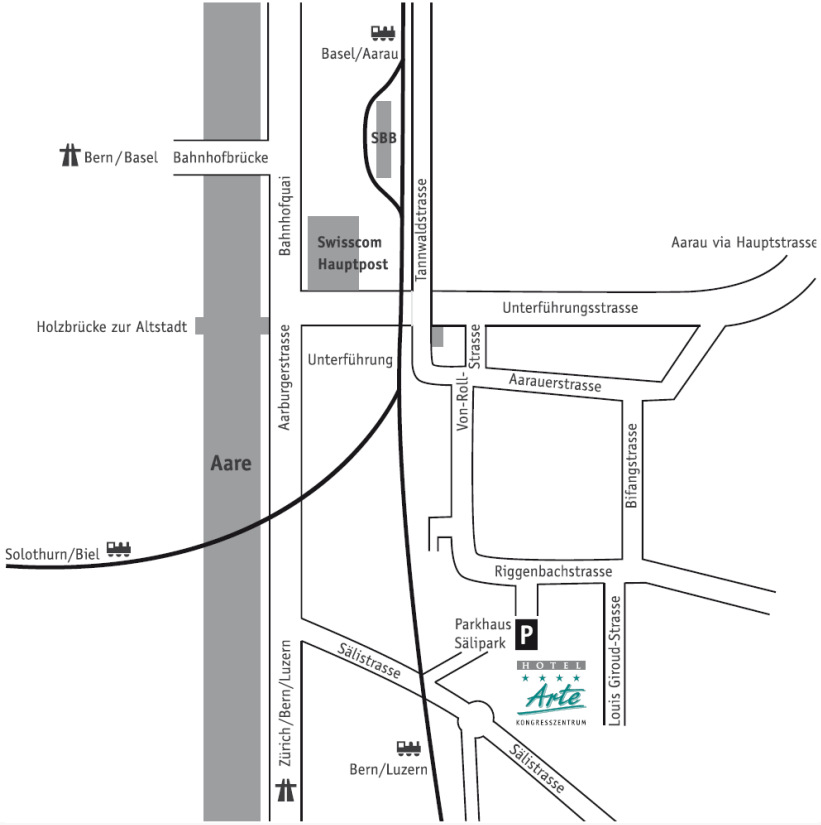

Location

Hotel ARTE, Kongresszentrum
Riggenbachstrasse 10
4601 Olten

www.konferenzhotel.ch

How to arrive by train

The hotel ARTE is approx. 10 minutes on foot away from the Olten train station. Use the railway underpass, where you find the Migrolino shop (near platform 12). On the right hand side of the shop climb the stairs leading to Tannwaldstrasse. From there follow the street and turn at the end of the street to the right into Von-Roll-Strasse. Follow the street till you see the hotel on your right.

How to arrive by car

You may park your car in the Sälipark P1 close to the hotel. Coming from Zurich, Bern, Basel and Lucerne take the highway exit Rothrist and follow the signs for Olten/Aarburg. Pass the tunnel and continue on until you see on your right the sign Hotel Arte. Turn right and follow the sign. After 500m you will see the Hotel.

Cover image by Mark Rabo: flic.kr/p/7HCbnR

Federal Office of Civil Aviation 2015
www.foca.admin.ch

SASCON `15

Swiss Aviation Safety Conference 2015

SASCON ‘15 - Fatigue Risk Management Systems

8th September 2015

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Bundesamt für Zivilluftfahrt BAZL
Office fédéral de l'aviation civile OFAC
Ufficio federale dell'aviazione civile UFAC
Federal Office of Civil Aviation FOCA

Program

09:00 - 09:30 Registration

09:30 - 09:45 **Opening of SASCON '15, Welcome Address**
Dr. Peter Müller, Director General
FOCA

09:45 - 10:30 **Things We Once Believed: A Reflection On The Evolution of Fatigue Management**
Ph.D. John A. Caldwell Jr., Experimental Psychologist
Fellow, Aerospace Medical Association & Aerospace Human Factors Association

10:30 - 11:00 **FRMS In The Air Traffic Control (skyguide's View)**
Keiko Moebus, Senior Safety Management Expert
skyguide Ltd.

11:00 - 11:30 Coffee Break

11:30 - 12:00 **The Story Behind The EasyJet FRMS**
Capt. Philippe Pilloud, Head of Operations Risk Management EZS
easyJet Switzerland

12:00 - 12:30 **FRM - Fatigue Risk Management - A System For Operators / Implementation Switzerland**
Thomas Gass - Captain, Senior Flight Inspector, Complex Aeroplanes
FOCA

12:30 - 13:30 Lunch Break

13:30 - 14:00 **Fatigue Risk Management**
Stefan Becker, Head of Corporate Development
Swiss Air Ambulance Ltd., REGA

14:00 - 14:30 **Fatigue Risk Management At Swiss**
Ph.D. Loukia Loukopoulou, Manager, Human Performance & Systems
Swiss International Airlines Ltd.

14:30 - 15:00 Coffee Break

15:00 - 15:30 **The Swiss System Of A FRM In Medicine**
Daniel Scheidegger

15:30 - 16:00 Q&A, Open Discussion, Panel

16:00 End

Dr. John A. Caldwell Jr.
Experimental Psychologist
Fellow, Aerospace Medical Association & Aerospace Human Factors Association

Dr. John Caldwell is an experimental psychologist, a Fellow of the Aerospace Medical Association, and a Certified Health Coach. He has over 30 years of experience conducting and directing stress, sleep, fatigue, and performance/safety research with government organizations to include the U.S. Army's Medical Research and Materiel Command, the National Aeronautics and Space Administration, and the U.S. Air Force Research Laboratory; as well as with privately-owned firms such as Archinoetics, LLC and Fatigue Science. As an expert in the areas of sleep enhancement, sleep deprivation, fatigue management, and experimental design, he frequently consults with organizations and individuals on sleep/fatigue research matters as well as on strategies to optimize performance and health in demanding contexts. He has published extensively, conducted numerous workshops, and made well over 100 scientific presentations. He holds the US Air Force's highest civilian award for research and development.

Abstract

Things We Once Believed: A Reflection on the Evolution of Fatigue Management
Fatigue has been a problem since the advent of the industrial age due to the fact that competition, technological advances, and transportation improvements have seriously challenged our basic physiology. However, these challenges often have been denied. Fortunately, science has now revealed the folly of macho attitudes towards sleep and fatigue, replacing them with a drive towards evidence-based fatigue management. Fatigue is a physiological phenomenon based on sleep, continuous hours of wakefulness, and circadian rhythms. It cannot be "willed away," and if ignored or improperly managed, it is a serious threat to aviation safety. However, fatigue can be effectively mitigated with scientifically-proven strategies. The avoidance of sleep restriction, implementation of proper work scheduling, appropriate use of technology, identification and treatment of sleep disorders, and concerted educational efforts are the keys to effective fatigue management. Once these and other strategies are implemented within the context of fully-integrated, data driven, fatigue risk management system, both safety and performance can be optimized.

Keiko Moebus
Senior Safety Management Expert
skyguide Ltd.

As a senior safety management expert, Keiko is committed to her role in strategic safety implementation and safety process improvement at skyguide; especially in the area of Human Performance and Human Factors domain. She joined skyguide in 2011 after having accumulated various work experiences from aviation and aerospace since 1994.

Prior to joining skyguide, she practiced her own aviation consultancy while taking a child-raising break from corporate career. Some of her unique contributions to European aviation safety and human factor were seen in her work done for EASA such as "Scientific and medical evaluation of fight time limitation" and "Impact assessment of the publication of questions of theoretical examinations for Part 66 and Part FCL".

She was born in Japan, but grew up most of her youth in USA, and since 1999, has been living in Switzerland. She holds Bachelor of Science in Aerospace Studies and Master of Aeronautical Science with Human Factors specialization from Embry-Riddle Aeronautical University in Florida USA.

Abstract

While the pilot fatigue contributes to 15-20% of fatal aviation accident, there is no public data linking air traffic controller's occupational fatigue as a direct/indirect cause for aviation accidents and incidents. Does it mean that we air navigation service providers (ANSPs) have no fatigue problems among air traffic controllers?

There are growing concerns among ANSP community that the risk of fatigue-related accidents or incidents may increase in the future – due to economic pressure and competition among ANSPs, and such tendency could possibly add more workload and pressure on operational personnel. As a result, ICAO and EASA are developing regulations related to air traffic controllers; similar to the one seen for aircrew.

This presentation guides audience to first understand the nature of air traffic controller's task and role and then to discuss possible contributing factors to air traffic controllers' occupational fatigue and its negative effects to the performance.

By reviewing the recent NASA FAA fatigue study report and skyguide's fatigue survey findings, it becomes evident that the defence mechanism to fatigue risk management remains the same for all; regardless dealing with aircrew or air traffic controllers. In addition, a Fatigue Risk Management System (FRMS) must be a shared responsibility between the organization where adequate staffing and scheduling are considered and the individuals who report fit for duty to perform their best.

A FRMS should be viewed and treated as a way to enhance safety and performance efficiency in the aviation community. As a result, various aviation stakeholders must work together to support more active FRMS implementation.

Capt. Philippe Pilloud
Head of Operations Risk Management
easyJet Switzerland

Head of Operations Risk Management at easyJet Switzerland. This includes the oversight of Flight Safety and Flight Data Monitoring, Cabin Safety and Fatigue Risk Management.
9000 flight hours, mostly on Boeing 737 and Airbus 320
Dipl. Engineer HES
Engineering study in Mechanic Master in Air Transport Management at London City University Air Accident Investigation course at Cranfield University
Flight Instructor FI(A)

Abstract

easyJet is today one of the major carrier in Europe with more than 250 aircraft operating across Europe and other countries in the region. Although a lot of fatigue studies have been conducted for long haul operations, mainly associated to jetleg effects, we were more interested in the fatigue risk associated with high productivity on short sectors. We started with a study called project blue. To summarize, the study was:
A Human Engineering study into fatigue levels of flight crew under the current roster pattern.

Aim: To investigate whether a relationship exists between current rostering practices at easyJet, pilot fatigue and human error.
Employs an Operational Risk Management Approach (ORMA), utilising data mining from the following sources: Surveys; Flight Data Monitoring (FDM); Air Safety Reports (ASRs); Threat and Error Management LOSA taxonomy; Cognitive Performance tests and Subjective fatigue / alertness indexes.
Predictive modelling ('SAFE' & 'FAID') applied to rostering pattern to be compared with collected data.
We used multiple data such as:
Archive and Survey Data: FDM, Crew Fatigue/Alertness Levels, Sleep Deprivation
Threat and Error Management Data: Total error, Violations, Procedural, Threat mitigation, Undesired Aircraft States, Error trap rates, Error failure to respond, Automation dependency, Expended effort, etc…
Cumulative Fatigue
Based on the study, we developed our FRMS further with the involvement of NASA and Universities in London.
Today our system collects 1000s of fatigue risk reports and allows developing high productivity rosters within a controlled risk environment.

Capt. Thomas Gass
Senior Flight Inspector Complex Aeroplanes
FOCA

FOCA Safety Division
Section Special Inspectorates - SBFF

Project lead and process support - implementation of NCC, FRMS, EASA FTL, EASA SERA in Switzerland; BAZL focal point for FTL, PBN, CRM; EASA RMT group member for FTL Air Taxi and PBN; SAFA Inspector; Line Captain, TC, TRI, SFE

Professional experience
8 years (including training) with FOCA Safety Division SB as Certification-, Oversight and Principal Flight Operations Inspector;
21 years (including training) in commercial line operations Airline as F/O, PIC, TC, TRI;
7 years experience (including training) Medical Sector - Kardiotechniker/Perfusionist at the Department for Cardiothoracic Surgery Kantonsspital Basel.

Stefan Becker
Head of Corporate Development
Swiss Air Ambulance Ltd., REGA

Stefan Becker is Head of Corporate Development for Swiss Air-Rescue Rega and reports directly to the CEO. He holds several university diplomas after his studies in economics, medicine and European Management. His key competence is the strategic interdisciplinary approach, especially between economics, medicine, aviation and rulemaking.

Besides his regular job for Rega, Stefan Becker is delegated to the European HEMS & Air Ambulance Committee (EHAC) as Managing Director, and serves as Co-Chair of the AIRMED World Congress Scientific Committee. He is a member of the Board of Directors for the Commission on Accreditation of Medical Transport Systems (CAMTS) and a member of the core team of the European Helicopter Safety Team (EHEST), where he is involved in the activities of the specialist team Rulemaking as well as of the sub-team Communication. Stefan Becker is also member of the Advisory Council of Aviation Research in Europe (ACARE) and has worked on the implementation concept of Flightplan 2050, a strategic approach of the European Commission.

Furthermore, Stefan Becker is the founder of a management consultancy which deals with strategic management, crisis management and media management for European enterprises and associations. Besides he is a university lecturer for strategic management and change management. Before he had been working in the field of professional humanitarian assistance for the Red Cross International Cooperation and lastly had been appointed as Deputy Head of Delegation in Sudan.

Abstract

The Safety Benefits of Fatigue Risk Management
Fatigue is caused by sleep deprivation. Sleep is a basic human need. When you are thirsty you drink; when you are hungry you eat. And when you are tired, only sleep will prevent fatigue and its almost inevitable and sometimes extremely serious consequences. The question needs to be addressed as to how far fatigue poses a risk of accident for crews, patients, passengers, the public at large and, in the end, also the company.
Fatigue does not pose a risk in itself, but is rather a physiological condition caused by a number of factors. It is the impact of fatigue or over-tiredness on the person's performance and the resulting error frequency and severity that pose potential critical risks, which need to be managed.
The scientific lecture addresses

- approaches to fatigue measurement;
- physiological consequences of fatigue;
- operational consequences and risk factors of fatigue;
- economic effects of fatigue;
- results from the FRMS studies of Swiss Air-Rescue Rega and how FRMS
- developed and is used;
- risk assessment and mitigation strategies for fatigue-related risks;
- the benefits of a fatigue risk management system (FRMS) in general and in
- particular with regard to innovative performance-based rulemaking;
- questions from the audience after the presentation

Ph.D. Loukia Loukopoulou
Manager, Human Performance & Systems
Swiss International Airlines Ltd.

Loukia is a Human Factors professional with the Flight Safety department at SWISS International Air Lines. She is responsible for implementing and running the FRM program at the airline, while also involved in a number of other projects on procedures and training, including an eye-tracking research project (partially funded by the BAZL) to investigate pilots' scan patterns.

Loukia holds a Ph.D. and a Master's degree in Cognitive Psychology from the USA where she resided for more than 15 years. She has previously worked as an officer in the aviation sector of the U.S. Navy, and at the Human Systems Integration Division of the NASA Ames Research Center. Her work, which primarily focused on multitasking in the flight deck, still finds a captive audience within the aviation industry. It has been widely presented and published, including in 2 books ("The Multitasking Myth" and "The Limits of Expertise"). Before joining SWISS in 2013, Loukia spent 8 years in her native Greece, where she worked with the Air Accident Investigation Board (and was a member of the Helios Airways accident investigation team), the Air Force, and as a consultant on SMS.

Loukia is beginning to call Switzerland "home" and is working on her Swiss-German while training and competing in international triathlon events.

Abstract

With an eye towards being proactive, and the goal of matching and exceeding industry best standards and practices, SWISS has engaged in implementing an own FRM program for some time already. As a potential risk to the safety of flight operations, fatigue has always been monitored and mitigated – but the increasing availability of scientific knowledge, operational evidence, and new methods and tools today opens up the road for a more systematic way to managing fatigue. In line with its SMS framework, SWISS has laid the necessary building blocks and is gradually expanding its reactive, proactive, and even predictive FRM capabilities. This presentation will offer an overview and status report of the FRM program at SWISS, using examples to illustrate the processes and tools in use, and provide an opportunity to discuss challenges and solutions, and exchange ideas with our industry counterparts and the BAZL.

Daniel Scheidegger

Daniel Scheidegger studied medicine in Basel and was trained to become a specialist in Internal Medicine, Cardiology, Anesthesiology and Intensive Care in Basel, Geneva and Boston.
From 1988 until 2013 he was Chairman of the Department of Anaesthesia and Intensive Care at the University Hospital in Basel and full professor for Anesthesiology and Intensive Care at the University of Basel.
1998 - 2009 member of the Swiss National Science Foundation and president of division III (medicine and biology)
Since 2012 member of the Swiss Science and Innovation Council.

Abstract

Fatigue Risk Management System in Medicine

Fatigue Risk Management Systems are based on research done primarily by psychologist and physiologists. Most of those results have been published in peer reviewed journals. Ideally, every single FRMS should be tailored to the specific needs of an airline or a hospital and rechecked after the introduction by a proper study. This would then allow to readjust the system according to the proper needs.

A goal in modern medicine is to introduce new therapies or new procedures only if there is clear evidence for an improvement. This is called Evidence based Medicine.
There is a lot of evidence about the risk of medical errors and mishaps due to fatigue in our hospitals. There is even more evidence how to counteract fatigue and what measures could be taken to minimize the risk.

Instead of learning from aviation and instead of following the evidence, published even in top medical journal, we have decided to counteract fatigue in medicine differently!
This unique approach, worked out by politicians and the union, will be discussed and compared to measures taken in other countries.

This is another example, where medicine in Switzerland missed to learn from the experience in aviation.