

EUROPEAN ASSOCIATION FOR AVIATION PSYCHOLOGY

**aviation psychology
&
applied human factors**

working towards zero accidents

**proceedings
of the
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Edited by André Droog



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AVIATION PSYCHOLOGY AND APPLIED HUMAN FACTORS
WORKING TOWARDS ZERO ACCIDENTS



**Proceedings of the 30th Conference of the
European Association for Aviation Psychology**

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Sardinia (Italy)

Edited by

André Droog

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(*corresponding author(s))

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Gunnar Steinhardt
- 2 Merging operational aviation safety and workplace health and safety management systems
– working towards a fully integrated approach to achieving zero accidents (*presentation*)
Robert Lee

INTRODUCTION

EAAP was founded in 1956 in the Netherlands as the Western European Association for Aviation Psychology (WEAAP) by nine psychologists working for aviation, mainly in the field of psychological selection of pilots and air traffic controllers. WEAAP was growing well and the decision to rename WEAAP into EAAP (to open up to Eastern European colleagues) was taken at the Dublin conference in 1994. The new name EAAP came into force in May 1997. In 2006 EAAP celebrated its 50th anniversary in Potsdam, Germany, with the 27th jubilee conference. Since 1956 EAAP has held 30 conferences and the number of EAAP members has steadily increased to about 400 at the present time.

EAAP has been contributing to safety in aviation for over 56 years by now. The 30th conference in Sardinia, Italy, called 'Aviation Psychology & Applied Human Factors – Working towards zero accidents' was (again) a huge success. 180 psychologists and human factors practitioners working or interested in the aviation branch met from 24-28 September 2012 in the Tanka Village Resort in Villasimius near Cagliari.

The proceedings of the 30th EAAP conference contain: the 4 keynote presentations, 61 papers, 20 posters and 6 tutorial outlines. Their numbering in the proceedings follows exactly the numbering of the conference programme as it was brought about. (In order to be able to do this it was necessary also to mention the papers and poster that were cancelled after the conference program was already out. To be exact: the proceedings contain 52 full papers, 6 abstracts, and 3 title pages of papers that were cancelled; and 19 posters and 1 poster title page.)

The conference programme as it was realised has been included (see the next pages) and, like the CONTENT, mentions the page numbers where the full paper, poster or tutorial can be found in the proceedings.

The EAAP30 conference proceedings will be published in digital form only. They can be downloaded from the EAAP website in parts of about 3 - 6MB each, according the following scheme:

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Our sincere thanks should be expressed to all sponsors, keynote speakers, presenters, assisting staff and ATAHotel Tanka Village staff for their contribution to the success of this conference.

The EAAP Board,

Peter Jorna
André Droog
Harald Kolrep
Hinnerk Eißfeldt
Monica Martinussen
Don Harris
Michaela Heese

November 2012

EAAP30 CONFERENCE PROGRAMME

Monday 24 September 2012

08:00 - 09:00	30EAAP Conference Registration Registration Desk will be open in the morning from 08:00-09:00 and during the coffee breaks throughout the conference.	
09:00 - 09:15	Opening Ceremony Welcome and introduction by the President of EAAP Prof. Peter Jorna	
09:15 – 10:35	Keynote Address e s Key Dismukes , Chief Scientist for Aerospace Human Factors (retired), NASA Ames Research Center: When experts forget to act - Lessons from a multi-pronged research approach to operational issues Michael Piers , Director Air Transport Safety Institute: Operational aspects of transporting passengers safely; have the lessons be learned yet?	
10:35 – 11:05	Coffee break	
11:05 - 12:25	Peter Jorna , Professor: Human machine interaction the next step: cooperative computers and an "understanding" flight deck Tim Coombs , Managing Director Aviation Economics: Airline economics and the impact on investing in safety	
12:30 - 13:45	Lunch	
13:45 - 15:15	Paper Session 1 - Selection of Flight Crew 1. Matton : Assessing self-confidence during cognitive tasks: an exploratory study in the context of pilot selection (p.2) 2. Goerke : Video-based test of social understanding in the context of pilot selection: relationship with cognitive abilities, personality and performance in assessment center tasks (p.8) 3. Hoermann : The Psychomotor Vigilance Test – A measure of trait or state (p.13) 4. Huelmann : Helicopter pilot selection in Saudi Arabia – a long term evaluation study (p.18)	Paper Session 2 - Selection of Air Traffic Controllers 5. Pecena : The predictive validity of selection and training measures on training performance of air traffic controller trainees (p.19) 6. Roe : The predictive validity of personality tests in air traffic controller selection (p.26) 7. Eschen-Léguédé : Performance in hybrid teams: development of a research questionnaire and simulation tool (p.32) 8. Lösch : Development of a basic multitasking test for operational A staff based on multidimensional item-response theory (p.39)
15:15 - 15:45	Tea break	
15:45 - 17:00	Paper Session 3 - Developing Aviation Operator Selection Strategies 9. Zierke : Predictive validity in aviation psychology: Really not much more than g? (p.45) 10. King : Psychological testing for mental health screening, suitability determinations, and archival purposes to improve safety and reduce costs (p.51) 11. Thompson : Modeling training success in a remote piloted airframe environment and its Impact on aviation safety: A case for a multi-factorial approach to selection (p.57)	Paper Session 4 - Developing Aviation Operator Selection Tools 12. Duvillard-Monternier : Critical abilities required to the training of RPA MALE operators in the French Air Force: “working towards zero accidents in drones piloting” (p.63) 13. Chappelle : Personality traits distinguishing rated USAF Tactical Air Party Controllers (p.71) 14. Grassmann : Individual differences in cardiovascular and respiratory correlates of mental Load (p.77)
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Tuesday 25 September 2012

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11:00 - 12:30	<p>Paper Session 7 – Pilot Training</p> <p>23. Kallus: Does experience change perceptual motion illusions (p.130)</p> <p>24. Groen: SUPRA project pushed the simulator envelope for Upset Recovery Training (p.137)</p> <p>25. Brown: Best practices for Integration of tablet technologies to modernize aviation training (p.143)</p> <p>26. Venus: Mandatory syllabus for PPL(A) pilot training: twenty years of experience in Switzerland (p.149)</p>	<p>Paper Session 8 - Human Performance in ATC</p> <p>27. Mélan: Influence of cognitive load factors, alertness and perceived tension on ATCs’ performance (CANCELLED) (p.154)</p> <p>28. Nunes: Assessing the day-to-day cost of fatigue: A terminal-area airspace analysis (p.155)</p> <p>29. Johnson: An evaluation of controller and pilot performance, workload and acceptability under a NextGen concept for dynamic weather adapted arrival routing (p.156)</p> <p>30. Battiste: Comparison of controller and flight deck algorithm performance during interval management with dynamic arrival trees (STARS) (p.162)</p>
12:30 - 13:45	<p>Lunch</p>	
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14:30 - 16:00	<p>POSTER SESSIONS (see next page for titles) – Posters will be on exhibition continuously</p>	
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Training & Education

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Information processing & Mental Workload

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19. **Franco**: SMS implementation as a step towards zero accidents at Portuguese language African countries (p.424)
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12:30 - 13:45	<p>Lunch</p>	

Thursday 27 September 2012

09:00 - 10:30	<p>Paper Session 13 - Passenger Safety and Cabin Comfort / Anti-g-training</p> <p>46. Burdekin: Interactive aircraft passenger safety briefs: the effects of testing passengers before boarding (p.269)</p> <p>47. Berg: Thermal comfort of various climate situations for different body areas (p.276)</p> <p>48. Weber: Crucial aircraft cabin properties for perceived passenger safety (p.281)</p> <p>49. Czihak: Psychological actions and training for High-G-Crews in the Austrian Airforce (p.288)</p>	<p>Paper Session 14 – Safety Culture</p> <p>50. Houtman: Safety improvement and legal obstacles (p.293)</p> <p>51. Kelly: Influence of trust and job satisfaction on safety (CANCELLED) (p.302)</p> <p>52. Heese: Marrying safety culture and organizational resilience: construct validation of the Safety Culture Maturity Questionnaire (p.303)</p> <p>53. Speyer: Operators’ guidance to Human Factors in Aviation: the tool’s concept and the case for situational examples (p.310)</p>
10:30 - 11:00	Coffee break	
11:00 - 12:30	<p>Paper Session 15 – Mental Health</p> <p>54. Cherng: Repression, self-concealment and their relationship with civil pilots’ stress copings and performance (p.318)</p> <p>55. Soll: Effects of standby duty on airline pilots and cabin crew members (p.323)</p> <p>56. Triscari: Psychological interventions after a high emotional impact event (CANCELLED) (p.324)</p>	<p>Paper Session 16 - Fear of Flying</p> <p>57. Busscher: Anxiety sensitivity moderates the relationship of somatic sensations and physiological arousal with flight anxiety during real flight (p.325)</p> <p>58. Busscher: Physiological reactivity and self-report of aviophobics during flight (p.333)</p>
12:30 - 13:45	Lunch	
13:45 - 17:00	<p>TUTORIALS</p> <p>Tutorial 1 - Alexandra Franco & Lucas van Gerwen: Fear of Flying among Cabin Crew (p.427)</p> <p>Tutorial 2 - Margaret Oakes & Robert Bor: Managing Aircrew Mental Health Problems: A Psychological Perspective on Improving Safety (p.428)</p> <p>Tutorial 3 - Teresa D'Oliveira: Enriched perspectives of organizational safety and performance (p.429)</p> <p>Tutorial 4 - Sibylle Gross & Alois Farthofer: Introducing EASA FCL into our systems: How to standardize psychological expertises within member nations (p.430)</p> <p>Tutorial 5 - Don Harris: Writing successful Human Factors research papers (p.434)</p> <p>Tutorial 6 - Billy Thompson: Selection methodologies: Traditional versus non-traditional approaches to personnel selection in high risk aviation environments (p.435)</p>	
15:00 - 15:30	Tea break	
20:00	GALA DINNER AND EAAP AWARD CEREMONY	

Friday 28 September 2012

Coffee available at 10:00

10:00 - 11.30 **Paper Session 17 - Safety Management**

59. **Furuta**: Design of ground aircraft operation plan at Haneda International Airport by simulation
(p.334)

60. **Nunes**: An investigation into how an evolving workforce impacts risk in the National Airspace System
(p.339)

61. **Lee**: Merging operational aviation safety and workplace health and safety management systems –
working towards a fully integrated approach to achieving zero accidents (p.340)

11:30 - 12.00 **Closing of the conference by the EAAP President Peter Jorna**

