

ORDER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8110.43

2/5/02

SUBJ: **JOINT TECHNICAL STANDARD ORDER AUTHORIZATION FOR U.S.
ARTICLE MANUFACTURERS**

1. **PURPOSE.** This order guides Aircraft Certification Offices (ACOs) in helping U.S. Technical Standard Order Authorization (TSOA) holders to obtain Joint Technical Standard Order (JTSO) Authorization from a Joint Aviation Authorities (JAA) member, from now on referred to as National Aviation Authority (NAA).

2. **DISTRIBUTION.** Distribute this order to the branch level of Washington headquarters and all Aircraft Certification Directorates; all Manufacturing Inspection Offices (MIOs); all Aircraft Certification Offices (ACOs); all Manufacturing Inspection District and Satellite Offices (MIDO and MISOs), and all Flight Standards District Offices (FSDOs).

3. **BACKGROUND.**

a. In this order, we are using the JAR 21-600 definition of an "article" as "parts and appliances of civil aircraft."

b. Previously, U.S. article manufacturers were granted individual approvals from each authority with an applicable bilateral agreement, based on the FAA TSOA. Now, the Joint Aviation Requirements (JAR) part 21, "Certification Procedures for Aircraft and Related Products and Parts" has been adopted by many of our bilateral countries in Europe. Consequently, they require U.S. article manufacturers to obtain JTSO approvals. The JAA has made available a "Practical Working Procedure for a US Manufacturer Holding or in Process to Hold a TSO authorization for an Equipment Other Than APU to Get a JTSO Authorization for Import in JAA Countries," Issue 2, March 31, 2000 (JAA JTSO Procedures). This document shows U.S. applicants how to obtain JTSO Authorizations for Import, and is available directly from JAA Headquarters.

c. U.S. applicants can continue to obtain an NAA approval from a bilateral country authority when no JTSO exists for the appliance.

d. The JAA is also developing a process for joint approval of Auxiliary Power Units (APUs). This process will be validated by a joint team and replace many independent acceptances. We in the FAA consider an APU to be a TSO article, subject to the same data requirements and application contents in this order.

e. The European Union's future European Aviation Safety Agency (EASA) will combine the activities of many NAAs. Once formed, changes to this order will comport with EASA's charter.

4. **SIMILARITIES AND DIFFERENCES IN JTSOs.**

a. JTSOs are published by the JAA in JAR-TSO. JTSOs have been developed directly from FAA TSOs and for the most part are technically identical to them. In fact, they most often reference

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either the corresponding TSO itself or the same performance standard. They follow a numbering system comparable with TSOs. For example, TSO-C39b, "Aircraft Seats and Berths" has a corresponding JAA standard, JTISO-C39b.

b. Of the 110 JTISOs for which a U.S. manufacturer could seek approval, 20 have technical differences with TSOs. When there is a technical difference, the JTISO is identified by a "2" before the "C", such as in JTISO-2C91a, "Emergency Locator Transmitter (ELT) Equipment." Those JTISOs with differences are clearly identified in Index 2 of JAR-TSO, which is available on the JAA web site, <http://www.jaa.nl>.

5. WHO IS ELIGIBLE TO APPLY, AND TO WHOM. A U.S. manufacturer must already hold an FAA TSOA for the article to receive JTISO authorization. The manufacturer makes the JTISO application to an NAA through the FAA. The application may be presented to us (the FAA) at the same time as the TSO application, or later, but the JTISO approval will not be granted until the TSOA is granted. The NAA must have such provisions in its Bilateral Aviation Safety Agreement (BASA) Implementation Procedures for Airworthiness (IPA) with us and have been acknowledged for JTISO authorizations by the JAA. A current list of acknowledged NAAs is available on the JAA website at http://www.jaa.nl/registers/jar-21_jtiso.html.

6. HOW TO GET A JTISO AUTHORIZATION. The JAA Practical Working Procedure describes the steps that a U.S. appliance manufacturer must follow to get a JTISO authorization, and the tasks for the NAA and FAA. The standard procedure can be shortened, in most cases, to what the JAA terms, "Alternative Procedure." The basic difference between the standard procedure and the alternative procedure is that under the alternative procedure, the applicant does not need to verify the requirements with the NAA before submitting a complete package. The applicant should be experienced enough with the European standard to submit a complete package. Therefore, we at the FAA intend, under normal circumstances, to use the JAA's "Alternative Procedure." See appendix 2 of this order.

a. Application. The FAA may accept the JTISO application before granting the TSO authorization, but the NAA will not grant the JTISO authorization before we grant the TSO authorization. When manufacturers submit their application package through us to the NAA, they should:

(1) Format the application according to the JAA JTISO Procedures, Annex 1. Copies are available from JAA Headquarters.

(2) Address the application to any NAA acknowledged for JTISO authorizations by the JAA. Normally this will be the NAA where a priority need for a JTISO authorization exists. Applicants need apply to only one NAA, since the JTISO authorization will be accepted by all NAAs, and authorized appliances will be accepted for import into all JAA member countries.

(3) Send copies to ACOs within their geographic area. After accepting an application and issuing the TSOA, the ACO forwards the application to the addressed NAA (see JAA web site for latest addresses). The application will include:

- (a) An application letter (see JAA JTSO Procedures Annex 1),
- (b) Brief description of the appliance,
- (c) List of applicable JTSO specifications and any requested deviations,
- (d) Statement of Compliance certifying that applicant has met the relevant requirements of the JAR-21 subpart N-O and the JTSO specification (see JAA JTSO Procedures, Annex 2) and specified the requested deviations,
- (e) Declaration of Design and Performance (DDP) (see JAA JTSO Procedures, Annex 3),
- (f) One copy of the following:
 - 1 Compliance checklist showing the methods of compliance demonstration with every applicable requirement (see JAA JTSO Procedures, Annex 4),
 - 2 Manuals required by the applicable JTSO.
- (g) JTSO identification plate drawing that includes the information required by JAR-21, subpart N-Q, Sections 21.N807(b) and (d).
- (h) Dash numbering explanation (if an applicant wants to identify the article with open brackets). When anticipating minor changes, applicant may set forth the basic model number of the article and the part number of the components with open brackets after it. This denotes that suffix change letters or numbers (or combinations of them) will be added from time to time.
- (i) An applicant's document or reference showing that the standards from which they requested a deviation (if any) are compensated for by factors or design features providing an equivalent level of safety.

b. Sending data directly. If you, the ACO, agree, the applicant can send the data directly to the NAA. In this case the applicant should add a cover letter, with a copy to you, listing the exact documents sent. These should match the documents sent by the applicant when applying for a TSOA.

c. Certifying statement. You must make the certifying statement (see appendix 1) that the appliance has been examined, tested and found to meet the applicable JTSO. Further, you must state that the requested deviations (if any) are compensated for by factors or design features providing an equivalent level of safety. This certifying statement is based primarily on the TSOA granted for the same or similar part. For any technical differences between the TSO and the JTSO, you should use the same rationale to decide how much detailed data review should be done as would be done for the TSO as identified in FAA Order 8150.1, "Technical Standard Order Procedures." For experienced and technically competent TSOA holders, their Statement of Compliance may be all that is necessary for you to make the certifying statement.

d. Approving deviations. The NAA is responsible for approving the deviations that the ACO approves. The Aircraft Certification Service (AIR-100) need not review the deviation.

e. Application transmittal. We will send the following to the NAA, identified on the TSOA holder's application letter:

- (1) The application package (see paragraph 6.a.),
- (2) A certifying statement letter (see appendix 1), and
- (3) A copy of the FAA TSOA letter.

f. Issuing the JTTSO Authorization for Import.

(1) A BASA IPA provides that the NAA may issue the JTTSO Authorization for Import without further investigation when the JTTSO and FAA TSO are identical, unless there are deviations, or it is a first-of-kind JTTSO.

(2) When the JTTSO and FAA TSO are not identical, the article must meet both standards. This can be achieved by the design encompassing both standards. If this is not possible, the appropriate authority should grant the deviation to their standard. JAA procedures require that the manufacturer hold a TSOA for the appliance, and 14 CFR § 21.323 requires that a manufacturer hoping to obtain an export airworthiness approval must hold a TSOA for that appliance. For a first-of-kind JTTSO, one that we have not issued before, the NAA may request further information to ensure that we have the latest policy regarding the JTTSO.

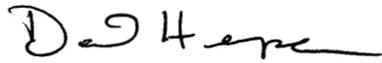
(3) When the NAA is satisfied that compliance with the applicable requirements has been demonstrated, they will issue the JTTSO Authorization for Import for the appliance. NAA will send the authorization under a cover letter to us. The cover letter will refer to the applicable requirements, the compliance demonstration document, the Statement of Compliance and the approved deviations. We will forward the cover letter and authorization to the applicant (see appendix 2 for flow chart of this process.)

7. DESIGN CHANGES. Major design changes require a new application. A major design change, as defined in JAR-21, subpart N-O, Section 21N611(b), is a change extensive enough to require a substantially complete investigation to determine compliance with the JTTSO, as defined for TSOs in 14 CFR § 21.611(b). For minor design changes, JAR- 21, Subpart N-O, Section 21.611(b) requires that revised associated data be submitted to the issuing NAA. The data is processed in accordance with the latest BASA IPA with the issuing NAA. If the IPA does not cover this, the applicant sends the data directly to the issuing NAA.

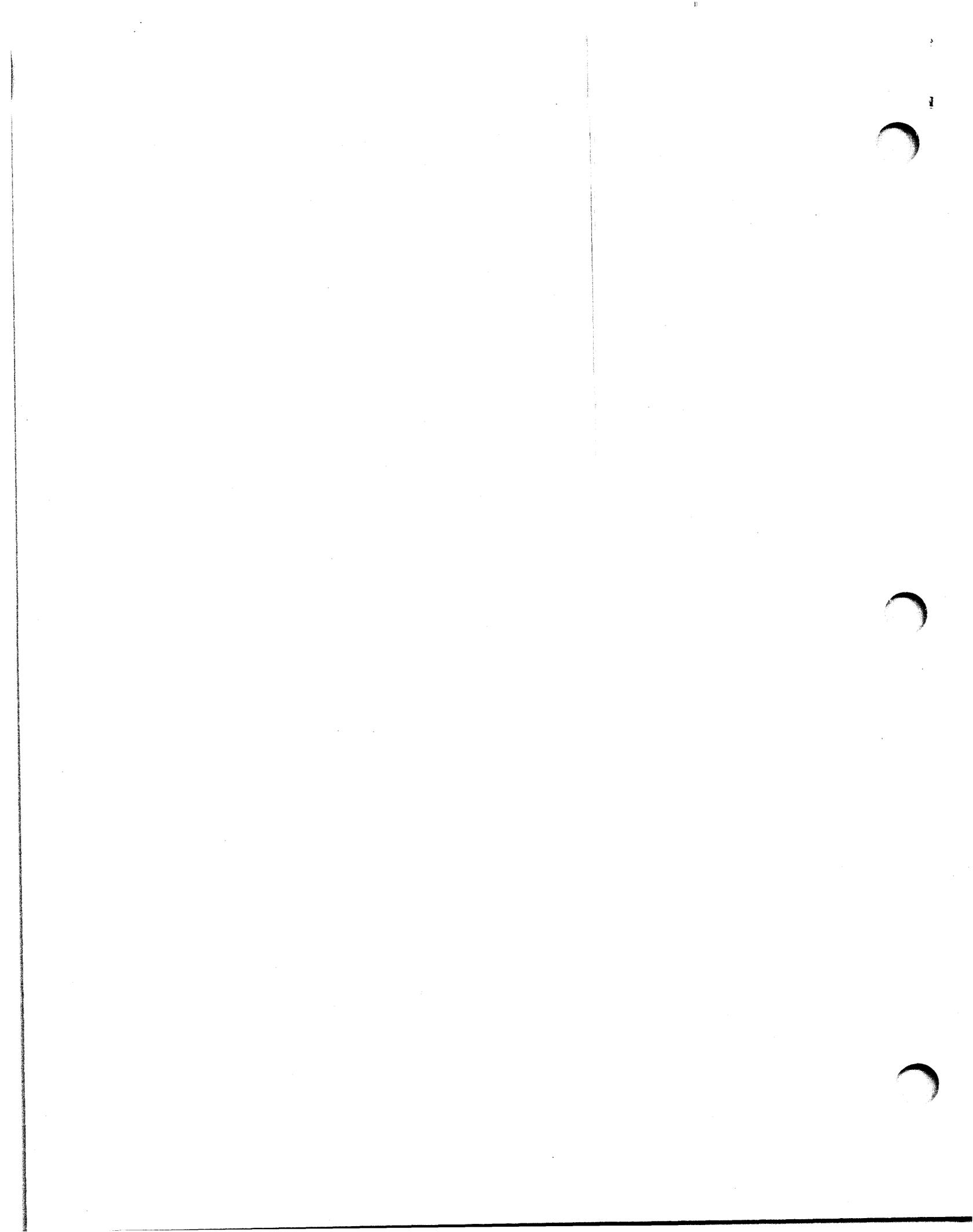
8. TSO AUTHORIZATION WITHDRAWAL OR SURRENDER. When a TSO authorization has been surrendered, withdrawn, or otherwise terminated, we must notify the NAA that granted a corresponding JTTSO authorization, if one exists.

9. **MARKING.** Having received the JTSO authorization, the applicant can then mark the appliance per the JTSO and JAR-21, Subpart N-Q, Sections 21N807(b) and (d).

10. **EXPORT CERTIFICATION.** Applicants should include, with each JTSO appliance they export to any NAA, an FAA Form 8130-3, Airworthiness Approval Tag, in accordance with the BASA IPA with that NAA.



David Hempe
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Aircraft Certification Service



SAMPLE CERTIFYING STATEMENT LETTER

FAA	to	NAA
		Attention:
N/REF:		
V/REF:		

Subject: JTSO Authorization

Sir,

Please find the FAA concurrence related to the statement of compliance for a JTSO-[...] Authorization approval according to JAR 21N605 , filed by the company:

Name and address of the company

For the following equipment :

- **TYPE OF EQUIPMENT:**
- **P/N:**

This equipment has received the TSO authorization referenced dated

This equipment is manufactured in accordance with the FAA approved [*applicant*] quality assurance procedures.

We hereby, certify that this equipment has been examined, tested, and found to meet the JTSO-XXX standards. Requested JTSO deviations, if any, are compensated for by factors or design features providing an equivalent level of safety, and documented in the attached item titled (Equipment Model Number) JTSO Deviations.

We certify that the FAA will assist in the management of continued airworthiness.

We are looking forward to your response,

Sincerely.

Manager, XXX Aircraft
Certification Office

Enclosures:

- Statement of compliance referenced.....dated.....and JTSO deviation document
- TSO authorization letter dated
- DDP referenced.... Issue
- Manuals (Installation, Repair...) (if not previously provided)
- JTSO identification plate
- Dash numbering explanation
- JTSO deviation document

PROCEDURE FLOW CHART

