



**LSA Working Group**

# **The case for an LSA regulatory package in Europe**

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## The case for an LSA regulatory package in Europe

The LSA category grew from European microlighting roots.

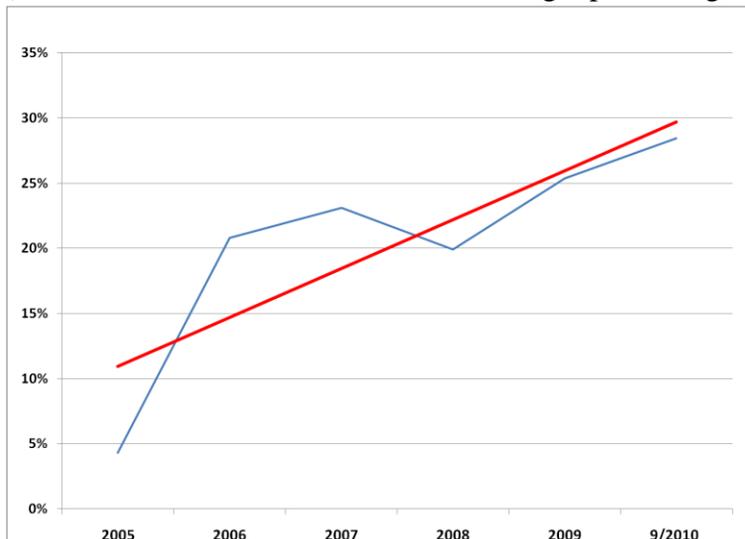
Freed from the shackles of conventional aviation regulation for design, manufacture and operations, the European microlight movement has flourished and grown from its origins in the early 1980s. Technical evolution was rapid and the simple aircraft that started the movement have developed into practical high efficiency and high performance aircraft.

As the sport of microlighting became more mainstream and offered a modern affordable alternative option to GA recreational pilots, the manufacturers increasingly pushed the boundaries of the microlight definition in response to the market demand. Versions of their aeroplanes were also made available with higher MTOM for sale in the home-built sector. The manufacturers also started exporting fully-built heavier versions for export to countries where legislation allowed them .

The writing was on the wall, and the US responded with its LSA regulatory package developing simple declarative systems and consensus standards through ASTM, for design and manufacture of ready-built sport aircraft below 600Kg MTOM. This had lead to a healthy market and a rejuvenation of recreational flying in the US. Many other countries around the world have also adopted the system.

**The irony is that the majority of the aeroplanes supplied to this market come from European manufacturers. Yet there is no similar system to enable these aircraft built according to the LSA regulations to be flown in Europe.**

Graph 1: USA SLSA Registration versus Total World SEP Deliveries  
 (Note that at least one out of three new single piston engine aircraft is SLSA!)



The announcement by EASA of the creation of the ELA process was thought by many to hold promise of being the European equivalent. **However, whilst ELA is a significant easing for some aircraft categories, the result for light two-seat sports aircraft is a process significantly more burdensome for design, manufacture and operation than the US LSA system.**

**Many now believe the answer is to create a specific category for sub 600kg aeroplanes and adopt the LSA system in a manner as closely equivalent as possible.**

### ***Why is the EMF interested to promote LSA?***

As the LSA grew from the microlight movement the LSA culture is very close to that of microlighting and the EMF. Many of the European LSA manufacturers began as microlight producers and are now producing LSA aircraft for export to non-European countries. The EMF wishes to support them with a European home market and to benefit from the development they make.

Many of the EMF member associations, as well as overseeing microlights in their individual countries, are also involved in overseeing home-build types that are above 450 Kg MTOM, and have a large proportion of their individual membership who desire a specific LSA regulation package to suit their needs and their desires to not always have to construct or assemble such an aircraft themselves as the only option.

Some of the smaller member countries in the EMF have national regulations for their microlights that are significantly more burdensome than those for the US LSA, and therefore may benefit from such a European regulation.

Many of the EMF associations' individual members fly the 'top end' microlights, (many of which have an identical basic structure to exported LSA versions) and wish to reclassify or progress to aircraft within the LSA definition to take advantage of higher payload.

## ***The EMF position***

The EMF wishes to keep a clear distinction and a class for microlights in accordance with the current definition in Basic Regulation (EC) No. 216/2008 Annex 2 paragraph e), separate from any LSA initiative.

The EMF has set up an LSA project group with the following remit:

***To support the activities of other bodies working towards the goal of a European LSA with regulations inspired by those of microlights***

Therefore the EMF seeks collaborative partners to implement a European /Global LSA with regulations inspired by those of microlights. In this collaboration the EMF will bring some expertise in LSA regulation and industry contacts and lend the weight of the Federation, which currently consists of some 40,000 individual members.

## **The EMF LSA proposal:**

The EMF believes that current EASA regulatory effort is not delivering what is necessary for further development of sport and recreational aviation. In the EMF view the LSA could become the entry category for aviation. To address needs of EMF members and other pilots EASA should create a stand-alone LSA category as compatible as possible with the US LSA system.

A positive consequence of this could be a Global LSA system which should be the long term target.

During the meeting in AeroVenture 2010 the FAA Administrator Randy Babbitt stated that the safety of LSA is better than expected. Here is a proof, that the US LSA concept based on initial airworthiness self-declaration as well as sensible and proportionate maintenance regulations, do not create a safety problem. Because 65% of US SLSA come from Europe (see Graph 2. On next page) the EMF is of the view that the same system could be used in Europe.

The concept of a standalone LSA could work; standalone does not necessarily mean that it is without EASA, but it means that it has a separate and distinct place in the hierarchy of EASA rules.

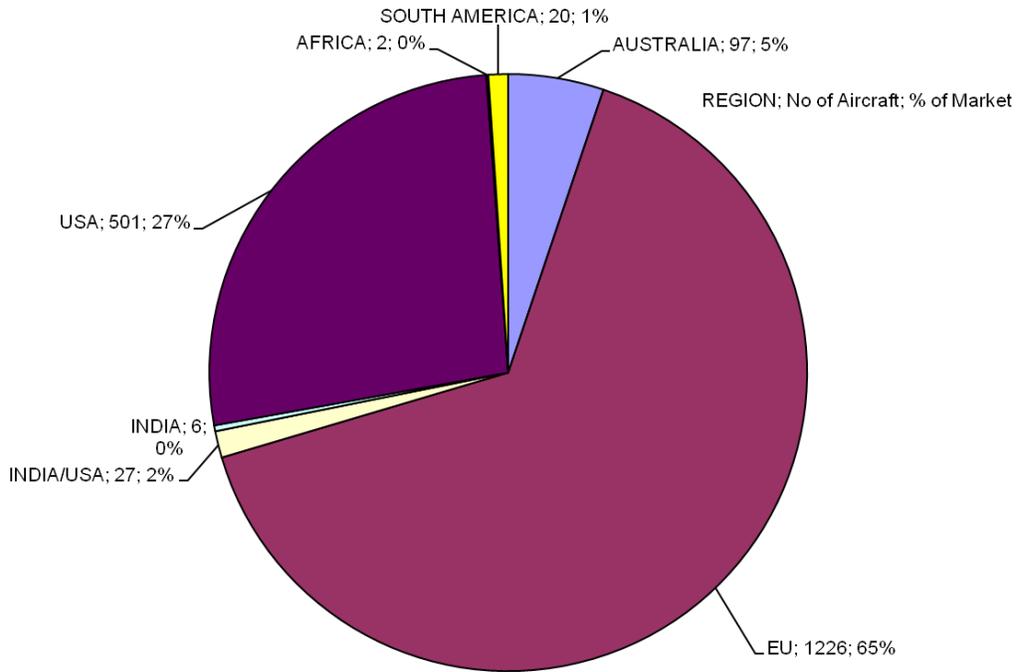
It has been done this way in the USA; the FAA helped to create the LSA category inside the FAA rules, the FAA retains the auditing function, but does not directly govern the process.

One possibility could be the creation of a Light Sport Directorate within EASA in order to address the needs of light aviation industry.

This means that we could ask for change of Basic Regulation which would say:

ANNEX LSA – Notwithstanding all the above, for LSA planes defined as.... the following rules apply: Airworthiness, Licensing, Operations, Maintenance.....

Graph 2. Registered 3-axis control S-LSA as of 1-st September 2010 by region of origin



## LSA Solution

The EMF proposes the creation of an LSA solution. . **A positive consequence of this could be a Global LSA system which should be the long term target.**

In order for this to work the system must consist of balanced rules for:

- **Airworthiness** – define realistic payload
- **Licensing** – simple and proportionate medical; clear transition from microlights with cross crediting of experience and the possibility to continue to LAPL or PPL)
- **Operations** (definition commercial: it is necessary to define what the aeroplane is allowed to do)
- **Maintenance** – sensible rules allowing for extensive pilot-owner maintenance, based on US Light Sport Repairman rules

### ***Main features :***

- Establish and maintain a worldwide LSA definition – for example CS-LSA
- Allow use of common industry consensus standards (ASTM and possibly others) as a means of compliance for not only design but manufacturing, quality assurance, continuing airworthiness, maintenance, etc.
- Required initial conformance check by Qualified Entity to assure the manufacturer complies with the relevant standards (this would be instead of a type certificate and DOA/POA and more than U.S. declarative system).
- Required periodic "audit" of manufacturer by Qualified Entity or delegated person/group. This could be an air sport association, national aeroclubs, LAMA EUROPE, etc. though the conditions in Annex V of 216/2008 are a barrier to most air sports organisations and similar becoming QEs
- Coordination between national aviation authorities worldwide on LSA consensus standards development and implementation.
- Coordination in gathering safety data and service data

## Detailed description

Overall the new LSA system must stay closer to existing microlight rules than to current EASA rules otherwise it will not work – so the principles of LSA and microlight rules need to be transferred into EASA system.

**The main principle must be, the rules (and EASA) are here for pilots not the other way around!**

### *Airworthiness rules*

A simple European Type Certificate based on the common (global) airworthiness code ASTM F2245 (no DOA and POA required or very simplified - again the same as used by LAA CR in CZ) with a clear definition what this aeroplane could do - use exactly the same definition as in the USA.

The proposed CS-LSA could be used, providing that the unknown additional requirements added by EASA after the end of MDM032 are acceptable.

It is necessary also to have ELSA – experimental LSA – these are aircraft built from kits of SLSA (Special Light Sport – company built), no 51percent rule required. The current proposed EASA rules are not concerned with this as these aeroplanes are Annex II. ELSA requires at least one approved SLSA – this is quite a significant requirement.

The system could be self-declarative with mandatory oversight by a Qualified Entity - Industry can set up one - for example LAMA EUROPE.

There should be a good transition system for aeroplanes and microlights enabling transfer to the ELSA category.

### **Below is a description of one possible solution for initial airworthiness:**

1. The manufacturer declares compliance and produces a compliance document. The document must have two signatures. Second signature can be from another engineer within the company, or from an outside consultant engineer, or from a local association like BMAA, UK LAA, DULV, DAeC or LAA CR etc.
2. A ‘qualified entity’ (national association) then audits the company initially and periodically. The audit is divided into two sections – a production audit and a design audit. The design audit consists of ‘cherry picking’ from the compliance document, taking a small section and examining it and the supporting technical justifications, tests etc. If all is satisfactory then the audit is passed. If there is a problem with what has been found then depending the considered safety implications sanctions can be made – up to complete fleet grounding.

This system allows manufacturers to get on and design and modify and develop aircraft without design survey fees and big delays waiting for responses.

Alternatively the French system of backing up a declaration with the submission of a ‘dossier technique’ (a design compliance submission) which is lodged, checked that something exists for each section, but only checked after complaint or safety problem, discourages cheating.

### ***Maintenance rules***

Simple maintenance by owner based on manufacturer’s approved maintenance manual, extended pilot-owner maintenance privileges (compared to Part M), and a specific “LS” or “Light Sport” maintenance licence patterned after the US Light Sport Repairman certificate.

For example, to earn an FAA repairman certificate, you must:

- Be at least 18 years old
- Speak, read, and understand English
- Demonstrate the requisite skill to determine whether an E-LSA or S-LSA is in a condition for safe operation
- For an Inspection rating—complete a 16 hour course on the inspection requirements of the particular class of light-sport aircraft;
- For a Maintenance rating—complete a course – 120 hours (aeroplane category); 104 hours (weight shift or powered parachute); 80 hours (glider or lighter-than-air) - on the maintenance and inspection requirements of the particular class of light-sport aircraft.

Other LSA Maintenance Options:

The annual condition inspection on special light-sport airworthiness certificated aircraft can be completed by:

- An appropriately rated mechanic—that is, A&P
- An appropriately rated repair station; or
- A light-sport repairman with a maintenance rating.
- maintenance can be performed by a licensed pilot (Sport Pilot rating or higher)

The annual condition inspection on experimental light-sport airworthiness certificated aircraft - can be completed by:

- An appropriately rated mechanic—that is, an A&P
- An appropriately rated repair station; or
- A light-sport repairman with a maintenance rating; or
- A light-sport repairman with an inspection rating (only on aircraft you own).

No rating is required to perform maintenance on experimental light-sport airworthiness certificated aircraft.

So for the private operation no Part M is needed, maintenance can be done by the pilot/owner according to the manufacturer’s approved manual.

If operated for flight training or rented on a commercial basis the maintenance must be done by person who is holding the "LS" licence - but it would be highly desirable to make sure that existing microlight technicians and inspectors could transfer easily to the LS licence system.

The above proposal is based on the track record of the US LSA system as well as the good experiences from maintenance of 40,000 European microlights, many of which are of comparatively complex construction (e.g. retractable landing gear and in-flight adjustable propellers) – but still successfully maintained by their owners.

### ***Operation rules***

In order to avoid difficult discussions as to what is commercial or not there must be a clear definition what LSA aeroplanes could do - it is proposed to use exactly the same definition as in the USA:

**Aircraft must meet industry consensus standards. Aircraft under this certification may be used for sport and recreation, flight training, and aircraft rental.**

**Can be licensed Experimental Light-Sport Aircraft (E-LSA) if kit- or plans-built. Aircraft under this certification may be used only for sport and recreation and flight instruction for the owner of the aircraft.**

In addition to this the EMF believes EASA must revert to original MDM032 idea. During the work of MDM032 the following conclusion was agreed and passed to the OPS WG:

- for aircraft below 2000 kg MTOM the Essential Requirements should be applied directly except for 3 additional Implementing Rules: (COM/NAV equipment, safety equipment, fuel reserves)
- for aircraft above 2000 kg MTOM OPS 0 should be applied

*see MDM032-DOC082 MoM 2007-04-17-19 Final Version.doc*

The text can be modified so that for LSA aircraft the Essential Requirements are applied directly except for 3 additional Implementing Rules: (COM/NAV equipment, safety equipment, fuel reserves).

### ***Licensing rules***

The license must be simple with simple and proportionate medical, and must recognize the value of microlight training and experience, and the competence of a pilot trained through this system. An example is the way how such recognition and cross crediting to the NPPL is done in the UK.

### **Basic licensing requirements**

Training similar to the current microlight training in the majority of EU countries (about 20-25hours training - competency based).

Simple medical - maybe based on driving licence or maximum ICAO Class 2 requirements.

This licence could be part of LAPL system - instead of Basic LAPL or as a separate LSA licence.

There should be a transition and crediting path from the LSA licence into heavier ELA aircraft.

The ability for conversion of current microlight pilots is very important:

### **Crediting for Microlight Pilots to Light Aircraft Pilot License**

Pilots who have been nationally certified to fly Annex 2 (e) aeroplanes in their country should be able to convert to a LAPL by following this proposed procedure:

1. Carry out such conversion training as judged necessary by a LAFI conducting the training, to achieve the required standard for the applicant to undertake the LAPL practical examinations.
2. The pilot successfully passes the theoretical and practical examinations for the Light Aircraft Pilot Licence.

(The holder of a LAPL licence qualified by being credited with prior experience shall not carry more than one passenger unless he has completed at least 50 hours flying as PIC of an aeroplane. This would be in compliance with EASA SPL FCL.205.S (b) (1).

### **Crediting for Microlight Instructors to Light Aircraft Pilot Instructor Licence**

Existing national rated microlight instructors could easily change to teach on these types - and retain the ability to earn remuneration whilst doing so (like it is in most of Europe for microlight instructors / schools).

Proposal:

Instructors nationally certified to instruct on Annex 2(e) fixed-wing aeroplanes and who have sufficient recent instructor experience (e.g. 3 successful students in last 2 years, or who are subject to regular national renewal of their instructor rating by examination) and pass the LAFI theoretical and practical examination, can be granted LAFI privileges.