21st European Airline Training Symposium

8-9 November 2023
Estoril Congress Centre, Cascais, Portugal

Transforming Recurrent Training
by Gathering Safety Intelligence for your SMS

Cengiz Turkoglu

Safety & Accident Investigation Centre

Cranfield Transport Systems

"I've never learned anything from anyone who agreed with me"

PLEASE DO CHALLENGE MY ARGUMENTS

MY PERSONAL OBSERVATION ABOUT THE CURRENT STATE OF THE COMMERCIAL AIR TRANSPORT INDUSTRY

DESPITE SOME FANTASTIC TRAINING PROGRAMMES DEVELOPED OVER THE YEARS AND DECADES AND STILL CURRENTLY DELIVERED TODAY,

NOWADAYS *SOME* ORGANISATIONS SEEM TO HAVE CONTRACTED A

DEADLY DISEASE!

"SELF-PASED ONLINE/CBT FOR CRM/SMS TRAINING"

WELCOME TO THIS YEAR'S HF/SMS RECURRENT TRAINING

WE HAVE SPENT HUGE AMOUNT OF RESOURCE AND MONEY TO CREATE A NEW SELF-PACED CBT PACKAGE FOR THE HF & SMS RECURRENT TRAINING SO THAT WE CAN DEMONSTRATE COMPLIANCE WITH THE REGULATIONS.

YOU CAN COMPLETE THIS TRAINING AT HOME OR AT WORK WHENEVER YOU ARE NOT BUSY.

AS THERE IS NO INTERACTION WITH A HUMAN BEING DURING THIS TRAINING, YOU NEED TO FIGURE OUT THE SOLUTIONS TO THE CHALLENGES YOU FACE REGULARLY.

BTW, PLEASE DON'T ASK YOUR CHILDREN OR WIFE/HUSBAND TO COMPLETE THIS TRAINING AND TAKE THE TEST AT THE END. EVEN IF YOU DO, YOU SHOULDN'T PAY THEM FOR GOING THROUGH THIS PAIN UNLESS THEY ACHIEVE A PASS MARK!

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three separate safety issues

one potential solution

HAZARDS / RISKS / SAFETY ISSUES

✈ *REMINDER - Hazard:* A condition or an object with the potential to cause or contribute to an aircraft incident or accident. (ICAO Annex 19)

HAZARDS	CONTRIBUTING FACTORS	POTENTIAL ROOT CAUSES
Under-reporting	Lack of fear (Just Culture) Ease of reporting Nothing happens, why should I bother? **Lack of time, when am I going to report?**	Organisational Culture Peer pressure Leadership's attitude
Limited / Lack of monitoring culture (weak signals) in an organisation	Too much driven by compliance To much focus on significant events	Inevitable pressure to maintain approvals Risk perception (Risk Homeostasis)
Ineffective recurrent training due to minimal or lack of interaction (i.e. computer based training becoming norm)	Achieve compliance (following syllabus)	Training seen as a non-productive activity rather than opportunity to capture feedback from employees

THREE KEY CHALLENGES

Under-reporting Challenge

Limited Utility of Safety Culture Surveys

Limited interaction in training

"Weak Signal Detection'
'Learning from All Operations'

A PROPOSITION TO ADDRESS ALL THREE CHALLENGES

CONTINUOUS MONITORING OF SAFETY/RISK CULTURE IN THE ORGANISATION

- CONTINUALLY CAPTURE 'LIVED EXPERIENCES' OF FRONTLINE OPERATORS DURING RECURRENT TRAINING SESSIONS
- ENABLE THE PARTICIPANTS TO ANALYSE THEIR OWN STORIES (CRUCIALLY IMPORTANT!) AND USE THE ORGANISATIONAL RISK BEHAVIOUR FRAMEWORK
- FEED THAT SAFETY INTELLIGENCE TO SMS TO ACHIEVE ORGANISATIONAL LEARNING

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TRANSFORM YOUR RECURRENT TRAINING SESSIONS

TO MONITOR YOUR SAFETY/RISK CULTURE &

ENABLE ORGANISATIONAL LEARNING

2016 ● 1st RISK CULTURE SURVEY IN CAT INDUSTRY

2017 ● 2nd RISK CULTURE SURVEY IN CAT INDUSTRY

2018 ● DEVELOPMENT OF ORGANISATIONAL RISK
BEHAVIOUR FRAMEWORK

2021 ● COLLABORATIVE STUDY (BALPA, CRANFIELD,
COGNITIVE EDGE) VALIDATION OF FRAMEWORK

2016 ⬤ **1st RISK CULTURE SURVEY IN CAT INDUSTRY**

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INDUSTRY-WIDE SURVEYS IN 2016 & 2017

www.riskculture.org
email@riskculture.org

FOCUS ON TWO FUNDAMENTAL QUESTIONS   **& SUB-QUESTIONS**

1 A scenario & decision on most significant 'accepted/acceptable risk'	1. Risk Decision Making Individual vs Organisational 2. Factors encouraging / discouraging people to take such safety risks.
2 A scenario & decision on most significant 'unacceptable/rejected risk'	

OPERATIONAL TARGETS & RISK TAKING

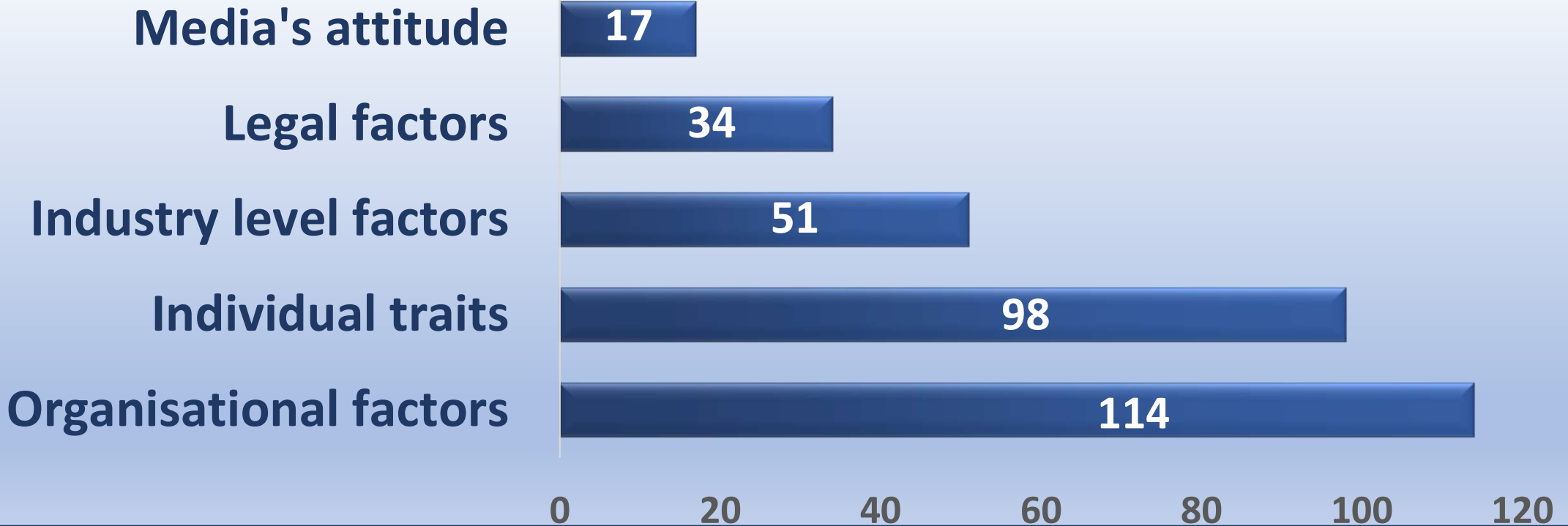| 2016	2017
Operational targets (such as 'on-time performance', 'availability', 'technical dispatch reliability'), can encourage pilots, engineers and their managers to take **SIGNIFICANT** risks potentially impacting on flight safety.	Operational targets (such as 'on-time performance', 'availability', 'technical dispatch reliability'), can encourage **"EXCESSIVE' / 'UNNECESSARY'** risk taking behaviour impacting on flight safety.

You may not necessarily agree with this statement. For example, some people argue that nowadays, particularly professionals (pilots & engineers/technicians) in large organisations do not have much discretion any more and considering the strict rules and regulations, they really cannot take any risks. However the counter argument is that there will always be circumstances that a pilot or engineer/technician must use judgement based on his/her technical knowledge and perception of risk before making a decision such as releasing or accepting an aircraft to service.

	2016 (n=165)		2017 (n=123)	
Strongly Disagree / Disagree	30	18%	16	13%
Neither Agree Nor Disagree	33	20%	20	16%
Strongly Agree / Agree	102	**62%**	87	**71%**

FACTORS ENCOURAGING RISK TAKING

Factor	Value
Media's attitude	17
Legal factors	34
Industry level factors	51
Individual traits	98
Organisational factors	114

(Horizontal axis: 0, 20, 40, 60, 80, 100, 120)

Organisational factors i.e. safety culture, leadership's attitude towards risk
Individual traits i.e. 'can do' attitude or 'thrill seeking'
Industry level factors i.e. policies, growth in the industry, competition
Legal factors i.e. litigation, unrealistic expectations about passenger rights legislation
Media's attitude i.e. victimisation of individuals who make mistakes

2016 1st RISK CULTURE SURVEY IN CAT INDUSTRY

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31

THE AIM IS **NOT TO LABEL** ANY INDIVIDUAL, DEPARTMENT, PROFESSIONAL GROUP OR THE ENTIRE ORGANISATION BASED ON THIS FRAMEWORK

THE AIM IS TO IDENTIFY OPERATIONAL RISK DECISIONS AND **BY DIALOGUE** TO CREATE A COMMON UNDERSTANDING OF RISK AND MOVE TOWARDS A **'RISK SENSIBLE'** POSITION.

2016 1ˢᵗ RISK CULTURE SURVEY IN CAT INDUSTRY

2017 2ⁿᵈ RISK CULTURE SURVEY IN CAT INDUSTRY

2018 DEVELOPMENT OF ORGANISATIONAL RISK BEHAVIOUR FRAMEWORK

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2021 **COLLABORATIVE STUDY (BALPA, CRANFIELD, COGNITIVE EDGE) VALIDATION OF FRAMEWORK**

A Collaborative Study

BALPA

Cranfield Transport Systems

COGNITIVE EDGE

Making Sense of Aviation Safety
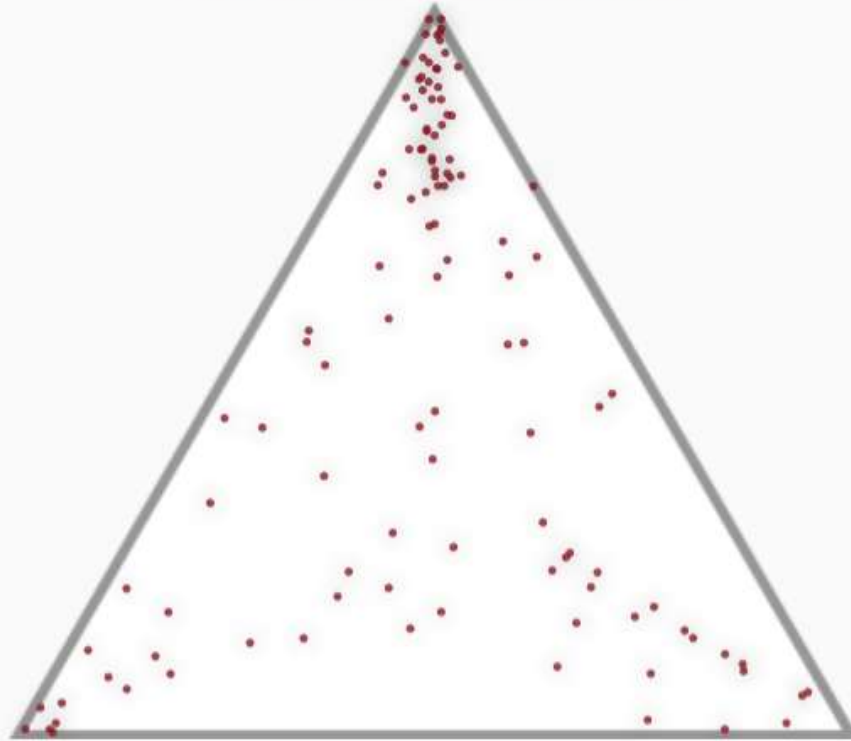
FIRST SHARE YOUR 'LIVED EXPERIENCE'

THEN ANALYSE YOUR OWN STORY BY ANSWERING UNIQUE QUESTIONS

Results of the 'Making Sense of Aviation' Study

T3 - In this situation we chose to...

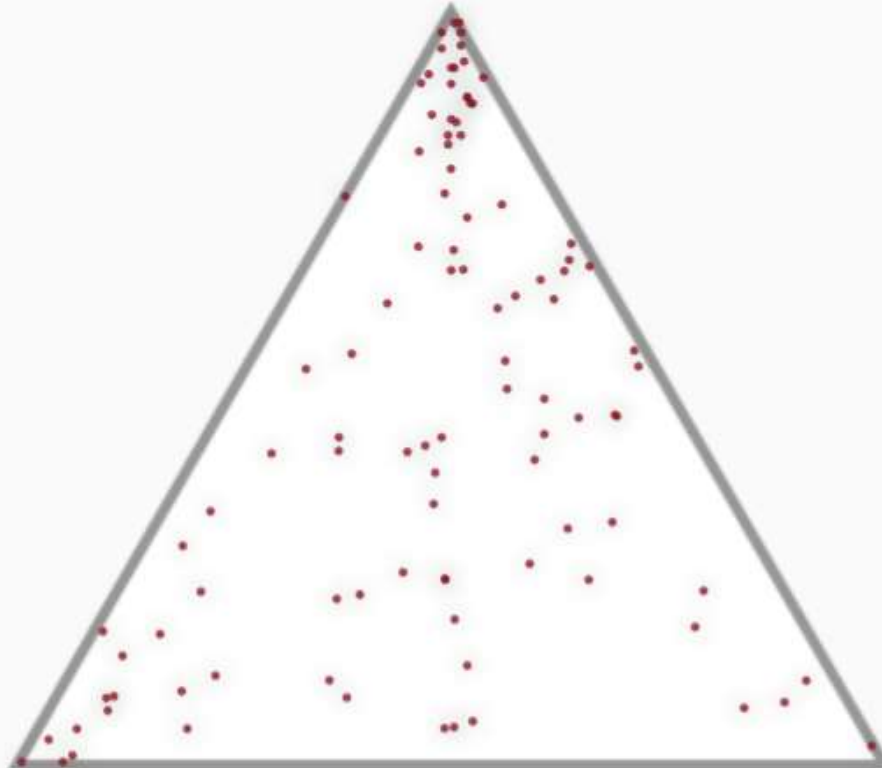stay strictly within the procedures

deviate slightly from procedures

use a novel solution

Results of the 'Making Sense of Aviation' Study

T2 - During decision making, pressure was felt from...

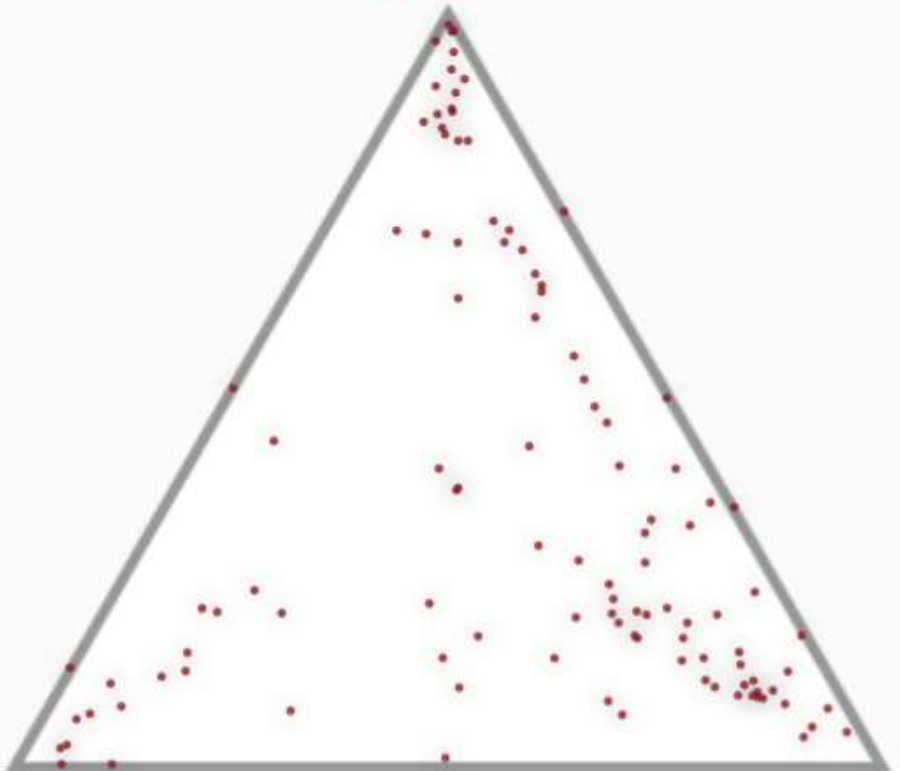company commercial

personal reasons (fatigue, ability etc.)

customer expectation

Results of the 'Making Sense of Aviation' Study
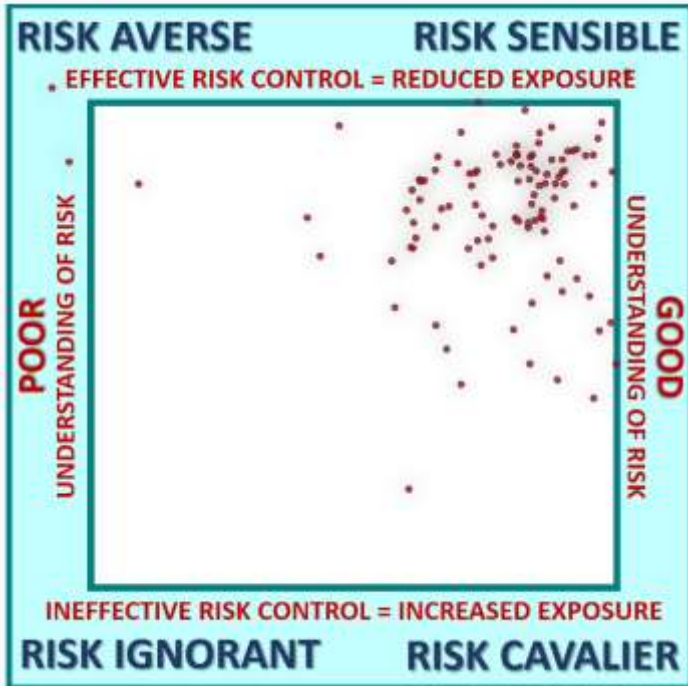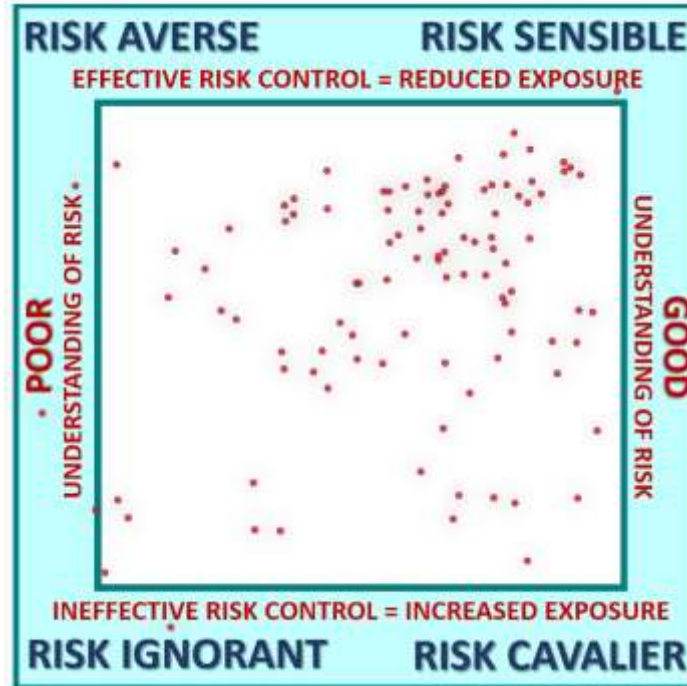

T5 - Risk was managed by...

avoidance

tolerance

mitigation

RISK AS ANALYSED/ASSESSED vs RISK AS MANAGED/TOLERATED
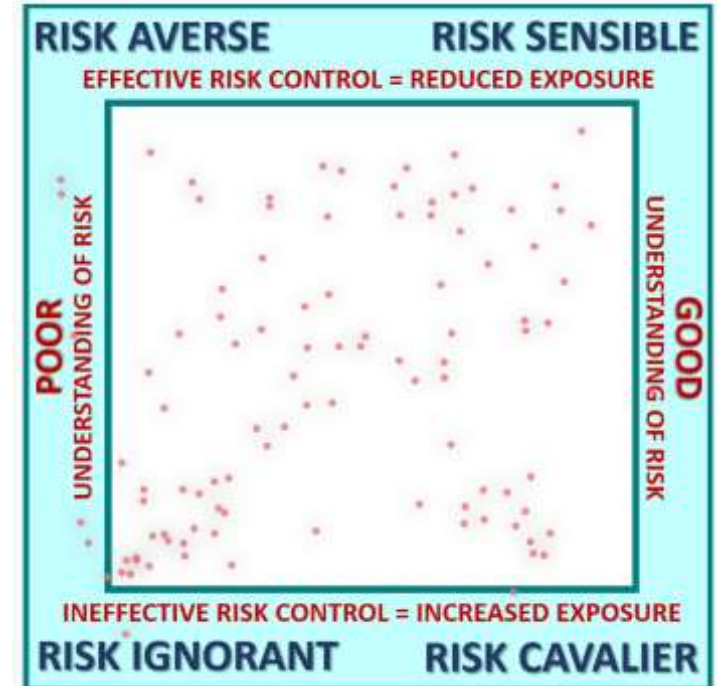
ME

RISK AVERSE — RISK SENSIBLE
EFFECTIVE RISK CONTROL = REDUCED EXPOSURE
POOR UNDERSTANDING OF RISK — GOOD UNDERSTANDING OF RISK
INEFFECTIVE RISK CONTROL = INCREASED EXPOSURE
RISK IGNORANT — RISK CAVALIER

CO-WORKERS

RISK AVERSE — RISK SENSIBLE
EFFECTIVE RISK CONTROL = REDUCED EXPOSURE
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MANAGEMENT

RISK AVERSE — RISK SENSIBLE
EFFECTIVE RISK CONTROL = REDUCED EXPOSURE
POOR UNDERSTANDING OF RISK — GOOD UNDERSTANDING OF RISK
INEFFECTIVE RISK CONTROL = INCREASED EXPOSURE
RISK IGNORANT — RISK CAVALIER

Data was collected between May 2021 and Jan 2022 as part of a collaborative study between BALPA, Cognitive Edge and Cranfield University. A total of 125 pilots responded and shared their operational experiences about complex scenarios they faced during the pandemic.
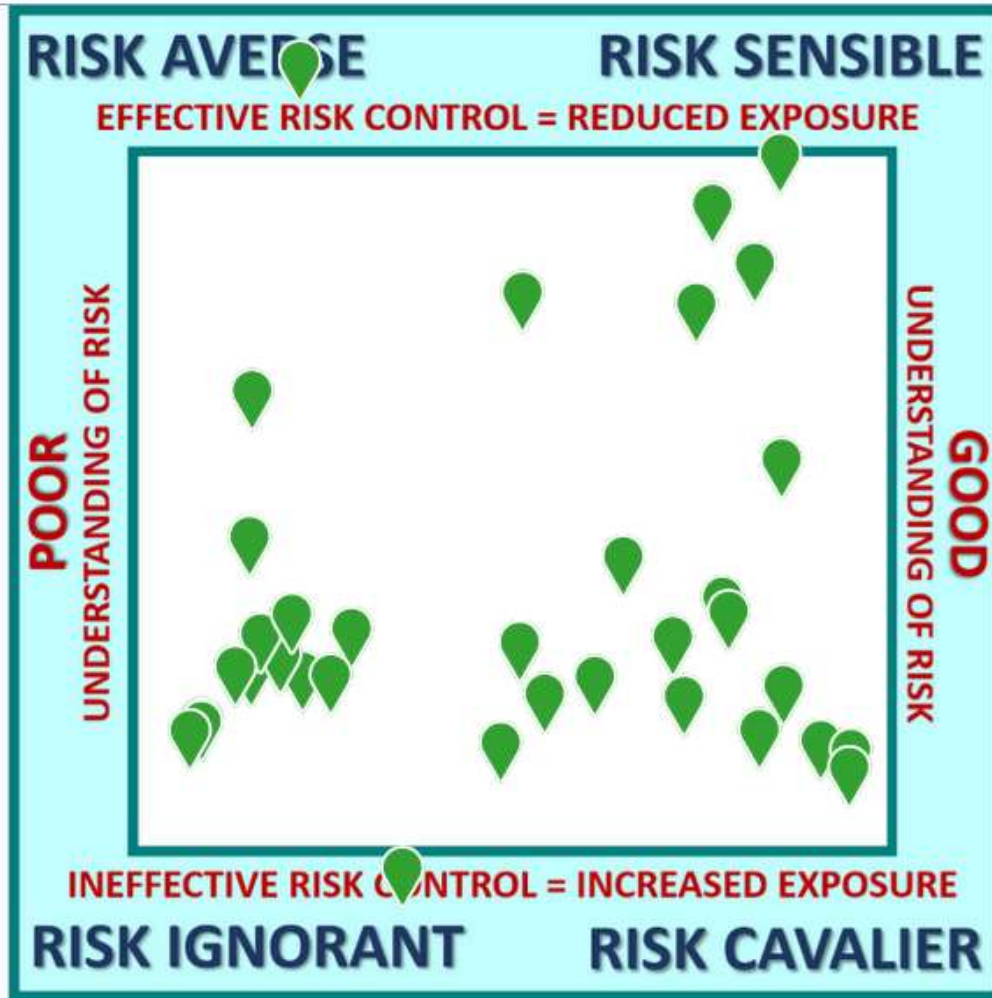
www.pollev.com/eats2023

RESPONSES GIVEN BY THE PARTICIPANTS DURING THE PRESENTATION

What do you think the most significant CABIN safety issue the industry faces today, is? (Just one word or a short phrase please) ♡ 29

Unruly pax	Shortage of crew leading to fatigue
Unruly pax	Situational awareness
Inexperienced Crew	Turbulence
Fatigue	Risk
Abnormal passenger behaviour	Lithium fire
Lack of knowledge year round	Turbulence
Crazy flying hours :)	Unruly Pax
Retention	

Complacency
Non-adherence to sop
Disruptive passengers
Company culture
Disruptive passenger incidents and balancing training with time
Cabin battery fire
Inexperience
Recruitment
Unruly
Unruly passengers
Lack of staff
The pressure of on time performance (OTP) and high customer service standards versus focus on maintaining safety standards
Unruly passengers
Turbulence

Starting pushback/taxiing before all passengers are seated and fastened their seatbelts.

A member of crew woke up having only slept 2 hours, but could not report unfit. So they reported for duty and joined the flight.
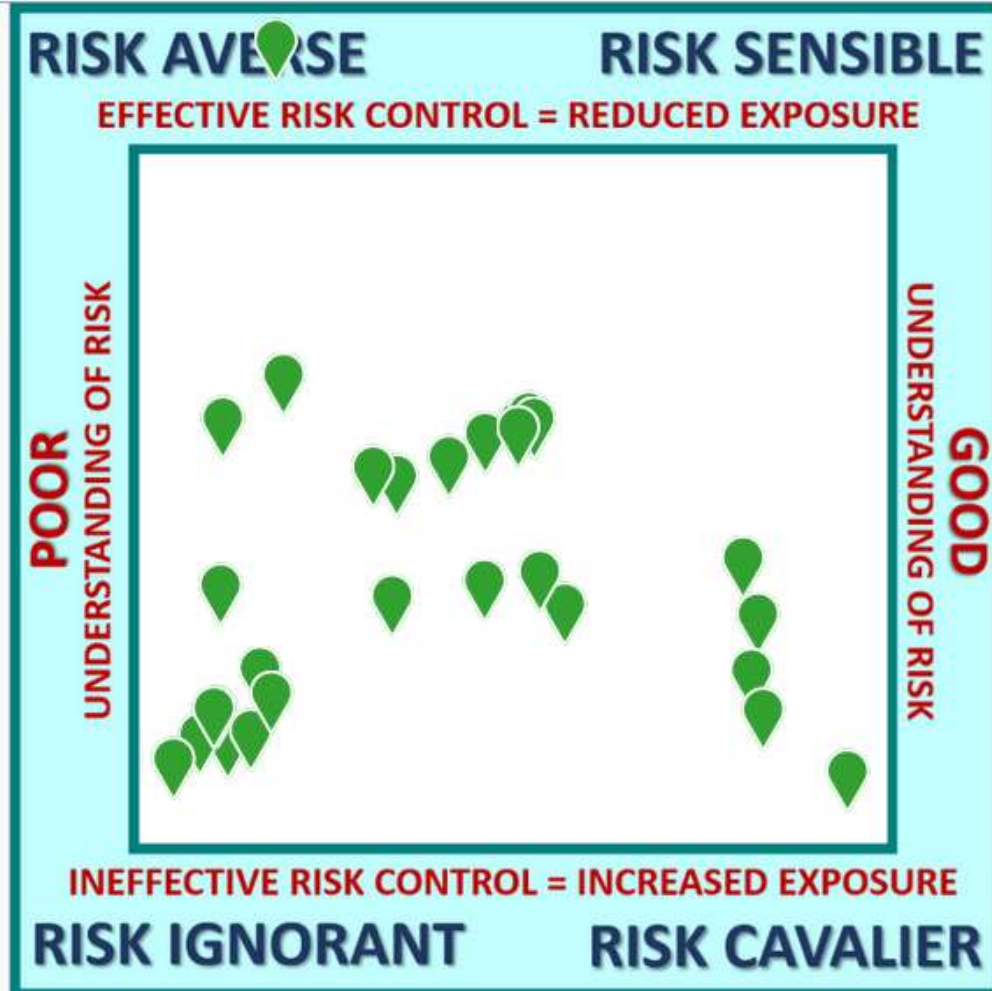
During taxiing, cabin was secured and the flight deck was notified. The aircraft started take-off roll and a passenger got up and tried to reach the overhead bin. The cabin crew tried to intervene and get the passenge to sit instead of notifying cockpit.
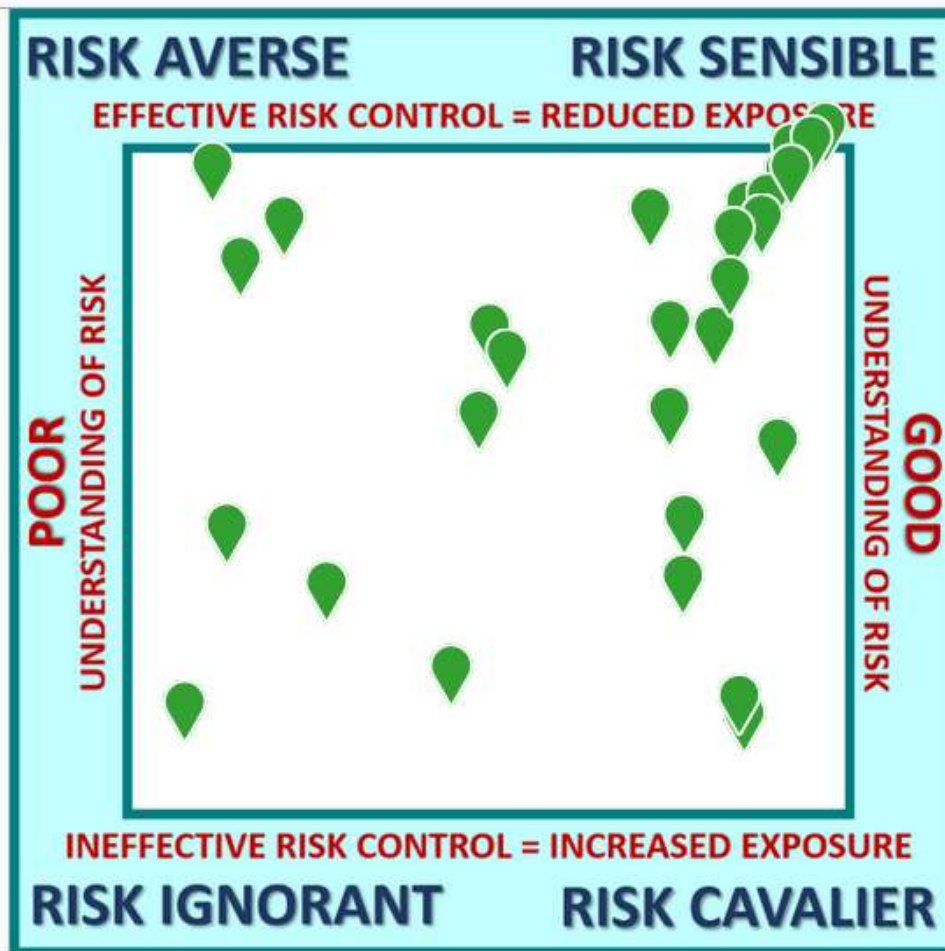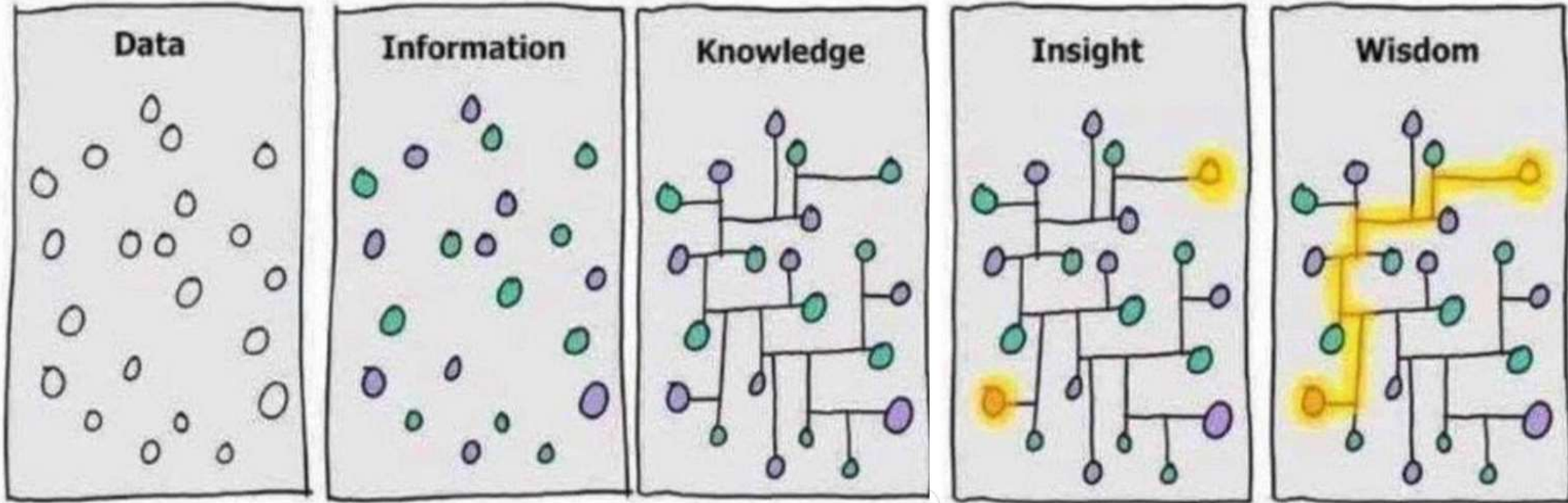
KEY TAKEAWAYS

DETECTING WEAK SIGNALS IN A COMPLEX SOCIOTECHNICAL ECO SYSTEM IS IMPORTANT

OUR AIM SHOULD BE TO ACHIEVE WISDOM

Data | Information | Knowledge | Insight | Wisdom

WE NEED TO AVOID ANALYSIS PARALYSIS

BIG DATA vs THICK DATA vs RICH DATA

If You Torture the Data Long Enough, It Will Confess to Anything

Ronald Coase? Irving John Good? Charles D. Hendrix? Robert W. Flower? Bulent Gultekin? Anonymous?

BIG DATA NEEDS THICK DATA - ETHNOGRAPHY

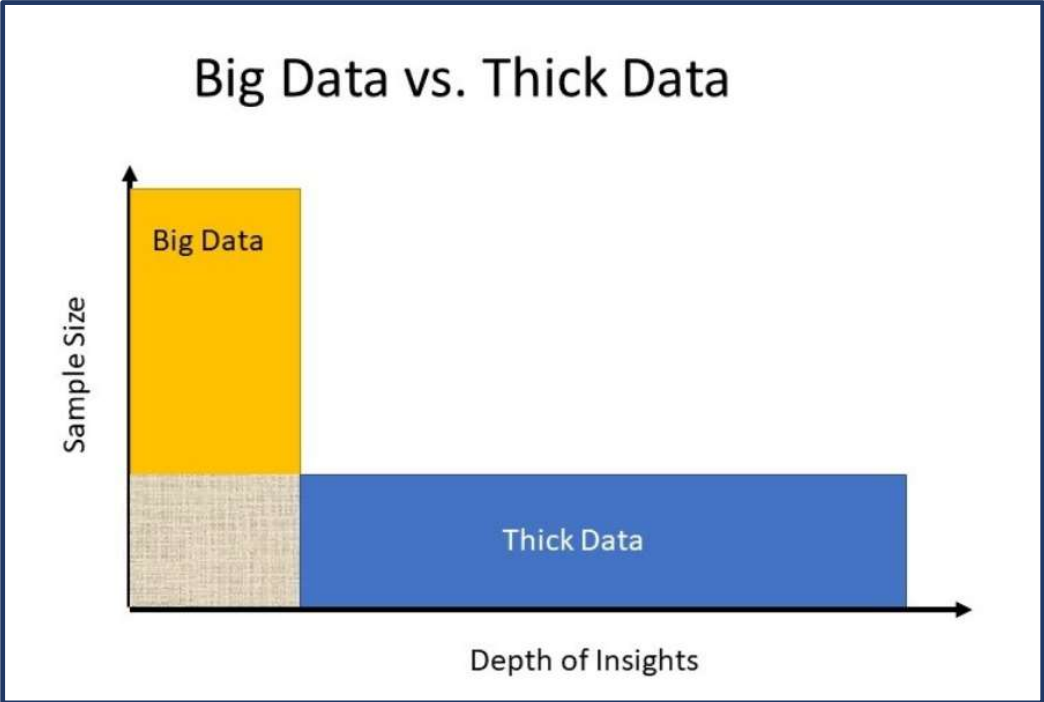https://www.ted.com/talks/tricia_wang_the_human_insights_missing_from_big_data?language=en

Big Data vs. Thick Data

Big Data

Thick Data

Sample Size

Depth of Insights

https://www.linkedin.com/pulse/thick-data-vs-big-ahmed-banafa/

Login

Weak Signals Approach to ANSP Safety Performance

Introduction

"*Creating foresight*", "*anticipating future threats*" and "*how to be prepared for possible future surprises*" are fundamental issues in managing today's complex socio-technical systems. Traditional safety approaches use after-the-event data to evaluate the organisation's safety level. This is based on the theoretical understanding that safety is seen as the absence of unwanted consequences. Consequently, managing safety is seen as the avoidance or elimination of negative outcomes. This safety approach follows the credo of improving safety by learning from errors and mishaps. Organisations with this understanding may learn from past events, but hardly pro-actively anticipate future threats.

In the current complex socio-technical systems, traditional theories of safety that follow a structural view and focus only on the negative limit the understanding of the interactive complexity and dynamics are inherent in such systems. Only finding and counting human errors, failures or breakdowns is no appropriate way to get a better insight of how today´s systems work and possibly fail. A better understanding of the interactions and couplings of system components is necessary.

The following presentation illustrates the traditional approach of managing safety.

Article Information

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2014

"Weak Signals in ANSP´s Safety Performance"
Theoretical Framework

TECHNISCHE UNIVERSITÄT DARMSTADT · EUROCONTROL · DFS Deutsche Flugsicherung

Weak Signals in ANSP's
Safety Performance

3 Key Messages

2021

EUROCONTROL

Patterns in How People Think and Work
Importance of Patterns Discovery for Understanding
Complex Adaptive Systems

2022

EUROCONTROL

Unearthing Weak Signals for safer and
more efficient socio-technical systems

The Structured Exploration of Complex Adaptations (SECA) method

DO YOU HAVE A STORY TO TELL ABOUT EXCESSIVE OR UNNECESSARY RISK TAKING?

PLEASE DO GET IN TOUCH
I AM HERE TO LISTEN !

www.riskculture.org
email@riskculture.org

THANK YOU FOR YOUR ATTENTION