



June 8, 2012

Dear LSA Manufacturer (or importer):

The following letter from Larry Burke employs his long experience on audit reporting. The purpose is to provide an outline that your company can use to issue Findings and Corrections reports on your (ASTM mandated) annual internal audit.

If you declared compliance on FAA form 8130-15, you are *required* to perform an annual internal audit. LAMA believes if you report this action to FAA, you will be better prepared for a visit from FAA. An FAA audit visit that finds you less than fully prepared can result in your company not being able to receive any new airworthiness certificates until all shortcomings are corrected to FAA's complete satisfaction.

If this happens, it means your company will not be able to deliver any new aircraft. This can present a very serious and real threat to your company. We urge you to conduct your annual internal audit and to prepare a short report of this action.

The outline below includes the most relevant information to include in your internal reports. We believe the outline has value to the LSA industry so we are extending the service at no cost to all producers of Light-Sport Aircraft that have declared compliance to ASTM standards. LAMA intends that reporting on your internal audit to be a purely voluntary action. Our goal is to promote the industry and increase quality and safety.

On behalf of LAMA and LAMA Europe, best regards,

Dan Johnson  
LAMA president  
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Jan Fridrich  
LAMA Europe chairman  
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## **Letter from Larry Burke, founder and chairman emeritus of LAMA**

Purpose: to offer you an outline for internal audit reporting

### INTRODUCTION

During AirVenture 2011, I interviewed a number of producers, discussing the content of an internal audit.

Everyone should recall that in the current ASTM QA Standard, annual internal audits are to be conducted by each LSA manufacturer, and held in readiness for FAA inquiries.

During my meetings at AirVenture 2011 with FAA personnel connected with LSA, they told me that internal audit reports would go a long way towards satisfying FAA that the LSA manufacturers were conducting their business and manufacturing properly, and in accordance with the ASTM LSA Standards.

They further told me that these reports would be compared to FAA field findings during their own auditing, and *could* ease the need for further FAA field audits.

#### **Internal Meetings:**

Surely you have conducted both informal and formal meetings with your staff regarding issues that have come up while doing business during each year. You should document the key decisions of these meetings, even by memory recall if no written records were made, and show how you resolved the issues.

In QA parlance, this process is called "Findings," that is, issues are identified, and "Corrective Action," that is, the issues are in process of solution or successfully resolved.

#### **Material, Assemblies, Drawings, and Manufacturing Controls:**

Surely each manufacturer has some method of purchasing materials, and perhaps parts and subassemblies, and once in the factory, assuring that these items are as ordered, and that those items conform to factory drawings, as follows:

- That factory drawings are changed by some procedure to assure the drawings used in the manufacture of the product are correct and only the latest revision is used in the manufacture of the aircraft.
- That these changes conform to the requirements of the ASTM LSA Standards.
- That processes and on-going and final inspections used in manufacturing and assembly of the final product are documented in some fashion, so that each and every product (aircraft) conforms to the original successfully tested prototype per the ASTM LSA standards requirements.

If any of these purchasing, processes, drawings, controls, inspections need modifying to assure the quality of the aircraft, then these also are called “Findings,” and what you do to make them better or correct is called “Corrective Action.”

### **Annual Audit:**

Therefore, these reports assure that the total collection of all the things you do on a daily basis in the management of your company, and the production of aircraft are documented in some fashion.

Findings and Corrective Action reports assure the key elements of your annual internal audit are presented, usually in no more than a one-page document, with what you have done or are doing to correct any deficiencies.

This one or two-page document should be called an “Annual Audit Report.”

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## OUTLINE FOR REPORTING FINDINGS AND CORRECTIVE ACTIONS

### **Template Check List for Annual Audit...**

#### **Introduction:**

It is up to the management of the company to decide the extent of an internal audit, but the normal thing is to concentrate on areas where there have been issues (problems), or areas that management would like to know more about, or to check that key things are proceeding as expected.

These elements of audit are usually those that come up in the course of doing business over the year.

Normally an internal audit consists of investigating the following **three major elements**:

- (1) Management System
- (2) Company processes
- (3) Product

**FAA Field Audit Findings:**

Regarding the field auditing of the LSA manufacturers by the FAA, a **fourth element** has been added, and that is areas of specific interest and findings by the FAA, called "Key FAA Interests."

To make sure that the "FAA Interests" are current, LAMA encourages manufacturers to cooperate with each other and share the FAA interests after the FAA field audit. If manufacturers will also share FAA visit results with LAMA, the organization will remain informed and relevant and can better speak on behalf of the industry.

**A. Key FAA Interests** (as of July 2011):

- (1) Continued airworthiness
- (2) Documentation supporting design and prototype testing
- (3) Quality, especially key findings and corrective action (annual audits)
- (4) Critical process and production controls.
- (5) POH and Maintenance manuals

**B. Management System/Controls:**

1. All documentation supporting and documenting claim of prototype aircraft meeting ASTM LSA Standards:
  - (a) Design and Performance of a Light-Sport Aircraft,
  - (b) Standard Practice for Quality Assurance in the Manufacture of Fixed Wing Light-Sport Aircraft
  - (c) Maintenance and the Development of Maintenance Manuals
  - (d) Standard Specification for Pilot's Operating Handbook for Light-Sport Aircraft

2. Auditor selection/ Audit plan/ Checklists/ Audit meetings/ Reporting Audit findings and Corrective Action.
3. All documentation supporting, and methodology in place for:  
Continued Operational Safety Monitoring of a Light-Sport Aircraft

**C. Manufacturing Processes/Controls:**

1. Material/ subassembly/ parts procurement and control including incoming inspection
2. Drawing controls
3. Production controls
4. Tooling control and calibration
5. Corrective Action
6. Archiving/ Record retention and protection
7. Continuing Airworthiness: (field feedback, directives to field)
8. Assigned persons for each position: Auditors/ Quality Personnel, Management Personnel
9. Schedules: what is intended to be accomplished by what dates?

**D. Products (Aircraft), including:**

1. Final inspections
2. Ground and flight testing
3. Final certification that product (aircraft) is airworthy and ready for use

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**Larry Burke Comments:**

The fact that LSA manufacturers continue to produce airworthy aircraft, and these aircraft are used successfully in the various things allowed for LSA is a strong argument that the manufacturers are doing an adequate job in all the elements of quality control.

The SLSA safety record, which FAA calls “acceptable” (their word, often repeated) also shows the building of LSA under ASTM standards is working reasonably well. However, FAA also expects you to demonstrate via written documents that you can prove you are adhering to all ASTM standards.

You can see that the collection of the key elements of every day activity can be presented nicely in an annual audit report.

I would strongly recommend that you do this, and voluntarily present these one or two page reports to the FAA.

If nothing else, doing this would surely give the FAA the confidence that the manufacturing community is indeed doing a proper job of documenting their quality control findings and corrective action in the production of airworthy aircraft.

Submitted by:

L. Burke,

LAMA chairman emeritus

P.S. LAMA has a detailed checklist series for the six major ASTM standards that you can use to review your compliance. These checklists are free to LAMA (U.S.) members for an annual membership fee of \$500, or €1.000 for LAMA Europe. Joint memberships are also possible. To become a LAMA member (either or both organizations) write office manager Randee Laskewitz at [Randee@LAMA.bz](mailto:Randee@LAMA.bz) or call or text to (USA) 651-226-1825. Payment can be made by credit card or by check payment or wire transfer. The checklists alone may be worth the price of membership especially compared to FAA ceasing to allow new airworthiness certificates to be issued.

In addition LAMA focuses on three **REP** activities for the LSA producer community:

**REPRESENT** — Be the industry's voice to news media, to FAA/NTSB, to show producers, to insurance and finance companies.

**ENCOURAGE** — All manufacturers of ASTM-compliant products must conduct annual internal audits which they should report. (*This letter addresses this element.*)

**PROMOTE** — Beyond the LSA Malls and other current activities promoting the industry, further actions will be considered to promote the several benefits of LSA beyond the lack of a need for an aviation medical.