The Challenge of Implementing SPIs in ATOs

JAA TRAINING ORGANISATION (JAA TO)

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JAA TO – who we are

Associated Body of the European Civil Aviation Conference (ECAC) & Europe's only ICAO Training Centre of Excellence

associated body ECAC CEAC | ICAO TRAINAIR PLUS™ PLATINUM EXCELLENCE

50+ years of experience training the aviation industry, CAAs/NAAs, NGOs on regulation

Capacity-building for (aviation) training departments

Non-profit, self-financing international organisation

JAA Training Organisation

What we do

4

150+ Courses
Classroom/Virtual/Hybrid

Customised Training at Client Location

5

Aerodromes, Safety, (Cyber) Security, Airworthiness, Oversight & Investigation, Air Ops, Dangerous Goods, Management

6

Innovative learning paths (e.g. UAS Diploma)

More information?

Murat Yalcin

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Sales & Account Representative Nordics

Our Services

Brian Brophy

Skerries, Dublin, Ireland

Objectives

The objective of this brief is to provide the attendee with an overview of SMS requirements and the implementation of SPIs in Approved Training Organisations in accordance with ICAO Annex 19 and the EU Management System requirements defined in the Aircrew Regulation (EU) 1178/2011

Introductions Please

- Name?
- Organisation?
- Position?
- Career to date?
- Why have you come to this briefing?

Brian Brophy

Business owner, Trainer and consultant for Operators, Training Organisations and Authorities worldwide (last 15 years)

35 years experience in aviation

CPL (A) (FI)

ATPL (H) (TRE/SFE)

BSc Management Law

MSc Risk Management & System Change

Previous employers were:

- Irish Military
- Irish Coastguard;

Some aircraft flown

Brian Brophy

Current Areas of Work:

- **SMS/Risk Management**
- **Compliance Monitoring Management/ Quality Management/Auditing Techniques – regulators, operators, training organisation.**
- **EASA Air Crew Regulation**
- **Subpart FTL Training Course**
- **International Search and Rescue**

Interests:

Rugby, Running, Motorcycling and Shooting.

Timing and Topics

Timings:

10:45 – 1200

Topics:

Regulatory Requirements

SMS overview

Safety Assurance

Performance Indicators, Targets and Alerts

Questions

What was the worst aviation disaster ever?

- March 27 1977, Los Rodeos Airport, Teneriffe
- 2 x 747's Collide on Runway with 583 fatalities
- Have we learned our lessons from this?
- Yes?

No Accident in China

Therefore, all is good (and safe)?

Was the Safety Performance satisfactory in your opinion?

Regulatory Requirements

WHAT WE MUST COMPLY WITH

Timeline for Aviation Regulations

1903

In the beginning
No regulations

1903 - 1939

Individual States provided own regulation

1939--

Advances in aviation technology WWII

7th Dec 1944

Chicago Convention Signed- 52 of 55 invited states, establishment of PICAO.

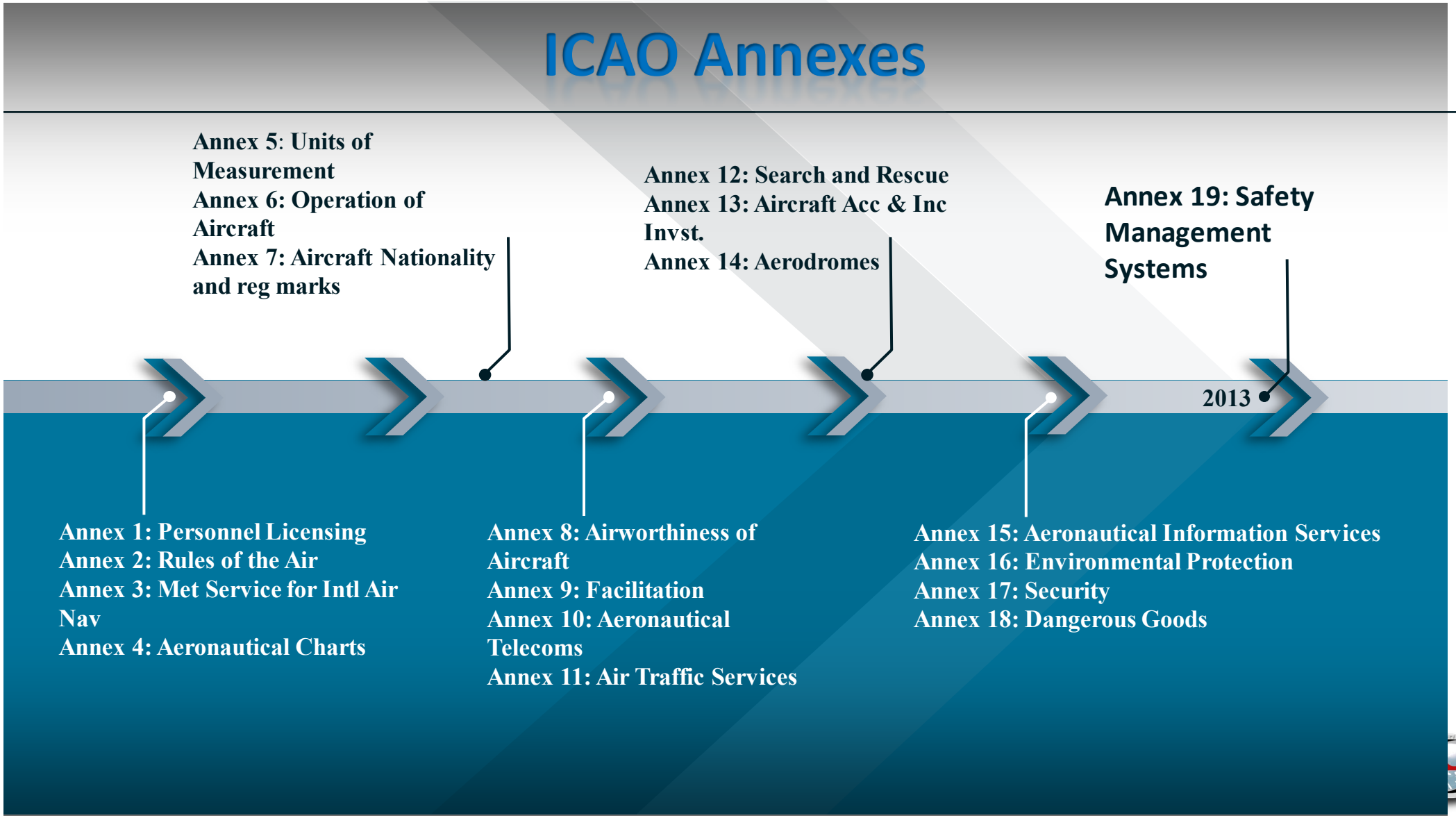
4th April 1947

ICAO – Established, and first assembly in Montreal in May 1947

2024

193 Member States >12000 International Standards and recommend practices (SARPS) published in 19 Annexes

ICAO Annexes



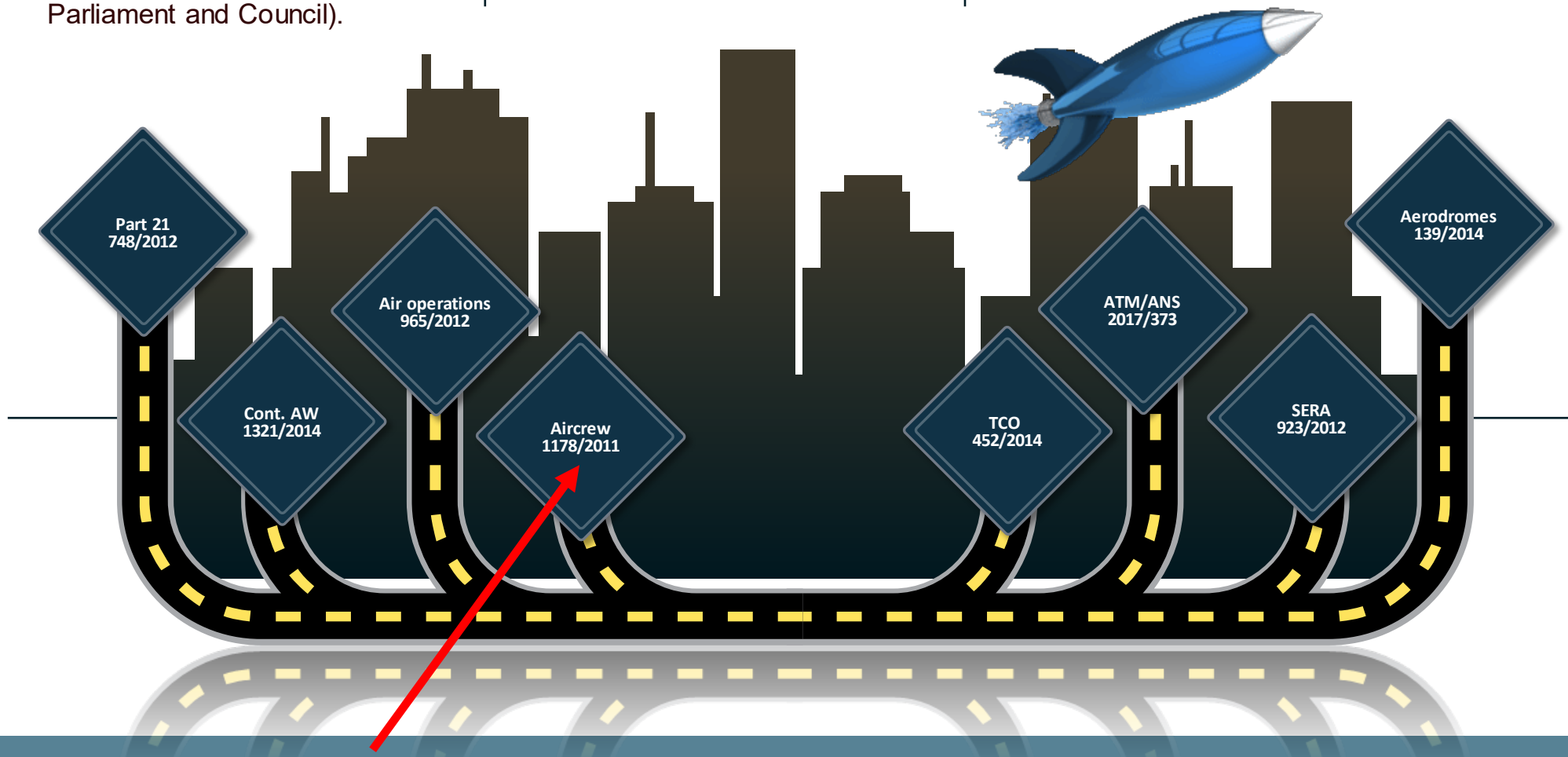
Regulations (1)

Basic Regulation

Describing and Mandating what must be regulated (2018/1139 reg of European Parliament and Council).

A series of Implementing Rules for Aviation in response to the Basic Regulation.

Note: Not all implementing rules reflected here – examples only



ORA.GEN.200 Management system

(a) The operator shall establish, implement and maintain a management system that includes:

(1) clearly defined lines of responsibility and accountability throughout the organisation, including a direct safety accountability of the accountable manager;

(2) a description of the overall philosophies and principles of the organisation with regard to safety, referred to as the safety policy;

(3) the identification of aviation safety hazards entailed by the activities of the organisation, their evaluation and the management of associated risks, including taking actions to mitigate the risk and verify their effectiveness;

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AMC1 ORA.GEN.200 (a) (3)

- EASA's Acceptable Means of Compliance

Safety Management Systems (SMS)

OVERVIEW

Firstly, what is Safety?

Safety the state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

(ICAO SMM 2018)

What is a Hazard?

A condition or an object with the potential to cause or contribute to an aircraft incident or accident.

(ICAO SMM 2018)

What is a Risk?

The predicted probability and severity of the consequences or outcomes of a hazard

(ICAO SMM 2018)

SMS – What is it?

Your definition please?

A **safety management system (SMS)** is a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures. (ICAO)

SMS - Objectives

The objective of a Safety Management System is to provide a structured management approach to control safety risks in operations. Effective **safety management** must take into account the organisation's specific structures and processes related to safety of operations.

A SMS is unique to each organisation!

SMS – What is it?

Use of SMS can be generally interpreted as applying a quality management approach to control safety risks. Similar to other management functions, safety management requires planning, organising, communicating and providing direction.

SMS is however NOT a Quality System.

Note that we can achieve compliance but remain unsafe

SMS – What is it?

The SMS development begins with setting the organisational **safety policy**. It defines the generic principles upon which the SMS is built and operated. This first step outlines the strategy for achieving acceptable levels of safety within the organisation.

SMS – What is it?

Safety planning and the implementation of safety management procedures are the next key steps in the processes designed to mitigate and contain risk in operations. Once these controls are ready, quality management techniques can be utilised to ensure that they achieve the intended objectives and, where they fail, to improve them.

This is accomplished by deployment of **safety assurance** and evaluation processes which in turn provide for a continuous monitoring of operations and for identifying areas of **safety improvement**.

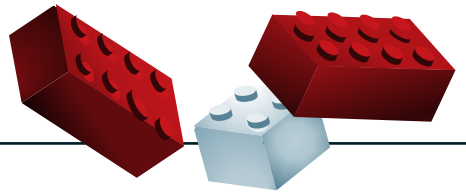
SMS – What is it?

Put simply, effective safety management systems use risk and quality management methods to achieve their safety goals. In addition, SMS also provides the organisational framework to establish and foster the development of a positive corporate **safety culture**.

The implementation of an SMS gives the organisation's management a structured set of tools to meet their responsibilities for safety defined by the regulator.

SMS – What is it?

- **Systematic**
- **Proactive**
- **Predictive**

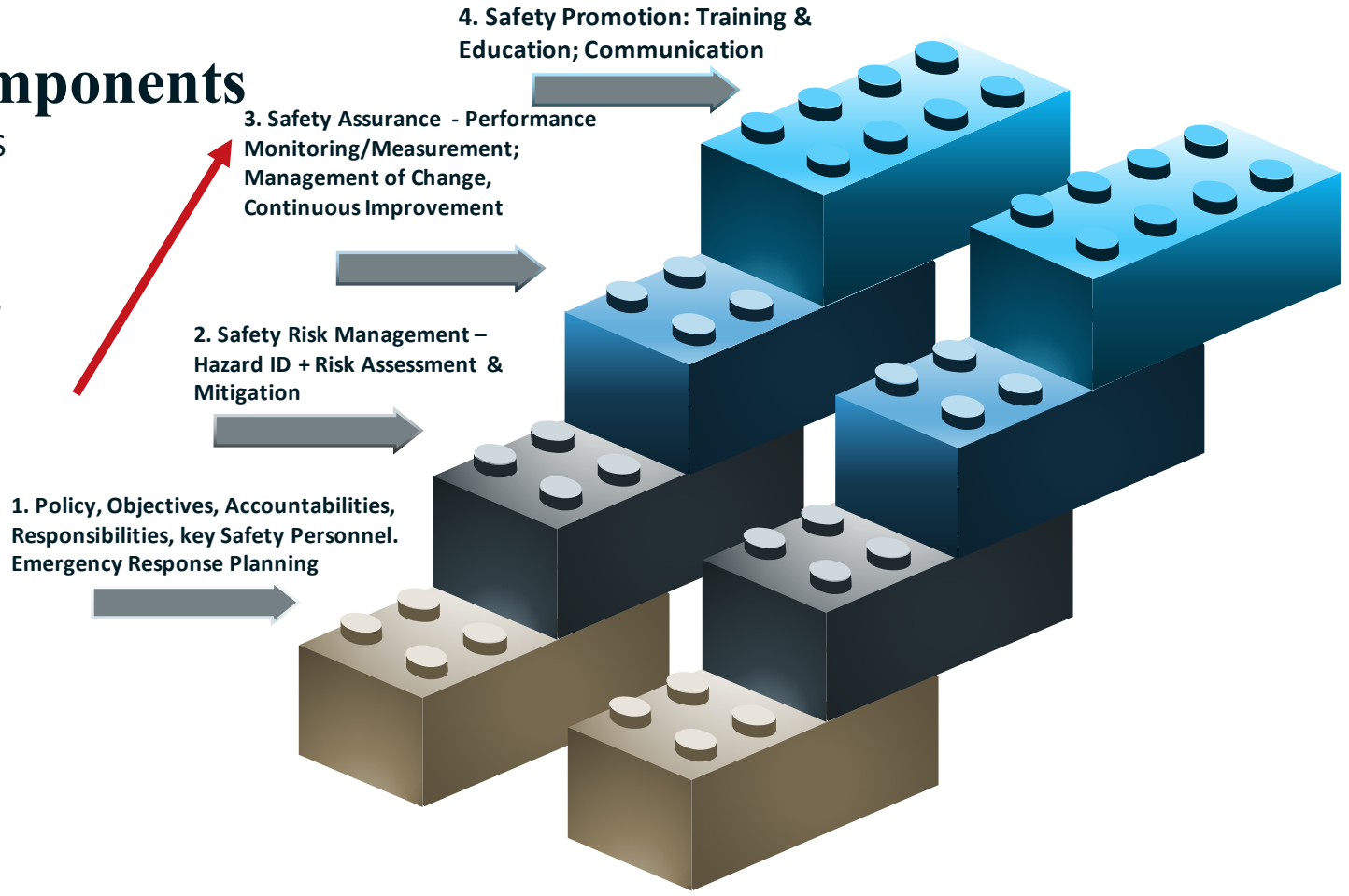


Building Blocks for SMS

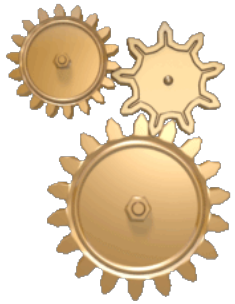
4 Primary Components

The ICAO/EASA model for SMS is based upon the principal of four specific components:

1. **Safety Policy & Objectives**
2. **Safety Risk Management**
3. **Safety Assurance**
4. **Safety Promotion**



What constitutes Safety?



Equipment
Processes/Procedures
Environment
People
Organisation?

In complex systems the same starting conditions may yield different outcomes

Causes and consequences of human errors are not linear in their magnitude

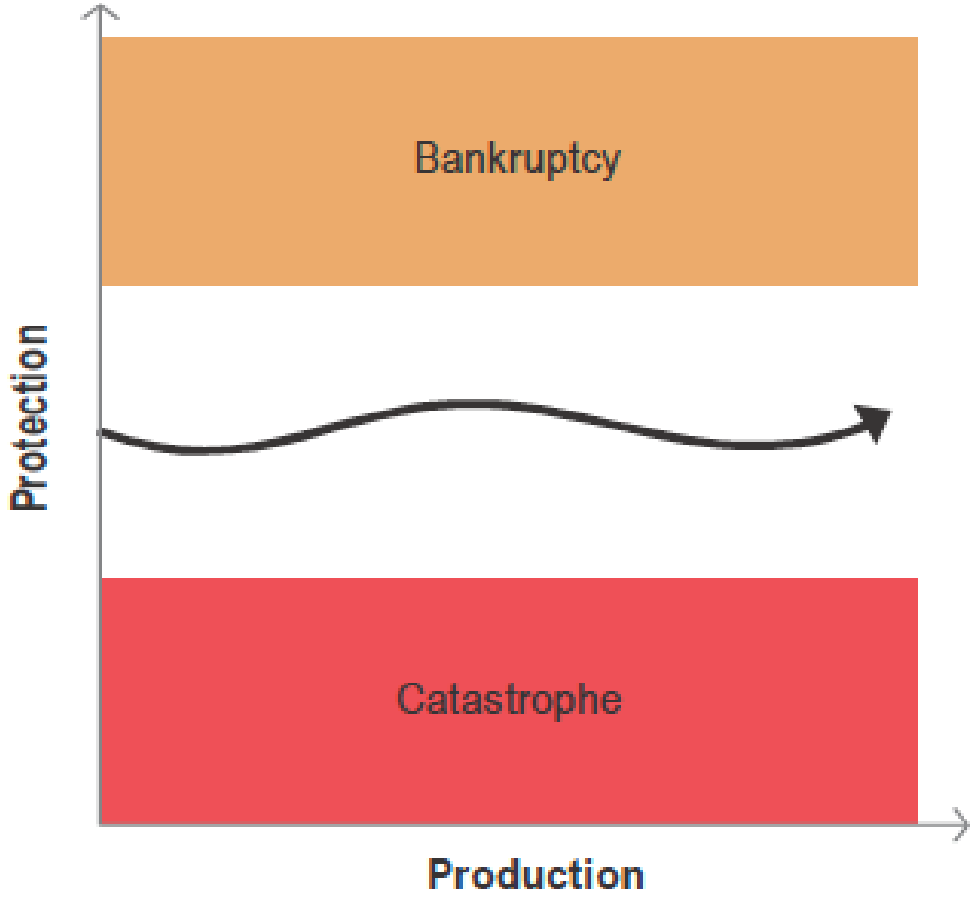
What is more critical to consider?

Compliance?

Results?

Performance?

Management Dilemma - Safety Space



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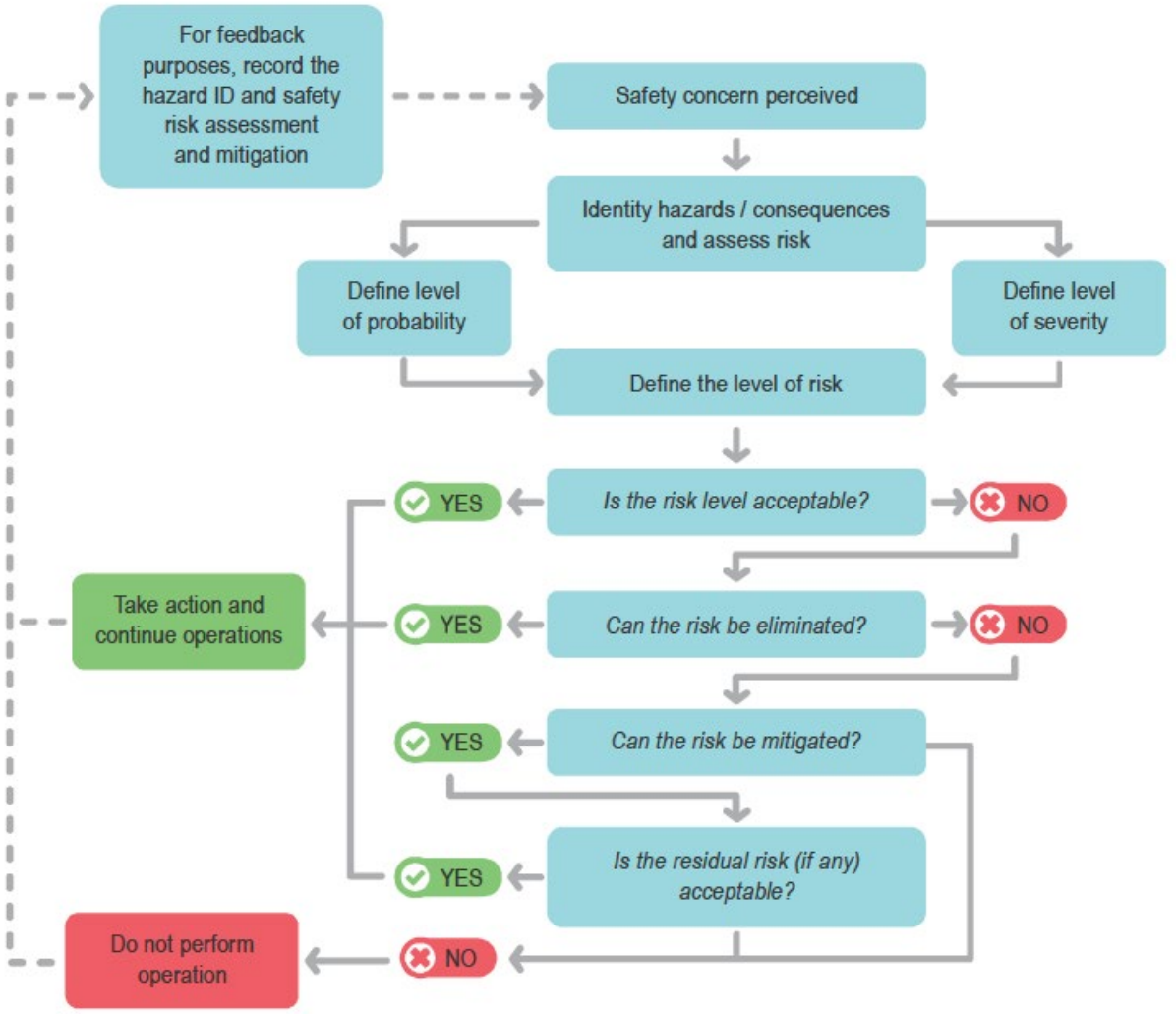
Safety Assurance

HOW WE VERIFY OUR SAFETY PERFORMANCE (ALOSP)

Hazard ID and Risk Management



After Risk Mitigation?

After we manage or mitigate a Risk, the question that we need to answer is thus:

How do we know that the *risk* remains controlled to an acceptable level over time?

There are a number of ways to do this, but we will concentrate on one of them, namely, the development of Safety Performance Indicators.

Developing Safety Performance Indicators

INDICATORS, TARGETS, ALERT LEVELS

Consider the Risks being managed

Examples: - The Risk of:

- **Negative Training (instructors imparting incorrect knowledge/practical demonstrations)**
- **Software/Hardware Changes to Simulator**
- **Aircraft Icing Events**
- **Student failure/substandard performance rate in competency assessments**
- **Solo Student Inadvertent entry into IMC**
- **Solo Student Loss of Control and failure to recover**

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Solo Student Inadvertent entry into IMC

Mitigations might be:

- **Setting Weather minima for training**
- **Briefings to student on decision making if Wx drops below forecast Vis/Cloudbase**
- **Procedure for students to make Wx check for destination during cross country Nav**
- **Procedures for students to divert if destination Wx is forecast below SOP mins**

Solo Student Inadvertent entry into IMC

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Procedure for students to make Wx check for destination during cross country Nav

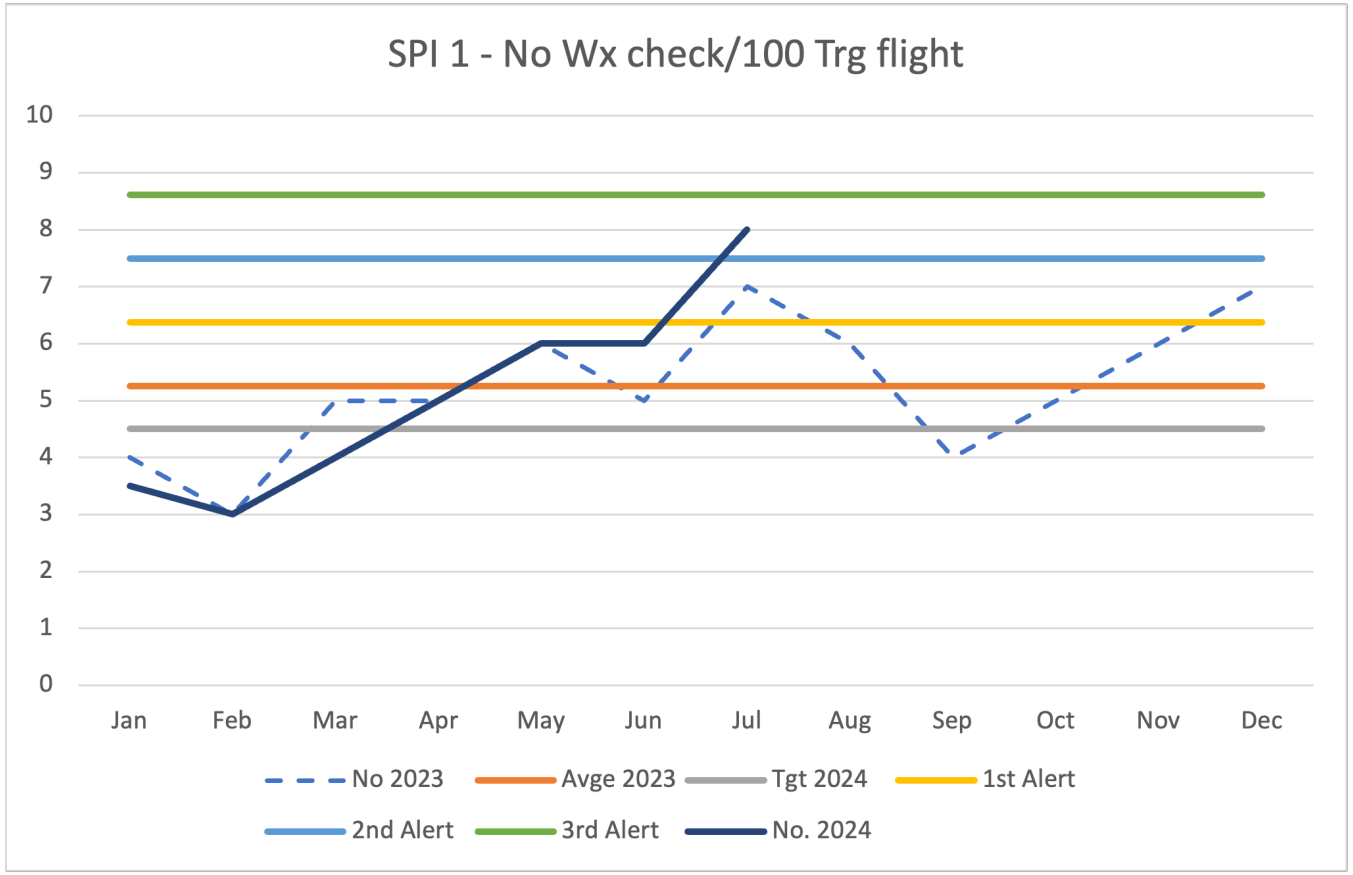
What performance indicators could we monitor?

- **2 Examples:**
- **The frequency of events when students DON'T make a Wx check prior to routing to a destination**
- **The frequency of events where students CONTINUE to a destination when Wx is below SOP minima**

Lets look at 1 indicator:

No of times students don't make a Wx Check prior to routing to a destination/100 training flights (or hours)

SPI Worked Example



Questions

AND ANSWERS (HOPEFULLY!)

Thank you!

BRIAN@CEMAX.AERO