



Opinion of AAE on the
**European Strategy
for Aviation**

proposed by the European Commission
in its communication of 7 December 2015



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The Opinions

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FOREWORD

On 7 December 2015, the European Commission published a communication setting out a European Union strategy for the aviation sector. This strategy will form the basis for European aeronautical policy for some years to come, which explains its importance in the eyes of all European stakeholders. The Air and Space Academy, drawing on the multi-

disciplinary expertise of its members, decided to contribute to this strategic debate in the form of an opinion, published here. For reasons of clarity, this opinion follows the structure of the European Commission's communication. A short summary heading the document highlights the main subjects tackled and the ensuing recommendations.

1. SUMMARY

The Air and Space Academy (AAE) has examined the Aviation Strategy for Europe issued by the European Commission (EC) in its communication of 7 December 2015¹. While backing this strategy on many points, it considers that some aspects should be modulated or developed. In general, AAE notes a lack of forward-looking scenarios and a resultant difficulty in envisaging the kind of breakthroughs that might have underpinned an ambitious strategy. Likewise, better retrospective analysis of difficulties encountered in implementing existing policies (for example the Single European Sky) might have enabled certain proposals to be reoriented. Lastly,

AAE regrets the absence of a balanced section on manufacturing industry, an essential sector that impacts the whole branch.

The policy of liberalising international air transport markets clearly boosts and enhances customer services. The desire for European companies to derive fair benefits from these developments with relation to their non-European counterparts is a legitimate concern that must be embraced by all. But European competitiveness cannot come from a downgrading of the competitiveness of other countries. Non-EU states will not blindly accept European rules targeted at the single internal market. Only by adjusting our own regulatory systems, therefore, will we find an answer to the lack of competitiveness on the international arena on the part of certain European players. At international level, the EU must also be careful to avoid confusion between such economic aspects and the concern to

1. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. An Aviation Strategy for Europe. SWD(2015) 261 final. This document is available at the following address: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0598&from=EN>*

maintain the high level of safety essential to sustainable development of the sector.

There are a large number of European airports and only a few are severely congested. While the Airport Observatory² is a useful instrument, it does not in itself constitute a policy. A strategy for infrastructures must be defined, in line with air transport policy, in which airports should play a role of coordination of those aviation players present. Common rules should be defined on economic regulation, with the priority of reducing charges, in particular taxes.

Flight safety is the most important prerequisite for sustainable development of air transport and Europe is a world leader in this field. Improving safety relies on harmonising standards for design, production and operations internationally and ensuring a high level of interoperability. This is one of the essential roles of the International Civil Aviation Organisation (ICAO) and, at a European level, the European Aviation Safety Agency (EASA), which has responsibility for certifying aeronautical equipment as well as introducing regulations. AAE recommends the agency be provided with the budgetary flexibility required to carry out its missions. Regulations must also be modernised and wherever possible

means-based obligations should be replaced with performance-based obligations. The ambition for EASA has always been to be on a level with the American Federal Aviation Administration (FAA), which means reinforcing its international status.

Aviation was also quick to tackle growing environmental concerns by setting up very strict noise and emissions certification standards several decades ago. To avoid distortions in the international aviation market, this major challenge for aviation can only be included in a global policy. AAE thus recommends that the EU choose the ICAO framework in order to defend the highest possible ambitions. Any one-upmanship in this field would be in danger of introducing inequities that would be difficult to manage.

The fight against terrorism remains a major issue for air transport. AAE calls on states to define a global approach to the fight against cybercrime as quickly as possible. EASA could play a technical role in implementing this policy, provided it receives sufficient resources.

European civil aviation is likely to face medium-term shortages in the training and employment of certain technical staff. Europe should look further into this issue, elaborate a dedicated policy and set up networks of training centres. EASA could play a coordinating role here,

2. *European Observatory on Airport Capacity & Quality.*

perhaps even setting up its own training structure in time.

Policy, and above all its application, with respect to passenger rights is only touched on in the Commission's paper. Certain European texts already exist but it is vital to set up the means to enforce them.

Research and innovation are essential to long-term aeronautical strategy. The Commission rightly insists on the need to adopt a policy supporting drone development, but does not reveal its proposals relating to future support for sectoral

aeronautical research. And yet the latter is vital if European industry is to achieve its strategic goals and reinforce its international competitiveness. AAE would like to highlight the dangers resulting from this uncertainty.

Finally, the Academy considers that in-depth study should be initiated on a European level into structural and societal changes with the aim of finding a new organisation and governance for European civil aviation to free it up from its current complexities and multiple stakeholders.

2. GENERAL REMARKS

Aviation is by nature a fast means of transport with a wide operating range, which has to guarantee a very high level of safety to customers all round the world. With the Chicago Convention of 1944, states committed to coordinating their aeronautical policies on a worldwide level. They entrusted this task to ICAO, a United Nations (UN) specialised organisation charged with harmonising environmental, safety and security requirements, ensuring systems' interoperability and supporting a level playing field in the development of international air transport.

The most relevant framework for aviation is therefore international. Any national or regional strategy must fit into this framework, due to the high level of technical and operational interaction within the air transport system and also because both market (passengers/freight, flight equipment) and stakeholders (carriers, industrials, professional or state bodies)

are global. A volcano spewing ash somewhere in Europe goads the entire world into action! When an airliner crashes on the other side of the world, the media coverage spans all the major capitals and a host of players are marshalled: not only the state where the accident occurred, but also the state where the airline was registered, the state where the plane was manufactured, even the countries of origin of all the passengers!

In order to decide on any strategy for aviation, it is necessary to launch preliminary reflexions into likely future scenarios or favoured outcomes. A look back over the past 40 years reveals the sector's capacity for rapid evolution and its ability to create game-changing aspects and deal with those imposed on it:

- technology: wide bodies, new materials, high bypass ratio engines, widespread automation, "human/machine" interface;

- environment: rapid increase in constraints impacting the system's capabilities;
- security: risk of terrorist action requiring costly, burdensome protection measures;
- economic model: liberalisation of markets causing the appearance and disappearance of major operators, emergence of low-cost airlines as major players, creation of alliances between airlines (three major alliances accounting for two-thirds of the world traffic); development of computerised booking systems more powerful than the airlines;
- networks: appearance of powerful, highly organised transportation hubs.

The strategy must also take into account long-term developments in the whole sector on a world level; a macroeconomic vision is not enough. The European strategy laid out is relevant as a whole, but lacks clarity when spelling out the vision of the future on which it is based. Neither is there in our eyes any critical analysis of past policies to help throw light on the current difficulties afflicting European air transport: delayed implementation of the Single European Sky in the field of air traffic control, for instance, or problems encountered by some European airports in their extension projects.

The Air and Space Academy considers that any European strategy for aviation

should include manufacturing industry. Europe, like the United States, is one of the world's two aviation leaders. At a time when China is clearly determined to enter this club and is acquiring the means to do so, when Canada and Brazil's ambitions are expanding, when Russia is reawakening and India is staking possible long-term claims, any European strategy should commit the EU to making all efforts necessary to preserve its rank. Aeronautics is one of the few prosperous industries in the EU!

Airbus is the number one commercial aircraft manufacturer in the world, Dassault Aviation is world champion in top-of-the-range business aircrafts, Airbus Helicopters is the main global manufacturer of rotorcraft and Leonardo-Finmeccanica is a top-notch player. Safran and Rolls Royce are also world class engine manufacturers. Thales can compete with the best American electronics specialists. We have OEMs like Safran Landing Systems (ex-Messier-Bugatti), Ratier-Figeac, Liebherr, MTU, Siemens, BAE systems... and the leading business software designer with Dassault Systèmes. The list is impressive.

The European strategy should make clear that the European aerospace sector constitutes an essential industrial base which the EU is determined to safeguard and strengthen.

The Air and Space Academy has analysed the Commission's proposals and presents in the present document some recommendations to go further.

3. AIR TRANSPORT

The Commission recognises the vital contribution of air transport to economic development. We can be proud of this recognition, contrasting as it does with transport policy guidelines in the past that emphasised the importance of railways and criticised air transport for its negative impact on the environment. Europe must preserve its traditional leadership in this sector by maintaining high quality service and ambitious safety standards. It is important to reaffirm that growth in air transport must go hand in hand with a high level of safety and security whilst at the same time reducing the ecological footprint; there is a current consensus on the notion of growth through sustainable development.

Our airlines are among the most successful in the world. Air France might be in a temporarily tricky situation, but British Airways and Lufthansa are both major legacy airlines and Ryanair and

EasyJet are two of the most successful low-cost carriers.

But we have to be realistic. Europe is too often tempted to try to impose its vision on the rest of the world, as witness the European attempt to introduce rules on CO₂ emissions in aviation (EU-ETS) ... While the desire to defend European airlines against “unfair competition” from Gulf airlines is a worthy one, imagining that they will no longer have access to cheap oil or will put their taxes up is unrealistic. **We have to find ways of helping our airlines in Europe, not in the Middle East!**

The Commission draws attention to the rapid emergence of new markets in Asia and regrets that these markets are not sufficiently accessible to European carriers. It considers that air transport suffers from many restrictions in terms of access to markets and investments. But there are many constraints in third coun-

tries, which is why the Commission is putting forward an ambitious foreign policy for the EU. It recommends negotiating air transport agreements at a European level in order to expand markets and encourage new economic models. Access to these markets would rely on both sides adopting rules on competition intended to prevent restrictive practices. Rules on ownership and control in particular would be liberalised. The debate might also be taken to an ICAO level for the adoption of global rules. We can only support the idea of airline ownership being reoriented on a basis of reciprocity.

The liberalising of markets is one of the factors encouraging growth, along with others such as technological progress. However, it would seem difficult to adopt competition rules in air transport worldwide in the short term, given the different political approaches on both sides of the Atlantic relative to organisation of international air services: one multilateral and regulating (European), the other bilateral and free-market (American), in accordance with the prevailing situation since the Chicago Conference. Over time, it will be possible to progress at an ICAO level, but in the short term it is more realistic to rely on bilateral agreements settled at a European level with a negotiated framework for competition that is acceptable to both parties. We consider it important that Europe does not attempt

to legislate beyond its borders. It would seem difficult therefore to reactivate the 868/2004 regulation in any form whatsoever since, as acknowledged in the paper, it turned out to be inappropriate and thus ineffective.

Lastly, the proposal refers to the Bilateral Aviation Safety Agreements (BASAs) whose aim is to define the conditions under which civil aviation authorities of different countries can recognise reciprocal responsibilities in overseeing aircraft airworthiness. The fact of simultaneously evoking air transport agreements and safety agreements is somewhat surprising. It would clearly be detrimental to safety to establish links between these different negotiations – on the contrary, they must remain independent - but we do not imagine this to be the intention.

The aim of these BASAs is above all to avoid duplicating type certification controls in different countries that do not have all the necessary competencies, and thus avoid unnecessary costs. The oldest bilateral airworthiness agreements date back to the 1970s and were updated and extended to cover maintenance in the 1980. The Franco-American agreement was the reference here. The EU already has over 150 agreements on air safety, from the simplest, where a state recognises European certification outright, to the most elaborate, as with the United States where there is a very

high degree of mutual recognition (the goal being to arrive at 100 %, which is not yet the case, not least because the respective regulations are not exactly the same). These agreements have a single fundamental aim: to enhance aviation safety. Between manufacturing countries they are particularly important, with the risk of being used as a barrier to block entry to a market, depending on the degree of mutual recognition and requirements imposed on the other state's industry. Parties are thus well advised to come to an agreement to minimise these requirements, but this requires mutual trust which is not always the case. The Commission underlines the successful agreements signed with the United States, Brazil and Canada and recommends pursuing negotiations with China and Japan. It omits to mention one manufacturing country, Russia.

RECOMMENDATION 1

The Air and Space Academy considers that international harmonisation of rules governing competition in air transport is still a somewhat remote prospect. This is why AAE recommends that the European Union and its member states embrace a policy that puts the accent on improving the competitiveness of European carriers rather than waging difficult battles aimed at imposing rules initially conceived for the domestic market on external players. AAE also recommends avoiding confusion between air transport agreements and aviation safety agreements, the latter remaining a prerequisite to sustainable development in this sector.

4. INFRASTRUCTURES

The European Commission recognises the need to reduce constraints negatively impacting infrastructure capacity. It claims that airports and the air management system are capable of dealing with 33,000 flights per day. The shortfall generated by the system's poor efficiency is put at five billion euros.

4.1. Single European Sky

The Commission recalls the goals of the Single European Sky (increased capacity, preserved safety level, reduced costs and environmental footprint) and deplores the lack of progress on merging airspace into functional airspace blocks (FABs) and the poor governance of the scheme, with duplication between Eurocontrol and EASA. It urges the Council and the European Parliament to adopt the final draft on the Single European Sky (SES 2+) which it considers will rapidly improve system performance. It recommends transferring addi-

tional functions from Eurocontrol to the network manager via new partnerships with industry.

The document discusses the benefits anticipated from SESAR, the deployment programmes already adopted and the funding already provided. It proposes the pursuit of these programmes on the basis of existing public-private partnerships, with European funding, as for the Horizon 2020 programme.

The Commission also discusses the need to ensure continuity of service by defining a minimum level of service, including overflights, and by pooling best practices between states.

The Air and Space Academy supports the aim to defragment air traffic management (ATM), a top priority due to the current impact on the finances of European airlines, on the environment and, because of higher ticket prices, on broader access to air transport. The

European strategy must emphasise the vital need for ATM reforms in order to obtain optimal flight paths.

Nonetheless, the Air and Space Academy would not advise enforcing the SES 2+ project, which has already been rejected categorically by certain member states, nor the FABs which have been created and set up much more slowly and less efficiently than anticipated by Brussels. It is clear that the whole issue must be debated again by all stakeholders.

One might question the relevance of the FAB concept, in particular, as presented initially, given that operational segmentation of airspace is a technical need. The concept could be re-examined in light of technological progress and political realities. This is why priority should be given to the technical component of Single Sky, pushing forward with the SESAR programme and making sure the appropriate funding is available.

RECOMMENDATION 2

The Air and Space Academy suggests taking a fresh look at the governance and deployment of the Single European Sky initiative in order to reorient European policy towards realistic priorities for ATM organisation, in particular by accelerating the SESAR programme and providing the appropriate funding.

4.2. Airports

The Commission recognises the need to reduce constraints limiting airport capacity: by 2035, European airports may be unable to accommodate two million flights due to capacity shortages, with 20 major airports at or near full capacity for six or more hours per day and smaller airports underused. All this would lead to 434,000 to 818,000 jobs being foregone and an annual loss in GDP of 28 to 52 billion euros. The paper commends the action of the European Observatory on Airport Capacity & Quality and encourages it to continue its work. It recommends the immediate adoption of the revised Slot Regulation presented in 2009, in order to optimise use of available capacities.

The proposal also encourages airports to further reinforce their efficiency and quality of service. As regards airport charges, it raises the possibility of market regulation for airports subject to competition. For the remainder, it calls on the Thessaloniki Forum of Airport Charges Regulators to make proposals designed to improve regulation of charges (transparency, consultation with airlines). Regarding airport services, the paper recommends opening them up to competition as envisaged in the directive of 1996. Finally it recommends improving inter-modality of transport.

The document also looks into the issue of airport connectivity (the number and frequency of direct or indirect routes). It suggests that European airports' connectivity has improved less than that of airports outside Europe and recommends careful monitoring of this parameter. It recognises that in certain cases the market alone is not capable of ensuring provision of the necessary routes and that states can establish public utility obligations within the framework of existing European regulations. Lastly, it indicates that too high a level of taxes and levies can be harmful to the development of connectivity and competitiveness.

The Air and Space Academy endorses the findings and goals of the Commission, albeit with some caveats.

The Commission recognises that certain airports are underused. However, although an underused airport can indeed receive more traffic, it may be that its catchment area is too limited to make better use of the infrastructure. On the contrary, the major European capitals and hubs will continue to be congested. It is not simply by drawing up master plans that new capacities will be found. The proposals do not go far enough in defining a policy for airport capacity.

The European strategy must, as the paper indicates, be to monitor the European system's ability to support traffic development. The Airport

Observatory is undoubtedly useful. But in view of the time required to set up new ATM systems (e.g. SESAR...) and new airport capabilities (the 3rd Heathrow runway, Frankfurt or Notre-Dame-des-Landes near Nantes), the observatory's conclusions would have to be published early enough and an effective decision process set up from the outset.

It is worth recalling that airports are no longer merely infrastructures placed at the disposal of airlines. They are complex companies with requirements of profitability, if only to ensure the funding of new aeronautical capabilities. The need for appropriate charges, adapted to input costs, must therefore be recognised. How is the Commission planning to revise the directive on taxes and other charges? The need for a pricing policy so that an airport can meet its objectives must also be recognised. It is also vital to remove state taxes (or levies) designed to support another policy but which negatively impact the air transport system.

Concerning the airports/ATM interface, the two sides should make concerted efforts towards meeting shared system performance goals. To this end, it would seem essential to modify ATM management structures, which links in to the previous paragraph.

The Air and Space Academy can only encourage developments in the air transport system which will facilitate growth of

the sector. It would like to see more details on the European vision relating to structural evolution of the market and of the infrastructure network. Different ways of dealing with problems of congested airspace, both en route and around airports, can influence airlines' policies on fleet assignment and flight programmes, and thus indirectly the aircraft manufacturing market. Unfortunately, the text proposed mainly gives an overview of the past and present situation and recommends continuing the current policy, but does not properly analyse the difficulties encountered, with little in the way of new proposals.

RECOMMENDATION 3

The Air and Space Academy recognises the importance of the work of the European Airport Observatory, but underlines the shortage of infrastructure development programmes. It recommends moving from observation to action, in particular by defining an infrastructure network policy in line with air transport policy. Moreover, AAE considers it necessary to tailor economic regulation of airports to their changing status and thus recommends reactivating the revision of the principles behind airports' pricing policy.

5. SAFETY AND SECURITY

This is the part of the strategy that underpins the revision of the joint regulation on safety in civil aviation (R 216/2008). From the outset, we must say that the choice of tackling safety and security in the same chapter (the former connected to the risk of an involuntary failure in the “human/machine” system, the latter pertaining to deliberately harmful acts, in particular by terrorists) is debatable in the sense that the methods to combat these two types of risk are substantially different and sometimes even contradictory (e.g. cockpit doors).

5.1. Safety

The continued existence and future development of air transport relies on maintaining a high safety level and effective interoperability. ICAO’s task is to elaborate comprehensive safety regulations for air transport, while member states are charged with implementing these rules, making them more stringent for their op-

erators if necessary. Equipment and systems are subject to extremely exacting safety requirements; new materials are certified and checked permanently during their lifetime. The system is founded on a continuous feedback from experience loop by which incidents and accidents are analysed and technical and operational lessons learned. Staff are invited to contribute to this feedback loop, even in cases where human factors are in question. This is what is known as a “Just Culture”.

The system relies on both public bodies and private operators in order to function properly. Operators are in charge of setting up internal monitoring schemes based on detailed principles as defined in national, regional (Europe) and international (ICAO) regulations. The authorities have the task of establishing the basic regulations and are responsible for overseeing their own operators. Each state must not only certify its operators, but

also permanently enforce regulations. EU states decided to gradually transfer some of these tasks to a European level.

Flight safety is clearly a strong feature of European aviation. Significant progress has been made in the past twelve years as this competence was gradually transferred from a state to an EU level, with the creation of the European Aviation Safety Agency (EASA). Accident statistics show that from 2012 on, for the first time ever, the safety level of the EU has been as high, or higher, than that of the United States. But flight safety must be judged in the long term.

The European strategy should assert the importance of consolidating results already obtained and maintaining current efforts.

From the outset, EASA was set up with strong support from the aircraft industry, which wished to see European airworthiness certificates introduced in order to strengthen the competitive position of European air transport with regard to the USA. An initial informal coordination of state authorities – the “Joint Aviation Authorities” (JAA) - proved insufficient to the task. EASA’s initial priority thus became airworthiness and maintenance regulation, then it went on to regulate licences and air operations before taking charge, in 2008, of airports and ATM. At the time of the JAA, it was already established that concerted action on the part of

all stakeholders was necessary to ensure safety in air transport and thus that the rules applied by the different players should be consistent and coherent. Airworthiness and environmental performance type certificates are issued directly by EASA, as are design organisation approvals. Individual certificates and production organisation approvals are still delivered by states (except for Airbus, directly supervised by EASA), as are all other types of certificates or approvals delivered to operators. Lastly, the agency carries out regular audits to ensure that states are performing their tasks in a coherent way in compliance with European rules.

There are many different issues underlying this reform. Below are some of the most important ones.

Regulations must evolve in line with technological innovation, increased systems complexity, design methods, and simulation and testing capabilities. Wherever possible, means-based obligations should evolve into performance-based ones. Likewise, certification and monitoring methods should be updated to keep abreast of observed risks and target failing areas or operators. These paradigmatic changes are written into ICAO’s policy and standards. This does not only require an updating of written rules (in particular the 11 current EC implementation regulations) but also a change in the

relationship between regulator and industry, via its standardisation organisations, the most important of which in Europe is EUROCAE (based in Malakoff). The Americans have fully assimilated this necessity, with the FAA now very involved in the work programme of the RTCA (Radio Technical Commission for Aeronautics), for example. This strategy, expressed in very general terms in the Commission's paper, is to be found in the EASA draft regulation, although in rather less ambitious terms than could be wished for: the intention is good, but implementation will take time.

The priority for all stakeholders is to ensure that EASA will be in a position to accomplish all its tasks, in particular the European certification programme, within the planned timeline. Achieving this goal is conditional on the agency obtaining the necessary budgetary resources and manpower. It should be stressed that these certification activities are entirely funded by industry in the form of levies covering over 70 % of the agency's budget; the remaining 30 % comes from the EU and is used to fund regulatory activities and state audits. Budgetary policy on the part of the European institutions must in no way compromise the agency's capacity to carry out its missions, in particular its certification activities.

The strategy proposal raises the idea of pooling national experts within EASA, or

voluntarily transferring national responsibilities to EASA, in a move that would take it in the direction of a single European aviation authority, comparable in its scope and structure to the American FAA. It is true that the long-term (or very long-term) goal must be to move towards a single authority. However, as tempting as this proposal first appears, it would seem difficult to implement in the short-term, while the transfer of activities from smaller countries to EASA would represent quite a simple initial stage. Nonetheless, we consider it much more important for the agency to concentrate on those activities for which it is competent, above all certification. The question of EASA's pool of expertise arises for the future. It takes more than ten years to train a high level certification expert. As time goes by, EASA will be able to draw from national manpower less and less and will have to turn to industry. It is thus vital to provide EASA with the necessary funding to invest in human resources for the future.

Another priority for EASA is to fully acquire the international standing needed to play a role akin to the FAA both in its dealings with multilateral organisations, in particular ICAO, and in its bilateral relations with third countries. Currently, representation to ICAO is on a state level: the EU has only observer status and EASA no specific status. This absence of status significantly weakens

any expression of joint European positions, although the agency's experts can contribute to the work of the technical groups. It is interesting to note that other regional monitoring authorities have applied for and acquired this ICAO observer status. Certain European coordination procedures already exist and, despite EASA's current lack of status, it would be possible for the agency to play a more formal role by delegation from EU states. This would confer on it a status more comparable with the FAA. On the other hand, on the level of bilateral relations, a strengthening of the presence and weight of EASA in technical negotiations would be useful.

RECOMMENDATION 4

The Air and Space Academy recommends speeding up modernisation of safety regulations and certification procedures by replacing means-based obligations by performance-based obligations where possible, in line with ICAO policy. It also recommends that the regulator establishes a closer relationship with industry standardisation bodies. EASA should possess the means and flexibility required to achieve its missions, it should elaborate a strategic programme to maintain its long-term expertise and finally acquire an international stature equivalent to that of the FAA.

As regards environmental certification standards, the European Union's policy, clearly expressed in its regulations, has until now been to align itself on ICAO standards; this has disappeared, at least partially, in the new project. The ICAO certification, which relates to both noise and emissions, calls on very complex measurement or calculation procedures defined by ICAO in intricate discussions involving all stakeholders. Recently for instance, the CAEP (Committee on Aviation Environmental Protection), in charge of this work, adopted proposals for aircraft CO₂ emissions standards only after extremely tricky negotiations at the highest state level. If one or more states refused to respect the conclusions of this negotiation and took action into their own hands, this would be very detrimental in the fight against climate change. On a technical level, performance levels registered on certificates are included in the plane's identity card. Different requirements on the part of certain states could make planes certifiable in some countries and not in others: this would immediately be regarded as an unacceptable obstacle to competition and ICAO would receive complaints procedures, as in 2002 when the EU had to cancel a regulation prohibiting planes fitted with noise-reducing "hushkits", which complied perfectly with ICAO standards.

RECOMMENDATION 5

Whilst emphasising the need for an ambitious environmental policy, the Air and Space Academy points out that the global nature of the air transport market requires standards to be defined on a world level too. It thus recommends that the European Union continues to align its aircraft environmental certification standards on those of ICAO, while working to ensure that the latter are suitably ambitious.

Finally, the paper brings up a vital subject for all passengers, namely civil aviation safety all over the world. While it is legitimate for the EU to care about the safety of European citizens, travelling in Europe or elsewhere, it must also (does this need reiteration?) concern itself about the safety of international civil aviation as a whole through ICAO, which includes all EU states as members. Since 2005, the EU has maintained a list of those airlines prohibited from operating from European airports (more than 230 currently). The Commission proposes to assess this policy and the implementation of European rules on investigations relating to aircraft accidents. Such investigations constitute the mainstay of air safety and are clearly regulated in ICAO's Annex 13.

To obtain a comprehensive view of European actions in this field, the as-

essment could be extended to the EU policy of technical assistance for flight safety, in which EASA obviously has a role to play, in co-operation with industry and other operators. The methods used for these assessments should benefit from a broad consensus, since safety does not sit well with conflict.

5.2. Security

Given the prevailing risk of terrorist action in Europe today, the proportion of the document given over to security policy in air transport might appear small, but can be explained by the very great sensitivity of the subject. The document recommends high standards, nonetheless compatible with the flow of passengers, the use of innovative technologies together with a risk-based approach in full respect of fundamental rights, and finally generalisation of one-stop security checks in order to avoid multiple checks for connecting passengers. These orientations are a logical continuation of previous policies.

The most serious risks facing aviation today are probably those related to cybercrime. Industry is devoting huge technical means to this issue in order to identify and set up suitable ways of protecting systems. Questions raised concern not only design, but also maintenance and operations which rely on a

large number of staff and processes that are not always fully controlled.

RECOMMENDATION 6

The Air and Space Academy recommends elaborating a global solution as regards procedures to fight against cybercrime in aviation. It supports the idea of entrusting technical management of this question to EASA, as long as it is given adequate means in terms of expertise to reach its conclusions rapidly.

6. EMPLOYMENT IN AVIATION

The communication underlines the priority that must be given to training in the various technical fields. It suggests setting up a virtual school at EASA which would operate within a network of existing training centres in Europe to promote the creation of joint standards for safety inspectors' skills for instance. Given the changing management style and operating models of airlines, including the outsourcing of activity bases, the Commission seeks enhanced communication between social players and if necessary the establishment of guidelines or regulations to clarify and guarantee fair working conditions. It advises paying particular attention to bilateral air transport agreements to ensure an even playing field for workers on both sides. It also brings up consultation between the two sides of industry on safety requirements drawn up by EASA.

At a time when many authorities have their academy (FAA, Singapore, UAE, etc) and others intend to set one up (Saudi Arabia), and when ICAO is actively encouraging this movement via the Trainer, Trainer Plus and RTCE (Regional Training Centres of Excellence) programmes, we must be much more ambitious for EASA. It must have its own flying academy, which would of course co-operate with existing training centres. Training is a strategic necessity for safety and requirements are immense.

It is astonishing that the Commission has completely overlooked the anticipated shortage of aviation professionals on a world level, taken very seriously at the moment by ICAO. In the next 20 years, the world fleet of aircraft will more than double. By 2030, nearly 500,000 new technicians will be needed to carry out maintenance on them, and 350,000

pilots to fly them, not to mention the increased need for air controllers.

It would be good to know how Europe, which is likely to be particularly badly affected, plans to deal with this situation,

by appraising various scenarios in order to create a roadmap for the European system of training. The planned network of training centres is manifestly insufficient.

7. PASSENGERS' RIGHTS

The communication recommends adopting the revision of the existing rules and announces that it will publish guidelines for its application. In addition to rules on passengers' rights, and in a context of traffic growth, the Air and

Space Academy recommends developing and applying a quality charter for treatment of passengers and their belongings, aiming to promote a service protecting the dignity of individuals and the integrity of their property.

8. INNOVATION AND DIGITALISATION

Stressing the importance of research and innovation for European civil aviation, the communication highlights efforts on the part of the aircraft industry to meet the challenges of environmental protection, safety, competitiveness and capacity. The European Clean Sky 2 research support programme is mentioned, but with no concrete proposals nor indications as to any follow-up to this programme after 2020. An allusion is made to the need for EASA to direct its certification programmes in an efficient, independent and impartial way but it does not make explicit the link with research. On the question of developing information technologies, the Commission proposes to assess the need for a revision of the code of conduct on computerised reservation systems, which dates back to 2009, and backs the launch of an aviation “big data” project oriented towards improving safety. Lastly, it highlights the importance of drone development, both in

terms of the new services they provide as well as for the industrial stakes they represent. It therefore recommends that a legal safety framework be drawn up relating to drones, taking into account risks, data and privacy protection, security, liability and respect for the environment. This framework should relate to drones of all sizes whilst taking care to make rules proportionate to risks. Implementation of these policies should be entrusted to EASA: drones are a type of “aircraft” flying in the same space as others.

This part of the strategy devoted to innovation tackles some essential questions: support for research, data handling and drones. It is a pity however that the strategy was not clearer with regard to European research programmes after 2020 or in its response to the ACARE recommendations (Advisory Council for Aviation Research and Innovation in Europe). Since publication of this paper,

subjects of concern have appeared, in particular the debate on a possible priority given to horizontal projects over sectoral projects. If this were confirmed, it could turn industry away from sector-based schemes and put an end to collaborative research, negatively impacting long-term innovation and competitiveness in European industry at a time when its American counterpart is receiving a huge level of state support and certain airlines are benefitting from very unfair advantages.

RECOMMENDATION 7

The Air and Space Academy supports increased involvement of EASA in safety oriented research activities and calls in particular for greater use of modelling and simulation tools in certification methods and processes in the future. Lastly, with regard to drones, AAE shares the overall aims of the document but has some reservations as to the adequacy of the funding allocated to reach these goals.

As regards the European policy of supporting research, AAE recommends maintaining the priority for sectoral projects at a sufficient level to support the efforts made by the key players.

9. ENVIRONMENT AND CLIMATE CHANGE

The communication proposes pursuing an ambitious policy of environmental protection. Concerning greenhouse gas emissions in particular, it recalls the European objective to obtain an agreement on ICAO level for installing a global market-based mechanism to ensure carbon neutral growth in the sector after 2020. It emphasises the importance of technological innovation, including the development of advanced biofuels and deployment of the distribution infrastructure. It also underlines the benefits to be drawn from the Single European Sky and SESAR programmes in terms of air traffic management. In the area of noise and pollution around airports, the Commission announces new regulations and encourages co-operation between the various European agencies to track the sector's environmental performance.

Noise from planes has fallen steeply in the past 30 years, while the number of flights has increased. Traffic limitations

adopted by states are holding back the large European airports. Audits should be carried out to quantify effective disturbance from noise and increased airport movements, so as to, at the very least, free up extra daytime movements during acceptable periods, without calling into question night closure of these airports (e. g. Orly...).

Aeronautics professionals are active in trades' organisations such as ATAG (Air Transport Action Group) which pools the efforts of the main players in the air transport industry towards sustainable development of aviation. Global air transport emits a little over 700 Mt of CO₂ a year, i.e. 2 % of the 36 Gt produced by human activities. Energy efficiency per seat-km has risen by 70% since the beginnings of jet aviation and industry has committed to increasing it by 1.5 % per year in the years to come. Industry has committed to not increasing its emissions after 2020, and even to reducing them by 50 % by

2050 as compared to the 2005 level. On a European level, the ACARE goals for 2050, put forward in 2012, included that of reducing CO₂ emitted by aviation by 75 % per passenger-km, NO_x by 90% and perceived noise reduction around airports by 65 %, as compared to 2000. **The Air and Space Academy considers that these objectives should be re-confirmed given the rise in traffic.**

It should be noted that industry policy relies on four axes: technological innovation (including biofuels), operational improvements, infrastructures and lastly market-based mechanisms.

European industry contributes to achieving these goals by investing in technological innovation (10 billion euros invested in civil research each year, 80 % of which has a positive impact on the environment). The ICAO CAEP group has obtained agreement on draft certification standards for CO₂ emissions. This process, already in force for the past 40 years for noise, will help improve the performance of new planes and, thanks to standards applying to planes in production, will accelerate the modernisation of fleets.

It should be stressed that the ICAO ambition is very important since it involves organising a world emissions regulation system for an entire economic sector, with global objectives and mechanisms enforceable on all 191 member states.

RECOMMENDATION 8

The Air and Space Academy recommends that future ACARE goals take into account rising traffic and evolving technology. It supports the process of reducing CO₂ emissions engaged by ICAO, which is the only organisation competent to define and implement a world aviation policy to fight climate change.

10. FINAL REMARKS AND PROPOSALS

A new strategy provides a chance to give new orientations. This is achieved in the Commission's document: new international agreements, security, cyber-safety, drones, EASA assistance to weaker authorities, closer links with the military ...

But there too, one must be realistic. Some of the subjects mentioned above – security or the military for instance - are taboo for certain member states. In this case it is better to progress step by step, by means of small, concrete, acceptable measures, than to launch a wider debate that may lead to entrenched positions.

Other subjects are so broad that the role institutions are ready to play should be carefully defined. This is the case for cyber-security which mobilises tens of thousands of people in industries all over the world and which affects all sectors of human activity, not just aviation.

The European strategy should propose new, realistic, structured developments in targeted fields, based on serious, well documented studies.

10.1 Institutional means

The European Union is obviously very heterogeneous in terms of its aviation industry. For example, out of its twenty-eight member states only a handful have a manufacturing industry. Similarly, the Amsterdam-Frankfurt-Paris triangle is subject to most air traffic congestion whereas traffic remains fluid in Riga...

This differing landscape is problematic when decisions have to be discussed and taken unanimously, if only because certain states do not attach the same importance to issues underpinning aviation, or even do not share what is at stake.

The European strategy should propose an institutional initiative and greater dialogue to improve the process of discussion and decision on subjects that do not concern all member states.

Role distribution between the European Commission, EASA, Eurocontrol, the member states and

industry must be re-examined so that each stakeholder deals with the subjects for which it is best qualified.

Such a revision of roles and responsibilities, and of the means of setting and checking goals, is essential if we are to advance in crucial areas. Technical subjects (changing regulations within a determined framework, certification, international relations), for example, should be covered by EASA alone, by means of precise procedures and rigorous monitoring. The aim would be to make the entire system more efficient by eliminating overlapping means and efforts, inconsistencies and inequalities of treatment.

Certain countries could benefit from this by handing over to EASA the responsibility of supervising their industry, a task they do not always have the means to perform properly on their own. This would represent an initial step, both simple to defend politically and economically justified, towards the grouping together within EASA of all EU regulation and monitoring functions, which must be the goal in the long term.

10.2. Funding and human resources

Projects to expand European responsibilities must be correctly funded from the outset.

The creation of EASA and its successive extensions are an example not to follow.

Needs in terms of financial and human resources were systematically underestimated, undoubtedly not to alarm Parliament and the Council. This caused important operational difficulties which could have compromised the agency's development by fuelling the arguments of those who wished to limit its action or get rid of it entirely.

The European strategy should include a financial and human component to support and lend credibility to its technical points.

RECOMMENDATION 9

The Academy recommends that in-depth reflexion be launched at a European level on the governance and long-term operation of European civil aviation institutions.

RECOMMENDATIONS

RECOMMENDATION 1

The Air and Space Academy considers that international harmonisation of rules governing competition in air transport is still a somewhat remote prospect. This is why AAE recommends that the European Union and its member states embrace a policy that puts the accent on improving the competitiveness of European carriers rather than waging difficult battles aimed at imposing rules initially conceived for the domestic market on external players. AAE also recommends avoiding confusion between air transport agreements and aviation safety agreements, the latter remaining a prerequisite to sustainable development in this sector.

RECOMMENDATION 2

The Air and Space Academy suggests taking a fresh look at the governance and deployment of the Single European Sky initiative in order to reorient European policy towards realistic priorities for ATM organisation, in particular by accelerating the SESAR programme and providing the appropriate funding.

RECOMMENDATION 3

The Air and Space Academy recognises the importance of the work of the European Airport Observatory, but underlines the shortage of infrastructure development programmes. It recommends moving from observation to action, in particular by defining an infrastructure network policy in line with air transport policy. Moreover, AAE considers it necessary to tailor economic regulation of airports to their changing status and thus recommends reactivating the revision of the principles behind airports' pricing policy.

RECOMMENDATION 4

The Air and Space Academy recommends speeding up modernisation of safety regulations and certification procedures by replacing means-based obligations by performance-based obligations where possible, in line with ICAO policy. It also recommends that the regulator establishes a closer relationship with industry standardisation bodies. EASA should possess the means and flexibility required to achieve its missions, it should elaborate a strategic programme to maintain its long-term expertise and finally acquire an international stature equivalent to that of the FAA.

RECOMMENDATION 5

Whilst emphasising the need for an ambitious environmental policy, the Air and Space Academy points out that the global nature of the air transport market requires standards to be defined on a world level too. It thus recommends that the European Union continues to align its aircraft environmental certification standards on those of ICAO, while working to ensure that the latter are suitably ambitious.

RECOMMENDATION 6

The Air and Space Academy recommends elaborating a global solution as regards procedures to fight against cybercrime in aviation. It supports the idea of entrusting technical management of this question to EASA, as long as it is given adequate means in terms of expertise to reach its conclusions rapidly.

RECOMMENDATION 7

The Air and Space Academy supports increased involvement of EASA in safety oriented research activities and calls in particular for greater use of modelling and simulation tools in certification methods and processes in the future. Lastly, with regard to drones, AAE shares the overall aims of the document but has some reservations as to the adequacy of the funding allocated to reach these goals.

As regards the European policy of supporting research, AAE recommends maintaining the priority for sectoral projects at a sufficient level to support the efforts made by the key players.

RECOMMENDATION 8

The Air and Space Academy recommends that future ACARE goals take into account rising traffic and evolving technology. It supports the process of reducing CO₂ emissions engaged by ICAO, which is the only organisation competent to define and implement a world aviation policy to fight climate change.

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The Academy recommends that in-depth reflexion be launched at a European level on the governance and long-term operation of European civil aviation institutions.