A 0N8

- 2) Applicants should include in their application:

- a) a copy of their CAR 573 Approved Maintenance Organisation Certificate and its ratings and limitations;
- b) a copy of the Maintenance Control Manual supplement as stipulated in Annex 1 of the TA-M. The Maintenance Control Manual supplement should clearly demonstrate how the organisation intends to meet any special provisions of the TA-M. Appendix 1 of this Advisory Circular provides some guidance on how to compile such a supplement.

- 3) TCCA will acknowledge receipt of the application and commence a review of the documentation required in accordance with the TA-M.
- 4) TCCA review will confirm that the organisation has been inspected in accordance with the inspection cycle of TCCA and has been subject to an audit covering all aspects of the organisation's activities within the past 36 months. Where these criteria have not been met, TCCA will conduct an audit of the company and implement procedures to ensure that the organisation is inspected on an annual basis.
- 5) Once the above criteria are met and have been found acceptable, TCCA will recommend the organisation to CAAS for recognition under the TA-M and the scope of work that may be performed.
- 6) CAAS will notify the applicant and TCCA, by means of a letter of recognition, of their acceptance under the TA-M.

12. TCCA ACCEPTANCE OF SINGAPORE SAR-145 ORGANISATIONS

SAR-145 maintenance organisations located in Singapore intending to perform work on Canadian aeronautical products should follow the procedures detailed below.

- 1) All applications for recognition under the Technical Arrangement – Maintenance (TA-M) should be sent to:

Director
Airworthiness/Flight Operations Division
Civil Aviation Authority of Singapore
Singapore Changi Airport
P O Box 1
Singapore 918141

- 2) Applicants should include in their application:
 - a) a copy of the Maintenance Organisation Exposition supplement as stipulated in Annex 1 of the TA-M. The Exposition supplement should clearly demonstrate how the organisation intends to meet any special provisions of the TA-M. Appendix 1 of this Advisory Circular provides some guidance on how to compile such a supplement;
 - b) document(s), a letter of intent for example, demonstrating that they have potential work on a Canadian aeronautical product.
- 3) CAAS will acknowledge receipt of the application and commence a review of the documentation required in accordance with the TA-M.
- 4) The CAAS review will confirm that the organisation has been inspected in accordance with the inspection cycle of CAAS and has been subject to an audit covering all aspects of the organisation's activities within the past 36 months. Where these criteria have not been met, CAAS will conduct an audit of the company prior to recommendation for acceptance.
- 5) Once the above criteria are met and have been found acceptable, CAAS will recommend the organisation to TCCA for recognition under the TA-M and the scope of work that may be performed.
- 6) TCCA will notify the applicant and CAAS, by means of a letter of recognition, of their acceptance under the TA-M.

13. PROCEDURES FOR AMENDMENT TO CAAS/TCCA ACCEPTANCE

A Canadian organisation accepted under the TA-M shall inform TCCA when a change, which may affect CAAS' acceptance, is made to the organisation or when a revised supplement to the Maintenance Control Manual is required. TCCA will make a determination on behalf of CAAS of the organisation's suitability for continued acceptance under the TA-M and will inform CAAS accordingly.

A Singapore organisation accepted under the TA-M shall inform CAAS when a change, which may affect the TCCA acceptance, is made to the organisation or when a revised supplement to the Maintenance Organisation Exposition is required. CAAS will make a determination on behalf of TCCA of the organisation's suitability for continued acceptance under the TA-M and will inform TCCA accordingly.

14. RENEWAL OF ACCEPTANCE

In accordance with the TA-M, there is no renewal requirement for organisations accepted to perform work under the terms of the TA-M, provided that the maintenance organisation continues to meet the terms of the TA-M and the applicable regulatory requirements established by the authority having direct oversight responsibility for the organisation.

Acceptance by CAAS or TCCA is subject to the organisation's continued compliance with the local authority's prescribed requirements.

15. REVOCATION OF CAAS/TCCA ACCEPTANCE

Each Authority has a responsibility under the TA-M to notify the other Authority of any instances of non-compliance or investigations or enforcement action that might affect the organisation's ability to comply with the terms of the TA-M. Upon notification of such an event, the authority having direct oversight responsibility for the organisation will review the case to determine whether the organisation still meets the terms of the TA-M, and notify the other authority of any corrective action taken.

Notwithstanding any of the foregoing, either Authority may revoke recognition of an organisation pursuant to the TA-M, where the Authority finds that an organisation is not maintaining the applicable standards or is otherwise not achieving the intent of the Technical Arrangement.

16. PERFORMANCE OF WORK UNDER THE TA-M

Work Performed on Canadian Aeronautical Products by Singapore Approved Organisations

Organisations approved under this TA-M to perform work on Canadian aeronautical products, shall do so in accordance with the following provisions:

- 1) All maintenance of Canadian aeronautical products shall be performed in accordance with the conditions specified by the owner or operator of the aeronautical products maintained;
- 2) TCCA regulations on Airworthiness Directives, related to the work undertaken, must be complied with;
- 3) The design of major repairs and major modifications shall be in accordance with TCCA approved data;
- 4) TCCA criteria shall be used to determine whether a repair or modification is major or minor;
- 5) Any parts installed pursuant to the TA-M shall be manufactured and maintained by organisations that are satisfactory to TCCA;
- 6) Maintenance shall be released in accordance with CAAS requirements. A SAR-145.50 certificate of release to service shall be used for a Certificate of Release to Service and a CAAS Authorised Release Certificate Form CAAS(AW)95 shall be used for aeronautical products other than complete aircraft;
- 7) Technical records shall be completed in accordance with TCCA requirements;
- 8) The maintenance organisation shall comply with all the requirements specified in the TA-M, Annex 1.

Work Performed on Singapore Aeronautical Products by Canadian Approved Organisations

Organisations approved under this TA-M to perform work on Singapore aeronautical products, shall do so in accordance with the following provisions:

- 1) All maintenance of Singapore aeronautical products shall be performed in accordance with the conditions specified by the owner or operator of the aeronautical products maintained;
- 2) CAAS regulations on Airworthiness Directives, related to the work undertaken, must be complied with;
- 3) The design of major repairs and major modifications shall be in accordance with CAAS approved data;
- 4) CAAS criteria shall be used to determine whether a repair is major or minor;
- 5) Any parts installed pursuant to the TA-M shall be manufactured and maintained by organisations that are satisfactory to the CAAS;
- 6) Maintenance shall be released in accordance with TCCA requirements. A Canadian Aviation Regulation CAR 571.10 Maintenance Release shall be used for a maintenance release and an Authorized Release Certificate 24-0078 shall be used for aeronautical products other than complete aircraft;
- 7) Technical records shall be completed in accordance with CAAS requirements

- 8) The maintenance organisation shall comply with all the requirements specified in the TA-M, Annex 1.

17. SUBCONTRACTED WORK

A Canadian organisation accepted by CAAS under the TA-M may subcontract work to:

- a) any SAR-145 approved maintenance organisation; or
- b) another Canadian maintenance organisation accepted by CAAS under the TA-M; or
- c) a maintenance organisation outside Canada, provided that the subcontracted organisation is acceptable to the CAAS; or
- d) any maintenance organisation, not addressed in (a), (b) or (c) above, provided it extends its quality system to that organisation and that the work is within the scope of the ratings and limitations of the certifying organisation's AMO Certificate

A Singapore organisation accepted by TCCA under the TA-M may subcontract work to:

- a) any CAR 573 approved maintenance organisation; or
- b) another Singapore maintenance organisation accepted by TCCA under the TA-M; or
- c) a maintenance organisation outside Singapore, provided that the subcontracted organisation is acceptable to TCCA under the terms of another existing TA-M or a bilateral maintenance agreement¹; or
- d) any maintenance organisation, not addressed in (a), (b) or (c) above, provided it extends its quality system to that organisation and that the work is within the scope of the ratings and limitations of the certifying organisation's AMO Certificate.

18. HUMAN FACTORS TRAINING

Maintenance organisations working under the TA-M must establish a human factors training programme for all its technical employees performing work under the TA-M. The training must be completed within one year of acceptance. Technical employees are persons who perform functions mandated by CAR 573 or SAR-145.

Human factors training should include instruction in :

- a) Human performance
- b) Factors influencing human error including :
 - (i) fatigue
 - (ii) stress
 - (iii) assertiveness
 - (iv) awareness
 - (v) resources
 - (vi) knowledge
 - (vii) teamwork
 - (viii) norms
 - (ix) complacency
 - (x) pressure
 - (xi) distraction
 - (xii) communication
- c) error management (which includes error prevention and error containment)

¹ A listing of existing Canadian technical arrangements and bilateral agreements can be found at the Transport Canada website: <http://www.tc.gc.ca/civilaviation/maintenance/regsdocs/menu.htm>.

19. OVERSIGHT OF ORGANISATIONS ACCEPTED UNDER THE TA-M

Oversight of maintenance organisations acceptable to TCCA under the TA-M shall be conducted by CAAS on behalf of TCCA. CAAS shall make the results of all audits and inspections available to TCCA upon request.

Oversight of maintenance organisations acceptable to CAAS under the TA-M shall be conducted by TCCA on behalf of CAAS. TCCA shall make the results of all audits and inspections available to CAAS upon request.

Either Authority may, subject to reasonable prior notification, inspect the approved maintenance organisation, to investigate safety issues, or participate in audits and inspections of approved maintenance organisations conducted by the other authority.

20. NOTIFICATION OF INTERESTED PARTIES

To advise potential Canadian clients, TCCA shall make public a list of Singapore organisations accepted under the terms of the TA-M on the Transport Canada website.

To advise potential Singapore clients, CAAS shall make public a list of Canadian organisations accepted under the terms of the TA-M on the CAAS website.²

21. EXPIRATION OF THE TA-M

In accordance with the TA-M, either Authority may terminate the agreement upon 180-days written notice. In the event of termination of the TA-M, maintenance organisations recognised under the TA-M shall be given notice that their recognition expires at the end of the 180-day period.

Issued by
AIRWORTHINESS/FLIGHT OPERATIONS DIVISION
CIVIL AVIATION AUTHORITY OF SINGAPORE

² The list of approved/accepted organisations is at <http://www.caas.gov.sg>

**APPENDIX 1 : SUPPLEMENT TO THE MAINTENANCE CONTROL MANUAL/
MAINTENANCE ORGANISATION EXPOSITION**

How to read this Appendix

Where necessary, a Singapore organisation compiling a TCCA supplement to the SAR-145 MOE should refer to the highlighted parts of this appendix and ignore the underlined parts.

Where necessary, a Canadian organisation compiling a CAAS supplement to the CAR 573 MCM should refer to the underlined parts of this appendix and ignore the highlighted parts.

COVER PAGE

**CAAS SUPPLEMENT TO CAR 573 AMO / TCCA SUPPLEMENT TO SAR-145 AMO
MAINTENANCE POLICY MANUAL / MAINTENANCE ORGANISATION EXPOSITION**

REF _____

Company Name and Facility Address

TCCA AMO APPROVAL No _____

CAAS SAR-145 APPROVAL No _____

DATE OF SUPPLEMENT _____

This Supplement does not form part of the TCCA Approved Maintenance Control Manual (MCM) / CAAS Approved Maintenance Organisation Exposition (MOE).

This Supplement together with the TCCA MCM / CAAS MOE form the basis of acceptance by the CAAS / TCCA for maintenance carried out by this organisation on aircraft and/or aircraft components under the regulatory control of the CAAS / TCCA.

Maintenance carried out and certified in accordance with the referenced MCM / MOE and this accepted as meeting the requirements of SAR-145 / CAR 573.

1. AMENDMENT PROCEDURE

This paragraph should identify who within the AMO is responsible for amendment action, and that amendment must be submitted to TCCA / CAAS for acceptance.

2. INTRODUCTION

This paragraph should address why the supplement is necessary.

“Transport Canada Civil Aviation and the Civil Aviation Authority of Singapore signed a Technical Arrangement – Maintenance (TA-M) on 7 February 2003 that allows for the reciprocal acceptance of maintenance organisations qualifying under the terms of the arrangement.

This supplement is therefore intended to inform the staff of the AMO of additional considerations that need to be taken into account when working in accordance with the TA-M.”

3. ACCOUNTABLE MANAGER'S COMMITMENT STATEMENT

This paragraph represents the agreement by the Accountable Manager that the AMO will comply with the conditions specified in the Supplement. The accountable manager is usually the AMO's Chief Executive Officer (CEO) but can be a person holding another responsible position so long as he/she has full financial authority.

An acceptable statement may be as follows :

“This Supplement defines in conjunction with the TCCA Approved Maintenance Control Manual / CAAS Approved Maintenance Organisation Exposition Ref the organisation and procedures upon which CAAS / TCCA acceptance is based.

These procedures are approved by the undersigned and must be adhered to when maintenance work is being performed for any customer that operates under the jurisdiction of CAAS / TCCA and the TA-M.

It is recognised that the organisation's procedures do not override the necessity of complying with any additional requirements formally published by CAAS / TCCA and notified to this organisation from time to time.

It is understood that CAAS / TCCA will list this organisation as an acceptable source of maintenance for Singapore / Canada in a formal CAAS / TCCA publication as long as CAAS / TCCA is satisfied that the procedures are being followed and work standards maintained. It is further understood that CAAS / TCCA reserves the right to withdraw acceptance and remove the organisation from the formal publication if it is considered that procedures are not followed or that the standards are not maintained.

Signed by the Accountable Manager
For and on behalf of the AMO.

_____ (signature) _____ (date)

_____ (name) _____ (designation)”

Note: When the Accountable Manager is replaced, the new Accountable Manager must sign the statement so as to not invalidate the acceptance.

4. ACCEPTANCE BASIS AND LIMITATION

CAAS acceptance is based upon full compliance with CAR 573 and the TCCA Approved Maintenance Policy Manual.

TCCA acceptance is based upon full compliance with SAR-145 and the CAAS Approved Maintenance Organisation Exposition.

This acceptance of maintenance is limited to the scope of work permitted under the current approval granted by TCCA / CAAS to the AMO in accordance with CAR 573 / SAR-145 and to the Canadian / Singapore locations specified therein.

5. HUMAN FACTORS TRAINING PROGRAMME

To describe the human factors training programme provided for all technical personnel. This paragraph may contain a cross reference to the appropriate section of the MCM / MOE if that document contains a human factors training programme that meets the requirements of the TA-M.

6. ACCESS BY TCCA AND CAAS

This paragraph should identify the fact that CAAS and TCCA staff must be allowed access to the AMO for the purpose of assuring compliance with procedures and standards and to investigate specific problems.

There must also be an indication that in the case of a serious non-compliance with regulations or established standards the organisation must accept that it may be subject to CAAS / TCCA enforcement action in order to maintain status with CAAS / TCCA.

7. WORK ORDERS / CONTRACTS

This paragraph addresses the subject of work orders/contracts. The AMO must ensure that the maintenance contract is understood and agreed to by both parties. The customer must ensure that the work orders/contracts are detailed and clear, and the AMO must ensure it receives work orders which it understands.

The work order should specify the inspections, repairs, alterations, overhauls, Airworthiness Directives and parts to be replaced.

Such replacement parts must be manufactured or maintained by organisations acceptable to CAAS / TCCA.

8. CONTRACTING AND SUBCONTRACTING

This paragraph should address the rules for contracting and subcontracting.

9. AIRWORTHINESS DIRECTIVES

This paragraph must address the compliance with Airworthiness Directives. The applicable CAAS / TCCA regulations on Airworthiness Directives (AD) must be complied with.

The customer must provide a copy of all ADs which have to be complied with to the AMO. The customer remains responsible for specifying any AD compliance required during maintenance through the work order.

10. REPAIRS AND MODIFICATIONS

This paragraph should specify that the customer will obtain or establish the process to obtain necessary CAAS / TCCA approvals prior to the incorporation of major repairs and major modifications. The AMO will ensure that major repairs and major modifications are incorporated only when in receipt of the appropriate approvals.

11. MAINTENANCE RELEASE OF AIRCRAFT COMPONENTS

Release to service of components up to and including complete powerplants under the TA-M should be carried out in accordance with CAR 571 / SAR-145 except that paragraphs 9 and 10 of this Supplement should be taken into account and the Authorised Release Certificate (TC Form 24-0078 / Form CAAS(AW)95) should be issued.

The following statement should be reflected in Block 13 of the Authorised Release Certificate:

“Released under the terms of the Canada-Singapore TA-M”

When maintenance cannot be performed in accordance with the work order/contract, this fact must be made known to the customer.

12. MAINTENANCE RELEASE OF AIRCRAFT

Release to service of aircraft should be carried out in accordance with CAR 571 / SAR-145.50 except that paragraphs 9 and 10 of this Supplement should be taken into account and specify the aircraft maintenance check plus any repairs, modifications, Airworthiness Directives, replacement parts together with the issue of approved data used.

The following statement should be reflected on the certificate of release to service:

“Released under the terms of the Canada-Singapore TA-M”

When maintenance cannot be performed in accordance with the work order/contract, details must be entered in the technical logs and the operator informed.

When the AMO does not perform aircraft maintenance, this paragraph should specify “Not applicable”.

13. REPORTING OF UNAIRWORTHY CONDITIONS

When serious defects are found in CAAS / TCCA regulated aircraft or aircraft components, then such fact must be reported to the local authority and the customer as soon as possible and using the fastest means available. The customer shall be responsible for reporting the unairworthy conditions to CAAS / TCCA.

14. MAINTENANCE RECORDKEEPING

This paragraph should describe how the AMO intends to meet the requirements of the TA-M on the retention of technical records.