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SPT.079 - CRM in Practice Survey review

Bernard Bourdon
Aircrew & Medical Programme Manager

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Survey results overview

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CRM in practice - SPT.079



SPT.079 – Survey on CRM in practice

Issues raised during CRM Workshop 8 nov. 2016

- Link between CRM training and SMS
- Better understanding of skills, needs and roles for the different individuals involved in CRM training (incl. Inspectors)
- Assessment of CRM training at operators
- Guidance shared is sometime superficial

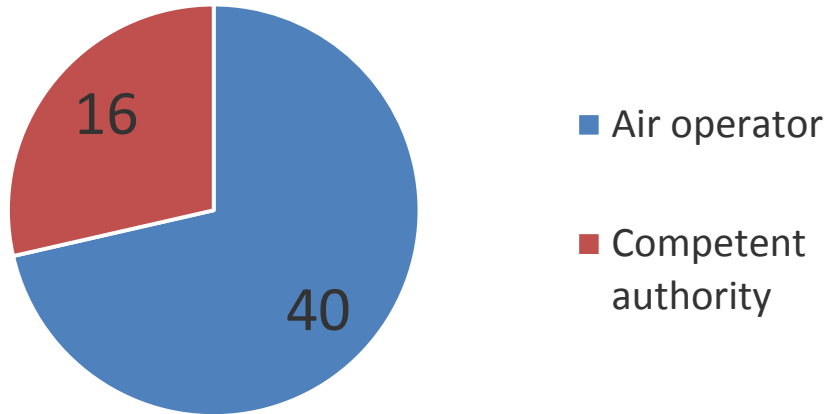
Survey on CRM Training

- 9 June -> 15 July 2017
- TeB Members, FS STeB



Respondents overview

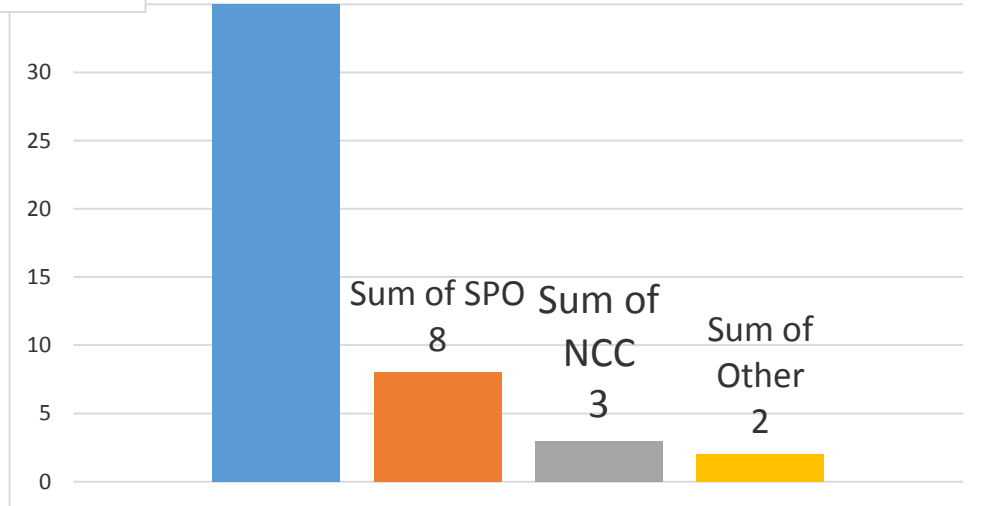
Number of respondents



Air operator respondents by type

Sum of AOC

35

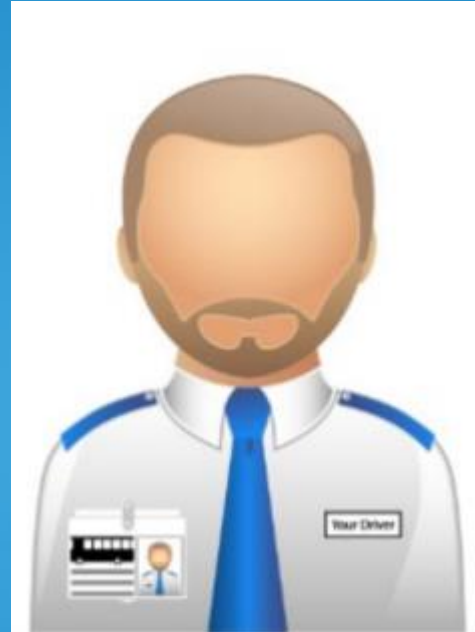




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Authority perspective



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1. Did you have to make changes, if any, to implement new AMC and GM on CRM training applicable since October 2016?



Creation of a working group involving FOIs, HF experts. Identification of training needs for FOIs.

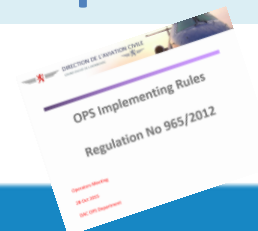
Changes in training for CRM/HF trainers

New mandatory training syllabus for the inspectors to cover changes in ARO.GEN.200

Update on oversight C/L and procedures



Information and Safety Promotion to Operators





2. As Competent Authority for operators oversight, is the CRM training for inspectors made internally or subcontracted to another external provider?

➤ Internal training developed

- Estonia,
- UK,
- Sweden,
- France,
- Croatia,
- Germany

...

- Iceland

Note: difficulties in finding relevant training for Authorities



3. How do you ensure that inspectors are qualified and trained for the oversight of the operator's CRM training including the assessment of non-technical skills?

► Inspectors background

- [ED Decision 2017/006/R](#)

GM7 ARO.GEN.200(a)(2)
Management system

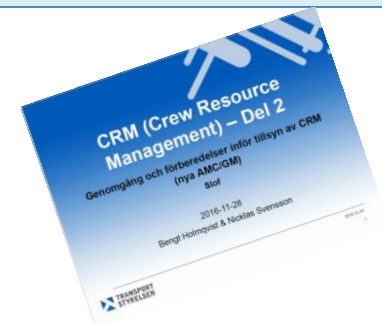
In the context of the approval and oversight of aircraft specific flight crew training and checking, the inspector should have experience as an instructor.

- Practical guide on the use of pilots as inspectors



► Initial and recurrent Training

- For CRM instructor and FOI
- Check-List for CRM oversight and
- NOTECHs sessions introduced
 - Video on cockpit scenarios
 - Simulator sessions, mock-up training





4. How do you evaluate the effectiveness of CRM training?





4. How do you evaluate the effectiveness of CRM training?

- Time is needed to implement
- Criteria suggested
 - Compliance monitoring
 - Initial theoretical knowledge (up-to-date)
 - CRM trainers qualification and training criteria
 - Measurable impact
 - Capacity to identify relevant CRM indicators in practical sessions
 - Implementation in SMS. Operators themselves should develop tools to assess the effectiveness of their training and link the CRM program to their SMS



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Organisation perspective



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1. Changes to implement new AMC and GM on CRM training applicable since October 2016?

Suggestions:

- Allocate more time to CRM
- Develop new « assessment forms »
- Crew representatives involved in the development of CRM assessment methodology
- Construction of CRM 'Library' for crew, instructors and examiners on eLearning platform





3. How is CRM training connected to your Management system? What main source of information do you use?

➤ Source for training development includes

➤ Operational risks identified by SMS

➤ Training issues

➤ reported from OPC, recurrent training...

➤ Data analysis of simulator data (recurrent programme)

➤ CMS and Change Management when introducing a new type of operation or product

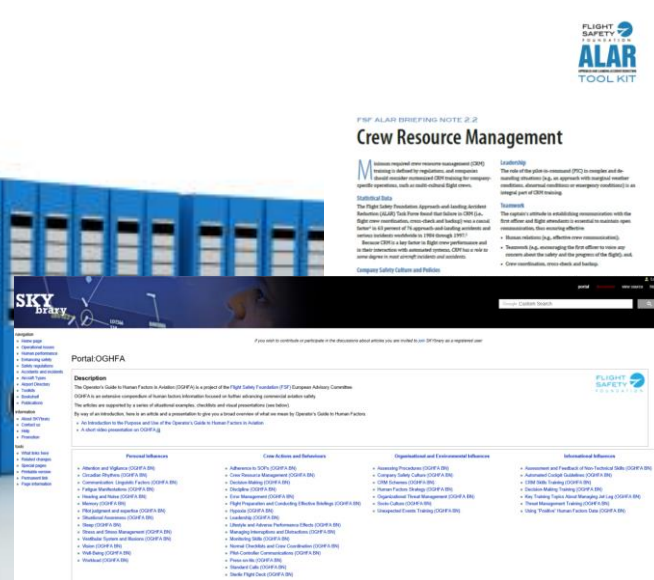
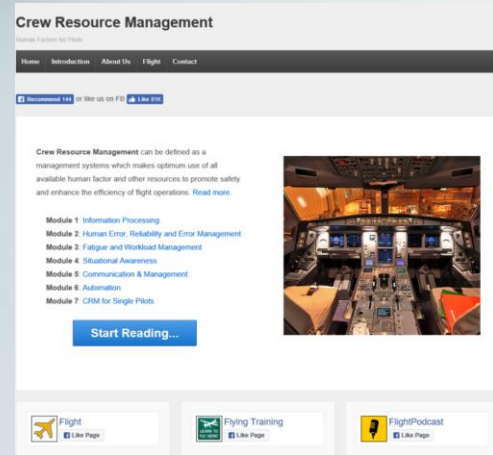
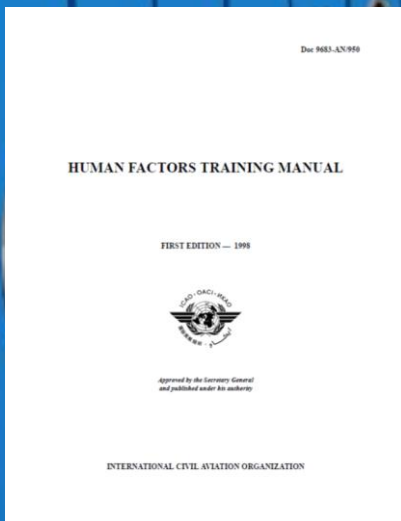
➤ Proportionate implementation for small fleet and company





4. How do you ensure that CRM training address all highlighted elements (resilience, automation...)

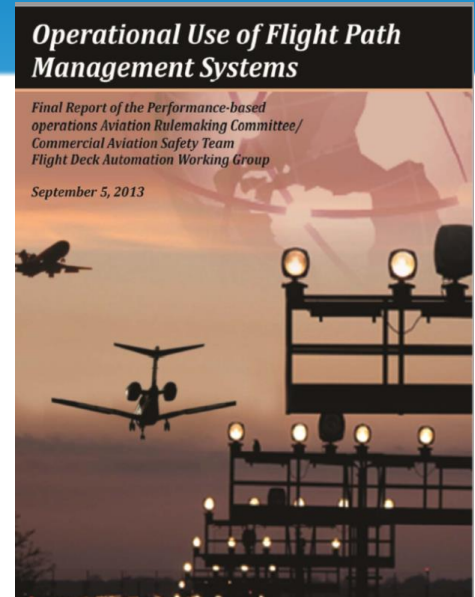
- Creation of CRM Learning Objectives matrix to give common focus for the Instructor and student on CRM topics relevant for the FSTD session.
- Each CRM LO supported by:
 - CRM Library to review where relevant by both Instructor (Preparation) and student
 - Instructor/ student pre-course review of lesson CRM learning objectives.
 - Inclusion of CRM Learning Objectives into briefing and debriefing. Identification of appropriate areas and exercises within the pre-simulator briefing and simulator training session to integrate the CRM concepts.
 - Identification of CRM weaknesses that could cause errors and identify CRM principles that can create safety margins.
 - Integration and linking of CRM to technical concepts and their relationship with each other.





Automation and the philosophy on use of automation

Flight path management policy is more relevant than an automation policy

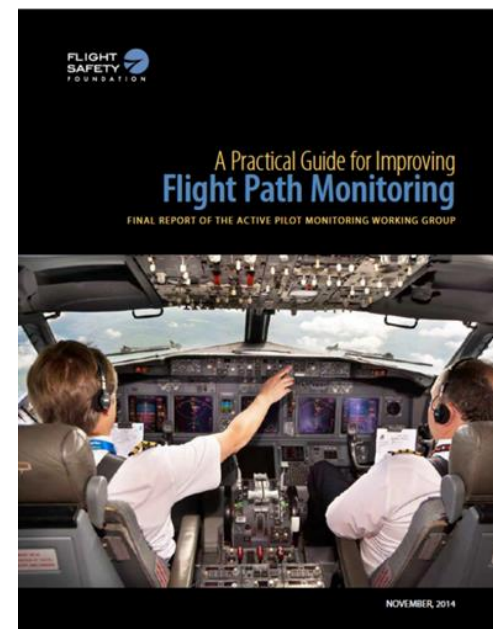
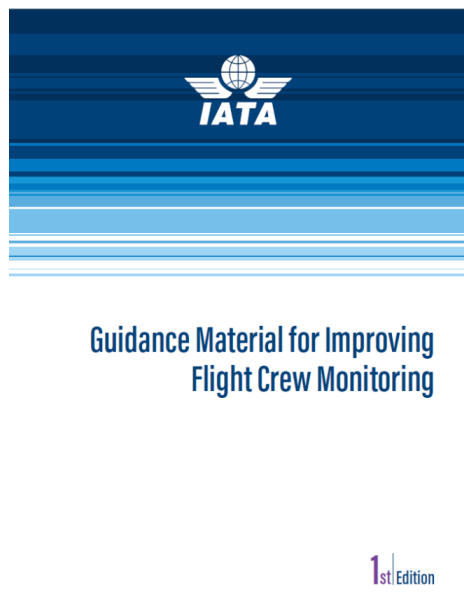


- [Operator's Guide to Human Factors in Aviation – Automated Cockpit Guidelines](#)
- [Flight Safety Foundation ALAR Briefing Note 1.2 “Automation”](#)
- [Airbus FOBN – Optimum Use of Automation](#)
- [Eurocontrol, Hindsight 20 - Winter 2014](#)
- [EASA Automation Policy – May 2013](#)
- [IFALPA Pilot Training Standards – 1st Edition, September 2012](#)



Monitoring and intervention

- SOPs and AFM with special attention on:
 - Mode awareness
 - Automation surprise
 - Over-reliance / complacency





Resilience Engineering



the academic pursuit of flight safety
postmaster@raes-hfg.com

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SAFETY CULTURE AND RESILIENCE DEVELOPMENT (INCLUDING SOPS AND ORGANISATIONAL FACTORS)

ENGINEERING RESILIENCE

In August 2016, Aerospace published an article regarding the upcoming changes to the CRM training syllabus, specifically the inclusion of Resilience as a topic. As one of the leaders in the area of training resilience, Luxair have kindly agreed to share their training material freely so that other airlines can learn from their experiences of training crew in this vital topic. From the team at the Royal Aeronautical Society Human Factors group, we'd like to thank Luxair and especially Captain Marc Frank and his team of instructors for sharing their superb work. A big thank you to Gunnar Steinhardt and Arthur Dijkstra for their work as well. An introduction to the topic, a PowerPoint presentation and instructor notes can be found below:

[Introduction note about resilience V4](#)

[Luxair RE CRM Rec 2013 v4](#)

[Luxair Trainer Handout RE CRM Recurrent V4](#)





Surprise and startle effect

➤ UPRT due to

- Pilot-Induced trigger
- Environment-Induced trigger
- System-induced trigger



Environmental Factors Affecting
Loss of Control In-Flight:
Best Practice for
Threat Recognition & Management

1st Edition

➤ Unexpected, unusual and stressful situations covering surprises and startle effects and management of abnormal and emergency situations enable to cover:

- Manage crew resources and analyse
- Exercise adequate behavioural response
- Rebuild situation awareness and control





5. What methodology are you using to assess CRM skills?



NOTECHS - GM6
ORO.FC.115



Core competences of ICAO
Doc.9995 – Manual of EBT



EBT Implementation Guide



6. How do you ensure that CRM trainers are trained in the fields of group management, group dynamics and personal awareness?



**Train-the-Trainer
'interactive course
conduct'**

**New scenarios
Be ready as facilitator
Expectations...**



**Assessment or trainers
CMS
Update briefings**



Trainers performance



Inputs received?

- Cabin crew CRM training – integration of the new CRM training elements into relevant parts of cabin crew training?
- CRM training for NAA cabin safety inspectors?



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Thank You

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TE.GEN.00409-001