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BRUSSELS, 29-30/05 2018
SAFETY FORUM
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FLIGHT SAFETY FOUNDATION
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EUROCONTROL

# Safety Forum
# Safety Behaviours
# May 2018
# Brussels:

## *Findings, Strategies and Action Opportunities*

# CONTENTS

# Executive Summary

This report describes the background, objectives, and outcomes of the Safety Forum: Safety Behaviours, initiated by the Flight Safety Foundation, the European Regions Airline Association and EUROCONTROL that took place on May 29th and 30th 2018 in EUROCONTROL Brussels.

During the Forum safety behaviours of various aviation stakeholders were presented and addressed. The role which these behaviours play to maintain safe operation was explored and discussed during the break-out sessions.

As a result the Forum outlines a number of Findings. Each Finding is one of the following:

- A current risk or a credible projection of one likely to be encountered in the near future in a given operational environment.
- A current risk factor or a credible projection of one for any unwanted outcome (both positive and negative influencers) in terms of their relative importance.
- A risk scenario that describes how risk factors combine in a sequence to create an unwanted outcome.

The Findings were then used to develop safety improvement Strategies which can prevent, contain or mitigate a specific risk illustrated by the 'Findings'.

Considering the Findings the Forum formulated a series of Action Opportunities to respond to the safety improvement strategies.

# Chapter 1

# Introduction

## 1.1 What is the purpose of this report?

***Documenting and communicating.***

This report describes the background, objectives, and outcomes of the Safety Forum: Safety Behaviours, initiated by the Flight Safety Foundation, The European Regions Airline Association and EUROCONTROL. The Forum took place on 29th and 30th of May 2018 in EUROCONTROL Brussels and was held in partnership with ICAO, IFATCA, UK CAA, UK NATS, IATA, ECA and DGAC (France).

## 1.2 The objectives of the Safety Forum: Safety Behaviours

***One Day, One Issue, One Co-ordinated Outcome Event.***

The Safety Forum: Safety Behaviours targeted operational and safety professionals with the intention to hold a short event, with a clear focus on safety behaviours aspects and to result in the creation of an event report and supporting awareness material.

It is an event from the industry for the industry.

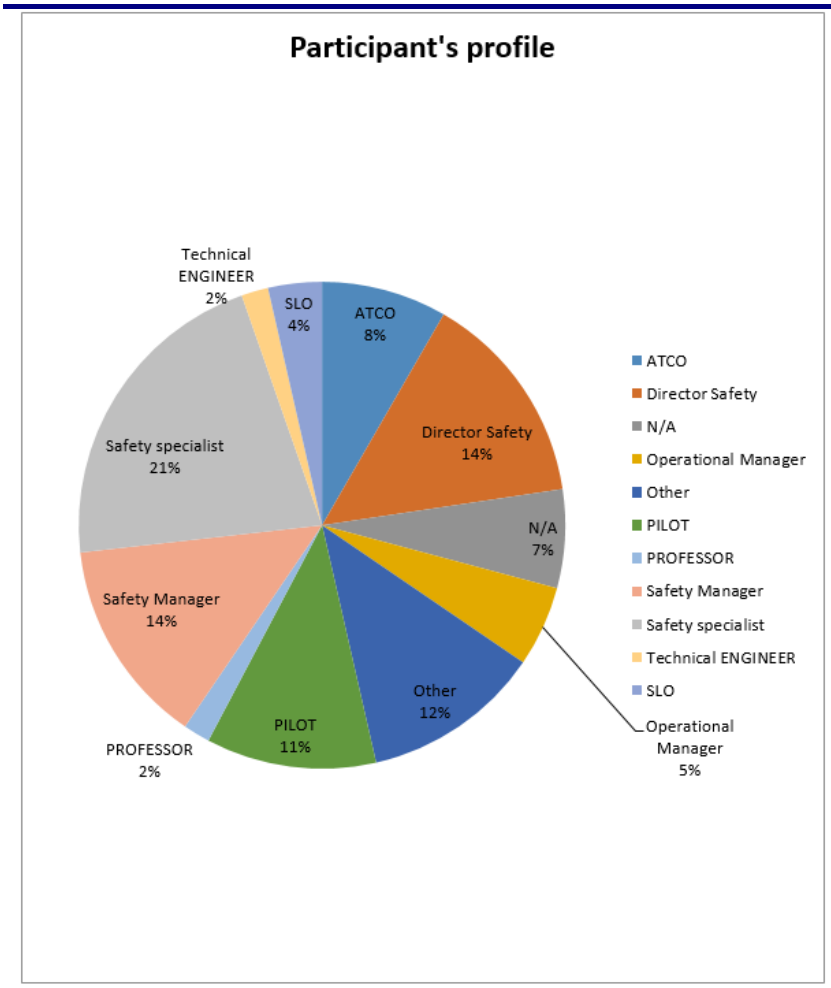
## 1.3 SKYbrary knowledge management

***Promoting the results***

The speaker briefings and final outcomes of the Forum are published on SKYbrary, shared freely with the global aviation community, in particular pilots and air traffic controllers, but also with managers, regulators and manufacturers.

## 1.4 Participants

***The Safety Behaviours Forum attracted attention of around 200 aviation professionals representing various stakeholders.***



***Participants to the Safety Forum came from 36 countries.***

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|---|
| Algeria |
| Australia |
| Austria |
| Belgium |
| Cape Verde |
| Croatia |
| Czech Republic |
| Denmark |
| Egypt |
| EUROCONTROL |
| France |
| Georgia |
| Germany |
| Greece |
| Hungary |
| Ireland |
| Isle of Man |
| Israel |
| Italy |
| Luxembourg |
| Malta |
| Morocco |
| Mexico |
| Moldova |
| Netherlands |
| Poland |
| Portugal |
| Romania |
| South Korea |
| Spain |
| Sweden |
| Switzerland |
| Turkey |
| UAE |
| United Kingdom |
| USA |

## 1.5 Outline of the results

***Findings, Strategies and Action Opportunities***

The Forum outlines a number of Findings. Each Finding is one of the following:

- A current risk or a credible projection of one likely to be encountered in the near future in a given operational environment.
- A current risk factor or a credible projection of one for any unwanted outcome (both positive and negative influencers) in terms of their relative importance.
- A risk scenario that describes how risk factors combine in a sequence to create an unwanted outcome.

The Findings were then used to develop safety improvement Strategies which can prevent, contain or mitigate a specific risk illustrated by the 'Findings'.

Considering the Findings and Strategies the Forum formulated a series of Action Opportunities.

# Chapter 2

# Findings, Strategies and Action Opportunities

## 2.1 Setting the Scene

The findings, strategies and action opportunities in this section are based on the following Safety Forum presentations:

- "Safety Behaviour, Procedures and Knowledge" - Capt. Ed Pooley, The Air Safety Consultancy
- "Use of Situational Judgment Responses to assess workforce knowledge and readiness to enact critical patient safety skills and behaviours" - Prof. Bryn Baxendale, Trent Simulation & Clinical Skills Centre Nottingham University Hospitals NHS Trust
- "Procedural Non-compliance: The Common Factor" - Capt. Jo Gillespie, McKechnie Aviation
- "Walking the talk – Delivering on Safety Behaviours" - Capt. John Monks, British Airways, and Capt. Stefano Prola, International Air Transport Association
- "Procedures in the wild" - Tom Laursen, International Federation of Air Traffic Controllers

As in the other sessions this session addressed different safety behaviours. The following are some of the behaviours which have been addressed in this section: team work, training, monitoring, promoting, analysing, reporting, participating, involving, enforcing, communicating, participating, developing, being aware, focusing, standardizing and teaching.

| | |
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| ***Finding*** | Standardisation of procedures throughout the aviation industry has reduced risk, incidents and accidents. |
| ***Strategy*** | Highest benefit from procedures are gained when they are founded on and supported by relevant Competencies (especially knowledge). |
| ***Action Opportunity*** | Effectiveness of standard procedures needs to be strengthened by:<br>• Emphasising the need for local monitoring,<br>• Teaching properly why and how they were designed, especially in relation to their frequency of use.<br>• Ensuring a wide degree of procedural agreement, will also ensure a greater degree of acceptance and therefore compliance.<br>• Monitoring of outcomes and feedback loops. |

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| ***Finding*** | Procedure development must match an agreed need. |
| ***Strategy*** | New procedures should not be limited to post event situations but may be drawn from other industries and from data trends. |
| ***Action Opportunity*** | Procedure development should ensure that:<br>• New procedures should be developed transparently involving affected stakeholders.<br>• Old (no longer relevant) procedures should be eliminated. |

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| ***Finding*** | Safety and quality has traditionally been based on past performance – i.e. via the use of lagging rather than leading indicators. |
| ***Strategy*** | Establish an evidence-based team training programme which embeds safety behaviours, improves and strengthens team working climate and promotes an organisational learning culture (resilience). |
| ***Action Opportunity*** | Reinforce systems 'thinking' and analysis amongst operations and managerial teams through the application of an appropriate evidence-based methodology (e.g. TeamSTEPPS[1]: Barriers, Tools & Strategies, Outcomes). |

[1] TeamSTEPPS is an evidence-based program aimed at optimizing performance among teams of health care professionals, enabling them to respond quickly and effectively to whatever situations arise.

| | |
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| ***Finding*** | Reporting and feedback of performance data has been tailored to Individual, Team and Management Levels. |
| ***Strategy*** | Deploy a multi-measure approach to assessment and feedback: Situational Judgement, Behavioural Observation, 360° Feedback & Recommend Links to Learning. |
| ***Action Opportunity*** | Support the acquisition of knowledge & set standards, assess decision-making on application of new skills and techniques in practice, provide targeted support and monitor/review progress. |

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| ***Finding*** | Application of procedures has been agreed as a competency (Note – not compliance with procedures). There may be rare occasions when non-compliance is fully justified. |
| ***Strategy*** | Widespread adherence to procedures is encouraged: It is an inherent part of being a 'professional'. Management must make their expectations with regards to compliance absolutely clear and the limits of adaptation. |
| ***Action Opportunity*** | To secure the right level of compliance:<br>• Managers must overtly state their policy on procedural compliance and non-compliance.<br>• Operational staff must participate in the procedure development and modification process.<br>• Compliance and non-compliance should be measured. |

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| ***Finding*** | World-wide accident rates are at an all-time low for large passenger jets due to a combination of technology, processes and people/training factors, for other aircraft types (turboprops and helicopters) the situation is different. |
| ***Strategy*** | Regulation by itself will not drive a change in reporting culture and neither will oversight of the National Authorities in Europe. It has to be the organisations themselves that deliver a safe and secure industry and it is these that have to drive the change to the values and approach. |
| ***Action Opportunity*** | "What has got us here, will not get us there" – In the future we need to develop and deploy reporting systems which facilitate the move from collecting information about events to information about human behaviours throughout organisations. |

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| ***Finding*** | The promotion of a Just Culture is a key enabler for both the industry and individual organisations to achieve the next step-level change in safety. |
| ***Strategy*** | Do not get distracted and focus on 'reckless' events – it needs commitment from all stakeholders – taking the long-term view rather than being influenced by short term factors. |
| ***Action Opportunity*** | Focus on four elements: Reporting, Investigation, Outcome & Promotion. Each organization has to find the right balance that works for them. |

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| ***Finding*** | Procedure and standardisation have improved safety over many decades. |
| ***Finding*** | Procedures and standardisation cannot and do not cover all situations. |
| ***Finding*** | There will always be a gap between work as imagined versus work as done. |
| ***Finding*** | Procedures are extremely useful but adaptations are also necessary in resolving (assisting in) many situations. |
| ***Strategy*** | With increasingly complex tools, the need to be able to judiciously apply procedures whilst still retaining the ability to react to “new” unforeseen sets of circumstances, is becoming a necessity of our more complex technological future. |
| ***Action Opportunity*** | We need to:<br>• Treat procedures as resources for action.<br>• To maximise this resource, we all need to understand their purpose and their design logic.<br>• Be aware of other potential courses of action.<br>• To make progress on safety through procedures, monitor the gap between procedure and practice, and understand the reasons behind them. |

## 2.2 Learning from Experience

The findings, strategies and action opportunities in this section are based on the following Safety Forum presentations:

- "Reduction of the Number of Nuisance RAs due to Procedural Change" - Capt. Max Butter, Lufthansa
- "The use of FDM to influence flight crew behaviour" - Capt. Richard Weeks, NetJets Transportes Aéreos and Pedro Duarte, NetJets Transportes Aéreos
- "Rethinking the Briefing" - Capt. Rich Loudon, Alaska Airlines, and Capt. David Moriarty, Royal Aeronautical Society Human Factors Group
- "Royal Air Force Military Parachuting Safety Processes: Reducing Drift" - Wg Cdr James Simmonds, Royal Air Force

As in the other sessions this session addressed different safety behaviours. The following are some of the behaviours which have been addressed in this section: modifying, optimising, training, monitoring, sharing data, using data, de-identifying, reviewing, promoting, developing, promulgating, editing, adapting, briefing, simplifying, involving, communicating, learning and engaging.

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| ***Finding*** | A high rate of climb or descent (over 1500 ft/min) approaching a target altitude or FL generates nuisance TCAS RA because the system predicts conflicts on actual rather than intended performance. |
| ***Strategy*** | Reduce Rate of Climb/Rate of Descent (ROC/ROD) to 1000ft/min or less when approaching the programmed level or altitude to reduce the number of TCAS RA. |
| ***Action Opportunity*** | • Programme alt selectors and aircraft level management to plan a rate reduction to achieve a maximum 1000ft/min within 1000ft of target altitude or level.<br>• Set FDM data-frames to capture ROD/ROC trends.<br>• Adjust SOPs and training for alt/FL capture.<br>• ATC to monitor ROC/ROD where possible.<br>• Encourage operators to share RA data when appropriate with ANSP and Eurocontrol. |

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| ***Finding*** | • Accurate data can be used to drive changes in behaviour and procedures.<br>• De-identifying reports to an excessive level risks losing critical data. |
| ***Strategy*** | Operators should use FDM proactively to review procedures. |
| ***Action Opportunity*** | • Operators share threat information for difficult destinations.<br>• Share validated data and highlight threats with pilots on regular basis. |
| ***Action Opportunity*** | Routine (confidential) provision of individual performance data to pilots. |

| | |
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| ***Finding*** | Confidentiality for FDM is crucial for success. |
| ***Strategy*** | Promote common standards for breaching confidentiality. |
| ***Action Opportunity*** | Invite EOFDM (EASA) to develop and promulgate confidentiality principles. |

| | |
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| ***Finding*** | Formal procedures should be in place to change or adapt SOPs and operating instructions, including capturing the intent behind the change. |
| ***Strategy*** | Ensure that proactive reviews of procedures and practices identify processes and capture intent. |
| ***Action Opportunity*** | Regular review of procedures and capture of intent and assumptions behind instructions will promote resilience. |

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| ***Finding*** | • Briefings can be one-sided and too lengthy in the interest of SOP compliance.<br>• Crews should focus on threats rather than verbal cross-checks of automated systems. |
| ***Strategy*** | • Focus briefings on an open discussion to develop or highlight 'the big picture' and salient points for the sector or event.<br>• Separate the management of routine items from the discussion of risk. |
| ***Action Opportunity*** | • Reducing challenge and response items and provide more internal open discussions on fewer, shorter and fixed threats.<br>• Ensure that briefings are interactive and an open discussion, encouraging advocacy.<br>• Increase the level of involvement of the Pilot Monitoring. |

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| ***Finding*** | Front line issues do not easily reach the senior management level (iceberg of ignorance). |
| ***Strategy*** | • Establishing causal factors should first consider systematic/organisational problems before examining individual failures.<br>• Ensure risks are communicated across the organisation (to/from all levels). |
| ***Action Opportunity*** | • Learning and change policy to be collectively driven and accepted via an implemented dynamic response process.<br>• Top level management should engage regularly with lower levels to be made aware of front line issues and communicate their own risks and general risk appetite. |

## 2.3 Work as done vs work as imagined

The findings, strategies and action opportunities in this section are based on the following Safety Forum presentations:

- "Safety Behaviours: work-as-imagined v work-as-done" - Magnus McCabe, NATS
- "Conscientiousness and safety behaviour in pilots and aerospace engineers" - Paul Dickens, Core Aviation Psychology
- "Work as Never Imagined: A Case Study on Flight Deck Displays for New Airspace Operations" - Dr. Kathy Abbott, Federal Aviation Administration

As in the other sessions this session addressed different safety behaviours. The following are some of the behaviours which have been addressed in this section: exploring, involving, creative work, simplifying, communicating, feeding back, engaging, encouraging, reviewing, training, decision making, team work and optimizing.

| | |
|---|---|
| ***Finding*** | End users of new technology will find ways to use technology which were not envisaged by designers during its development. |
| ***Strategy*** | Exploring how new technology may be unexpectedly used should be integrated into the project programme. |
| ***Action Opportunity*** | • Those who write procedures should know how the work is done. Ensure frontline, inexperienced end users are involved in every stage of developing new technology.<br>• Use of 'sandbox' allows a safe space for new technologies to be tested. |

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| ***Finding*** | High levels of conscientiousness in pilots/engineers and controllers may indicate the likelihood of above average safe behaviour. |
| ***Finding*** | Very high levels of conscientiousness in pilots/engineers and controllers may indicate a reduced flexibility in decision making whereby procedures are blindly followed. |
| ***Strategy*** | Regulations and procedures should not stifle creativity, nor be too restrictive. |
| ***Action Opportunity*** | Minimize updates and procedures so they can be easily remembered. Reduce procedures to the minimum needed. Make clear how much flexibility there is and what are the safety margins. To encourage flexibility, put more surprises into training. |

| | |
|---|---|
| ***Finding*** | Need to reduce the gap between training and operations in the real world. |
| ***Strategy*** | Work on knowledge based training and flight safety basics. If unsure where or if there is an issue ask the frontline staff (directly or via social media). |
| ***Action Opportunity*** | Engage with engineering to get into how why and what. Feedback loop is important from those using the procedures. Encourage people to come back. |

| | |
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| ***Finding*** | Use of LCEs (Local Competency Examiners); OJTIs (On-the-job Training Instructors); surveys; Safety Managers – use of their knowledge. |
| ***Strategy*** | Know top five issues. Increased use of data in day to day strategy. Common human factors taxonomy. |
| ***Action Opportunity*** | Mixed discipline workshops. Use of RAT Tool (Risk Analysis Tool) for better discussions. |

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| ***Finding*** | Team work is often not mentioned in procedures so people multitask rather than work together. |
| ***Strategy*** | Ensure the procedures do not require people to do things they are not good at e.g. multitasking. |
| ***Action Opportunity*** | End users should know why the procedures are there. |

# Chapter 3

# Posters

# Risk Culture in Commercial Air Transport

This preliminary concept is based on some of the 'Safety Culture' models well-known and applied in aviation. It aims to add a new dimension to the existing safety culture framework based on the 'Risk Culture' guidance material produced by Institute of Risk Management (IRM), which was developed to supplement ISO 31000 *Risk management*.


*"CULTURE: the unwritten rules of the social game"*
Professor Emeritus Geert Hofstede


*"Risk Management: It's not rocket science. It's much more complicated than that."*
Professor Emeritus John Adams

*"Warm-blooded, passionate, inherently social beings though we think we are, humans are presented in this context as hedonic calculators calmly seeking to pursue private interests. We are said to be risk-averse, but, alas, so inefficient in handling information that we are unintentional risk-takers; basically we are fools."*
Dame Mary Douglas




*"Safety is a paradox; people demand safety once they have taken risks."*
René Amalberti


In 2016, Future Sky Safety conducted a survey 'European pilots' perceptions of safety culture in European Aviation'. Over 500 pilots clearly stated that they have to take risks that make them feel uncomfortable about safety. Unfortunately the survey didn't provide any insight what kind of risks respondents take. WE REALLY NEED TO FIND OUT WHAT THESE RISKS ARE!

# 1st Risk Culture Survey Results

## OPERATIONAL TARGETS & RISK TAKING

**6 out of 10** 'Agreed' or 'Strongly Agreed' that

**ONLY 2 out of 10** 'Disagreed' or 'Strongly Disagreed' that

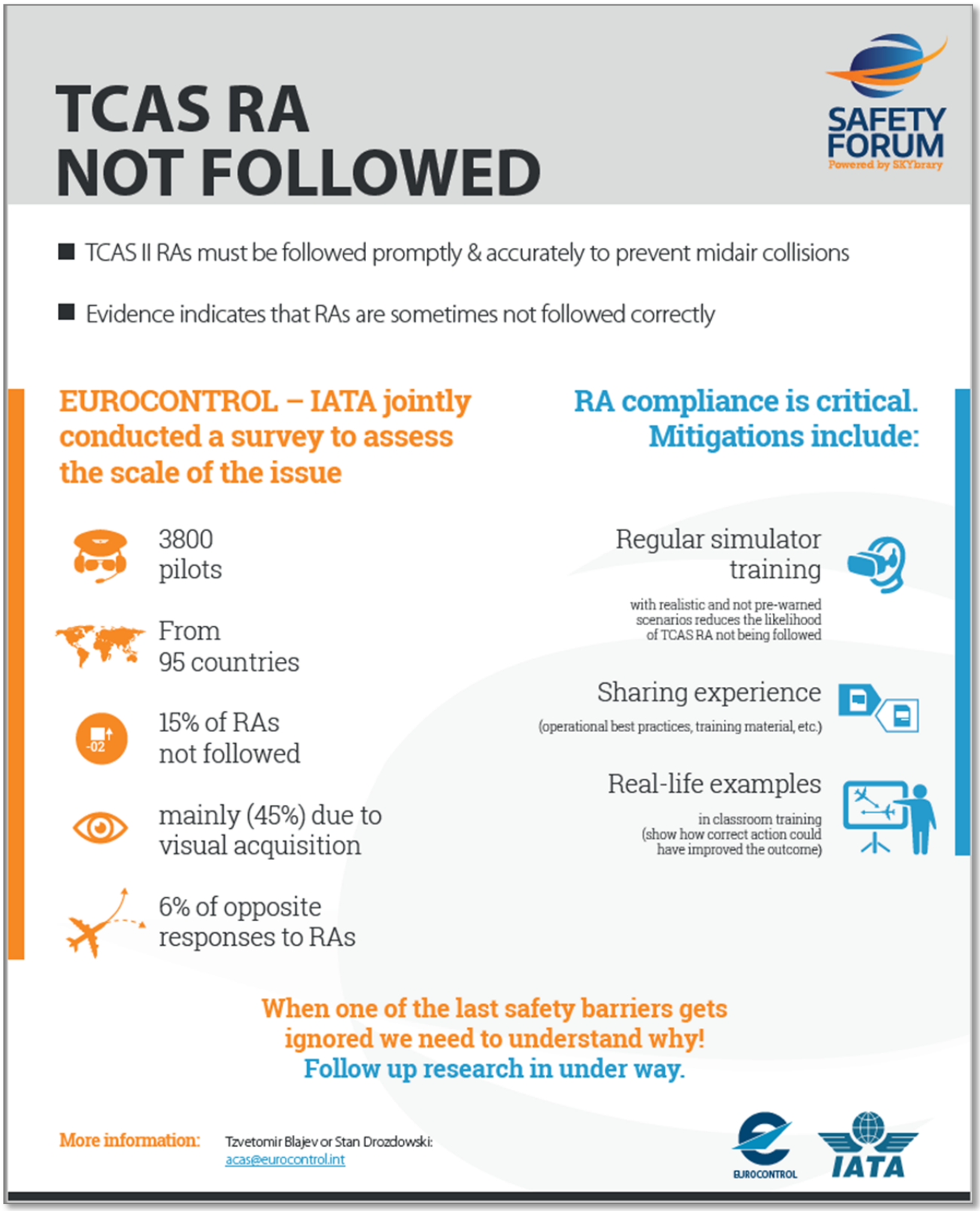
**Operational targets (such as 'on-time performance', 'availability', 'technical dispatch reliability') can encourage pilots, engineers & their managers to take SIGNIFICANT risks potentially impacting on flight safety.**

29 year-old First Officer: *"Destination (second main base of operator) had strong headwinds but runway in use was covered by low clouds on final. After one unsuccessful attempt we diverted to alternate (main base). Upon arrival to alternate, the company had already placed a flight plan to return back to destination. 4 flights in total had diverted. All were "pushed" to try again even though there was no clear improvement. After waiting for 2 hours we departed again. Only way to land was by executing a circling approach with 20kts tailwind and breaking off at less than 1000ft and turning base at 3 miles. This was at night and in a mountainous area. All 4 flights attempted the procedure. Some made it on the first try, some felt "forced" to try again and again until they made it on 3rd attempt."*



46 Year-old Maintenance Engineer: *"An engineer made the decision to cut a fire detection wire to prevent false alarms in the flight deck. The pilots and engineering management were also aware of the decision. The decision was made to enable an aircraft to return to the home base the same day, to avoid an overnight stay for the flight crew and to avoid looking bad to the customer. Significant pressure was put on the engineer by the operations manager for the airline. The LAME has since left the industry to avoid being put in the same position again."*

28-year-old First Officer: *"I was just finished with line training, and flying out of a city far from my hometown. It was an early morning departure, and with the low salary only being paid per block hour, and I had to endure all expenses for accommodation, I could only afford to sleep at a hostel. The hostel had very thin walls and you could hear other people having sex during the late night hours in other rooms. I woke up having only slept 4 hours, but could not report unfit, as this would result in me losing money on the trip from my home country as a whole. This at a time when all cash reserves were exhausted."*


TCAS RA
NOT FOLLOWED
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TCAS II RAs must be followed promptly & accurately to prevent midair collisions
Evidence indicates that RAs are sometimes not followed correctly
EUROCONTROL – IATA jointly conducted a survey to assess the scale of the issue
3800 pilots
From 95 countries
15% of RAs not followed
mainly (45%) due to visual acquisition
6% of opposite responses to RAs
RA compliance is critical. Mitigations include:
Regular simulator training
with realistic and not pre-warned scenarios reduces the likelihood of TCAS RA not being followed
Sharing experience
(operational best practices, training material, etc.)
Real-life examples
in classroom training (show how correct action could have improved the outcome)
When one of the last safety barriers gets ignored we need to understand why!
Follow up research in under way.
More information:
Tzvetomir Blajev or Stan Drozdowski:
acas@eurocontrol.int
EUROCONTROL
IATA

# FLIGHT STATUS ANALYSATION

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## Integrated processing of operationl flight data

### The variety of flight data & information sources

A targeted deployment of operational data supported by an intelligent processing system, which on the one hand computes relevant information and on the other hand assists pilots without ignoring the current workload in the cockpit, forms the basis for a fault-free flight operation at a time of steadily increasing interdependencies of processes in commercial aviation.


Technische Universität Braunschweig

Rule-based flight state analysis

Consideration of data correlation, validity & relevance

Evaluation of pre-defined tasks and operational limits

Processing of internal and external information sources

Provision of notifications and ecommendations

Enhancement of situational awareness

Support of decision making process

IFF

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Captain Paul Cullen, Dr Joan Cahill (TCD) & Dr Keith Gaynor (SJOG)

Trinity College Dublin

# Understanding Pilot Wellbeing, and Its Impact on Flight Safety

## PILOT WELLBEING

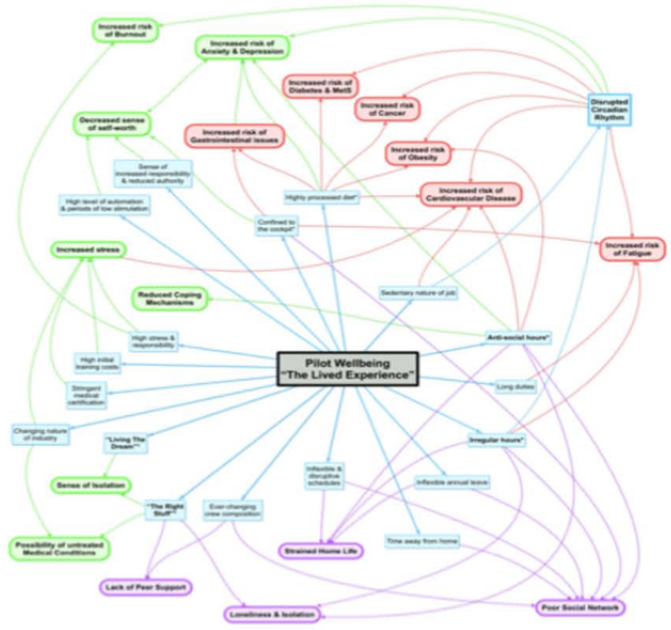
- There is evidence that **Pilots are under stress** and **experiencing wellbeing/mental health problems**
- Currently, there is a **lack of awareness/understanding** about wellbeing/mental health issues for pilots
- Overall, the **relationship between Work-Related Stress (WRS), pilot wellbeing, pilot performance and flight safety** needs to be understood and supported at different levels
- **Safety is enhanced when a wellbeing/mental health issue is addressed**, as opposed to allowing it go undiagnosed and untreated
- People with wellbeing and mental health difficulties for the most part are perfectly able to continue to do their jobs, especially with support.

### Sources of Work Related Stress (WRS)

Factors impinging simultaneously on more than one pillar are highlighted with an *

| Biological | Psychological | Social |
|---|---|---|
| Working irregular hours* | | |
| Working anti-social hours* | | |
| Working within the close confines of the cockpit* | | |
| Divergence of values between management and pilots* | | |
| Unnatural location of work environment (5 miles up in the sky – no supports/can't step out)* | | |
| Working long duties | Increased responsibility with reducing authority and support* | |
| Difficulties accessing fresh, healthy food | Lack of engagement (management and pilots)* | |
| Sedentary nature of working as a pilot | Perception of pilots possessing "The Right Stuff"* | |
| Cockpit environment – air quality, oxygen levels, noise | Perception that pilots are "living the dream"* | |
| | Time away from home* | |
| | Not having a sense of home/never at home* | |
| | Lack of certainty in relation to roster (changes)* | |
| | Being contacted by work when off duty if staffing/roster issues* | |
| | Managing and understanding cultural differences (international workforce)* | |
| | Commuting lifestyle* | |
| | Long working day in close contact with one other person (may or may not get on with)* | |
| | Interpretation of the rules* | |
| | Captain responsibility – never switch off | Working inflexible / disruptive schedules |
| | Changing nature of the industry | Inflexible annual leave allocations |
| | Automation and prolonged periods of low stimulation | Ever-changing crew composition |
| | High training costs | |
| | Stringent medical certification | |

## BIOPSYCHSOCIAL MODEL PILOT LIVED EXPERIENCE




## FIELD RESEARCH & VALIDATION WITH PILOTS

- Initial exploratory interviews with pilots (N=40)
- Validation of biopsychosocial model with pilots semi structured interviews with pilots (N=60)
- Literature review and further consolidation of biopsychosocial model
- Advancement of safety case and impact scenarios
- Validation of model, safety case and impact scenarios with pilots (3, workshops: N=33)

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# Understanding Pilot Wellbeing, and Its Impact on Flight Safety

## SAFETY CASE & IMPACT SCENARIOS

| # | High Level Scenario | WRS | Wellbeing Impact | Impact on pilot performance (when flying) | How often | Safety Outcome |
|---|---|---|---|---|---|---|
| 1 | Pilots mostly coping well | Any pillar – include fatigue, social isolation etc | Minor impact | Minor impact<br>Sometimes performance degraded - might miss something like ATC instruction, but will notice and correct action | Frequent | None – pilot self corrects own actions |
| 2 | Pilots mostly coping well, but impacts on physical health (GI, musculoskeletal problems) | Mostly biological pillar | Minor impact - suffering in daily life | Minor impact<br>Sometimes performance degraded - might miss something like ATC instruction, but will notice and correct action | Frequent | None – pilot self corrects own actions |
| 3 | Pilots experiencing difficulties but mostly coping – however, something gives on the day – potential for event but co-pilot acts as barrier – compensate for other pilot | Complex combination of personal factors, work factors and operational situation on the day | Significant/considerable impact | Loss of attention<br>Impact on situation awareness, decision making and teamwork<br>Protection of co-pilot means avoid safety critical scenario | Infrequent | Near miss<br>Potential for safety event/accident, if not picked up by co-pilot |
| 4 | Pilots mostly coping well, but long-term impacts | Any pillar – include fatigue, social isolation etc | Long term impact on health – develop illness when on annual leave or when retire | N/A | N/A | N/A |
| 5 | Pilots not coping – impact on wellbeing – | Complex combination of personal factors and work factors | Significant impact - suffering in daily life – stop working – potential for serious MH issues including self-harm and suicide | N/A | N/A | N/A |
| 6 | Extreme cases – murder/suicide (Germanwings) – media attention - implication for safety – very rare – should not be the immediate focus | Potentially pre-existing MH issue | Major impact | Major impact | Rare | Potential for accident/fatal accident |

## NEXT STEPS

- Extensive **survey of European pilots – measure wellbeing issues and get feedback on sources of WRS**
- **Stakeholder workshops** focusing on how **wellbeing issues might be addressed at (1) airline level, (2) pilot self-management level**