ESTABLISHING AND BUILDING THE

EUROPEAN AVIATION SAFETY AGENCY EASA

N. Lohl
European Aviation Safety Agency
Germany

1. INTRODUCTION

On 2nd September, 2002, the Official Journal of the European Communities published EC Regulation 1592/2002 of 15th July, 2002, "on common rules in the field of civil aviation and establishing a European Aviation Safety Agency".

The basic plan was to build an agency in the European Union that would be the equivalent of the Federal Aviation Agency (FAA) in the USA. The new agency would create unified European Aviation regulations and standardize the application of these regulations in all EU Member States as well as in all additional EASA member states such as Iceland and Norway.

The European Aviation Safety Agency (EASA) began operations on 28th September 2003 and was provisionally based in Brussels, Belgium, and on 13th December, 2003 the Germany city of Cologne was selected by the European Union Council as the location for EASA.

One of the first activities was to set up a web site – www.easa.europa.eu – and to have a logo designed that would reflect the fact that the Agency is part of the European Union.

FIG 1. EASA Logo

2. VISION AND MISSION

2.1. Vision

The vision of the Agency is that of a safe, sustainable aviation system satisfying expectations of the general public and industry needs, in a demanding mobile society.

All Agency Directorates contribute to this vision by providing a safe and efficient service for the benefit of the general public and the industry.

2.2. Mission

The mission of EASA besides Rulemaking and Standardisation is to perform certification and safety oversight functions in all fields of competence as assigned by the European legislator, which presently comprise airworthiness and environmental protection.

This consists of the delivery of product certificates and organisation approvals, the continued safety oversight thereof and, when necessary, the mandating of corrective action by means of airworthiness directives.

For this purpose, the Agency will apply and promote the highest common standards of safety and environmental protection in civil aviation. It will also assist the EU Commission in maintaining and enhancing these standards.

Furthermore, the Agency will assist the Commission and the Member States in achieving their safety objectives by actively contributing to the standardisation, accreditation and rulemaking efforts.

The remits of the Agency are being gradually extended from airworthiness and environmental protection to operational and flight crew licensing operations. A first step will be the transfer on 1st January 2007 to the EASA of some of the tasks presently carried out by the Joint Aviation Authorities (JAA).

2.3. Values

The values of the Agency consist mainly in:

- **Safety** as the ultimate value and first priority,
- **People**. EASA draws upon the best qualified professionals to build up an European centre of excellence in aviation safety,
- **Performance**. EASA aims at reaching its objectives and regulatory obligations with the highest level of efficiency without any compromise on safety,
- **Accountability**. EASA is fully accountable to the general public and the industry through a system of independent verifications involving the internal Agency auditing systems, the Agency's management board, the European Parliament, Council and Commission.

2.4. Citizens, Customers and Partners

The main beneficiary of the activity of the Agency is the general public who expect a safe and environmentally compatible aviation system. In this respect, they are the prime customer of EASA.

Simultaneously, EASA regards all applicants, regulated organisations and persons as "customers" who can expect a high quality and efficient service. In this respect, issuing certificates on time and performing the related continuing airworthiness and surveillance functions without hampering commercial growth is an ongoing challenge.

In order to fulfil these duties and responsibilities the Agency co-operates in partnership with:

- National Aviation Authorities of the Member States,
- Foreign Aviation Authorities (world wide),
- The EU institutions and in particular the European Commission.

The Agency is also considering contractual relationship with external aviation experts and qualified entities.

2.5. Legal Framework

Three levels of regulations are applicable:

- **Level I**. The “European Parliament and Council Regulation (EC) No 1592/2002 of 15 July 2002 that established European Community competence in the areas of aviation safety oversight”. This “Basic Regulation” created the Agency, defined its remits and established essential requirements for airworthiness,
- **Level II**. The “Commission Regulations (EC) No 1702/2003 of 24 September 2003 and No 2042/2003 of 20 November 2003 respectively established implementing rules in the areas of airworthiness and continued airworthiness” are implementing rules,
- **Level III**. This is known as “Soft law”, comprising Certification Specifications, Acceptable Means of Compliance and Guidance Material, Management Board and Agency Decisions, adopted at the level of the Agency.

In addition, as per the basic regulation, all the costs of all the certification activities are to be recovered from the industry. A fees and charges regulation (CE regulation 488/2005 and its revision 779/2006) provide for the charging mechanisms.

2.6. Responsibilities

Besides Rulemaking and Standardisation the main responsibilities of the Agency are:

- To issue certificates of the design of products, including type certificates, supplemental type certificates, approval of minor and major design changes and repairs, parts and appliances approvals,
- To ensure continued safety oversight of certified products, including publication of airworthiness directives, where necessary,
- To approve organisations responsible for the production and maintenance located outside the territory of the Member States, and to design organisations wherever located,
- To approve production organisations located in the territory of one or more Member States if requested by the Member State(s) concerned
- To ensure the continuous compliance of approved organisations with applicable safety standards by performing appropriate oversight,
- To provide assistance to Member States to fulfil their international obligations,
- To assist the Agency, the Commission and the member States in achieving their safety objective by actively contributing to the standardisation, accreditation and rulemaking efforts,
- To recover all the certification related costs from the industry, according to the fees and charges regulation in force.

These responsibilities will be gradually extended in pace with the extension of the remit of the Agency.

2.7. Strategic Objectives

The main strategic objectives of the Agency are:

- To establish and maintain a high uniform level of civil aviation safety in Europe for passengers, crews and third parties,
- To ensure a high uniform level of environmental protection,
- To perform oversight functions on certified products and approved organisation and take corrective actions if deemed necessary,
- To define, consolidate and implement the uniform certification and safety oversight culture and to ensure effective spread throughout Europe,
- To establish an European Aviation Safety organisation with worldwide reputation as an equal counterpart to the Federal Aviation Administration (FAA),
- To attract the most qualified staff from National Aviation Administrations and Aviation Industry
- To further improve public's and industry's high level of confidence in the Agency work and in its dedication to safety above all,
- To actively implement an EASA Quality Management System,
- To exactly recover its costs from the industry according to the fees and charges regulations in force.

2.8. Priorities

The ultimate aim of the Agency is safety. In this respect, the activities related to continued safety oversight of products deserve the highest priority, for example when an unsafe condition has been identified as a result of in-service experience. This is in particular the case for the publication of "emergency airworthiness directives".

2.9. Trends

During the coming years commercial air transport ("Aviation Industry") as well as the business and private aviation ("General Aviation") is predicted to grow in terms of:

- Number of passenger and quantity of goods transported. The increased demand of "basic services" has favoured a rapid expansion of "low cost" airlines which in turn generates additional needs for new aircraft and relevant customisation, resulting in more certificates and approvals being delivered by the Agency,
- Technical complexity due to the progress in science and technology. This development offers increased capabilities and features of the aircraft (new aircraft architectures, new materials, sophisticated man machine interfaces and navigation aids). This has a direct impact on the Agency in terms of increased effort and an indirect impact as training and competence maintaining activities becoming necessary,
- Organisational complexity. Due to the general globalization of markets, the aviation industry will take advantage of joint ventures, consortiums, suppliers spread worldwide. This results in more cooperation and work sharing between Authorities.

A combined moderate yearly growth (2 to 4%) is to be expected over the following years for the Aviation Industry and General Aviation.

2.10. Challenges

The Agency is under the oversight of the European Parliament, Council and Commission. The aviation industry is involved via several bodies, such as the EASA Advisory Board. Member States´ representatives are part of its Management Board. The evolving market as described above, together with rising expectations of all parties overseeing the Agency, produce an increasingly challenging environment for EASA in terms of:

- Increase in the number of approvals,
- Shorter response time,
- General requirement for cost effectiveness,
- Improved competences and expertise on technical and organizational issues,
- Necessary update of certification specifications to reflect new technologies and transferring experience gained during previous certification processes.

By its very nature, the Agency is continuously submitted to the contradictory constraints of safety and cost effectiveness. Its management will ensure that all decisions related to improving the cost effectiveness will have no detrimental effect on safety. In order to deal with those challenges the Agency is constantly improving its efficiency through:

- Process streamlining including implementation of new working methods and means of delegation,
- Constant monitoring of the volume of technical and administrative activities,
- Management of human resources to ensure, maintain and extend their competence,
- A safety-minded, efficient and cost conscious management,
- Improved communications with customers.

2.11. International Cooperation

Aviation is a global activity. This is evident for operators, but it is also the case for the design and manufacturing of products. Manufacturing of parts and aircraft components in different countries has taken place for a long time. The trend for TC holders to outsource major parts of the design of a product to a foreign company is albeit more recent, but is developing rapidly.

To face those challenges, the strategy of the Authorities is to match that of the industry and to engage into international cooperation. This has many aspects, ranging from the validation of foreign products, to mutual recognition of approvals according to a bilateral arrangement concluded after a successful confidence building exercise. It also comprises mutual technical assistance between Authorities.

It is the policy of the Agency to build a network of such bilateral arrangements. The paramount agreement will be the conclusion of a full bilateral agreement with the US FAA, scheduled to enter into force in mid 2007.

Arrangements have been made or will be concluded soon, inter alia, with Canada, Brazil, China, India, Interstate Aviation Committee, United Arab Emirates, Japan, Israel, Australia, Singapore and New Zealand.

2.12. Organisation

The EASA Organisation consists of 5 Directorates: the Executive Directorate with the main tasks of Safety Analysis, Risk Management and Communication, Rulemaking Directorate with the main tasks Product Safety, Flight Standards, Environmental Protection and International Cooperation, Quality and Standardisation Directorate with the main tasks Quality Assurance, Standardisation and Technical Training, and: Certification Directorate with the Programmes Department, Products Department and Organisation Department. Administration Directorate deals with Finance & Budget, Human Resources, and Legal Service & ICT/Technical Services.

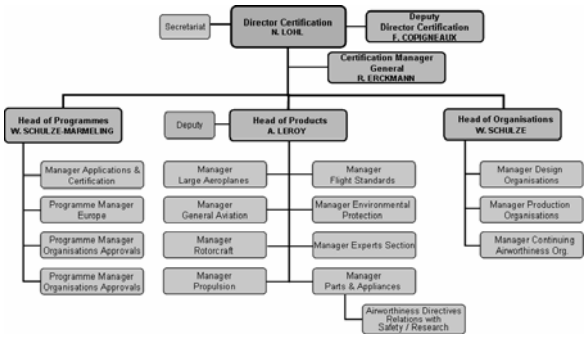

FIG 2. EASA Organisation

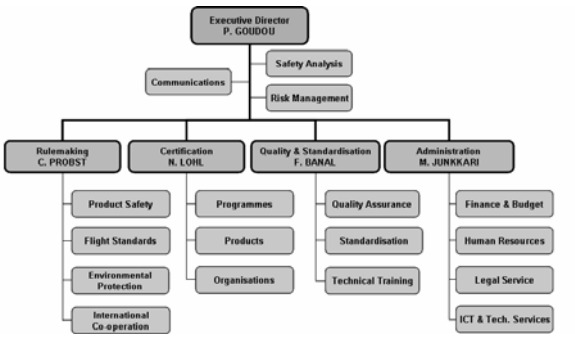

FIG 3. EASA Organisation Certification Directorate

A Management Board with representatives from the Member States and the European Commission adopts the Agency's budget and work programme. The aviation industry is actively involved in the Agency's work through a number of consultative and advisory committees. There is also an independent Board of Appeal.

2.13. Communication

The Internet Web site is the central communication tool of the Agency. The organisation of and the participation in major international events such as the yearly aviation safety conference, seminars, workshops, press events and meetings are additionally performed. The Agency is also initiating working groups tasked at enhancing aviation safety, e.g. the European Safety Strategy Initiative (ESSI), whose safety results are expected within 8 years from its starting point in early 2006.

In this respect, in addition to regular industry meetings, the Agency strengthened its relations with various stakeholders by a series of bilateral meetings. Discussions took place with industry's representative bodies and major applicants. Conclusions from these discussions resulted in continuous improvements of current application/approval processes.

The Agency has also established regular bilateral meetings with National Authorities in this respect.

3. DEVELOPMENT PLAN

3.1. Long Term Vision

The vision of the Agency has three main pillars which underline its structure and actions:

- Policy: what it should do,
- Culture: how it should work,
- Geometry: what should be the best location of the involved personnel to perform their work

The long term vision of the Agency can be summarised as follows:

The Agency will itself perform most of tasks related to product certificates and organisation approvals, when there is a clear benefit in terms of safety, uniformity, efficiency and cost effectiveness. However, Some tasks might remain with the local National Authorities, or other delegated bodies, for efficiency reasons related to physical proximity and languages.

The approach leading to this vision is detailed below. It is noteworthy that it is evolving as a necessity for a living organisation.

The evolution of the total staff in the Certification Directorate can be seen in Fig. 4. In 2010 a number of 307 staff members is foreseen. The proportion of in-house technical staff and external staff e.g. in National Authorities working for EASA is estimated as shown in Fig. 5 with figures of 220 internal and 40 external staff in 2010.

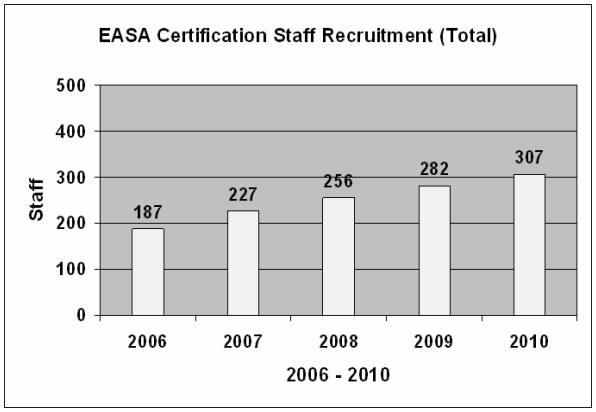

FIG 4. EASA Certification Staffing

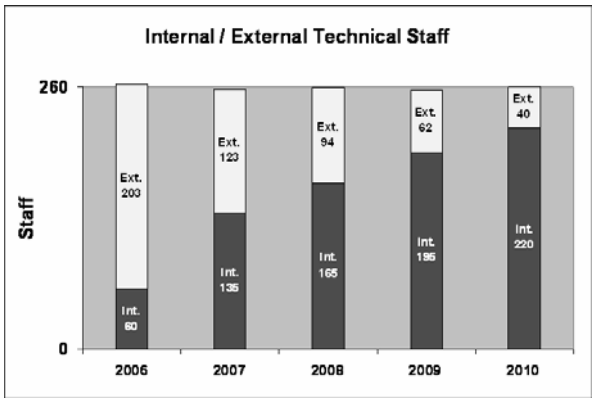

FIG 5. Comparison Internal/External Technical Staff

3.2. Policy

The policy of the Agency is for its own staff to perform all certification activities when this results in a clear benefit for the community. The elements to be taken into consideration are:

- High uniform level of safety across Europe,
- Equal treatment for all citizens (in terms of safety) and companies (in terms of efficiency and cost effectiveness) wherever they are located,
- Complete implementation of all the provisions provided by the legal framework, and, in particular, of the privileges delegated to the industry under the concepts of organisation approvals,
- Sustainable development for the Agency and its stakeholders in the long term.

“Internalisation” by EASA is an obvious response to these high level requirements.

For all these reasons, the policy of the Agency is based on the following concepts:

- Full uniform implementation of the Design Organisation (DOA) concept and privileges to enable approved organisations to exercise their delegation and responsibilities, within the scope of their privileges and subject to the continuous surveillance of the Agency,
- Performing all the certification activities itself where internalisation results in a clear benefit for the community, i.e. for:
    - Type certificates, supplemental type certificates, major design changes and repair approvals, for certain products (e.g. large aircraft and rotorcraft, their propulsion means and related appliances),
    - Continued safety oversight thereof and,
    - the investigation and continued surveillance of the Approved Design Organisation of those approval holders;
- Continuation of the outsourcing to the local National Authorities for other activities. Certification tasks could be carried out locally where e.g. the use of the English language is a problem for the applicant, or the physical proximity to this applicant is necessary.

Concerning organisation approvals, the Agency has the following approach:

- Design organisation approvals are to be internalised in parallel with the related design certification activity because they technically belong together and should not be separated,
- Foreign continuing airworthiness (maintenance, maintenance training) organisation approvals and foreign production organisation approvals are to be managed by the Agency and teams could be built in close cooperation with National Authorities which maintain their competences and qualified staff to cope with their own national approvals.

3.3. Culture

One of the central goals of the Agency is to establish its own technical culture.

As its initial staff constituting the "core teams" came from the National Authorities and the Central JAA (Joint Aviation Authorities), this culture is initially based on that of the National Authorities and of the former Joint Aviation Authorities certification system. There is however a strong need to evolve from this "federation of cultures" into the Agency's own culture of “best practice”. To achieve this goal, i.e. centralisation, performing all these activities from the Agency's headquarters is a necessity.

The Agency's culture will comprise the following:

- **Qualitative description** through a set of procedures and working instructions explaining how the tasks should be performed. The "internal procedures" have been released in early 2005 and are being continuously extended and revised. The working instructions followed with a dedicated "PCM (Project Certification Manager) Handbook",
- **Quantitative description** through an average estimation of technical involvement for each type of certification tasks for better planning of the staffing and the organisation.

3.4. Geometry in Europe

The certification tasks were initially performed by the National Authorities, and gradually internalised by the Agency, with staff located in Cologne. The internalisation process progressed in pace with the increase of the staff of the Agency.

Simultaneously a special working group, the EASA/ National Authorities certification transition working group (ENaCT) has the task to monitor and advise the Agency on its transition process, and on its final geometry.

As a first step, this group identified several candidate "proximity activities" which could be performed *locally* by National Authorities. A series of bilateral talks between the Agency and the National Authorities further confirmed the necessity to perform some activities locally, but also showed that these "local" tasks, their volume, and the most adequate means to perform them were to a certain extent different in some Member States. Experience also led the Agency to consider whether some activities should be better performed locally, e.g. some certification tasks related to minor modifications, minor repairs and to General Aviation activities.

In a second step EASA has identified several ways which could be implemented to perform these local tasks in the long term by:

- Continued outsourcing to the National Authorities,
- Delegation to qualified entities, public or private bodies,
- Delegation to individuals.

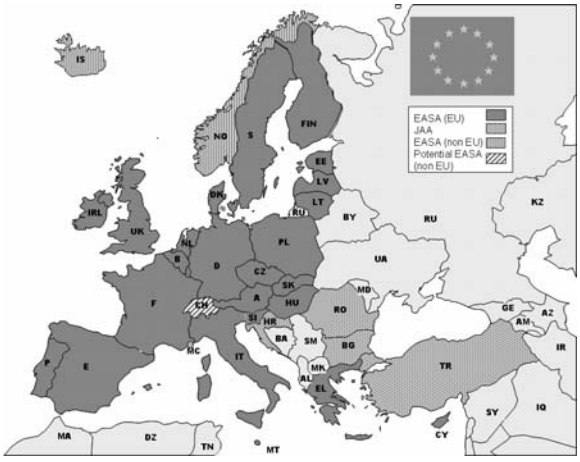

FIG 6. EASA Members

3.5. Staffing

The staffing policy of EASA aims to provide the Agency with the necessary workforce, fulfilling the quantitative and qualitative requirements. Quantitative requirements have been described above.

From a qualitative point of view, to fulfil its global objectives, the Agency must have a highly qualified workforce and adequate procedures to maintain their competency.

The staffing policy can be split into several phases:

- Initially, the Agency recruited its staff either from National Authorities, the EU Commission or from the Central JAA (Joint Aviation Authorities). They constitute the "core expertise" of the Agency, who started the internalisation process and defined the Agency's culture.
- In a second step the main target for recruitment of the Agency is the European aviation industry.
- In a third step there will be the hiring of students out of university and implementation of internal training.
- For some areas of activity (e.g. General Aviation) long term outsourcing to the National Authorities might be worth considering.

To manage the natural turn-over of a dynamic organisation the Agency would definitely encourage movements of staff to and from the industry.

3.6. Transition Period

The "transition period" is defined by the Agency as the time necessary for the transition from the National Authorities/Joint Aviation Authorities system before the Agency came into place to the definitive certification system of the Agency.

The "transition period" began when the Agency started its operation on 28th September 2003.

Initially, from that date to September 2004, the Agency only had limited technical staff able to perform certification activities and nearly all activities were outsourced to the National Authorities.

From September 2004 onwards, the Agency gradually acquired its own technical staff and started performing more and more technical activities. The outsourcing to the National Authorities accordingly decreased.

Outsourcing to the National Authorities was performed informally until the implementation of the fees and charges regulations (CE regulation 4888/2005) led to the conclusion of contracts between the Agency and most of the National Authorities from June 2005 on.

A certain volume of activity ("proximity activities") will remain with the National Authorities, which is currently estimated at 36.000 hrs per year (40 persons or 15% of the total).

Some specific General Aviation activities in some countries where the market is local and English is not used as a working language may remain outsourced to the local National Authorities, for which the outsourcing contracts might need to be modified.

Some other specific tasks such as flight test, software qualification, structural testing, etc. might be outsourced to qualified entities on a long term basis.

3.7. The Future

The European Aviation Safety Agency EASA is already the centrepiece of the European Union’s strategy for aviation safety. Its mission is to promote the highest common standards of safety and environmental protection in civil aviation.

As air traffic continues to grow, a common initiative is needed at the European level to keep air transport safe and sustainable: While national authorities continue to carry out the majority of operational tasks - such as certification of individual aircraft or licensing of pilots - the Agency develops common safety and environmental rules at the European level. It monitors the implementation of standards through inspections in the Member States and provides the necessary technical expertise, training and research.

The aviation industry benefits from common specifications, cost-efficient services and a single point of contact.

The main tasks of the Agency currently include:

- Rulemaking: drafting safety legislation and providing technical advice to the European Commission and to the Member States;
- Inspections, training and standardisation programmes to ensure uniform implementation of European aviation safety legislation in all Member States;
- Type and Environmental Certification of aircraft, engines and parts;
- Approval and oversight of Design Organisations world-wide and of production and maintenance organisations outside the EU;
- Data collection, analysis and research to improve aviation safety.

The European Commission has proposed to extend the Agency's responsibilities to further important areas of safety regulation:

- Rules and procedures for operations;
- Rules and procedures for the licensing of crews;
- Certification of non-Member State airlines.

The Agency expects to take over these tasks by 2008.

In the long-term, it is also likely to play a key role in the safety regulation of airports and air traffic management systems.

4. SUMMARY

The European Aviation Safety Agency (EASA) became operational in 2003 on the basis of a European Parliament and Council Regulation (1592/2002). As an independent EU body under European law, it is accountable to the Member States and the EU institutions. Based in Cologne, Germany, the Agency already employs more than 200 professionals from all Member States. It will continue to recruit highly qualified specialists and administrators in the next years as it consolidates its position as Europe's centre of excellence in aviation safety.

The European Aviation Safety Agency is developing close working relationships with counterpart organisations across the world including the International Civil Aviation Organisation (ICAO), the Federal Aviation Administration (FAA) in the United States and the aviation authorities of Canada, Brazil, Israel, China, Russia, etc. Working arrangements between the Agency and these organisations are aimed at harmonising standards and promoting best practice in aviation safety world-wide.

FIG 7. EASA Headquarters in Cologne