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Top Five ATM Safety Concerns A EUROCONTROL View

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Background

Following a recommendation from the Management Board of EASA, a European Aviation Safety Advisory Committee (EASAC) was created in October 2009. The main goal of EASAC is to advise on a Strategy and propose a European Programme and a Plan for safety. As a starting point to help build the first European Aviation Safety Plan, EASAC is asking the Member States to provide their **top five safety concerns**. In this context, EASA considers that this process will greatly benefit if EUROCONTROL was also to submit an input.

In addition to the top 5 list, EASA is seeking more information about how these safety issues are obtained and how they are monitored, i.e. whether it is through a Safety Plan, a specific set of Safety Performance Indicators or a similar process that guarantees that actions are in place to mitigate the identified risks.

This paper presents the consolidated view of EUROCONTROL on this topic. In addition, a number of other areas of concern have been clearly identified from the analysis and results provided by the safety maturity surveys. These are listed at the end.

Top five safety concerns

1. Clear and expeditious establishment of a Just Culture environment, to support the further improvement of the national and European safety occurrence reporting.

- a. EUROCONTROL collects data through a mandatory and a voluntary scheme. The first is based on ESARR2 reporting by States to the SRC, the second is based on voluntary agreements with airlines and ANSPs to CND (EVAIR). There is correlation work done between the two databases and a follow-up when possible.
- b. ESIMS found that in 14 of the 21 audited States there were serious issues with regard to the development, implementation and follow up of the safety actions intended to prevent the repetition of occurrences. Moreover, a growing percentage of the safety occurrences reported are not being classified.
- c. EUROCONTROL has established a taskforce to work with the judicial authorities. This meets typically twice a year and is working on establishing a methodology for the interface with the judiciary. A first draft guideline is already available.
- d. There is already a coordinated Top 4 High Level Key risk areas - see the SRC Annual report. Except for Near CFIT for all other 3 key risk areas (RWY Incursions, Level Busts and Airspace Infringements) European prevention action plans are in place to reduce the risk. They are monitored through SAFER (both AST mandatory and EVAIR voluntary data). The deployment of the plans is monitored through LSSIP.
- e. Overall aggregation of the lagging indicators is made through the Aerospace Performance Factor (APF). This is the latest development and there is further significant work going on. In fact after all members of EASAC have made their inputs so EUROCONTROL could facilitate a weighting/prioritisation exercise.

2. Safety Culture as a driver to implement rigorous safety risk management.

- a. EUROCONTROL has developed a thorough methodology to measure the safety culture in ANSPs. This has been tested and validated with a number of organisations now. It has also been compared with other methods developed independently and the results showed a very high correlation between the independent methods. The methodology includes questionnaires, interviews and workshops, then a follow-up survey after 2-3 years to identify progress.
- b. Following an impressive coordination process and a major involvement from many organisations, including ANSPs, Regulators, CANSO and ICAO, a new

methodology to measure safety maturity was developed. This also includes, *inter alia*, parts relative to safety culture and just culture. The surveys are run yearly, the results published in a consolidated way; they will feed the new Performance Scheme of the SES and be used for better focusing safety improvement activities at the European and local level.

3. Harmonisation of the safety management approach across FABs

- a. As part of their integration activities, ANSPs and NSAs belonging to a FAB have started to work out their common concepts and procedures on safety management. Current information indicates that some difficulties are experienced in concluding on the best common approaches.
- b. As the same time, it is observed that different approaches are followed by different FABs. This can lead to variations across FABs. The latter has been flagged up by FABs and they seek support on the latter for harmonisation purposes.

4. Competent safety resources (number and quality) in NSA's

- a. The SRC repeatedly expressed serious concerns about this matter and its evolution. The negative impact of the financial crisis on the improvement of resources is particularly severe for regulatory/oversight organisations. The consequences of financial problems will be felt in the medium to long term because expertise cannot be improvised. The findings from the ESIMS and ICAO USOAP audits conducted in Europe confirm the existence of significant issues with regard to the resourcing of safety oversight functions.
- b. Furthermore the analysis of ESIMS audit results shows a general problem as regards the effective implementation of safety oversight processes.
- c. EUROCONTROL has set up a whole programme to train NSA personnel, there is also an NSA coordination platform that can be used to share experience and learn how to implement the SES rules. However, while these can help a great deal in bringing the personnel in line with the demands that are put on them, it can do nothing in the cases where there are simply no people to train. This is entirely a State-related issue and only States can solve it.

5. Longer term: determination of the correct approach for safety in SESAR

- a. SESAR looks at two clusters of ATM safety, one being safety risk assessment and mitigation of the SESAR ATM developments, the other one being a fresh look at safety management approaches for the future.
- b. Safety Risk assessment and mitigation has been traditionally applied to well identified changes in the ATM system on a one by one basis. Within SESAR, the changes in the ATM system are of a different order of magnitude, and many of the will run in parallel. The challenge of SESAR will be to consolidate all this changes and to look at safety risk and/or safety benefits of the total system. The latter is not only a huge task, but also is it unprecedented. Care also has to be taken that political and/or commercial pressure to deliver does not jeopardize the implementation of appropriate safety risk assessment.
- c. The current safety management system (SMS) principles are mature as a result of their 15 year lifetime. However, review of these principles needs to be done in the light of the changed ATM environment to date and of the further changes planned by 2020. Further globalisation will require these new SMS principles and standards to be agreed not only on a European basis, but equally so globally.

Further clarifications

The above list been coordinated within the whole EUROCONTROL Agency. It represents a high-level collection of science and intelligence stemming from an experience of more than ten years of safety regulation, as well as of support to safety management that spans over three distinct programmes over the same period.

This is also the result of hundreds of meetings with thousands of cumulated participants from virtually every single EUROCONTROL Member State. It further includes coordination with ICAO, CANSO, the FAA/ATO and other relevant organisations. Participation typically included users' representatives, such as IATA, ATCOs and pilots (e.g. IFATCA) and has taken due account of the changes in the political and/or regulatory framework, such as for example the birth of the SES. It further includes observations from audits, from surveys, from regional and local support to ANSPs and NSAs.

The issues that have been identified are high level issues. They do not deal with operational safety issues that have been the results of incident data from either mandatory or voluntary reporting systems. EUROCONTROL has however a prioritised set of type of incidents and their causes. However, this information is already publicly available on the EUROCONTROL website (http://www.eurocontrol.int/esp/public/news/Evair_4.html, http://www.eurocontrol.int/src/public/news/news_2009_annual_report.html, and http://www.eurocontrol.int/prc/public/standard_page/doc_prr.html)

Additional significant issues identified by EUROCONTROL

The significant experience and extremely large quantity of data gathered from the safety maturity surveys has pointed to the identification of several significant safety issues, as listed below. This has helped focusing the efforts to improve safety regulation, management, and allocation of resources and priorities.

- Usage and understanding of local indicators and targets

Different organisations might use different indicators or different definitions for the same indicators. This would generate a problem when trying to exchange data or when trying to share lessons learned. One example to mitigate this is the EUROCONTROL-developed Risk Assessment Tool (RAT), also adopted by the FAA, which aims at a uniform and less subjective classification of the incident severity and risk of reoccurrence in a 5×5 matrix.

- relations between Safety and Quality

- Number of regulations and multiple regulation

- Risk apportionment

This refers to apportioning the risk between several service providers in the same State under the same Regulator; a similar analysis might be needed for a FAB.

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