Safety Management International Collaboration Group

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ABSTRACTS & SPEAKER BIOS

'Measuring Safety in Aviation – Developing Metrics for Safety Management Systems'

Robert J. DE BOER – Professor of Aviation Engineering, University of Applied Sciences Amsterdam

Abstract: The Aviation Academy of the Amsterdam University of Applied Sciences has initiated a research project entitled "Measuring Safety in Aviation – Developing Metrics for Safety Management Systems." The aim of the project is to identify ways to measure operational safety without the benefit of large amounts of safety data. This will facilitate performance based safety management and oversight. The researchers are examining the validity of current safety metrics and exploring new safety metrics that might be an improvement. The research is based on different safety models, both traditional and recently proposed systemic models. In the end, we hope to develop a web-based safety dashboard for the industry. The project will last four years, from September 2015 to September 2019, is co-funded by the Dutch government, and is executed by a team of researchers from the Aviation Academy in collaboration with a consortium of industry, academia and authorities' representatives.

Biography: Robert J. de Boer MSc PhD (1965) was trained as an aerospace engineer at the Delft University of Technology. He majored in man-machine systems and graduated cum laude in 1988 on the thresholds of the vestibular organ. After gaining experience in line management and consulting, he joined Fokker Technologies in 1999. There he was asked to develop the Program Management methodology for Fokker in compliance with aerospace requirements, as a prerequisite for Fokker to participate in the A380 program. This led to his appointment as the Director of Engineering in 2002. In this role, he supported and guided an increasing number of engineers (up to 300) occupied in a large number of new design projects across the globe. These experiences inspired his current scientific interest in organizational safety and process improvement, cumulating in a PhD (achieved in May 2012) at the Delft University of Technology. Since September 2009, Robert has been a Professor of Aviation Engineering at the Amsterdam University of Applied Science. In this role, he executes applied research in the field of aviation, with a focus on Human Factors and safety.

'Introduction of Just Culture in Alitalia Engineering & Maintenance'

Giuseppe FOLINO – Maintenance Standards Monitoring & Investigations Manager, Alitalia

Abstract: Alitalia adopts Just Culture principles, whose objective is to foster the reporting of (potential) safety risks in order to protect people and assets, implement risk mitigation actions, and therefore also improve operational efficiency. Just Culture accepts the possibility that honest errors could happen during the normal carrying out of tasks, and that those errors should not lead to punitive actions. However violations which involve negligence or carelessness regarding safety hazards, can incur punitive actions based on proportionality criteria. In Engineering and Maintenance Occurrences analysis, Alitalia has always applied the principles of the Maintenance Errors Decision AID (MEDA) philosophy created by Boeing, with the aim to identify an event's original "root cause" Today, Alitalia is enriched by typical 'Just Culture' tools, including analysis of Maintenance staff best behaviors, in order to identify actions to be implemented, and adopting a 'no blame culture' philosophy.

Biography: Giuseppe Folino studied Electronic Engineering and graduated in Naples University (Federico II) in 1987. He has worked in the Alitalia Engineering & Maintenance group from 1988 with various tasks, starting in the Maintenance Control Centre as manger on duty, then in charge of the Wide Bodies Maintenance department, and soon in charge for Line Maintenance Department. From 2004, he was the Quality Assurance Manager for Alitalia approved maintenance organization (AMO) (part 145) and from 2008, he was responsible for the Maintenance Standard Monitoring & Investigation Office, working in close cooperation with the Safety Department and Compliance Monitoring/Quality Manager.

'SMS Approach in the Design Process'

Gökçen ÇELEBİ – Chief/Safety Management, Turkish Aerospace Industries (TAI) -

Abstract: The International Civil Aviation Organization (ICAO) Annex 19 applicability to design and manufacturing organizations has created a new frontline where SMS is not well known. Most of our experience with SMS is mainly from the operational phases of the product, whether it is the daily operation of an off-shore platform or a nuclear power plant or routine operations of an airliner, maintenance, repair, and overhaul (MRO), or ground services. Commonly, it is all about the active utilization of the product already designed, tested, and certified. How to implement SMS for design processes of a product is challenging. There are not so many methods available. One of the fundamental SMS processes is hazard identification. TAI is studying a systematic approach to identifying hazards for design organizations, according to the process described in SAE AEP4754A.

Biography: Gökçen Çelebi is the SMS chief at TAI and has the role and responsibility of establishing SMS infrastructure for the all services that the company provides. She has a Bachelors and Masters of Science in Electrical & Electronics Engineering and has been working at TAI for 12 years. She has experience on systems engineering and design processes and has had the opportunity to work in the quality management system and in independent monitoring functions for almost 3 years. She has recently become acquainted with SMS and has one year of SMS background. During this year, she has studied the SMS approach to design and production services and developed methodologies while a corporate-level SMS processes have been defined.

'Implementation of a Fatigue Risk Management System to Initiate Sustainable Improvements in Maintenance Operations.'

Antonio HÄRRY – Head of Quality, Safety & Central Engineering, SR Technics

Abstract: *'After introducing a risk-based SMS, it became apparent that we needed to include and implement a Fatigue Risk Management (FRM) System in order to initiate sustainable improvements in our maintenance operation.'* – Chiara Knecht, School of Engineering Winterthur, and Antonio Härry, SR Technics Zurich.

With a functioning risk-based SMS, SR Technics has been able to identify critical processes in its operations and address adequate corrective actions and improvements. The company has recognized the necessity to associate the classical "human factors" with a system that allows the management of fatigue-related safety risks to ensure an adequate level of alertness. SR Technics launched a physical data-monitoring exercise for shift workers in cooperation with a specialized engineering school. The working environment of shift workers was investigated and it became evident that extended working hours and disturbance of the circadian rhythm by the scheduled working time resulted in decreased sleep quality and quantity. Boundary and environmental conditions for aircraft maintenance must be acknowledged in the system. Using a pragmatic approach with results based on scientific principles, combined with operational experiences, would allow us to develop further counter-measures including the need to educate the staff about FRM principles.

Biography: Antonio Härry, Head of Quality, Safety & Central Engineering, SR Technics. By profession, Antonio Härry is a mechanical engineer and holds an engineering degree in thermo-dynamics. He began his career in 1980 at Jet Aviation in Basel working as a Project Engineer for completions. From 1982 to 2001, he was with Crossair and Swissair/SR Technics. At Crossair Technics he started up the technical organization first in Zurich, later in Basel. He then became the head of the line maintenance department at Crossair. He was project leader on behalf of Crossair for the development of the Saab 2000 aircraft, from the specification, through development, and the introduction to the airline. At SR Technics, he worked in the aircraft overhaul division and later for the flight safety division. Between 1991 and 2006, he spent 5 years as head of Quality Assurance at Contraves Space (today RUAG Space). Antonio became the Vice President of the Quality Assurance and Flight

Safety department for RUAG Aviation in Emmen for two years, where he introduced a proactive and risk-based Quality and Safety organization including a Safety Management System. Next, he became Vice President of the Business Unite Products at RUAG Aviation in Emmen and Oberpfaffenhofen (Munich), where one of his responsibilities was the successful relaunch of the Dornier 228 New Generation aircraft. In January 2011, he re-joined SR Technics Switzerland Ltd. in Zurich as Vice President of the Quality & Safety and Central Engineering Group.

'Safety Risks in an Airworthiness Organisation – Maintaining a Clear View'

Belinda SWAIN – Chief Airworthiness Engineer, Rolls Royce Plc

Abstract: In her presentation, Belinda will review how Rolls-Royce, as a designer, manufacturer, and maintainer of turbine engines, as well as a provider of services to the Aerospace sector, identifies and manages product safety risks, and how those risks contribute to the assessment of enterprise risk. She will consider how identification, monitoring, and assessment of risk continue to evolve as the company strives to be ever better at assuring product safety, and as the environment, including the regulatory environment, develops. Finally, she will touch on some of the challenges either being, or still to be, addressed.

Biography: Belinda Swain joined Rolls-Royce in 1985 after studying Physics at Oxford. She has spent much of her 30 year career at Rolls-Royce working on Defence Projects, most notably the EJ200 engine for the Eurofighter Typhoon, for which she was Chief Engineer when the aircraft entered service. She has also worked on the engines for the Harrier, Hawk, Jaguar, Transall, Tornado, Nimrod and AMX amongst others. In 2000, she led the Rolls-Royce activity in support of the Air France Concorde accident investigation and the return to service programme. She took on her current role as Chief Airworthiness Engineer for Rolls-Royce in 2011, supported by teams at the main Rolls-Royce Engineering sites covering both Airworthiness and Air Safety Investigation. She is based in Derby, UK, home of Rolls-Royce's large civil engines, where her team has overseen the certification of the Trent XWB for the Airbus A350 and Trent 1000 variants for the Boeing 787 in the last few years.

'Challenges of Safety Promotion and Learning in a Large Organisation'

Neil HICKEY – Technical Manager Safety – Engineering, Ryanair

Abstract: The presentation will examine the challenges posed to an organisation by working in various countries, with geographical, cultural, and logistical barriers. It will look at the barriers to maintaining control of standard operating procedures and the importance of them as a barrier in preventing errors and ultimately accidents in this diverse operating environment. It will then explain the importance of effective learning and safety promotion in maintaining these safety defences and will demonstrate the current process that Ryanair uses and will also deal with future initiatives that are planned as enhancements in safety promotion and learning.

Biography: Neil Hickey joined Ryanair as an apprentice aircraft mechanic/aircraft electrician in 1993. He has a B1/B2 European Aviation Safety Agency (EASA) licence on B737-200 & 800. He has been a line engineer in Dublin and Ryanair outstation Charleroi and has set up and managed various Ryanair outstations across Europe. He was Manager of Engineering for the Spain and Portugal region, where over 70 aircraft were based across 13 stations. He was also Manager of Airframe Systems in the Ryanair Technical Services Department. He has completed a degree in Business Management in Aviation and is currently studying in City University London for a Masters in Air Safety Management. Neil Hickey is currently the Technical Manager Safety Engineering in the Ryanair Safety Department.

'Safety Management in the CAMO, an Operator Perspective'

Ewout HILTERMANN – Director Safety & Compliance, KLM Cityhopper

Abstract: The presentation will provide an overview of the integrated safety management system implemented at KLM Cityhopper, with particular focus on continuing airworthiness management. It will elaborate upon the cooperation between the Continuing Airworthiness Management Organisation (CAMO) and the contracted maintenance organisations, joint risk assessments, the relationship between technical performance and safety performance, and the challenges to manage safety in the CAMO.

Biography: Ewout Hiltermann started his flying career at Lufthansa in 2001 after finishing the KLM Flight Academy in the Netherlands. After flying the B737 for five years as first officer, he left Lufthansa to start flying for KLM. After seven years on the Fokker 70, he became a captain on that same aircraft type for KLM Cityhopper in the beginning of 2014. From 2008, he held positions in the office next to his flying career. From 2010, these positions were in the Safety Department. He worked as Chief Investigator, Safety Manager, and is currently holding the position of Director of Safety & Compliance. In this position, he is acting as Safety Manager and Compliance Monitoring Manager for the KLM Cityhopper Air Operator Certificate (AOC) and Approved Training Organisation (ATO) certificates and as Quality Manager for the Part M. Throughout his career in the Safety Department, he has been a program manager for SMS implementation. In his current position, he is responsible for the daily operation and development of the SMS.

'Risk Culture' – The Missing Link in 'Safety Culture'?

Cengiz TURKOGLU – Chairman of the Technical Committee - International Federation of Airworthiness (IFA)

Abstract: This study is about an argument for introducing 'Risk Culture' as a new component of 'Safety Culture'. The ICAO Safety Management Manual (SMM) and many other guidance materials published by the regulatory authorities around the world refer to models such as '4 Components of Safety Culture' (Reason, 1997), three categories of organisation culture (Westrum), 'Culture Ladder' (Hudson, 2001), and 'Just Culture' model (Dave Marx – Outcome Engenuity, 2015). As a result, the stakeholders in aviation have so far considered these perspectives in terms of measuring, assessing, and developing their safety culture. While these models are valid and – when effectively applied – can have significant impact on organisations' safety performance, it can be argued that they seem to be very much focused on collection of past event data and they do not specifically aim to explore how risk is perceived and managed at different levels in organisations. For example, what/how risk decisions are taken by front line operators and if senior management is presented with the same risks front line staff faces, would they take the same/similar decisions? In other words, have different groups in different levels in organisations a more risk-averse or more risk-taking attitude than each other? If so, what does it mean from a safety management perspective as well as for the overall business?

Biography: Cengiz Turkoglu started his career as an aircraft maintenance engineer and worked in different airlines and maintenance organisations both in Turkey and in the UK. He held aircraft maintenance licenses from the Turkish Directorate General of Civil Aviation (DGCA), the United States Federal Aviation Administration (FAA) and the Civil Aviation Authority of United Kingdom (UK CAA). He then worked as a Quality Engineer for SR Technics UK Ltd (Formerly FLS Aerospace UK Ltd) until 2005 and subsequently held the 'Continuing Airworthiness Post Holder' position for Flightline, a UK charter airline. In 2008, Cengiz joined City University London as a Senior Lecturer and also Wake Quality Assurance (QA) as a part time International Air Transport Association (IATA) IATA Operational Safety Audit (IOSA) auditor. Since then he had the opportunity to visit many airlines in Asia, Middle East, Africa, and Europe and audited their Quality & Safety Management Systems. In September 2015, Cengiz joined the Cranfield Safety and Accident Investigation Centre (CSAIC). He has been a member of the UK Flight Safety Committee since 2010 and recently joined the 'Executive Board' as the Vice Chairman. He has been chairing the Technical Committee of the International Federation of Airworthiness since 2011 and representing IFA in the European Commercial Aviation Safety Team. He currently holds BEng (Hons) Degree in Aircraft Engineering from Kingston University and MSc Air Transport Management from City University London. Cengiz chose the topic of 'Risk Culture in Commercial Air Transport' for his PhD research, which he is currently starting at Cranfield University, UK.