EASA MB 04/2012

Cologne, 11 December 2012

Agenda item 9a: Roadmap for Regulation of GA

(Presented by: the Commission and the Agency)

Summary:

Actions to be taken:

18 November 2012

WORKING PAPER

ROADMAP FOR REGULATION OF GENERAL AVIATION

- Presented by Commission and EASA -

This draft roadmap is a follow up of the discussions in the Management Board of EASA in September 2012 on the subject of General Aviation and also takes into account the meeting paper and the discussion on overregulation during the DGCA meeting in October. In the September Management Board the Commission took the initiative to present a roadmap to the EASA Committee on how the principles contained in these two previous papers could be put into practise, realising that besides the European Commission and EASA also the Member States and the General Aviation Community were addressed in the recommendations to implement or to assist in implementing the recommendations.

This paper lays down some basic principles as well as a preliminary work programme for such a new approach. It stresses in particular the need to base regulations on identified and relevant risks as well as on a need for regulatory protection determined by a clear risk hierarchy. The risk hierarchy is also linked to the type of activity within General Aviation.

Consequently the approach advocates a move away from the traditional manner of regulating first Commercial Air Transport (CAT) and then basing the General Aviation (GA) rules on a slightly reduced set of CAT rules. Instead the new GA rules should be more "tailor made" and more "proportionate" to the type of GA-activity, with additional "risk modules" based on safety analysis added to a basic rule set for more risky GA activities.

The attached action items list will be updated twice per year as work progresses.

The Committee is invited to discuss the draft roadmap.

1. Introduction

A discussion has been underway for several years now about the need to develop a more proportionate and effective regulatory approach to General Aviation (GA). In the past years some improvements have been introduced but more can and should be done. The problem predates the creation of EU competence in this field, but was brought to EU-level discussion first with the Commission communication[1] on General aviation in 2007, the European Parliament resolution[2] in 2008 and more recently the Commission paper for the DGAC meeting in Paris concerning Overregulation and finally the European General Aviation Safety Strategy developed under the auspices of the EASA Management Board. They all concurred on the need for more proportionate regulation, but also indicate a need to take a critical look at the effectiveness of traditional regulatory approach in today's aviation environment with already high levels of safety and safety regulation.

Furthermore there is a need to take account of the limited NAA resources and to correspondingly focus them better. In the September EASA Management Board, Commission took the initiative to develop a roadmap on how to turn these recommendations into concrete actions and to present it to the December EASA Committee.

The scope of GA activities is fairly broad, but the main scope of the Management Board paper – and consequently this roadmap – is on the lighter end of operations. This does not however exclude the eventual use of the same principles for all GA operations and even some non-GA operations once sufficient experience has been gained.

2. A new approach based on risk…

A reoccurring feature in recent discussions has been the need to focus regulation on actual risk and to prioritise rules that target the biggest and most relevant risks. Traditionally much regulation has been blanket regulation, which aimed to cover all possible risks by saying something about everything, although the vast majority of fatalities are caused by a small set of recurring causes. This has led to a situation, where persons participating in aviation only occasionally on their free time cannot actually remember all the rules, nor do they consider the majority of rules relevant to them. The resulting culture of indifference and non-compliance is a major safety risk as those people who choose to ignore rules they consider irrelevant, tend to apply the same attitude to all rules.

We could of course simply condemn this behaviour and answer it with more frequent oversight and tighter regulations. However, the discussions on overregulation and on the GA safety strategy show

[1] COM(2007)869 final "An Agenda for Sustainable Future in General and Business Aviation"

[2] 2008/2134(INI) "European Parliament resolution of 3 February 2009 on an Agenda for Sustainable Future in General and Business Aviation"

that we have come to the end of that road. The NAA resources for oversight are simply not there and the rules alone don't seem to be a solution. It is more useful to think about the way forward. The end result could be a system of fewer, but better targeted and less burdensome regulations, less burden on national authorities, much more emphasis on the operational side (link between manufacturer-user) and same or better levels of safety. However this also requires more harmonisation of how Member States implement the regulations and it requires that Member States adapt their way of doing oversight. The Member States should have a risk based oversight and not a compliance based system as many still do today although that is not mandated.

Principle 1: All regulation should be screened against the identified risks and their relevance to overall serious accident numbers.

3. …and acceptable risk levels

As noted in the Commission paper on overregulation, which was presented at the DGAC meeting in October 2012, we also need to consider what is meant by "a high level of safety" as described in Article 2(1) of the Basic Regulation, before moving forward. A "high level" does not mean applying the same level to all activities. The safety requirements of an Airbus A380 used to transport large numbers of fare paying passengers are far greater than those for a piston single aircraft used for pleasure flying. Furthermore it has to be acknowledged that the levels of safety in a large and well-resourced organisation, employing professionals with extensive training and experience are bound to be better than for a private individual who can only afford to fly 20-50 hours an year and who is his own SMS organisation. Anything else would imply that all that professional training and SMS's have had no positive safety impact.

Taking a broader look at societal priorities it is also evident that in a normal society we accept varying risk levels between different activities. No one would expect rock climbing or motorbike riding to be as safe as walking on a city street or taking the train to work. We also recognise that adults, who have sufficient understanding of the risks involved, may choose out of their free will to engage in risky activities in return for other benefits, such as physical exercise or bypassing traffic jams. When taking that risk they implicitly accept that the society will not provide them with the same safety levels as e.g. when taking the train and hence they take more responsibility for their own actions. This does not mean that the society would leave them totally on their own, but merely that the level of safety assurance is relative to the type of activity and the active choice of an informed individual engaging in that activity. Therefore it is reasonable to except private general aviation operations to demonstrate a higher level of acceptable risk[3] than commercial air transport, but obviously the same applies on a sliding scale also to other "interim" types of operations.

[3] N.B. This approach is also reflected by ICAO in Annex 6: "The Commission endorsed the philosophy....for the safety of operations in non-commercial operations where travel is not open to the general public. In such operations the Standards and Recommended Practices need not be as prescriptive as those in Annex 6, Part I, due to the inherent self-responsibility of the owner and pilot-in-command. The State does not have an equivalent “duty of care” to protect the occupants as it does for fare-paying customers in commercial operations"

The General Aviation Safety Strategy introduced the concept of a risk hierarchy, which is useful as a basis for assessing the required level of risk averseness or acceptable level of risk. The higher a person is in the risk hierarchy, the higher the required level of regulatory protection is and the lower they are, the more aware[4] and accepting they may be considered to be of the risks:

Risk hierarchy

1. Uninvolved third parties
2. Fare-paying passengers in commercial air transport (CAT)
3. Involved third parties (e.g. air show spectators, airport ground workers)
4. Aerial work participants / Air crew involved in aviation as workers
5. Passengers ("participants") on non-commercial flights
6. Private pilots on non-commercial flights

Principle 2: All regulation should be screened against the backdrop of the above risk hierarchy and resulting need for protection.

4. The limits of effectiveness for prescriptive regulation and what should we learn from it

The United States has a long history of GA and a look at its safety statistics provides some revealing insight into the limits of traditional approach. From the late 1930's until 1978[5] we can witness a steady and relatively rapid decrease in the amount of fatal accidents. However at that point something happens and this positive safety trend levels out, so that only slow and somewhat uneven improvements take place after that. A similar development can be witnessed in a major European State with good statistics, albeit over a decade later. There may be several reasons for this phenomenon, but it is difficult to believe that safety would simply have reached its peak in GA. Although safety is currently good, it can probably be further improved if we find the right means.

A possible answer may be found by studying the main causes of fatal GA accidents in the US, UK, France and some other States[6]. Whilst precise statistical categories and order of appearance vary depending on country and year, the top-5 causes of fatal accidents, which account for well over 80% of casualties, remain the same everywhere and in rough order of magnitude they can be classified as:

[4] Where the participants may not be sufficiently aware of the risks involved (e.g. participation in "adventure flights") the transparency of risk may need to be increased by adequately informing them that the level of safety they will encounter may not be the same as in CAT, in order for them to understand and accept the level of safety knowingly.

[5] GAMA Statistical Databook & Industry Outlook 2011

[6] Data collected amongst others from annual Nall Reports, NTSB statistics, Regulatory review of General Aviation in UK (2006), "Sécurité de l'activité "vol à moteur de l'aviation générale" report of 2007 by French DGAC, CASA Australia website etc.

1. **Loss of control in visual meteorological conditions - VMC** (i.e. basic handling issues, typically stall/spin accidents.)
2. **Controlled flight into terrain - CFIT.** (Typically a non-instrument rated pilot/aircraft scud running in worsening weather ending with hitting the ground, or a ground obstacle).
3. **Low altitude aerobatics or buzzing**
4. **Loss of control in instrument meteorological conditions – IMC** (Often similar to the poor weather CFIT accidents above, except that to avoid CFIT, the pilot elected to climb into the cloud, where he then lost control)
5. **Forced landings due to pilot error.** (Most often caused by running out of fuel)

If these could be eliminated, general aviation safety could be greatly improved. Almost invariably the cause is pilot error and only rarely something related to third party failings, such as airworthiness issues. However the most important lesson for the purposes of this roadmap is that all of these accident causes are already forbidden by law – yet they keep recurring[7]. It is evident that additional regulation would not change anything, but what we are tackling with is a very human mix of genuine mistakes and attitude problems. Hence, if we wish to improve GA safety further, we need to find more intelligent methods of reaching the pilots.

Another reason for seeking a new approach is that aviation has become very slow to adopt technological improvements. Traditionally most innovations have come from the less regulated sectors as lack of rigid certification requirements allows for affordable research and introduction of new concepts and technologies. If we look at the average certified GA aircraft today, we will see engine technology dating back to 1930's, aerodynamics that fall behind many 1940's examples and even where mechanical instruments are being replaced by more modern glass cockpits, their level of development and usability is much behind today's low-cost consumer electronics. In addition to more affordable licensing rules, this has been behind the shift we are witnessing away from certified GA aircraft and into the area of less regulated ultralights, homebuilts and other Annex II aircraft.

Therefore in order to further improve safety and invigorate technological development, we need to move from prescriptive regulation towards a mix of non-regulatory measures (e.g. educating and aiming at a culture change) and soft law, that makes extensive use of best practises and industry standards in the form of AMC's and Guidance Material.

This approach requires also a corresponding activation of the General Aviation sector itself[8] as authorities lack resources for widespread field work and in any case GA participants are more likely

[7] Another important lesson is that none of the five main causes of fatal accidents is one that actually endangers either commercial air transport (CAT) or third parties on the ground, hence necessitating segregation of GA from CAT. This is also supported by the US statistics, where according to the Nall report, out of the 1181 GA accidents in 2009, only 1 included a fatality to a third party and none collisions with CAT. When general aviation kills, it kills just general aviation people.

[8] See also the NTSB's 2012 "10 Most Wanted" safety improvements list as regards GA safety. NTSB too recognises that the safety development in private flying is essentially flat and one of the ideas proposed is to develop a joint effort between FAA and the GA sector organisations to increase understanding and compliance with rules and good airmanship practises.

to be convinced of the need for culture change, if the message comes from inside the sector. Many States have had good experiences with working together with the GA representative organisations (e.g. national aeroclubs) to improve pilot's awareness and even to delegate authority tasks. The GA organisations need to become even more active in participating in regulation of their own sector, but also need to take more responsibility for ensuring compliance. The solution could perhaps involve the creation of a new type of "delegated entity" for GA sector to take more responsibility of regulation and implementation or "partial Competent Authorities" run by these organisations, in co-operation with EASA and State authorities. However a caveat should perhaps be made as regards oversight, where trust should not be allowed to totally replace independent control. The new approach should not delegate oversight totally to the GA organisations, but rather help the NAA's focus their resources more efficiently by allowing them to some extent focus on overseeing the "delegated organisations" instead of each end user.

Principle 3: In addition to more risk-based regulation, we need also non-regulatory means and an active engagement of GA sector to improve safety and speed-up technological development.

5. The need for robust data and the need to understand that data

Making sound decisions requires a good understanding of the facts relevant to that decision. As safety of general aviation goes, we have a good idea of the number of casualties and also know many of the non-fatal accidents and good many incidents. However the usefulness of that data is greatly limited by the fact that only in very few States there exist reliable figures about the amount of hours flown in in GA operations, against which the accident figures could be meaningfully reflected. Organising a proper, yet non-burdensome, collection of that activity data should be one of the actions taken towards better regulation of general aviation.

However this lack of data should not be interpreted as an excuse not to do anything before more robust statistics have been developed. Today's data already points the way forward and in addition there is a certain urgency to revise the course. National authorities can ill afford to put more resources to oversight of general aviation, when CAT is an obvious safety priority. Also the general aviation community itself is suffering and activity levels are falling, because flying as a hobby is becoming increasingly difficult and expensive to maintain. Apart from the loss of a recreational activity this puts also the recruitment basis and innovation potential of commercial aviation at risk

Principle 4: It is important to gather more meaningful data of GA safety, but also to take action where possible before such data is available. The data collection itself should be organised in a way that minimises the associated bureaucracy and administrative load.

7. Conclusions

The traditional approach to regulating general aviation has contributed over the decades to a considerable increase in safety levels. However the growing number and complexity of regulations has begun to have major side-effects to the extent that new rules may now even have a counter-

productive effect. Prescriptive regulation also has a negative impact on innovation and causes a major resource load on the national authorities and the regulated persons themselves.

Future regulatory policy should be more precisely targeted at the actual risks and avoid negative side-effects. It should:

1. Be based on risks that have been identified as most relevant for improving safety[9].
2. Be more proportionate to the risk awareness and risk choices of individuals, protecting primarily those with least involvement and awareness[10].
3. Utilise non-regulatory means where useful[11].
4. Engage the General Aviation sector itself in safety work to off-load the authorities and better reach the GA community[12]
5. Use only meaningful data as a basis for decision-making[13]

The principles presented above need to be transformed into concrete actions. Some of them are of more general nature and concern the approach we should take towards regulating general aviation. Others are more concrete.

As noted in the Management Boards General Aviation strategy discussion, we should initially focus on the lighter end of general aviation and move upwards as more experience is gained. It is the lighter end that most suffers from the current situation and also where it is simpler to introduce the new approach.

Annex 2 presents a preliminary listing of on-going or to be started concrete regulatory actions and a possible timing for them. They are linked to the proposals requested under actions 1, 5 and 6 of the General Aviation Safety Strategy and are without prejudice to already on-going comitology work. Not all the proposals have been received at the time of writing, but they will be considered for the next update, including the proposals to be defined yet by the GA community.

Annexes

1. GA Strategy action items and actors
2. Initial draft table with specific regulatory actions and their timing (to be dispatched later)

[9] In accordance with Principles P3 and P2 of the attached GA Safety Strategy

[10] In accordance with Principle P1 of the attached GA Safety Strategy

[11] In accordance with Principles P5 of the attached GA Safety Strategy

[12] In accordance with Principle P6 of the attached GA Safety Strategy

[13] In accordance with Principle P3 of the attached GA Safety Strategy