European Network
of
Civil Aviation
Safety Investigation Authorities

ANNUAL REPORT

2017

FOREWORD

BY THE CHAIRMAN OF THE EUROPEAN NETWORK OF CIVIL AVIATION SAFETY INVESTIGATION AUTHORITIES

This report summarises the seventh year of ENCASIA's activities.

I should like to acknowledge the tremendous progress that ENCASIA has made during its first seven years, six of which were under the chairmanship of my predecessor, Mr Ulf Kramer.

To enable the financing of the annual work programmes, ENCASIA created a legal basis, the ENCASIA ASBL. This has enabled us to develop concrete and useful work programmes with the support of grants from the European Commission (EC) and co-financing by our members. Our Network has also been actively involved in regulatory discussions on safety investigation matters with the European institutions and is regularly represented at International safety forums.

Amongst the valuable activities carried out by our working groups, I would like to first underline the 'peer reviews'. Within the three years of my on-going term, we will have completed the reviews of all the Safety Investigation Authorities (SIA) of our Member States as well as the Observer States of Iceland and Norway. These reviews have helped to improve the mutual understanding of our common rules and to identify capability gaps and, as importantly, they have helped building stronger ties within the community of European safety investigators.

One of our main aims is to promote mutual support between ENCASIA SIAs with the primary objective of ensuring that a major civil aviation accident, wherever it occurs in Europe, will be properly investigated and that lessons to prevent reoccurrence will be learned and shared. The ENCASIA Mutual Support System (EMSS) is a medium to long term project that will prepare all SIAs to manage such an event. Our work in improving the drafting and the sharing of safety recommendations will also help to disseminate lessons learned and strengthen our approach in identifying and resolving safety deficiencies.

These early successes were only possible through the active participation of investigators, from many SIAs, in the ENCASIA working groups. While their involvement represents a significant investment in time, their efforts have helped to implement the objectives of Regulation (EU) No 996/2010. I, therefore, take this opportunity to thank them and encourage them to remain committed to this collective work.

I should also like to take the opportunity to thank the European Commission for their continuing support, not only by providing logistics support and grants financing, but also through the participation and open discussions in ENCASIA meetings. The Commission's support has been instrumental in ENCASIA's success.

Rémi Jouty

ENCASIA Chairman and
Director Bureau d'Enquêtes et d'Analyses
pour la Sécurité de l'Aviation civile

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INTRODUCTION

Regulation (EU) No 996/2010 established the European Network of Civil Aviation Safety Investigation Authorities (ENCASIA) and has put strong emphasis on the coordination between Safety Investigation Authorities (SIA) and its reinforcement in the European context, in order to generate real added value in aviation safety. This is to be achieved by building upon the already existing cooperation between such authorities and the investigation resources available in the Member States. SIAs should be able, in each Member State, to conduct efficient and independent investigations and contribute to ithe prevention of accidents through their activities.

ENCASIA is composed of the Heads of the SIAs in each of the Member States and / or, in the case of a multimodal authority, the Head of its Aviation Branch, or their representatives, including a Chairman chosen among these for a period of three years.

This 2017 report is the seventh ENCASIA Annual Report related to the implementation of its work programme. The report will be provided to the European Parliament and European Council, and will be made publicly available on the Commission's webpages at:

https://ec.europa.eu/transport/modes/air/encasia/activities_en

ENCASIA's organisation

1.1) Change of key Positions

The Chairman and Deputy Chairman of ENCASIA are elected by members for a period of three years. The position of Deputy Chairman had been vacant since August 2016 following the retirement of Mr Conradi (UK) from ENCASIA and the position of Chairman was due for re-election in early 2017.

At the 14th Plenary Meeting held in Brussels on 8 and 9 February 2017, the 21 members present, who were permitted to vote, elected Mr Rémi Jouty (France), for the position of Chairman and Mr Jurgen Whyte (Ireland) for the position of Deputy Chairman. Mr Ulf Kramer (Germany) who held the position of Chairman for six years did not stand for re-election.

A photograph taken, following the election, of ENCASIA Members and representatives of the EC and EASA is at Figure 1.

Figure 1. ENCASIA Members with representatives from the EC and EASA

1.2) Commission's grants

Table 1 summarises the status of the Commission grants, which are related to the ENCASIA work programme.

Year	Name	Grant actions	EC grant	Co-financing rate	Status
2012	ENCASIA 1	Two training sessions carried out in the UK and FR during 2013.	€98,630	95% (EC) 5% (UK and FR)	Closed 2014
2013	ENCASIA 2	Training for peer reviews (UK) and mutual assistance (DE) in 2014. Peer review of four SIA in 2014.	€99,932	100% (EC)	Closed 2015
2014	ENCASIA 3	Training for peer reviews (PT) in 2015. Peer review of six SIA in 2015.	€79,947	95% (EC) 5% (ENCASIA)	Closed 2016
2015	ENCASIA 4 & 5	Training for peer reviews (AU) in 2016. Peer review of six SIA in 2016.	€159,942	95% (EC) 5% (ENCASIA)	50% of grant received and actions completed for 2016.
2016		Training on mutual support and preparation for peer reviews (CZ) in 2017. Peer review of six SIA in 2017.			30% of the grant received as a 2nd instalment and all actions completed for 2017. Additional payment of the grant (10%) requested to pay for the actions in 2017.

2018	ENCASIA 6&7	Mutual Support training in 2018. Peer review in 2018 and 2019. Training on Safety recommendation and investigation in 2019. Desk Top exercises in 2018 and 2019.	€168,428	95% (EC) 5% (ENCASIA)	Contract signed 29 Dec 2017. First instalment of €80,000 received in January 2018.

Table 1. Status of the grants from the Commission

1.3) Outreach activities

Throughout 2017, ENCASIA members have taken an active part in a variety of forums where they have not only represented the views of ENCASIA, but have also advised the wider aviation community on the progress of the ENCASIA work programme. Forums include: the International Civil Aviation Organisation (ICAO) Accident Investigation Group (AIG) Panel; ICAO European Civil Aviation Conference (ECAC) ACC (group of experts on accident investigation); International Society of Air Safety Investigators (ISASI); European Society of Air Safety Investigators (ESASI); European Aviation Safety Agency (EASA) Network of Analysts (NoA); ECCAIRS Steering Board (ESB) and Steering Committee (ESC).

ENCASIA has continued to informally advise the European Rail National Investigation Body (NIB) Network on developing a peer review process. A representative of the USA National Transportation Safety Board (NTSB) was also invited to take part in a workshop to develop the EMSS for accident investigation.

2) ENCASIA Membership Committee

Introduction

ENCASIA and the EC had been approached by a number of non-EU European SIAs, who were in the process of adopting Regulation (EU) No 996/2010 into their national law, to be accepted as an Observer at ENCASIA meetings, workshops and training activities. Article 2, of Regulation (EU) No 996/2010 states:

> "*The Network may invite safety investigation authorities of third countries to appoint representatives to participate as observers, at the discretion of the Chairman, in the work of the Network. The Network may also, in the same way, invite experts to attend its meetings when appropriate."*

Current situation

Norway and Iceland have held Observer status for a number of years, and have attended ENCASIA plenary meetings and taken an active role in ENCASIA working groups and activities. The only restriction is they are not permitted to vote at plenary meetings. Kosovo[1] has also attended a number of plenary meetings as an Observer and representatives from other non-EU European SIAs have attended ENCASIA training activities at their own expense.

Establishment of a membership committee

There are advantages in accepting new observers who can benefit and also help the Network meet its aims of improving the quality of safety investigations, in particular major civilian aircraft accident investigations, and encouraging high standards in investigations within Europe. Therefore, at the 15th plenary meeting held in September 2017 a sub-committee, chaired by the Deputy Chairman of ENCASIA (Mr Whyte), was established to develop guidelines for processing applications from Observer State candidates. Such guidelines would assist in the future consideration of applications for Observer status against the following criteria:

- Implementation of Regulation (EU) No 996/2010 at national level for non-EU Member States.
- Implementation of the EU acquis in Civil Aviation, especially the EASA basic Regulation and its implementing rules.
- Capacity to be actively involved in the ENCASIA activities and working groups.

The sub-committee has developed guidelines to consider applications for Observer status and has started processing them.

3) Mutual Support

One of the main remits of ENCASIA is the mutual support of Member States in undertaking safety investigations. The following two investigations undertaken during 2017 are good examples of how ENCASIA members work together not only to provide practical assistance, but also to offer advice on best / good practices.

3.1) Accident involving a Sikorsky S-92 Coastguard helicopter

The AAIU highlighted a number of challenges they faced when investigating an accident involving a Sikorsky S-92 Coastguard helicopter, which crashed in the sea after colliding with a rock off the West Coast of Ireland. In particular, the release of an

[1] This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and ICJ Opinion on the Kosovo declaration of independence.

extract from the transcript of the CVR recording. The extract (1 min 42 sec of a 2-hour tape), which covered the final moments of flight, was important in understanding how the helicopter was being operated and was, therefore, included in the Preliminary Report and released to the families ahead of its publication.

It took ten days for the Multi-Purpose Flight Recorder to be located, recovered, and then downloaded by the AAIB (UK). However, the difficulty that the AAIU faced was in meeting their EU obligations relating to the assistance to the families of the victims, while also satisfying the requirements of ICAO Annex 13 and Regulation (EU) 996/2010 regarding the protection of CVR recordings or their transcripts.

The AAIU consulted widely, including seeking advice from the Heads of European SIAs who agreed that this was a complex situation. Ultimately the main concern of the AAIU was the protection of the actual recording. The release of the extract of the transcript was well received by the families, professional colleagues and much of the industry. However, some professional organisations expressed the view that release of the extract was in contravention of ICAO Annex 13 and Regulation (EU) No 996/2010.

The AAIU considered that the advice and deliberations of other SIAs was invaluable in their decision-making process to release this information. In addition, it is important to note that there was a general consensus by ENCASIA Members that the release of this information was justified and consistent with the provision and obligations of Regulation (EU) No 996/2010.

3.2) Fan separation on Air France A380

On 30 September 2017 an Air France A380 was crossing the Atlantic when the fan and inlet section of the No 4 engine detached in flight. The aircraft successfully diverted to Goose Bay in Canada and the Canadian TSB led the start of the investigation.

After it was determined that the event occurred over Greenland, Denmark as the State of Occurrence delegated the investigation to the BEA (France) as the State of Registration, Operator and Design. The NTSB (USA) were also involved as State of Design of the engine. Investigators from the BEA, AIBD (Denmark), NTSB and TSB (Canada) all cooperated in the investigation and the recovery of the parts in difficult weather conditions and inhospitable terrain. A further search for missing parts will take place in the spring of 2018.

This accident not only highlights the international nature of air accident investigations, but also the benefits of States establishing good working relationships between their SIAs prior to the occurrence of an accident. The TSB and AIBD are both part of the

Nordic Accident Investigation Group (NAIG), which includes other Nordic countries[2], and holds regular meetings and exercises. The BEA and AIBD are both members of ENCASIA and the NTSB sent a representative to an ENCASIA mutual support workshop held in 2017 to understand how European SIAs work together.

4) ENCASIA's work programme

The 2017 ENCASIA Annual Work Programme is at Appendix 1 and covers the activities of the working groups (WG) and the coordination of ENCASIA training activities. The progress of each of the work streams is summarised in the following WG reports.

4.1) Working Group 1: Network communication and internet presence

WG 1 continued to update and improve the ENCASIA restricted (Drupal) and public websites. In addition, the working group has started a consultation process with members to determine how ENCASIA might improve its communication strategy and improve the content on the public area of the ENCASIA website.
www.ec.europa.eu/transport/modes/air/encasia_en

4.2) Working Group 2: Inventory of best practices of investigation in Europe

In addition to developing and adding to the inventory of best / good practice, WG 2 has worked closely with WG 3 and WG 5 in the development of the EMSS. Members of this working group also took an active part in the peer review process where they identified and reviewed best / good practice, and the EMSS training held in September 2017, where they shared a number of best / good practices.

During the year, WG 2 drafted two main documents that once approved will be uploaded onto the ENCASIA Inventory of Best Practice, held on the ENCASIA restricted website. The documents are titled *'Guidance on Health and Safety'* and *'H&S IIC / ACCREP Short Term Coordination Practices'*.

During 2018, WG 2 will focus on producing guidelines to assist smaller SIAs with the management of a major investigation.

4.3) Working Group 3: Procedures for asking and providing help

A major initiative launched during 2016 by WG 3 was the development of the EMSS concept, which is intended to help States that do not have the resources or experience to investigate a major or complex aircraft accident. It is a voluntary process that helps ENCASIA States identify their capability gaps, develop contingency plans and establish prior arrangements with other States.

[2]Canada, Denmark, Finland, Iceland, Norway, Sweden

The basis of EMSS is that on request, and subject to availability, one or more Assisting States would provide a combination of an Assistant Investigator in Charge (AIIC), group leaders and investigators.

Following an extensive consultation exercise and a workshop held in Prague on 27 and 28 September 2017, attended by representatives from 29 European States and the NTSB (USA), the working group produced a Framework Document and a template for a National Investigation Management Plan (NIMP). The Framework document provides guidelines on how States might provide mutual support and the key steps that need to be undertaken during a major investigation. The completed NIMP will belong to the State responsible for organising and conducting the investigation and details the responsibilities and protocols in place between the State of Occurrence and Assisting States.

Three Host and three Assisting States have volunteered to take part in a trial of EMSS by producing a NIMP and testing it during a table-top exercise to be run in the Host States during May and June 2018. Representatives from other ENCASIA States will be invited to observe the exercises.

The Host and Assisting States are:

Host State	**Assisting State**
Iceland	UK
Lithuania	Germany
Slovenia	France

4.4) Training steering committee

The training steering committee assisted WG 3 and WG 5 with the investigator training and EMSS workshop held in Prague, Czech Republic, during the week of 25 September 2017. Twenty-five participants from 18 States took part in the investigator training and 37 participants from 29 States took part in the workshop. The training covered peer reviews, mutual support and the role of an AIIC.

The training and workshop was hosted by the Air Accidents Investigation Institute (Czech Republic).

4.5) Working Group 5: Peer Reviews

Introduction

Six peer reviews were carried out during 2017 in Hungary, Ireland, Latvia, Malta, Poland, and Sweden. In total 22 ENCASIA States, including Iceland and Norway, have now been peer reviewed with eight States still to be reviewed. Two external States, Israel and Singapore have also been reviewed, at their request, and Switzerland has asked ENCASIA to conduct a peer review in 2018.

Training

The peer review training took place in Prague, Czech Republic, from 25 to 26 September 2017. Twenty experienced investigators from 18 different ENCASIA SIAs, as well as two observers from Switzerland and the USA, took part in the training which was delivered by members of WG 2, WG 5, WG 7 and the EC.

2017 was the last year that the peer review training would be run in its present form. Over the four years that the course was run, ENCASIA trained 72 investigators from 28 ENCASIA States, the EC, Israel, FYROM[3], Switzerland and USA. The training was considered to have been a success and has been fundamental in harmonising a number of practices, improving the standard of investigations and helping to lay the foundations for mutual support across Europe.

Findings and improvements

The findings from the peer reviews undertaken during 2017 reflected the findings from previous years in that smaller SIAs generally do not have the necessary resources and experience to conduct, without assistance, an investigation into a major civilian aircraft accident. With such accidents being relatively rare, larger SIAs also experience difficulty in ensuring that new investigators gain the necessary experience.

Future of the Peer Reviews

The intention is to complete Phase 1 of the peer reviews of all ENCASIA States during 2018, evaluate the findings and produce an ENCASIA Discussion Paper on the results of the reviews during 2019. Consideration will then be given to developing the objectives for Phase 2 of the peer reviews.

4.6) Working Group 6: Safety Recommendations

Overview

WG 6 continued to support other organisations with the development of the European Safety Recommendation Information System (SRIS) and to support the integration of safety recommendations into the European Central Repository (ECR) database.

European Central Repository (ECR)

The ECR is a repository of information on civil aviation occurrences exchanged in accordance with Regulation (EU) No 376/2014. This includes information on occurrences investigated by ENCASIA member SIAs. Regulation (EU) No 996/2010 (Article 18) also requires Member States to record in the ECR all safety recommendations issued in accordance with Article 17(1) and (2). A decision has been made by the EC that support of the ECR would transfer from the DG-JRC (Directorate General - Joint Research Centre) to EASA at the end of December 2019.

[3] Former Yugoslav Republic of Macedonia (FYROM)

A project has also been launched to update the ECR and its supporting software, including the recording of occurrences and safety recommendations - a project known as ECCAIRS 2.0. As this change has a direct impact on SIAs, ENCASIA produced a Position Paper in December 2016, which was included in the 2016 Annual Report. It was subsequently agreed by the ECCAIRS Steering Board (ESB) that ENCASIA would be represented on the ESB by the Chairman of WG 6. The terms of reference of the ESB and ECCAIRS Steering Committee were amended and agreed, to allow this permanent position on the ESB.

During the initial feasibility studies into the future of ECCAIRS there was direct engagement with the SIAs, including on-line surveys and interviews. A Key User Group (KUG), which includes ENCASIA members, was established to define the key requirements for the new database and will be instrumental in its development. In the meantime, DG-JRC continues to support SRIS until December 2019.

Public SRIS

Work continues to explore the possible amendment of the Commission Decision to expand Public SRIS with the inclusion of responses and response assessments. An ENCASIA Opinion on this subject was prepared by ENCASIA and presented to the EC. The ENCASIA Opinion is at Appendix 2.

Training and guidance

There are plans to hold a workshop on safety recommendations in 2019, the details of which will be developed during 2018. Training and guidance material is continuing to be developed and will be available to SIAs, along with material already produced by WG 6, from the ENCASIA restricted website. It is anticipated that the instructional video on the use of SRIS will be provided during 2018.

4.7) Working Group 7: Assistance to Air Accident Victims and their relatives

WG 7 completed the practical guide, in the form of a leaflet, for victims and their relatives. The guide explains the role and the different phases of a safety investigation, and the relationship of the investigators with other entities involved in dealing with the accident. The leaflet titled '*Practical guide on safety investigations for air accident victims and their relatives'* was translated into 23 languages and placed on the public area of the ENCASIA website. Representatives of ENCASIA briefed the wider aviation community of the existence of the leaflet through ICAO, ECAC (ACC) and ESASI.

A separate memo for investigators on dealing with victims and their families (produced in English) was also finalised and placed on the secure area of the ENCASIA website (Drupal). In addition to the leaflet and memo, a list of links to victims' associations has been compiled and added to a new page on the public area of the ENCASIA website www.ec.europa.eu/transport/modes/air/encasia/leaflet_en.

The leaflet and memo have been used by a number of SIAs many of whom have distributed the leaflet widely within their own State. ECAC will incorporate the leaflet into their Reference Document, Doc 30, Part I on Facilitation, which provides guidance on ICAO Annex 9.

ENCASIA will continue to collect and disseminate the experiences of SIAs and will be able to advice SIAs on current best practice on family assistance.

5) Evaluation of Regulation (EU) No 996/2010

ENCASIA played an active role in supporting the EC evaluation of Regulation (EU) No 996/2010, which was undertaken as part of the EC's aviation strategy to look at the most important safety regulations. ENCASIA was represented on the focus group by four members and representatives from most of the SIAs attended a meeting to discuss the initial findings held in June 2017. ENCASIA Members were also involved in selecting and advising on the case studies that were considered during the evaluation. The case studies were:

- Germanwings, Airbus A320, Prads-Haute-Bléone, France. (24 March 2015)
- LOT Polish Airline, Boeing 767, Warsaw, Poland. (1 November 2011)
- Namur Air Production, Pilatus PC-6, Gelbressée, Belgium. (19 October 2013)
- UK Court cases.

ENCASIA will participate in discussions, and provide comment, on the final report and EU Discussion Paper that are expected to be circulated in early 2018. Support will also be provided to the EC, where possible, in the preparation of a Commission Staff Paper on the evaluation and functioning of Regulation (EU) No 996/2010.

6) Revision of Regulation (EC) No 216/2008

ENCASIA continued to monitor the progress of the revision of Regulation (EC) No 216/2008, particularly the three Articles which could affect ENCASIA Members. Article 28 and Article 61 concerned the real time downloading of data from an aircraft in distress, and Article 124 the scope and obligation to investigate.

The initial proposal for the real time downloading of flight recorder data meant that data would be transmitted to EASA, which ENCASIA believed would be in contravention of Regulation (EU) No 996/2010. However, the EU Presidency proposed a compromise with a more performance based regulation which would allow a second solution to meet this requirement using floatable flight recorders and by removing the role of EASA in processing downloaded data. As there would be no direct transmission of data to EASA, this proposal would protect access to CVR and FDR information in accordance with the requirements of Regulation (EU) No 996/2010, Article 14.

As the draft revision of Regulation (EC) No 216/2008 would regulate drones under the EASA system, this would create new obligations to investigate occurrences involving drones. ENCASIA advised the EC on the wording of Article 124 that amends Regulation (EU) No 996/2010.

While the proposal requires States to investigate accidents involving some categories of drones, there is flexibility to ensure that an excessive burden is not placed on SIAs for events with limited consequences and potential for drawing safety lessons.

7) Data Analysis of the Safety Recommendations Information System (SRIS)

ENCASIA is required by Regulation (EU) No 996/2010 (Article 7.3(g)) to analyse the safety recommendations that have been entered onto SRIS and to identify important Safety Recommendations of Union Wide Relevance (SRUR). This analysis is carried out by WG 6.

While this Annual Report refers to data that was entered onto SRIS up to 28 December 2017, the analysis of the data only covers the period up to 1 December 2017.

7.1) SRIS overview

As of 28 December 2017, a total of 2,714 safety recommendations had been recorded on SRIS, of which 248 were issued in 2017. This is fewer than the consolidated figures for the previous years, and reflects the experience of EASA who has also recorded fewer safety recommendations on their database over the same period. WG 6 will review this data in more detail in order to understand the reason for this change.

A comparison of the safety recommendations contained in SRIS and the EASA database identified 12 that had been received by EASA, but had not been recorded on SRIS. WG 6 reminded the SIAs involved of the requirement to record safety recommendations on SRIS and where necessary have offered SIAs training in the use of SRIS.

Charts 1 and 2 provided a summary of the safety recommendations recorded on SRIS.

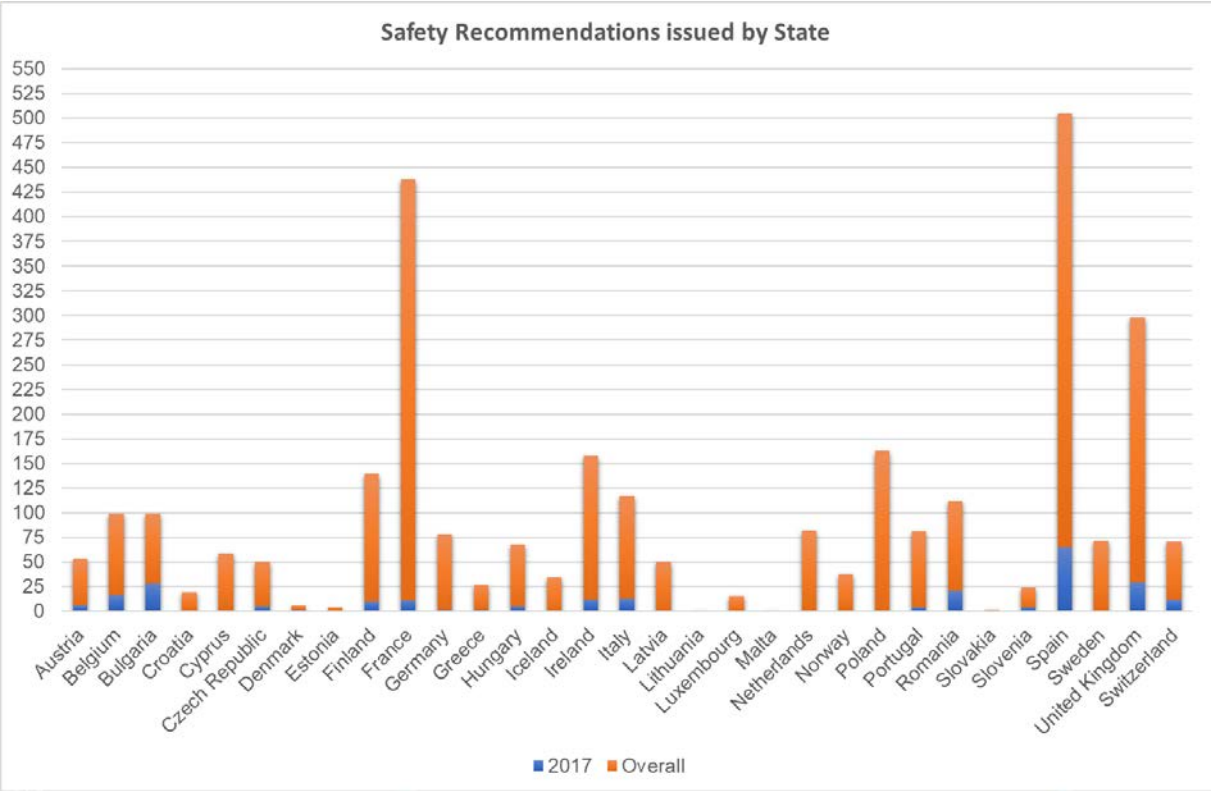

Chart 1. Summary of safety recommendations recorded on SRIS by State

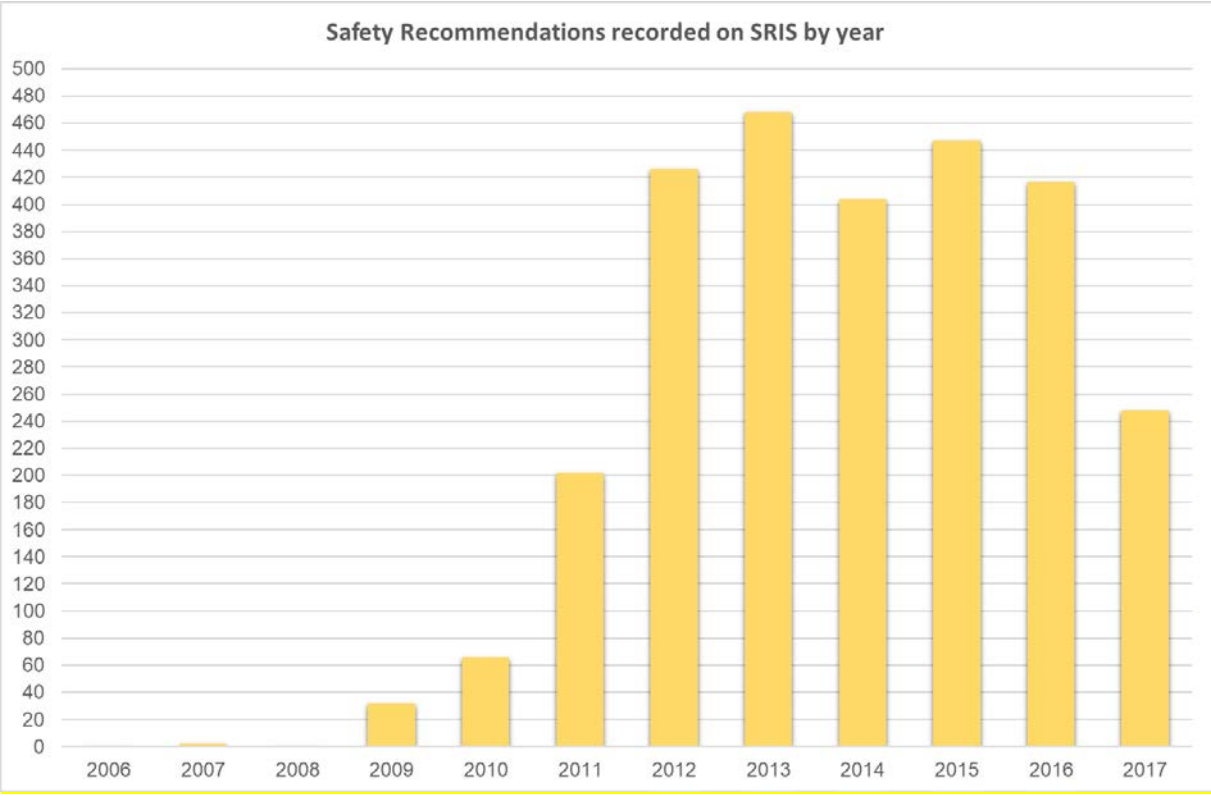

Chart 2. Number of safety recommendations recorded on SRIS by year

7.2) Safety Recommendations of Union-wide Relevance (SRUR)

A SRUR is defined as meeting one or more of the following criteria:

- The deficiency underlying the safety recommendation is systemic, not related to a specific aircraft type, operator, manufacturer component, maintenance organisation, air navigation service and/or approved training organisation, and is not solely a national issue, or;
- There is a history of recurrence across Europe of the relevant deficiency.

In 2017 there were 19 safety recommendations that were assessed as being SRUR and covered the following safety issues, which are expanded on in the following sub-paragraphs:

- Aircraft performance
- Aerobatic training requirements
- Aeromedical decision making
- Ballistic Parachute Recovery Systems
- Fire/Smoke emergency descent training
- Life jackets and water survival training for overwater aerial work
- Lithium battery
- Loss of tail rotor effect training
- Minimum fuel declaration
- Safety briefings
- Unmanned helicopter auto recovery
- Oxygen mask and smoke goggle usage

Aircraft performance

While taking off from Belfast International Airport, a tyre on a Boeing 737-86J struck a 0.35 m high runway approach light situated 29 m beyond the end of the runway. This serious incident occurred because the thrust on both engines had been set significantly below that required to achieve the required takeoff performance. The investigation established that it is probable that the Outside Air Temperature (OAT) at the top-of-climb had been entered into the Flight Management Computer (FMC) instead of the ambient ground OAT. The FMC software on the aircraft did not have a crosscheck of measured OAT with that entered into the FMC, which was available on later versions of the FMC software. The AAIB (UK), therefore, issued a safety recommendation to the Federal Aviation Authority (FAA) for this latest version of software to be mandated and to promulgate information on this event to all operators.

Aerobatic training requirements for pilot's of Annex II aircraft

Article 2 of the Basic Regulation (EC) 216/2008 states "*The principle objective of this Regulation is to establish and maintain a high uniform level of civil aviation safety in Europe.*"

An investigation carried out by the AAIU (Ireland) considered that the application of Regulation (EU) No 1178/2011 FCL.800 (Aerobatic Rating) to Annex II aircraft had the potential to provide an additional level of uniform safety for such a relatively high-risk aviation activity. However, EASA informed the investigation that this rule cannot be applied to Annex II of Regulation (EC) 216/2008 aircraft under their current mandate and any changes would be the responsibility of the EC.

While Part-FCL requirements for Annex II aircraft are currently the responsibility of National Aviation Authorities, the Director General of Mobility and Transport of the European Commission (DG MOVE) engaged proactively with the investigation to consider how best to resolve this safety issue within the regulatory framework. The AAIU subsequently issued a safety recommendation to DG MOVE to consult with EASA in order to define common minimum aerobatic training requirements for pilots wishing to operate, for the purposes of aerobatic flight, aircraft categorised under Annex II of Regulation (EC) 216/2008.

Aeromedical Decision making

The SIAF (Finland) made safety recommendations to ICAO and EASA to review the existing guidance material contained in the Manual of Civil Aviation Medicine to include a risk assessment model to facilitate aeromedical decision making in the evaluation of pilots at risk from recurrent heart attacks. These safety recommendations are intended to take account of modern cardiological treatments and to provide an assessment of the risk of a recurring heart attack occurring in pilots who have already suffered a heart attack.

There was concern that some Aviation Medical Examiners (AME) may only carry out a small number of aeromedical assessments and, therefore, may not be fully proficient in performing adequate risk assessments. Therefore, a safety recommendation was made to EASA to introduce training for AMEs who would carry out the risk assessment.

Ballistic Parachute Recovery Systems (BPRS)

The CIAIAC (Spain) raised several safety recommendations to EASA and ICAO regarding the hazard that a BPRS presents to first responders and accident investigators following an accident or serious incident. In order to manage the risk of injury there is a need for first responders and accident investigators to be aware that such a system is fitted and to have access to information on how to make the system safe. Similar recommendations have been made by the AAIB (UK), the NTSB (USA) and other SIAs. The issue is currently being addressed by the ICAO AIG/P.

The safety recommendations propose that information where an aircraft is fitted with a BPRS should be added to flight plans; additionally, information on how to identify and deactivate BPRS should be shared widely. Safety recommendations have also been made to improve the installation of BPRS and to include, as compulsory for pyrotechnical systems: specifications for the routing of system components; a thermal exposure indicator; placarding to alert persons to the hazards, and the danger areas on the aircraft.

Fire/Smoke emergency descent training Oxygen mask and smoke goggle usage

Following an accident involving a Cessna 525 B Citation (F-HCIC), the BEA (France) issued two safety recommendations relating to training and improvement of crew protective equipment for High Performance Aircraft (HPA). The safety recommendations covered:

- Training on complex aircraft, in the context of Flight Crew Licensing, undertaken in flight simulation training devices during smoke or emergency descent training.
- Mandating the use of full-face masks on HPA. A study to be carried out by EASA, in cooperation with the FAA, to look at the in-service experience on the use of masks with separate goggles compared to the use of full-face masks.

Life jackets and water survival training for overwater aerial work

A Hughes 369(D) helicopter, undertaking aerial work, crashed into the sea three nautical miles east of Pinedo, Valencia, Spain. Although all the occupants survived, they were no life jackets onboard the helicopter and only the passengers had completed a water survival training course. The CIAIAC (Spain) made a number of safety recommendations to EASA relating to the carrying of lifejackets during civil helicopter operations and for water survival training to be undertaken by persons involved in aerial work over water.

Lithium battery fire on powered sailplanes

A lithium battery fire occurred, in flight, on an HPH Glasflugel 304 eS, electric self-sustainer sailplane (G-GSGS). The AAIB (UK) issued a safety recommendation to EASA to require all powered sailplanes fitted with a Front Electric Sustainer System, and operated under an EASA Restricted Type Certificate or an EASA Permit to Fly, to be equipped with a warning system to alert the pilot to the presence of a fire or other hazardous condition in the battery compartment.

Loss of tail rotor effect training

The CIAIAC (Spain) recommended that the EASA standardise training for ‘Loss of Tail Rotor Effect’ across all helicopter training programmes.

Minimum Fuel declaration

Following a missed approach, which occurred as a result of the wind changing direction, the crew declared a fuel emergency and were given priority to land. This action required ATC to coordinate other traffic which led to a potential traffic conflict. Although this event is still under investigation, the CIAIAC (Spain) recommended that EASA should consider issuing guidance on the appropriate use of the "*minimum fuel declaration"* by flight crews.

Passenger safety briefings

Following a domestic flight from Bucharest to Timișoara, a passenger informed the CIAS (Romania) that although the flight remained within Romania, the safety briefing was only made in English and he was not able to understand it. The commercial announcements for duty free products, food and drinks were made in Romanian.

According to Article CAT.OP.MPA.170 of Regulation (EU) No 965/2012, the air operator is not required to use the official language of the State in which the flight is undertaken. In this case, the air operator preferred to make the safety announcements in English which is an official language of ICAO.

Given the potential safety issue for domestic flights with non-English speakers, the CIAS made a safety recommendation to EASA that passenger safety briefings required by Regulation (EU) No 965/2012 should also be given in the official language of the State where the flight takes place.

Unmanned helicopters

The ANSV (Italy) carried out an investigation into an event involving an unmanned helicopter that suffered an engine failure and did not have a system fitted to arrest the vertical descent with the result that it struck the ground with some force. In comparison, following an engine failure on a manned helicopter the pilot would fly an autorotation manoeuvre to decrease and manage the vertical velocity. As a result of this finding, the ANSV made a safety recommendation to EASA for automatic emergency recovery systems to be installed in unmanned helicopters to reduce the vertical velocity following an engine failure.

7.3) Safety recommendation topics

Each safety recommendation is assigned to a topic that best indicates the area that the recommendation addresses. The topics are allocated to three levels, with Level 1 being the highest and covering four topics. Each Level 1 topic is further broken down into sub-topics.

Chart 3 shows the Level 1 topics and the percentage of those assigned to each category. From Chart 3 it can be seen that almost half of the safety recommendations raised during 2017 were related to procedures or regulations.

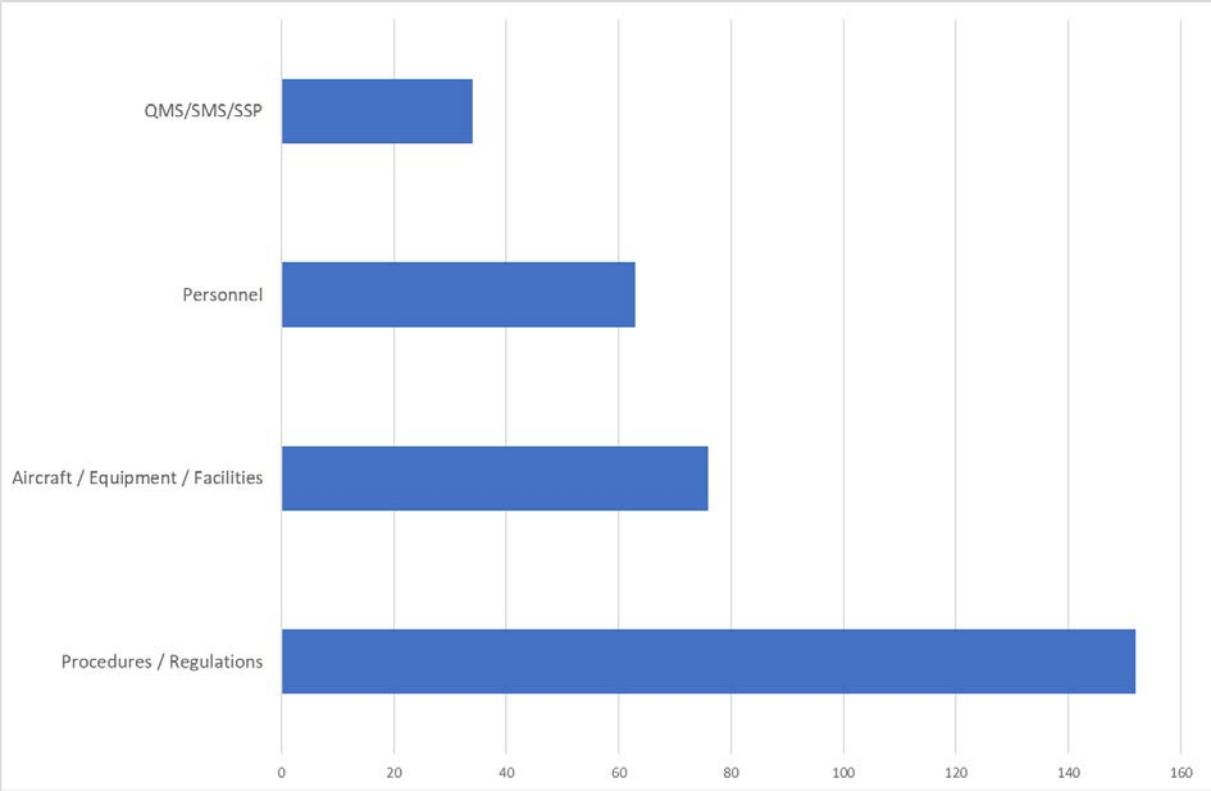

Chart 3. Level 1 safety recommendation topics

Charts 4, 5, 6 and 7 show the sub-level 2 topics for each of the higher Level 1 topics.

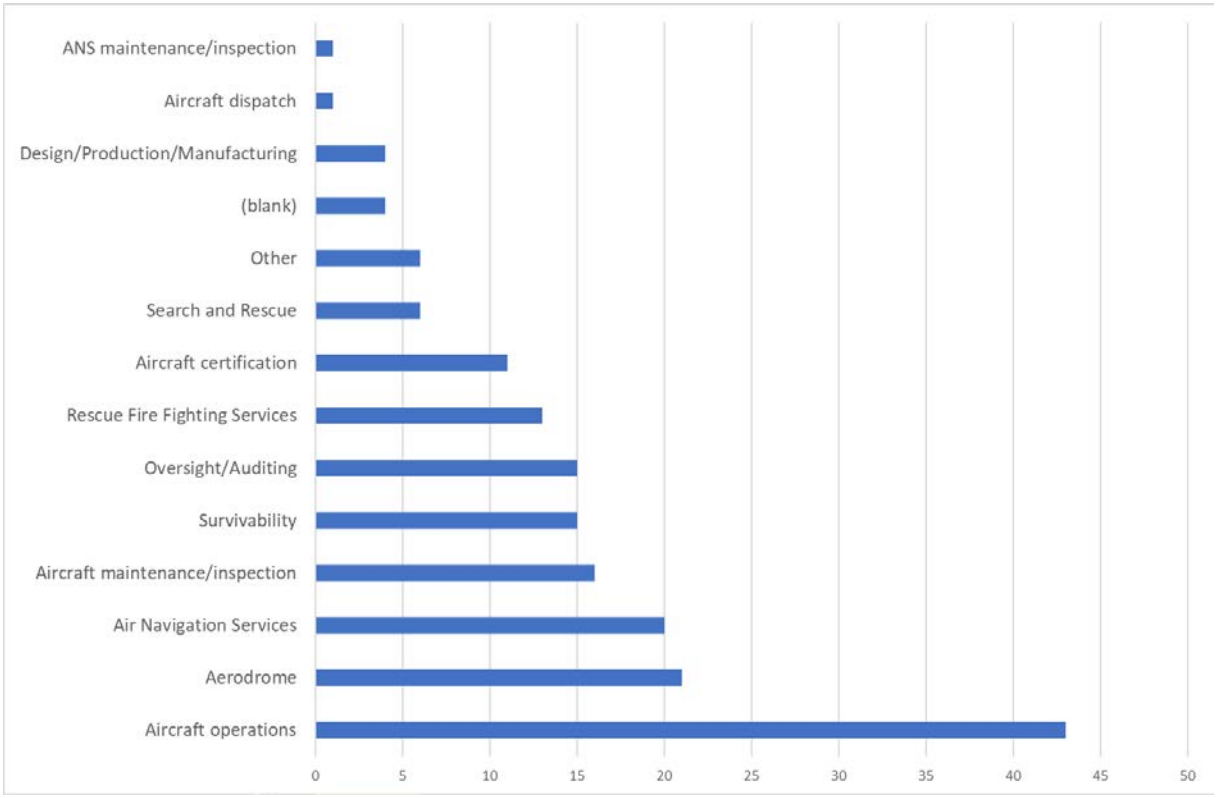

Chart 4. Level 2 safety recommendation topics relating to procedures and regulations

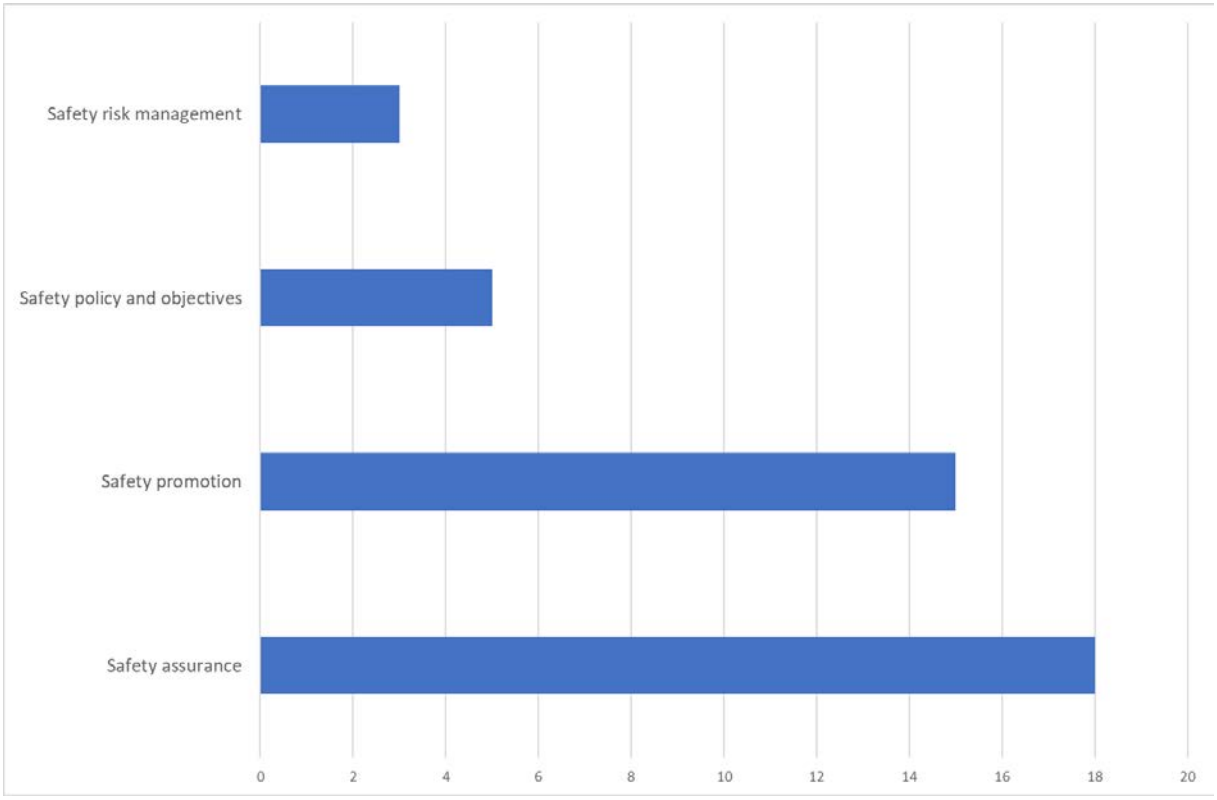

Chart 5. Level 2 safety recommendation topics relating to Quality Management System / Safety Management System / State Safety Programme

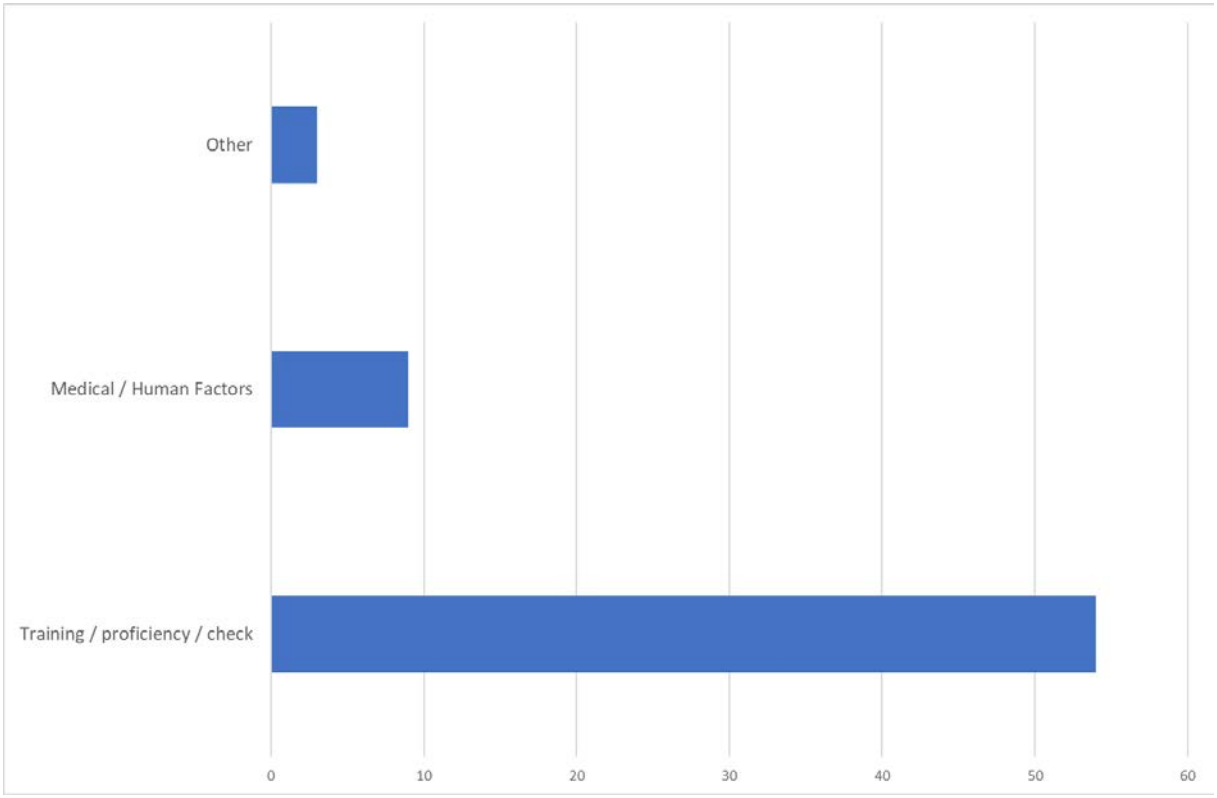

Chart 6. Level 2 safety recommendation topics relating to personnel

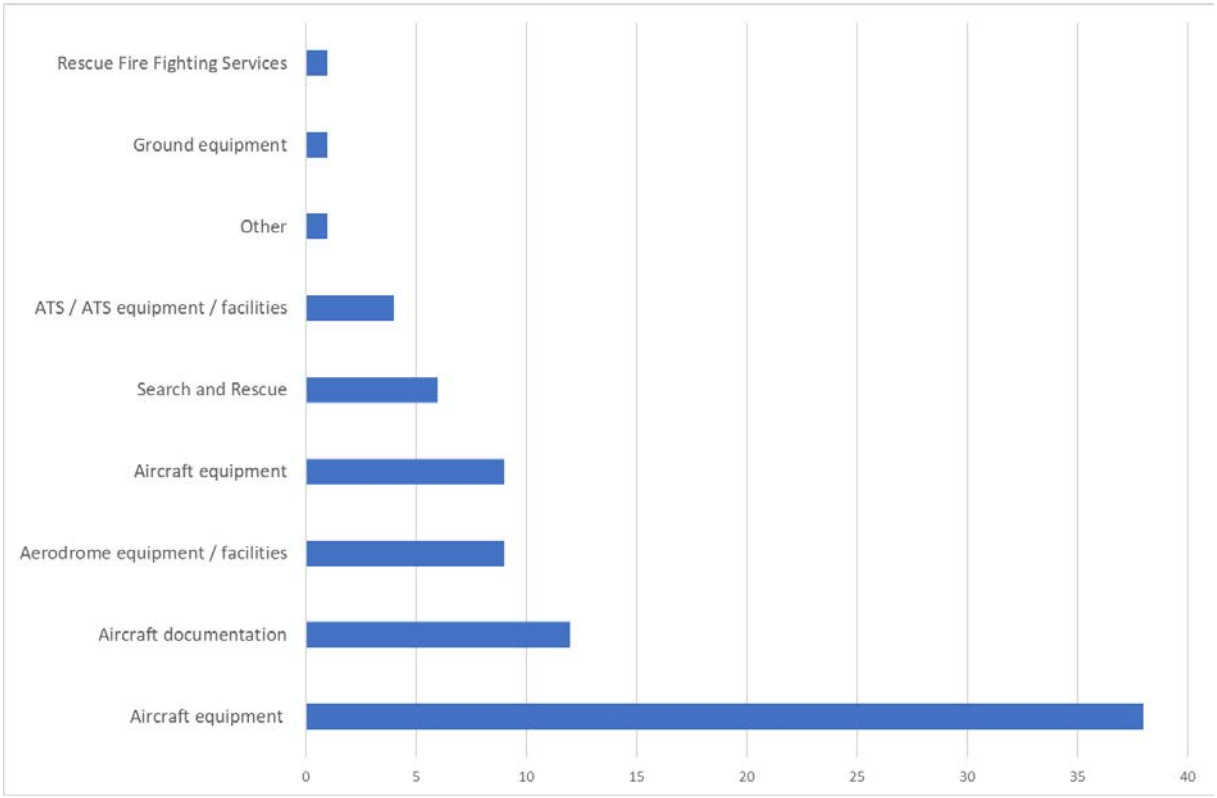

Chart 7. Level 2 safety recommendation topics relating to aircraft / equipment / facilities.

Chart 8 shows a further breakdown of the topics related to aircraft equipment.

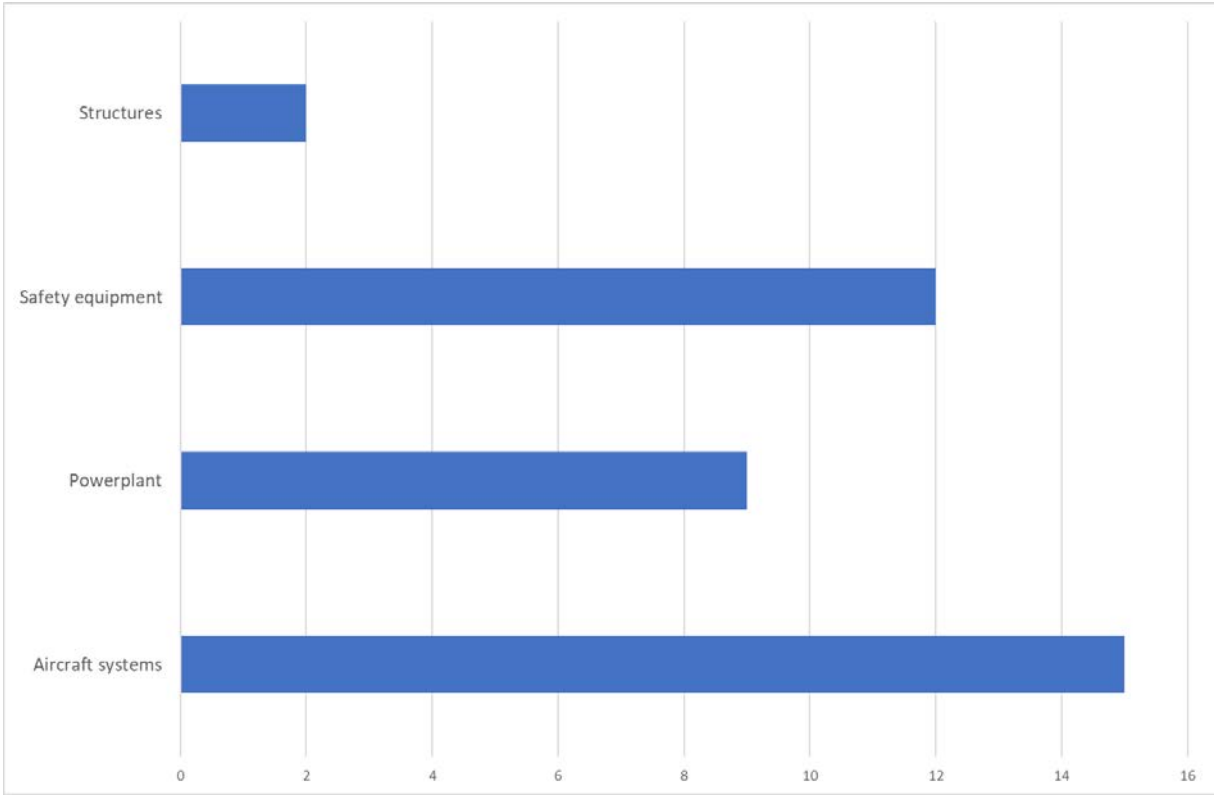

Chart 8. Level 3 safety recommendation topics relating to aircraft systems

7.4) Safety Recommendation addressees

Most of the safety recommendations issued during 2017 were addressed to national Civil Aviation Authorities (CAA). The term "National Authority" is used to refer to authorities that are not the EASA or a CAA. See Chart 9.

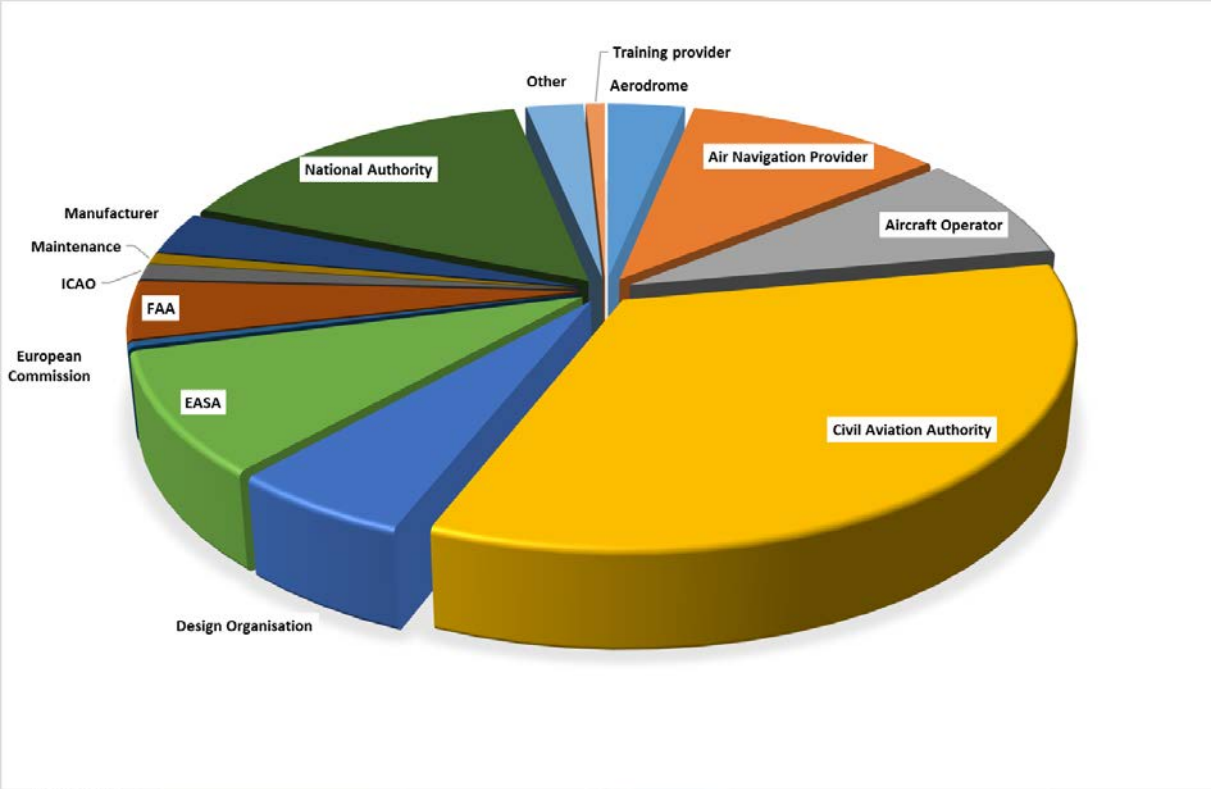

Chart 9. Addressees of safety recommendations issued in 2017

7.5) Safety Recommendation response assessment by SIA

Regulation (EU) No 996/2010, Article 18, requires addressees to respond within 90 days of receiving a safety recommendation. On receipt of a response, the SIA should assess the response and provide an assessment with a written explanation if the SIA considers that the response is anything other than adequate. Of the safety recommendations issued in 2017, 189 are still awaiting a response.

A breakdown of the SIA's assessment of responses to safety recommendations issued during 2017 is summarised in Chart 10.

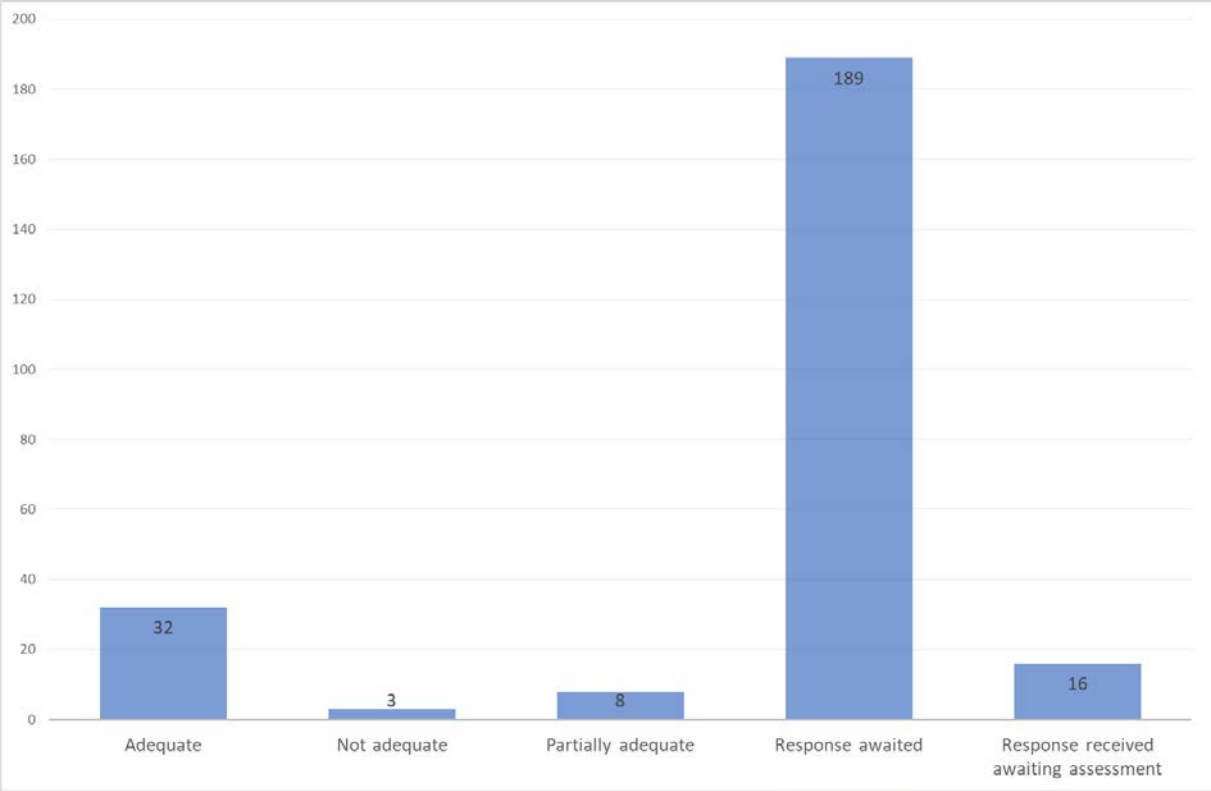

Chart 10. SIA's assessment of responses to safety recommendations issued in 2017

7.6) Update on 2016 safety recommendations

The ENCASIA Annual Report 2016 stated that as of 31 December 2016, a total of 375 safety recommendations had been recorded on SRIS for 2016. An additional 42 safety recommendations for this period were entered during 2017, such that as of 27 December 2017 a total of 417 safety recommendations had been recorded on SRIS as having been issued during 2016. The number of SRUR issued in 2016 remained unchanged.

Chart 11 shows the current response assessments for the 417 safety recommendations on SRIS for 2016. Of note, 248 are shown as '*response awaited'*. All safety recommendations made in 2016 should have received a response by the

addressee, but it is possible that the addressee is a third country and therefore not bound by EU regulations. However, ICAO Annex 13 records:

> *"6.10 A State that receives safety recommendations shall inform the proposing State, within ninety days of the date of the transmittal correspondence, of the preventive action taken or under consideration, or the reasons why no action will be taken."*

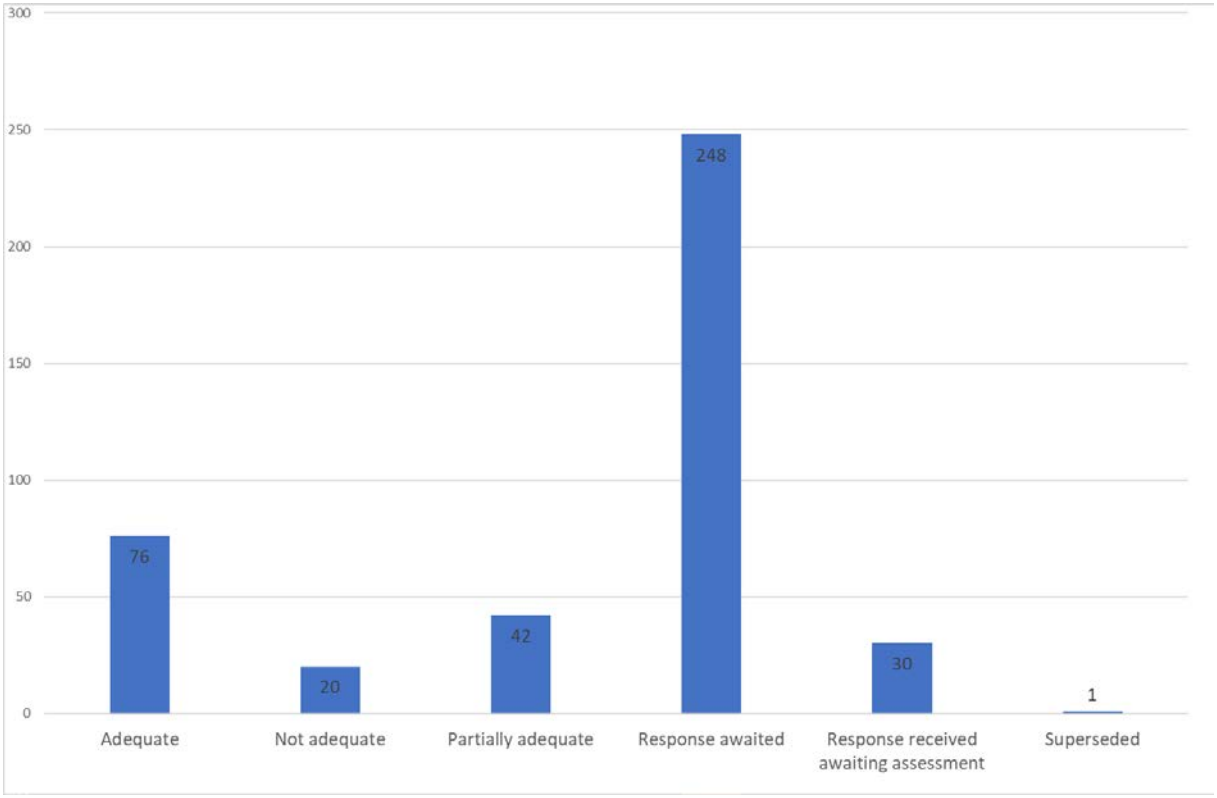

Chart 11. Response assessments for safety recommendations issued in 2016

It is possible that a response has been received by the SIA but, contrary to Regulation (EU) No 996/2010 (Article 18) it had not been recorded on SRIS. WG 6 will continue to work with addressees to help them place responses directly onto SRIS, which will address the majority that are addressed to EASA or NAAs. However, this will not resolve the issue of SIAs not recording responses on SRIS. WG 6 will address this issue by advising and training SIAs on their responsibilities and ENCASIA recommended practices.

WG 6 will also consider why some recommendations stay in the '*response awaited*' status for a long time. One reason may be that some recommendations require more than three months and several correspondences between the SIA and the addressee before the addressee can clearly define the actions it intends to take.

7.7) Safety Studies

During 2017, ENCASIA members undertook three Safety Studies, which generated a number of safety recommendations. A summary of the Safety Studies follows:

Accidents at small airfields

The ANSV (Italy) carried out a Safety Study into accidents and serious incidents that had occurred at small airfields and airstrips. The investigation identified:

- A lack of flight planning and analysis of the characteristics of the airfield such as its dimensions, runway surface, surrounding orography, and obstacles in the vicinity of the runway.
- A lack of knowledge of the aircraft performance in relation to the dimensions and condition of the runway.

Safety recommendations were made to the Italian CAA, the L'Ente Nazionale per l' Aviazione Civile (ENAC), to:

- Add specific training for pilots operating from small airfields and airstrips.
- Recommend that airfields and airstrips be classified according to their runway length, surface, obstacles and other safety factors.
- Ensure that each airfield / airstrip has appropriate safety areas near the runway ends and appropriate consideration has been given to obstacles in the vicinity of the runway.

Further information is available from the ANSV web site www.ansv.it.

The AIBD (Denmark) also carried out a study of accidents at grass airfields and made a recommendation to the Danish Transport, Construction and Housing Agency (DTCHA) for a risk assessment to be carried out on private flying from grass runways and to review the Aeronautical Information Circulars (AIC). Further information is available from the AIBD web site www.havarikommissionen.dk.

Schiphol air traffic Safety Study

Following a series of incidents, the DSB (Netherlands) carried out an investigation to identify vulnerabilities in the safety system at Schiphol Airport. A number of safety risks were identified resulting in safety recommendations being made to the Schiphol Group, LVNL (ATC Netherlands), airlines in the Schiphol safety platform (VpS) and the Secretary of State of the Ministry of Infrastructure and the Environment.

The safety recommendations concerned: the handling of air traffic at Schiphol Airport; cooperation on safety between the airport, air traffic services and the operators; and to clearly define the responsibilities for safety of air traffic at and around Schiphol.

Further information is available from the DSB website www.onderzoeksraad.nl.

Search and Rescue in Switzerland

STSB (Switzerland) published a Safety Study in December 2016 on the organisation and efficiency of the Search and Rescue (SAR) service for civil aviation in Switzerland. The study reviewed a number of accident and serious incidents in which there were delays in aircraft being found and subsequent rescue operations being initiated. The study made several recommendations to the Swiss Federal Office for Civil Aviation (FOCA) to:

- Mandate installation of Emergency Locator Transmitters (ELT) on aircraft.
- Review the work of the Rescue Coordination Centre (RCC).
- Ensure that all those involved in civil aviation in Switzerland have adequate knowledge of SAR operations.

Further information is available from the STSB web site www.sust.admin.ch.

CONCLUSIONS (THE WAY FORWARD)

ENCASIA and its members will have to adapt to a number of changes and challenges in the near future. The regulatory environment will be modified through the revision of the Basic Regulation, which may change the range of events that States will be required to investigate. The investigation of accidents and serious incidents involving drones (Unmanned Aircraft Systems) is one area that is likely to assume greater prominence.

Expectations for aviation safety are high, with the Aviation Safety Network reporting that 2017 was the safest year ever for commercial aviation with no fatal accidents involving turbojet airplane carrying passengers. A summary of the fatal accidents that occurred during 2017 is at Appendix 3. However, the thorough investigation of accidents and serious incidents will continue to remain a key driver for safety improvements. Moreover, the investigation of a major aircraft accident, particularly when it involves multiple fatalities, will become the centre of media attention for a long period of time, with the risks of multiple controversies fuelled by social media in a context where speculation is rife. Operating in this environment will continue to be a challenge for investigators.

To face this evolving environment, ENCASIA will continue to focus on training and helping SIAs to identify their capability gaps and to manage and organise a major aircraft accident investigation. Additionally, during 2018 ENCASIA will focus on restructuring its working groups, which have become increasingly inter-related, to make better use of its resources to meet its objectives.

Reinforcing the public and industry visibility of ENCASIA, and its actions, will continue to be a priority. This will not only further improve the credibility of ENCASIA, but will provide a level of confidence in the ability of ENCASIA members to work together to conduct an effective, independent safety investigation.

The request by a number of non-EU SIAs to join ENCASIA as Observers and participate in our training and peer review activities is an indication of the growing recognition of the achievements of ENCASIA outside of the EU. It is also heartening to see that some of our members have chosen to display the ENCASIA logo alongside their own.

APPENDICES

Appendix 1

ENCASIA 2017 Work Programme

The 2017 ENCASIA Annual Work Programme included the following activities:

- Management of the 'Network communication and Internet presence' (WG1). The objective is to maintain the ENCASIA public and restricted websites. Belgium, France, Hungary, Portugal, the UK, and the EC, who provide IT support, are members of this group. This group is chaired by Belgium.
- Update of the inventory of 'best / good practices' for Safety Investigation Authorities in Europe (WG2). France, Germany, Hungary, Italy, Poland, Sweden, and the EC are members of this group. This group is chaired by France.
- Establishment of an inventory of safety investigation resources / capabilities available in EU Member States; reinforcement of procedures / automated tool for sharing these resources / capabilities; providing assistance between the EU authorities, on the basis of the experience learned from previous workshops related to the response to a major accident (WG3). This activity will lead to the publication of training and guidance material. Croatia, Czech Republic, Finland, France, Germany, Kosovo, Luxemburg, the Netherlands, and the EC are members of this group. This group is chaired by Finland.
- Coordination of training activities. This steering committee is coordinated by Belgium and Denmark.
- Implementation of the 'Peer Review' programme to help authorities enhance their investigating capabilities (WG5). Belgium, France, Germany, Iceland, Italy, the UK, and the EC are members of this group. This group is chaired by Germany.
- Operation of the safety recommendations database by all authorities with the progressive identification of safety recommendations of Union-wide relevance (WG6). France, Ireland, Hungary, Italy, Romania, Slovenia, Sweden, the UK, the EASA, and the EC are members of this group. This group is chaired by the UK.
- Preparation of a practical guide in the form of a manual or leaflet for victims and their relatives in order to facilitate their understanding of the role and the different phases of a safety investigation, as well as its relationship to the other entities involved in dealing with the accident. This group will follow-up matters on family assistance and disseminate the lessons learnt to ENCASIA members. France, Germany, the Netherlands, Spain, the UK, and the EC are members of this group. This group is chaired by France.

Appendix 2:

ENCASIA Opinion on Public Access to Safety Recommendations

ENCASIA OPINION

CONCERNING

PUBLIC ACCESS TO SAFETY RECOMMENDATION RESPONSES RECORDED ON THE EU SAFETY RECOMMEDATIONS INFORMATION SYSTEM (SRIS) DATABASE

1. Introduction

1.1. The Safety Recommendations Information System (SRIS) European Union database was established in application of Article 18(5) of Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation.

1.2. On 5 December 2012, a Commission Decision was made on access rights to the European Central Repository of Safety Recommendations and their responses established by Article 18(5) of Regulation (EU) No 996/2010 of the European Parliament and of the Council on the investigation and prevention of accidents and incidents in civil aviation and repealing Directive 94/56/EC (Text with EEA relevance) (2012/780/EU).

1.3. This decision implemented by Article 2: “All safety recommendations contained in the database mentioned in Article 1 shall be made available to the general public through a public website.”

1.4. However, Article 3 states that “The access to safety recommendations responses shall be limited to addressees of safety recommendations.”

1.5. The Commission Decision took on board the opinion of the EU safety investigation authorities. This opinion, released in April 2012 by the ENCASIA chairman, concluded with the following text: “(…) It is desirable that unrestricted public access should be a long-term goal but there are many hurdles to overcome before that is considered practicable. In order to gain experience with working with the SRIS, it is recommended that access rights are further reviewed in 12 months’ time.”

1.6. Since the inception of the SRIS EU database, ENCASIA has gained a lot of experience. It has developed common guidance material for its Members.

As mentioned in the 2016 ENCASIA annual report, 28 states have entered SRs in the database. The hurdles identified in 2012 have been overcome.

2. Discussion

2.1. The SRIS EU database was set up to meet the requirements of Regulation (EU) No 996/2010 Article 18(5) and all EU member States that have raised recommendations now routinely input their Safety Recommendations, responses and SIA response assessments onto the database.

2.2. Public access to the SRIS EU database was set up in 2012 and gives access to the Safety Recommendation text. However, it did not provide access to responses in accordance with article 3 of the Commission Decision 2012/780/EU.

2.3. In order for the general public to understand the assessment, there is a need for them to also refer to the response that was received by the SIA.

2.4. The public nature of safety recommendations provides strong incentives for addressees to reply in a constructive manner. This transparent dialogue on safety matters contributes to improving aviation safety.

2.5. Many Member States already publicise responses that have been received and EASA regularly publicise their own responses in their annual report.

2.6. Guidance on how to prepare response text for SRIS has already been produced by ENCASIA WG6.

3. Opinion

3.1. ENCASIA's opinion is the European Commission amend Commission Decision 2012/780/EU to allow responses that are recorded on the SRIS EU database under Article 18(5) of Regulation (EU) No 996/2010 to be made available to the general public through the public website. The responses to be made public would be those recorded in the SRIS EU database after the date of the Commission Decision.

3.2. For those Member States that have already established procedures to publish their safety recommendations and the associated responses on their own websites, it is recommended to make public the historical responses in the SRIS EU database.

Rémi Jouty

Chairman ENCASIA

Appendix 3:

List of 2017 Fatal Accidents involving commercial activities

The Aviation Safety Network database[4] showed that during 2017 there were 10 fatal accidents involving aircraft with a minimum capacity of 14 passengers that resulted in 44 fatalities in the air and 35 fatalities on the ground. Five of the accidents involved cargo flights and five were passenger flights. There were no fatal accidents involving turbojet airplanes carrying passengers.

Aviation Safety Network has stated that 2017 was the safest year ever for commercial aviation.

Date	Location	Aircraft type	Air carrier	Number of fatalities
16 January	Near Bishkek-Manas International Airport, Kyrgyzstan	Boeing 747-412F	Turkish Cargo	4 (on-board) 35 (ground)
12 April	North of Oksibil Airport, Indonesia	Cessna 208 Caravan I	Spirit Avia Sentosa	1
1 May	Chignik, Alaska, USA	Cessna 208B Grand Caravan	Grant Aviation	1
5 May	Charleston-Yeager Airport, West Virginia, USA	Shorts 330-200	Air Cargo Carriers	2
27 May	Lukla-Tenzing-Hillary Airport, Nepal	Let L-410UVP-E20	Summit Air	2
14 October	Near Félix Houphouët Boigny International Airport, Abidjan, Ivory Coast	Antonov An-26-100	Valan International Cargo Charter	4
15 November	South west of Nelkan Airport, Russia	Let L-410UVP-E20	Khabarovsk Avia	6
15 November	Ngorongoro Conservation area, Tanzania	Cessna 208B Grand Caravan	Coastal Aviation	11

[4] www.aviation-safety.net/statistics/2017

Date	Location	Aircraft type	Air carrier	Number of fatalities
13 December	West of Fond-du-Lac Airport, Saskatchewan, Canada	ATR 42-320	West Wind Aviation	1
31 December	Near Punta Islita, Costa Rica	Cessna 208B Grand Caravan	Nature Air	12

-END-