Regulatory Impact Assessment

Options for regulatory action in relation to aircraft within the scope of the European Light Aircraft group 1 process, resulting from a study of microlight aeroplane regulations in Member States
(Short title: "Microlight Study")

Contract: EASA.2009.C53

A Synopsis

7th October 2010

Introduction

The RIA discussion and process is based on a study of regulations applied to microlight aeroplanes (< 451kgs MTOM) in Europe, and also the Light Sport Airplane (LSA) in the USA (<601kgs MTOM). Microlights in Europe remain outside of EU Community regulation and are subject to a variety of national regulations. In the USA, the FAA regulates the LSA quite differently to the methodology applied in Europe for the same MTOM range. The study also collected accident data (primarily for fatal accidents) in both the microlight sector and also the USA LSA category, together with comparative accident data where available, for Community-regulated light aeroplanes, gliders and balloons.

The purpose of studying the European microlight and US LSA experience was to see if there are benefits – economic, social, technical, environmental - in the regulatory approaches for microlights and the US LSA that may be used in the rule-making task for the ELA 1 sector, without materially adversely affecting the safety record of the Community-regulated sector.

ELA 1 is a proposal by EASA for a process of regulatory compliance for airworthiness and covers aeroplanes from 451 to 1200 kgs MTOM sailplanes and balloons.

The RIA analyses five options for the regulation of light aircraft in the ELA 1 MTOM range.

The outcome of the RIA is a recommendation that the Option 2 proposal of using accredited bodies under delegation from either the NAAs or EASA to undertake compliance functions should be investigated further, together with a consideration of the use of a consensus system (Option 1) of arriving at certification specifications for original airworthiness.

Based on this RIA and the Final Report, EASA will evaluate options and make recommendations for any changes to the Basic Regulation and supporting Implementing Rules in respect of the complete range of regulatory topics relating to the ELA 1 process in order to:

(a) Reduce the regulatory burden (resource time and monetary cost)

(b) Foster increased economic development in the sector

(c) Provide an enhanced environment for increased participation levels, commensurate without overall safety objectives.

Recommendation

Two Options are selected for consideration:

Option 1 - the use of a consensus process for arriving at Initial Airworthiness specifications

Option 2 - the introduction of the use of Accredited Bodies to undertake regulatory tasks under devolution from EASA

Background to the Regulatory Impact Assessment (RIA)

EASA commissioned a study in early 2010 of the regulation of microlight aeroplanes ('microlights') in Europe (reference contract EASA.2009.C53).

The study comprises three phases:

Phase 1 A study of microlight regulations and accident rates within certain EU States and comparative accidents rates for EU regulated aircraft categories

Phase 2 Preparing a Regulatory Impact Assessment in respect of the proposed ELA 1 range of aircraft regulated at Community (EU) level

Phase 3 A final report with recommendations

The purpose the study was to review and report on the national regulations of microlights in a selection of Member States and to ascertain, where possible, the accident experience of these aeroplanes. Phase 1 of the study also undertook a comparison of microlight accident rates against those for aircraft between 451kgs and 1200kgs MTOM which are subject to Community regulation. The categories of aircraft are Aeroplanes up to 1200kgs, sailplanes and balloons.

EASA agreed from the outset that for the purposes of the study, including this RIA, airships, helicopters and autogyro planes are excluded from scope.

The experience in the USA of the 'Light Sport Aircraft' ('LSA'), (introduced in the USA in 2005) was also studied, including the 'Sport Pilot Licence' designed to be more appropriate for piloting the LSA category of aircraft.

This RIA is concerned solely with the regulation and related implementing rules for aircraft covered by the proposed ELA 1 process, but covering more than just airworthiness.

With the introduction of the US LSA, European aeroplane designers and manufacturers began producing LSAs for the USA market in addition to microlights and/or aeroplanes designed and produced according to the CS23 code. Other manufacturers also identified potential new market opportunities.

For these European manufacturers to achieve EASA type certification for each new aeroplane involves a design organisation approval (DOA) and production organisation approval (POA). The additional cost of obtaining these approvals represents a substantial business risk.

Scope of the RIA

The scope of the RIA is to consider a range of options for the future regulatory framework, including if necessary changes to the Basic Regulation EC 216/2008, of aircraft covered by the proposed ELA1 process.

The primary theme of this RIA is to establish if the regulatory framework established in Regulation EC 216/2008 (and its preceding EC 1592/2002), and the supporting Implementing Rules are *the most appropriate for light aviation,*

and does it reflect a proportionate approach commensurate with the overall safety objective?

In so far as the study and this RIA is able to determine, the outcome will be expressed in terms of a recommendation for one of the options to be taken forward to a future EASA working group (BR.010).

Current regulatory status of ELA 1 range of aircraft

The current regulatory status of the aircraft within the ELA 1 range may be summarised as follows:

	European (EuLSA)	**Aeroplanes 451-1200kgs other than EuLSA**	**Sailplanes**	**Balloons**
Initial Airworthiness	EASA CRD Part 1(ELA) proposals	EASA Part 21 (law)		
Continuing Airworthiness	EASA CRD Part 1 (ELA)	EASA Part M (law)		
Pilot Training & Licensing	No separate EASA proposals yet	EASA Opinion 4/2010 & IRs		
Pilot medicals	No separate EASA proposals yet	EASA CRD 2008-17c		
Operations	No separate EASA proposals yet	EASA NPA 2009-02		
Organisation Requirements (Training)	No separate EASA proposals yet	EASA NPA 2008-22 and CRD (4/10/10)		
Engineers' licensing	EASA CRD 2008-03 (L licence)			
Airfields	National unless within scope of Regulation 1108/2009			National rules – mainly non-airfield operations
ATM	National rules			

Why the issues need to be addressed

1. The current Regulation and Part 21 Implementing Rules for initial airworthiness applied in the light aviation sector (ELA 1) are regarded by many stakeholders as too burdensome economically for the light aviation sector. A reduction in the regulatory cost burden for launching new aircraft will require alternative processes and procedures for the official acceptance of initial airworthiness. This issue needs to be explored and solutions found and agreed
2. Evidence of accident rates in the microlight aeroplane sector (which has varying degrees of national regulation) but with no EASA-level initial airworthiness type certification, demonstrates that microlighting is not materially different to the regulated sector in safety outcomes as a result of initial airworthiness failures.
3. Part M (continuing airworthiness and maintenance) represented a significant change in approach for stakeholders in some EU Member States. Part M is viewed by many as creating a significant increase in financial burden with little potential gain in safety outcome. Whilst the original Part M was modified through the work of EASA working group M.017, so as to adapt it to the light aviation sector, there is a general belief amongst stakeholders that these modifications were not sufficient to make Part M more widely acceptable.

What is an ‘acceptable’ safety level?

In this discussion of ELA 1, one of the most fundamental points to decide upon is ‘what is an acceptable safety level’ for this MTOM range?

It is generally accepted in aviation regulatory circles and thinking that the accident rate that can be expected in private aviation is not the same as for public air transport. This distinction reflects the different purposes of the two ‘extremes’ of civil aviation.

The question is whether the expected safety level can be expressed in a form of an ‘acceptable’ fatality rate.

RIA Options

The options under consideration are summarised as follows:

Option No.	Description
0	**Do Nothing** This represents a position of 'no change' from the current proposals for ELA 1.
1	**Use of Consensus Process for Airworthiness** This option focuses on changes to the current proposals for aircraft within the ELA 1 MTOM range whilst retaining the overall legal scope of Community regulation in terms of the MTOM range (451kg to 1,200kg). The option considers only initial airworthiness, but without the involvement of Accredited Bodies, which are covered in Option 2.
2	**Delegation or devolution to Accredited Bodies (Assessment Bodies)** This option would consider the application of the concept of Accredited Bodies to ELA 1, as referred to in Regulation 1108/2009, whilst retaining the overall Community regulatory framework with appropriate modifications. The option considers all regulatory topics, not just initial airworthiness.
3	**A 'Mixed Economy'** This option would evaluate a range of issues under each regulatory topic for the range of aircraft from 451 kg up to 1,200 kg MTOM that are subject to Community regulation, with a view to recommending changes that would represent a mixture of regulatory approaches. It represents partial deregulation, with some regulatory topics and / or aircraft categories de-regulated from the EU level whilst retaining elements of the EU regulatory framework for certain aircraft categories and / or regulatory topics.
4	**Total de-regulation from EU regulation** This option would take the aircraft within the ELA 1 process out of the scope of the EU regulation completely and into Annex II of Basic Regulation 216/2008.

Criteria to be applied in the evaluation of options

The key criteria used in the evaluation of the options will include:

Safety criteria

- Evidence from fatal accident data
- Safety risk and likely safety outcomes of proposed changes
- Proximity and form of regulatory compliance oversight
- 'Knowledge management' of operations and activities in the sector
- Ability of 'industry' to manage itself ('industry' embracing users and user associations as well as supporting enterprises for manufacturing, maintenance, training etc).

Economic criteria

- Free movement of aircraft, parts and personnel within the EU
- Economics for designers / manufacturers of aircraft and equipment
- Cost of participation by 'end users' (aircraft owners/operators, pilots, training organisations, clubs) embracing capital costs and operating costs, in the widest meaning of the word 'costs'.

Technological criteria

- Opportunity for technological innovation and progress – materials, performance, environmental.

Social criteria

- Accessibility to and participation in light aviation
- Social factors relevant to particularly non-commercial, recreational and sporting aviation
- The volunteer nature of participants in many of the non-commercial light aviation sector's activities.

Overall criteria

- Proportionality in regulation

Analysis of RIA options

Option 0 - Do Nothing

This represents a position of 'no change' from the current proposals for ELA 1.

Initial Airworthiness	CRD NPA2008-07 still requires DOA/POA whereas views of MDM.032 group and original NPA 2008-07 promoted industry consensus process without DOA or POA. The experience of the microlight sector in Europe, and the USA LSA processes for airworthiness point in the direction of a further relaxation of direct regulatory authorisation and detailed oversight of design and production, without adverse safety consequences.
Continuing Airworthiness	Part M represented a significant change in approach for stakeholders in some EU Member States. Part M is viewed by many as creating a significant increase in financial burden with little potential gain in safety outcome. Whilst the original Part M was modified through the work of EASA working group M.017, so as to adapt it to the light aviation sector, there is a general belief amongst stakeholders that these modifications were not sufficient to make Part M more widely acceptable. Therefore reject 'do nothing' option in this respect
Pilot training & licensing	Opinion 2010/04, whilst acceptable in many respects by the stakeholder community in respect of ICAO compliant PPL licences and the LAPL contains elements that it is understood will be considered further, (such as cross-crediting of Annex II hours for re-validation purposes). Therefore reject 'do nothing' option in this respect.
Pilot medicals	Based on the current CRD information, sub-ICAO medical criteria and compliance processes are considered too restrictive and potentially more expensive than necessary for the risks of medical incapacitation, which from accident data obtained is very remote / statistically insignificant.
Operations	Based on the extant NPA 2009-02, for which the CRD is awaited, there is a variety of concerns from various parts of the light aviation community with the draft OPS rules. Whilst it is understood that changes are in hand leading to the CRD, until these are seen the 'do nothing' option cannot be recommended.
Training Organisations	The CRD to NPA 2008-22 being the latest proposals for organisation approvals for small organisations was published on 4th October 2010. Therefore, subject to a review of the CRD and any stakeholder feedback, 'do nothing' is not a recommended option for this topic.

This Option was dismissed and not pursued further.

Option 1- Use of consensus process for Airworthiness

In essence this option would retain the current and proposed framework in terms of which aircraft categories are within the scope of the Basic Regulation. However, the option would propose changes to some of the articles in the Basic Regulation (but not Annex II) or the Implementing Rules in the rule-making work-in-progress for Initial Airworthiness. The purpose of such changes to be evaluated would be to make them more acceptable to affected parties and communities in terms of economic factors, commensurate with maintaining overall safety objectives.

The aim of the proposed modification is to minimise the time and cost of regulatory overheads and to make maximum use of the wide spread of expertise within the industry and the sector as a whole. Responsibility and control would remain with those directly involved with the activity, whilst the regulator interactions are removed from the critical business paths to an auditing role.

The most significant feature of Option 1 is the removal of DOA/POA requirement and their replacement with an Industry-wide consensus process, which relies upon manufacturer responsibility for compliance. The standards are developed by the industry and administered by a standards Institution (such as ASTM). EASA would retain a right of audit or intervention as necessary.

The basic principles of the existing ELA 1 system are maintained, namely the need for proactive oversight of airworthiness and the need for defined standards for design and manufacture.

The basic principles of Option 1 are:

a. Designers / manufacturers will be totally responsible for compliance of their products.

b. Designers / manufacturers will ensure the initial airworthiness of their product design by compliance with appropriate and approved design standards.

c. The design standards would be developed by a visible and transparent consensus process based on cross-industry input (such as ASTM) together with EASA input.

d. The design standards, once agreed by industry consensus, would be deemed accepted and approved by EASA and form part of the agreed Certification Specifications.

e. EASA has the option to develop a recommended standard, but it will not necessarily be the sole standard to which an aircraft can be designed or manufactured

f. DOA approval by EASA would not be required for a designer/ manufacturer

g. Following normal aviation practice, two competent signatories stating compliance will be required. They may both be internal to the

manufacturer, as required for DOA, or one or both may be external including independent experts.

h. Manufacturers will ensure the initial airworthiness of their products by compliance with appropriate and agreed Quality Approval standards .

i. Random audits of compliance of both design and production may be undertaken by EASA.

Additional considerations relate to the challenges faced by small start-up businesses, which have contributed so successfully to the microlight sector. Large fixed regulatory fees and charges applied before aircraft are ready for sale restrict the possibilities for start-up companies. The opportunity to reduce fees by using consensus standards should provide a positive economic stimulus.

Conclusion

The consensus approach has proved to be a workable solution in the US LSA category for MTOM up to 600 kg. There is therefore no reason in principle why this approach for Initial Airworthiness on ELA1 cannot be extend to cover MTOM up to 1200 kg.

Whether or not this acceptable is dependent upon two factors:

1. The appetite for regulation and rule-making to accept a potentially higher degree of risk
2. Whether or not manufacturing industry sees a commercial advantage in participating in a consensus system up to 1200kg.

The recommendation is that the consensus system should form part of the approach to the regulatory process for ELA 1

Option 2 - Delegation (or devolution) to Accredited Bodies (Assessment Bodies)

This option considers the possibility, presented by the inclusion of a reference in the preamble to Regulation 1108/2009, of introducing the concept and use of 'Accredited Bodies'.

Microlighting in Europe is frequently managed by the national aero clubs or national microlight associations, with varying degrees of delegation from the Competent Authorities (NAAs) of the Member States. Such delegation operates under a wide range of types of national rules, but there is a common thread throughout in terms of scope. The involvement of personnel in these organisations, who have both a close affinity with and proximity to the activity, is viewed by the participants as very positive. This brings governance proximity to the pilot-owner stakeholders and the local microlight organisations.

Similar arrangements of delegation and management have been in place in many Member States for light aviation that is now regulated at the EU level. The activities cover gliding and ballooning in particular, as these activities depend on group organisation to one degree or another, either in clubs or operating groups. In turn these clubs and groups are members of a national body devoted to the oversight and management of their activities, again including safety management in particular.

In the Basic Regulation 216/2008 there is a role for 'Qualified Entities'. Article 3 defines a Qualified Entity as *"a body, which may be allocated a specific certification task by, and under the control and the responsibility, of the Agency or a national aviation authority."*

However, the Council of Ministers did not adopt the proposal for 'Assessment Bodies' in the final stages of drafting 216/2008, but the extension of 216/2008 to aerodromes and ATM, recital 11 of EC Regulation 1108/2009 states:

"The Commission intends to begin work, in due time, on an examination of the feasibility and the necessity of introducing ***accredited bodies*** *for the certification of ATM/ANS systems and an evaluation of all possible options and impacts. The Commission could, if appropriate, make a proposal for further revision of this Regulation based on a full impact assessment."*

Further, in 1108/2009 Article 13 of 216/2008 is amended to add the following: *"Qualified entities shall not issue certificates"*

RIA Option 2 therefore considers the possibilities of a role for 'accredited bodies' (or assessment bodies) in relation to regulatory aspects in the ELA 1 range of aircraft.

This would resonate with the concepts being developed for industry-based compliance certification for initial airworthiness, but may also be extend to other activities, amongst which are continuing airworthiness, pilot training and licensing & medical certification.

Conclusion

In the absence under Option 1 (Consensus) of a DOA/POA, some other form of compliance system may be required. The ASTM based consensus system for US LSA relies upon manufacturer's declaration of compliance, *subject always to the reserve audit powers of the FAA.*

If a consensus approach is to apply for MTOM up to 1200kg, it may need to be complemented by independent certification. This could be accomplished by the use of Accredited Bodies which are capable of issuing certificates of compliance and which are independent of the designers and/or manufacturers.

The recommendation is that the Option 2 proposal of using assessment bodies under delegation from either the NAAs or EASA to undertake compliance functions should be investigated further.

Option 3 - The 'Mixed Economy'

The purpose of this option is to examine the possibility of retaining agreed elements of regulatory topic within Community level regulatory scope (undertaken by EASA) whilst devolving other elements to national level (administered by the NAA or delegated to an Assessment Body) so as to achieve a more proportionate approach and greater ownership and proximity for safety management. In effect, some aspects would be controlled by EASA and other regulatory topics by the State NAA

Discussion
The concept of varying the regulatory approach for different topics and having a mixture of EU and National regulations to enable a 'best-fit' for each regulatory topic, appeals to certain sectors of the industry, especially with regard to mitigating the burden of regulatory costs – the principle driver in the minds of many within Industry.

However, the arguments in favour of gaining a 'proportionate approach' or optimising regulatory costs are far outweighed by the propensity for confusion and cost increases that would accompany a European-wide dichotomy of regulatory responsibility.

Some NAAs would either no longer have the resource or may simply not wish to engage in partial control of regulatory topics. Additionally, there will be some states that may have a preference to retain control over a subject that other states wish to be undertaken at Community level, and *vice versa*.

Furthermore, the regulatory environment that would result from the implementation of this approach is unlikely to satisfy the basic aims and objects of the Community in regulating at Community level (Recital 5 of BR 216/2009), and for this reason alone it would be unlikely to succeed.

Conclusion
It is proposed not to pursue this option further within the regulatory impact assessment.

Option 4 - Total De-regulation from EU level regulation

Under this option the light aviation sector would revert to its pre-EASA status whereby only national regulation and rules apply. In that respect, it is relatively easy to conceptually establish what would be gained and what would be lost by such a move.

If this option were pursued it would mean a fundamental change in the scope of the Basic Regulation, transferring all aircraft from 451kgs up to 1200kgs MTOM to Annex II, or at least those which are non-complex. These aircraft are already operating within the EASA initial and continuing airworthiness rules, but are still operating under national pilot training and licensing rules as well as operational rules.

Objectives	**Potential Gain**	**Potential dis-benefit**
EU agenda (free movement between States)	None	Removes free movement without alternative mutual recognition for cross-border movement.
Safety	Possibly some gain arising from proximity of national regulator to and knowledge of local designers / manufacturers	Removes pan-EU standardised approach with common certification standards for each category of aircraft, unless previous JAR codes retained.
Economic	Release from EASA POA/DOA fees and charges, but replaced with national fees and charges, which vary country to country.	Removal of pan-EU certification which provides economies of scale for designers / manufacturers.
	Proximity to regulator and possible improvement in timescales for development and certification.	
Organisational		NAAs need to reconstitute functions to provide initial airworthiness services
Resources	Potential for re-engaging delegated arrangements previously in place	NAAs have to re-staff following transfer back from EASA of responsibilities for initial airworthiness.
Environmental	No material impact	No material impact
Social	Enhances more local involvement and ownership in activities	Dilutes pan-EU community connections

Conclusion

It is clear from just the review of one segment of regulation that this option is unlikely to provide an overall net benefit in either practical or economic terms for the stakeholders or the regulators, given the extent of unwinding of the existing pan-European processes that would be required.

Furthermore, the wording of recital 5 of Basic Regulation 216/2008 indicates that " *consideration should be given to* ***regulate at Community level*** *aeroplanes and helicopters…..that can circulate all over the Community and that are produced in an industrial manner.*"

Given the intent of Recital 5, it is unsurprising that any move or recommendation to further de-regulate back to National level would not be viewed favourably by the Commission and would be unlikely to be adopted.

The option is therefore not recommended for further consideration.

Analysis of impact on Stakeholders

An analysis will be drafted, following the input from participants at the Workshop on 19th October of their views on the impact of the 2 main options.

Some of the issues to be considered (amongst others) are:

- safety levels/accident rates.
- aviation businesses and expanding markets.
- environmental issues.
- Participation levels and social aspects.
- End-user cost.
- acceptance of new regulatory framework.
- workload and costs for the regulatory authorities.

- End of Synopsis -