

TECHNICAL STANDARD ORDER AUTHORIZATION PROCEDURES

1. Authorization:

This procedure is according to 06-07A “Regulations Governing the Certification for Aviation Products, Appliances and Parts” ; This procedure explains how to administer the Technical Standard Order Authorization.

2. Applicability:

This procedure applies to all of the Technical Standard Order Authorization (TSOA).

3. Definition:

- A. TSO: is issued by the CAA and is minimum performance standard for specified articles used on civil aircraft.
- B. Technical Standard Order Authorization (TSOA): is a CAA design and production approval issued to manufacturer of an article, which has been found to meet a specific TSO.

4. Document, Reference, and Form:

A. Document and Reference

- (1) 06-07A “Regulations Governing the Certification for Aviation Products, Appliances and Parts”
- (2) FAA Order 8150.1 (A)- Technical Standard Order Procedures.

B. Form

- (1) TSO Application Form
- (2) CAA Form ACS-P06-02 Statement of Conformance
- (3) CAA Form ACS-P06-03 Technical Data Review Form
- (4) CAA Form ACS-P06-04 Issue Record
- (5) CAA Form 8130-09 Statement of Conformity
- (6) CAA Form 8100-01 Conformity Inspection Record

5. Application Procedure

A. Pre-Application

The Pre-application according to “Certification Issuance Procedures” “Pre-Application Phase” Section.

B. Formal Application

- (1) Applicant should complete the application form (06-07A attachment 20) and submit it to CAA. After receipt of the application data, the CAA will form a certification team.
- (2) After the certification team is formed, the team will review the certification basis with the applicant. Any deviation to the TSO standard must be reviewed and approved by the CAA.
- (3) If the CAA does not issue the TSO standard, the applicant should submit an international TSO standard with the application letter for reference. After the new applicable TSO standard is issued by the CAA, then the applicant may apply for that TSO item.
- (4) According to the 06-07A, the applicant should submit the following items:
 - (a) Registry of Factory (Copy) °
 - (b) Statement of conformance (CAA Form ACS-P06-02). To proof the article has met the required standard and submit the “Letter of Compliance” document to show that applicable regulations/standards are complied with and relevant compliance statement.
 - (c) TSO design data: design standard, drawing, function/environmental tests and minimum performance standard.
 - (d) Quality control system description: 06-07A Article 29 and 30. (If the quality control system has been approved by the CAA before, the applicant only need to label which TSO has been approved for evaluation reference).
- (5) “Letter of Compliance” document
 - (a) The purpose of “Letter of Compliance” document is to

systematically ensure that all applicable regulatory requirements are appropriately addressed and complied with. The "Letter of Compliance" document shall be in the form of a complete listing of all regulatory sections pertinent to the authorization the applicant is proposing. This list should reference applicable regulations subparts and each relevant section, TSO standard, and applicable airworthiness standards. The applicant must provide all applicable regulatory sections a brief narrative description or preferably a specific reference to a manual, procedures or other documents, which describe how each regulation will be complied with.

- (b) The applicant shall be advised that "Letter of Compliance" document must be submitted, reviewed, and accepted before the certification is complete.
- (6) The applicant should provide the certification plan to describe the certification work scope, schedule, means of compliance and tests needed to be witnessed as well as the quality control system evaluations and submit the plan to the CAA certification team for concurrence.
- (7) When requests for deviations are made because the TSO performance standards are restrictive or become otherwise unsuitable due to developments and changes in particular case. Requests for deviations from TSO standards should send application to CAA for review and approval. In deviation application, CAA should review of all information which the applicant contends provides an equivalent level of safety to that provided by the TSO.
- (8) The manufacturer of an article under an authorization TSO may make minor design changes. In this case, the application should keep the original model number and put dash plus letters or numbers to identify the part number for minor change.
- (9) The certification team will review the design and production aspects of the application item. The review works are as following:
 - (a) To check the adequacy and validity of technical data and ensure its compliance with the applicable TSO standard.
 - (b) To check applicant's quality control system;
 - (c) If manufacturer requests approval to deviate from any

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performance standard of a TSO, one should check the equivalent level of safety is satisfactory;

C. Document Review

- (1) The purpose of this stage is to review the submitted technical data if it is in compliance with the TSO standards and applicable airworthiness standards.
- (2) If the data is not complete, the applicant should submit the additional supporting data as requested by CAA. If applicant cannot submit the additional supporting data, the application will be canceled.

D. Certification and Inspection

- (1) When the certification team requests the witness items, the applicant should prepare the following:
 - (a) Applicant submits the test plan to CAA for reviewing 30 days ahead of the tentative testing date.
 - (b) Applicant submits the statement of conformity (CAA Form 8130-09), the certification team will then follow "Conformity Inspection Job Function" to conduct the conformity inspection and record it in the form CAA Form 8100-01.
- (2) The certification team will evaluate the design based on the TSO standard. Per 06-07A requirements, the team will on-site evaluate the quality system.
- (3) If there are any finding/observation/unsatisfactory items during on-site evaluation/witness, CAA will inform the applicant. The applicant should make the correction actions.

E. Issuing Certificate

- (1) The engineering data (test plan, test report, drawing, design specification etc.) is approved through the "Technical Data Review Form (CAA Form ACS-P06-03)".
- (2) After document review of the quality control system description and relevant manufacturing and process specifications, and after on-site evaluation of the Applicant's quality control system, the quality

control system description and relevant manufacturing and process specifications will be also approved through the "Technical Data Review Form (CAA Form ACS-P06-03)".

- (3) After the design and production approval, all the design data and the quality control system description are evaluated in compliance with the applicable civil aviation regulations and airworthiness requirements and will be approved by CAA. Then the CAA will issue the TSOA certificate.

F. The Administration of TSO Holder

- (1) Each manufacturer holding a TSO authorization/certificate should manufacture the article according to the corresponding TSO standard. The holder also need to establish and maintain the quality system to ensure the article can be safety operation.
- (2) The holder of a TSO authorization/certificate should follow the 06-07A requirements to mark the nameplate the following information:
 - (a) The name and address of the manufacturer;
 - (b) The name, type, part number, or model designation of the article;
 - (c) The serial number and the date of manufacture of the article;
 - (d) The CAA approved TSOA marking and the applicable TSO number.
- (3) The holder of a TSO authorization/certificate shall receive the Authorized Release Certificate before domestic delivery or export.
- (4) The holder of a TSO authorization/certificate should keep the following records in its factory.
 - (a) The effective technical data of each model includes drawing and specification.
 - (b) The complete and effective inspection records ensure all of the inspection and testing are done and registered.

The technical data as listed in above item (1) shall be retained until the TSO items are no longer produced. Inspection records as listed in above item (2) must be retained in the manufacturer's file for a period of at least 2 years.

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- (5) The TSO authorization is not transferability and effective until surrendered, suspend, revoked, or a termination date is otherwise established by the CAA.
- (6) The holder of TSO authorization should follow the requirements of 06-07A and the supervision of the CAA.
- (7) After a TSO authorization issued, the CAA will assign a principal inspection (PI) in charge of the relative matters. The principal inspector also supervises the quality system maintain and conducts periodic inspection. The inspection record of PI should keep in file. TSO certificate management includes ongoing and random surveillance. The ongoing surveillance includes product audit, QASEP Audit, PI audit and supplier control audit and is conducted on a continuing basis. The random surveillance is accomplished on an as-required basis and includes the following tasks: change control review as prescribed in Section 5G, service difficulty investigation, suspected unapproved part (SUP) investigation as well as compliance and enforcement investigation etc. The random surveillance can be also conducted to ensure that appropriate corrective actions have been taken for all noncompliance identified at a TSOA facility. The unscheduled PI or QASEP audits, supplier control audits, product audits are also performed if needed. Please refer to related Job Functions for the detailed working items.
- (8) Per 06-07A requirements, the CAA can supervise and inspect the TSO holder. If there are any non-compliance with the approved TSO standards, the TSO holder should make the correction in time. Otherwise, per 06-07A requirement, the CAA will conduct for further enforcement.

G. Management of change control

- (1) Design change
 - (a) The TSO holder may make minor change in accordance with the 06-07A Article 62's requirements. The holder should prepare the revised design data and submit regularly to CAA for acceptance and record keeping.
 - (b) The TSO holder shall apply for the new application for major change in accordance with the 06-07A Article 62 and its relative procedures.

- (2) For any change of the quality system, the TSOA holder shall notify the CAA the change in the quality control system description. The PI will conduct necessary document review or on-site evaluation on the changes. If the change is considered minor, the change in the quality control system description will be submitted to the CAA for acceptance. If the change is considered major, the change in the quality control system description will be submitted to the CAA for approval. The criteria to determine major or minor could be defined in relevant quality control system description document before the first issuance of TSOA certificate. The CAA will discuss with the TSOA holder to revise that criteria when necessary.
- (3) The TSOA holder shall notify the CAA by submitting the “Application for TSOA (CAA Form ACS-P06-01)” as prescribed in “Regulations Governing the Certification for Aviation Products, Appliances and Parts” Attachment 20, when the manufacturing facility is relocated or expanded to include additional facilities at other locations. The CAA will conduct on-site evaluation and approve the revised quality control system description. If the facility relocation or expansion result in the change of TSOA holder address, the TSOA certificate will be revised and re-issued. This requirement also applies to supplier facilities, but only to those who furnish parts or related services where a determination as to the safety and conformity to the approved design is not made upon receipt at the approved receiving facility.
- (4) Name change of TSOA holders:
 - (a) When there is a change in a TSOA holder such as a name change and the CAA determines that the change has no significant effect on the quality control system, such change is considered to be an administrative change. The holder submit the original TSOA certificate to the CAA, then the CAA will issue a new TSOA certificate.
 - (b) In case when the CAA determines that there is a significant effect on the quality control system and procedure, the old TSOA certificate should terminate and the reapply the TSO authorization for CAA approval of their quality control system as well as quality control system description the after the CAA's reevaluation.

H. Installation approval

If anyone would like to install the approved TSO articles on an airplane, the manufacturer or owner of airplane may submit the installation approval to the CAA. Under special circumstances, the TSO holder may also apply the installation approval to the CAA. The CAA will approve the installation in accordance with the type certification, change to type certificates and supplemental type certification requirements in the 06-07A.