

Major Repairs/ Major Alterations on Special Light Sport Aircraft

There have been multiple questions from mechanics and LSA owners about proper documentation and authorization of major repairs and alterations in the field.

The definition of a major repair or alteration for SLSA was required to be included in the ASTM standards by the FAA and is documented in the preamble of the final rule. ASTM defined the terms in ASTM F2483 as follows:

3.1.10 *major repair, alteration, or maintenance*—any repair, alteration, or maintenance for which instructions to complete the task excluded from the maintenance manual(s) supplied to the consumer are considered major.

3.1.11 *manufacturer*—any entity engaged in the production of an LSA or component used on an LSA.

3.1.12 *minor repair, alteration, or maintenance*—any repair, alteration, or maintenance for which instructions provided for in the maintenance manual(s) supplied to the consumer of the product are considered minor.

There have been questions as to who can perform a major change or alteration: ASTM F2483 9.3 states that the manufacturer must identify in writing the instructions for the modification, who is authorized to perform the modification, and the level of certification that person performing the modification must have.

9.3 The manufacturer or other entity that performs the evaluation shall provide written instructions and diagrams on how, who, and the level of certification needed to perform the alteration or repair.

There have been questions as to who the manufacturer is, i.e. can a distributor authorize a change? The FAR's are clear (Reference 91.327(a)(5),(6)(7)) that any modification after the date of manufacturer must be authorized by the

manufacturer, inspected by procedures developed by the manufacturer and recorded in the specific aircraft, i.e., serial number, records.

The FAA considers the manufacturer as the entity that attests to compliance with the ASTM standards on the FAA form 8130-15. Further the ASTM QA standard F 2279 requires that the person signing compliance with the ASTM standards be specifically identified in the manufacturers QA manual and that the approval be accomplished in accordance with a documented system/procedure that assures that the aircraft continues to comply with all the applicable ASTM standards.

There have been questions about what documentation is required to be in the aircraft records for any major change and or alteration.

The manufacturer is required to provide:

Directions to accomplish the task;

Detailed instructions and diagrams -as needed to perform the task;

Method to test/inspect to verify the task was accomplished properly; and

Affidavit stating that the modification, repair or alteration will not change the aircraft flight characteristics.

Reference:

9.2 The manufacturer or other entity that performs the evaluation of an alteration or repair shall provide a written affidavit that the aircraft being altered will still meet the requirements of the applicable ASTM design and performance specification subsequent to the alteration.

9.3 The manufacturer or other entity that performs the evaluation shall provide written instructions and diagrams on how, who, and the level of certification needed to perform the alteration or repair.

9.3.1 The instructions must include ground and flight testing

that complies with the original ASTM production acceptance testing standard, as appropriate, to verify the alteration was performed correctly and the aircraft is in a condition for safe operation.

9.4 The manufacturer or other entity that performs the evaluation shall provide information to the owner of the aircraft for the documentation of the alteration in the aircraft's records.

Major repairs and major alterations may only be accomplished on SLSA by a repairman (light-sport aircraft) with a maintenance rating, a certificated mechanic with A&P ratings, or a certificated repair station. The manufacturer must provide the level of certification to perform the task and the technical data for such a repair or alteration and identify the training required, if any, to perform that repair or alteration.

This technical data is call a Letter of Authorization (LOA) and is required for **all** major repairs, modifications or alterations performed **after the SLSA is certificated**

Ø Manufacturers may develop repair and alteration manuals

Or refer to other repair and alteration manuals available from another source.

This technical data must include:

1. The make, model, and serial number for the aircraft

The level of certification to perform the task. The manufacturer may name a certain Repairman or A & P in the letter. When listing the level of certification needed to perform a task the manufacturer shall use one of the following descriptors

- ***LSA Repairman Maintenance***
- ***A&P***
- ***Repair Station***

– ***Task Specific***

3. A List of tools to perform the task.
4. The materials needed to perform the task
5. Directions to accomplish the task
6. Detailed instructions and diagrams -as needed to perform the task, and
7. Method to test/inspect to verify the task was accomplished properly.
8. Affidavit stating that the modification, repair or alteration will not change the aircraft flight characteristics.