

## **Morning workshops**

### **Clear Skies, Strong Minds: Mental Fitness for Aviation Excellence (Karien Stadler)**

The interactive session aims to familiarize participants with research-based tools and content designed to promote wellness, enhance performance, and foster healthy relationships. These tools operate by establishing new neural pathways that cultivate enduring positive habits.

The workshop will incorporate experiential exercises to deepen and personalize participants' comprehension of mental fitness tools. These exercises will underscore the daily practices necessary for reinforcing mental fitness through the adoption of lasting positive habits

### **Modeling Emerging Properties of Aerospace Systems (Ioana Koglbauer)**

In complex sociotechnical systems properties such as safety, efficiency, security emerge from the interplay of people, equipment and procedures in interaction with the operating environment. When designing a complex system, the challenge for practitioners is to develop models of the system and requirements that are prerequisites for the expected performance and safety. Also, when conducting analyses of complex incidents and accidents it can be challenging to outline how the unsafe interexchange in the sociotechnical system occurred and what recommendations could be effective to prevent future mishaps.

A powerful tool for modeling such emergent properties and defining system-level requirements is STPA which stands for System-Theoretic Process Analysis (Leveson & Thomas, 2018; Bishop et al., 2024). Recently STPA was included in multiple standards such as the SAE J3307 and the SAE J3187-1\_202309 with a focus on STPA and Human Machine Interactions (HMIs). STPA was developed from the System-Theoretic Accident Model and Process (STAMP) (Leveson, 2012), which is an interesting and useful accident causality model.

In this workshop the participants will have the opportunity to discover both STPA, STAMP and their applications on examples from the aerospace domain

### **Assessing multiple-task performance. Timesharing: A recap of issues (Diane Damos)**

This workshop (seminar) discusses the major issues associated with selecting pilots and air traffic controllers based on multiple-task (timesharing) measures. It will cover both theoretical (the status of timesharing ability), performance measurement (statistical), and practical issues, such as performance feedback and practice effects. It will also discuss different ways of measuring individual differences in multiple-task performance.

## **Implementation of Artificial Intelligence in Aviation. A Human-Centric Approach for Practitioners and Organisations (Dimitrios Ziakkas)**

The Implementation of Artificial Intelligence in Aviation workshop will form a first stop for practical matters related to successful deployment and safety assurance of new and emerging technologies in the aviation and transportation domains.

By April 2023, global searches for the use of 'chat-GPT' and other AI tools such as image generators and automatic software coding had reached a new peak. Every media outlet is reporting constantly on the impending tsunami of AI tools to be introduced to the market. Socially and culturally, we are dealing with the philosophical questions of overreach and data protection as well as influence over thinking and social development. Within the industries, top management and regulators are already using key buzz words relentlessly at conferences, shareholder meetings and customer offers to offer a new vision of aviation that meets climate concerns, increasing traffic demands, and solves the issue of aging and smaller workforces.

Legislation has begun to be drafted. In 2021, EASA released the first draft of guidelines for Artificial Intelligence concept paper. It has since been updated this to a second version currently released after a period of open review. CANSO (Civil Air Navigation Services Organization) has also recently published a paper about onboard technologies and limitations as well as emerging technologies. But other areas remain slower to leap into action.

With these two issues at play: the present 'hot topics' being thrown about as solutions to all of our problems as well as the legislative gap and time it will take for regulators to issue guidance, a clear need has arisen to issue practical guidance to organisations as they embark on developing new concepts of operations, tackle recruiting, selection and training issues and develop new ways of monitoring operations and human performance all with the help of AI tools.

This workshop is intended to be an updatable, dynamic solution with key practical tips distilled by experts across the field for use at upper management and decision-making levels. The workshop-selected topics below reflect the most pressing topics facing airlines and air navigation service providers. Fundamentally, at the heart of adopting AI is a question of culture and human performance. We do not trust what we do not understand, and gaining the trust of operators in the years ahead will be the difference between immediate adoption of technology versus pushback. This starts with the way we communicate about technology. We aim in this workshop to present topics in an understandable and digestible way that is accessible to all, focusing on the role of the EAAP community. We hope the topics present stimulation and talking points for real development and change as well as most importantly, focus which is required now to navigate what is possible and what is unfeasible or not possible.

The implementation workshop of AI for Aviation will represent the most comprehensive and succinct areas of its kind following a human-centric approach. The selected workshop areas are arranged into sections/case studies to better comprehend AI, aviation industry implications, science, technology, and society contributors, change management and alertness, real-world AI implementation case studies, and future perspectives.

### **The Cognitive Assessment of Aircrew (Randy Georgemiller, Rob Bor, Alastair Gray)**

This workshop introduces participants to the rationale for psychological evaluations of aircrew and the range of different assessments currently used in practice at the point of entry into flight training and subsequently determining fitness to fly. Participants will briefly learn about the typical conditions or symptoms for which aviation regulators seek psychological expertise in order to determine medical fitness. The workshop will also offer an introduction to neuropsychological evaluations of flight crew.

The presenters have recently edited the ground-breaking textbook 'Handbook of Aviation Neuropsychology' and will refer to some of the key concepts and practice skills from the book. There will be scope for participants to share their own experience, as well as clinical and ethical practice dilemmas. The workshop is aimed at practitioners who are required to carry out psychological evaluations of air crew.

### **Equitable Skies: Navigating Inclusivity Through the Integration of DEI Principles in Non-Technical Competencies for a Sustainable Aviation Ecosystem (Allyson Kukel)**

Explore the nuanced relationship between non-technical skills and Diversity, Equity, and Inclusion (DEI) in aviation. This workshop delves into key competencies - communication, leadership, teamwork, problem-solving, decision-making, situational awareness, and workload management - as identified by EASA. Participants engage in real-world scenarios, case studies, and discussions, aiming to understand and apply observable behaviors that demonstrate competency.

Emphasizing DEI principles, the workshop crafts a structured framework for embedding these skills in every phase of aviation training. Furthermore, the workshop addresses the role of inclusive leadership [HoT/DFO] and effective team dynamics [crew] in aviation's DEI journey.

## **Afternoon session**

### **Building bridges between Aviation Medicine and Aviation Psychology (Katrien Vercauteren, Diederik De Rooy)**

With the ever increasing need to focus on mental health requirements for pilots and air traffic controllers, the Mesafe research project contracted by EASA has proposed evidence based recommendations for mental health assessment methods suitable for aeromedical fitness assessments.

First steps have been taken to improve the collaboration between Mental Health Specialists and Aeromedical Examiners and Medical Assessors. In line with the recommendations (adopted by/proposed to) EASA, the European Society of Aerospace Medicine's Academy organizes comprehensive mental health practical training in their advanced aeromedical examiner course as from November 2024.

Not only AME's have expressed their need for mental health training, also Mental Health Specialists involved in working with Aircrew, need training in how to conduct comprehensive

mental health assessments and the clinical skills needed when working with pilots and air traffic controllers.

This work shop focusses on Part- MED requirements for Air Traffic Controllers and Pilots by providing an overview of mental health disorders and symptoms and their associated incapacitation risks. Guidelines are being formulated on how to perform a comprehensive mental health assessment interview and mental state examination with emphasis on the limitations of questionnaires and psycho diagnostic tests in the context of aeromedical assessments. The role of Aviation Psychiatrists and Accredited Clinical Aviation Psychologists is being clarified. For complex cases a transparent process to formulate an aeromedical mental health fitness decision is used involving all parties concerned: AME, AVPSY and pilot/ATC controller concerned.

### **Positive Organisational Culture in Aviation (Paul Reuter, Cate Bichara, Job Bruggen)**

The workshop will develop the concept of “Positive Organisational Culture in Aviation” and touch upon the following:

- Why should organisations look to Organisational Culture? What is in it for them... and for their staff?
- Presentation of the basic concept
- How to support the human resource by creating a psychologically safe environment
- The role of diversity and inclusion.
- The difference between empty phrases and real cultural change
- How to direct the leadership at all levels of the organisation
- The pitfalls to look out for

### **Selection in Aviation: Where do we go from here? (Jenny Eaglestone, Johann Wium)**

Following the interest shown to EAAP’s Selection Seminar in Amsterdam (2023), we will be hosting a selection-related event during the workshop phase of the EAAP 35. The workshop would be a combination of a moderator-lead Town Hall discussions with participants and a structured networking event.

The Town Hall section would focus on three main areas. First, what has been the experience of practitioners of EU regulation 2018/1042 with regards to psychological selection of pilots. This will include an overview of the 2023 EASA’s impact survey results and discussion of specific points from the regulation (e.g. validity, time horizon, AP oversight). Second, how do we increase the quality of aviation selection. This might include discussions on validity studies, appropriate norm groups, test re-test and other technical issues of interest to participants. Third, what should EAAP focus on with regards to assisting the aviation selection practitioner. Discussions might include experience with EAAP’s Selection Report, feedback following Amsterdam’s Selection Seminar, next steps and so on.

Finally, the event will end with a structured networking event. This event would divide participants into groups depending on specific experiences (e.g. pilots vs. non-pilot selection; experienced vs. non-experienced) and match individuals for 1:1 discussions (or small groups, depending on number of participants and composition) as a means to start off conversation.

### **Human Factors for AI: Human - AI Teaming from Human Augmentation and Assistance to Safeguarded Advanced Automation (Andrew Kilner, Renée Pelchen-Medwed)**

The aim of the workshop is to introduce the audience to the EASA work and the development of the concept paper which is the first step towards the development of AI regulations. The main aim of the workshop is to familiarise the audience with the concept of Human AI-teaming in line with different AI-levels. And with the help of a hands-on approach, the workshop aims at elaborating further on the concept of Human- AI teaming in line with the AI levels.

### **Human Factors in Flight Safety: An Introduction and Overview (Brent Hayward, Alan Hobbs)**

The workshop covers:

Introduction to aviation human factors

Human factors in safety events

Crew Resource Management

Human factors in aviation maintenance

The positive contribution of humans

Systemic approaches to safety

### **Integrating Resilient Development into Peer Support Systems (Priya Doobaree)**

This workshop will demonstrate how continuous resilient development can be part of a peer support system. Proactive engagement with pilots at every stage of their training and career using a blended approach of mentoring and coaching to develop non-technical skills has demonstrated an improvement in these competencies. The combination of evidence based training using the competency based training and assessment framework is used to monitor progress. Self evaluation, coaching and mentoring techniques are used during facilitation to help peers grow confidence and competence