Shaping Asia Pacific ATM - Global Vision, Regional Action

4 - 6 MAY 2016
QUEENSTOWN, NEW ZEALAND

CANSO ASIA PACIFIC CONFERENCE
Safety Management System Maturity

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30 Years On....

Chernobyl, April 1986

5 years on: "The accident can be said to have flowed from a deficient safety culture, not only at the Chernobyl plant, but throughout the Soviet design, operating and regulatory organizations for nuclear power that existed at that time."

30 years on: "The accident has convincingly demonstrated, that the cost of ensuring the safety of nuclear facilities is significantly lower than that of dealing with accident"

Challenger, January 1986

1 year on: “the underlying problem which led to the Challenger accident was not poor communication or underlying procedures as implied by the Rogers Commission conclusion. Rather, the fundamental problem was poor technical decision-making over a period of several years by top NASA and contractor personnel, who failed to act decisively to solve the increasingly serious anomalies in the Solid Rocket Booster joints.

30 years on: NASA's safety discipline was "perfect" on paper only
Workshop Objectives

• Introduce new Standard of Excellence in Safety Management Systems
• Benchmarking and maturity assessment options
• Implementation challenges in the region
  • Who are you learn from?
Safety Management Maturity in Our Region

Graph showing the maturity of safety management in different regions:
- Africa: 31%
- America: 53%
- Australasia: 65%
- ECAC: 78%
Revised Standard of Excellence

- Previous version of SoE was published in 2010
- In late 2013, CANSO decided to align the questionnaire to ICAO Annex 19
- In early 2015, new version of the questionnaire was agreed at the Global Safety Conference
Standard of Excellence Structure

Safety culture
Element: Development of a positive and proactive safety culture

Safety policy and objectives
Elements:
- Safety Policy
- Organisational and individual safety responsibilities
- Compliance with international obligations
- Coordination of Emergency Response Plan
- Safety Management System Documentation

Safety risk management
Elements:
- Risk Management Process

Safety achievement
Elements:
- Safety Interfaces
- Safety by Design
- Fatigue-related Risk Management

Safety assurance
Elements:
- Safety Performance Monitoring and Measuring
- The Management of Change
- Continual Improvement of the SMS
- Safety Reporting Investigation and Improvement
- Operational Safety Surveys and SMS Audits

Safety promotion
Elements:
- Safety Communication
- Training and Education
Standard of Excellence Structure

SAFETY CULTURE
Element: Development of a positive and proactive safety culture

SAFETY POLICY AND OBJECTIVES
Elements:
- Safety Policy
- Organisational and individual safety responsibilities
- Compliance with international obligations (CANSO SoE element)
- Coordination of Emergency Response Plan
- Safety Management System Documentation

SAFETY RISK MANAGEMENT
Elements:
- Risk Management Process

SAFETY ACHIEVEMENT
Elements:
- Safety Interfaces
- Safety by Design
- Fatigue-related Risk Management

SAFETY ASSURANCE
Elements:
- Safety Performance Monitoring and Measuring
- The Management of Change
- Continual improvement of the SMS
- Safety Reporting Investigation and Improvement
- Operational Safety Surveys and SMS Audits

SAFETY PROMOTION
Elements:
- Safety Communication
- Training and Education
Main Differences [1]

- The SoE in SMS goes further than ICAO Annex 19 as it requires:
  - The development of a positive and proactive safety culture
  - Compliance with international obligations
  - Management of Safety Interfaces
- Two additional study areas are added:
  - Safety by Design
  - Fatigue Risk Management
Main Differences [2]

- 17 Study Areas (up from 11 in SoE 1)
- Weightings have been revised and agreed
- Changes to the maturity level descriptors
- The bar is raised – so **scores are expected to go down**
  - This does not mean your performance got worse – it means the questions got harder
Maturity Levels

Level E. OPTIMISED
SMS processes and/or requirements set international best practice, focusing on innovation and improvement.

Level D. ASSURED
Evidence is available to provide confidence that SMS processes and/or requirements are being applied appropriately and are delivering positive, measured results.

Level C. MANAGED
SMS processes and/or requirements comply with ICAO Annex 19 and are formally documented and consistently applied.

Level B. DEFINED
SMS processes and/or requirements are defined but not yet fully implemented, formally documented or consistently applied.

Level A. INFORMAL ARRANGEMENTS
SMS processes and/or requirements are not routinely undertaken or depend upon the individual assigned to the task.

SMS Maturity
# Phased Approach to Implementation

<table>
<thead>
<tr>
<th>Phase</th>
<th>Group</th>
<th>Element</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Safety Policy and Objectives</td>
<td>Safety Policy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organisational and Individual Safety Responsibilities</td>
</tr>
<tr>
<td>2</td>
<td>Safety Assurance</td>
<td>Safety Reporting, Investigation and Improvement</td>
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<td></td>
<td>Safety Promotion</td>
<td>Training and Education</td>
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<tr>
<td></td>
<td>Safety Culture</td>
<td>Development of a Positive and Proactive Safety Culture (Appendix A: Sub-element 1.1 and 1.2)</td>
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<tr>
<td></td>
<td>Safety Policy and Objectives</td>
<td>SMS Documentation</td>
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<td></td>
<td></td>
<td>Coordination of Emergency Response Plan</td>
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<td></td>
<td>Safety Promotion</td>
<td>Safety Communication</td>
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<tr>
<td>3</td>
<td>Safety Risk Management</td>
<td>Risk Management Process</td>
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<tr>
<td></td>
<td>Safety Assurance</td>
<td>Management of Change</td>
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<tr>
<td></td>
<td></td>
<td>Safety Performance Monitoring and Measurement</td>
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<tr>
<td></td>
<td>Safety Achievement</td>
<td>Continuous improvement of the SMS</td>
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<tr>
<td></td>
<td>Safety Policy</td>
<td>Safety Interfaces</td>
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<td></td>
<td></td>
<td>Timely Compliance with International Obligations</td>
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<td>4</td>
<td>Safety Assurance</td>
<td>Operational Safety Surveys and SMS Audits</td>
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<tr>
<td></td>
<td>Safety Culture</td>
<td>Safety Culture (Appendix A, Sub-element 1.2)</td>
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<tr>
<td></td>
<td>Safety Achievement</td>
<td>Safety by Design</td>
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<td></td>
<td>Fatigue-related Risk Management</td>
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</tbody>
</table>
The existing system requires review of a set of maturity levels, and a self assessment of the level of achievement:

<table>
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<tr>
<th>SAS-2</th>
<th>An organisation that strives to go beyond compliance, takes into account the need to ensure, in a timely manner, that there are no inconsistencies with European or national requirements or international safety standards.</th>
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<tbody>
<tr>
<td>A Initiating</td>
<td>There is little awareness of the regional or international safety standards.</td>
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<tr>
<td>B Planning/Initial Implementation</td>
<td>There is an awareness of the European or national requirements or international safety standards. Work has started in some areas.</td>
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<tr>
<td>C Implementing</td>
<td>European or national requirements or international safety standards are known and met as required.</td>
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<tr>
<td>D Managing &amp; Measuring</td>
<td>All of Implementing plus: There is a process in place to address the need for timely and consistent compliance with European or national requirements or international safety standards.</td>
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<tr>
<td>E Continuous Improvement</td>
<td>All of Managing &amp; Measuring plus: The organisation has a structured mechanism to address the need for ongoing and consistent compliance with European or national requirements or international safety standards. It contributes to a European or national or international dialogue to improve these requirements or standards.</td>
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</tbody>
</table>

Justification - Why have you chosen this category? What is preventing you from selecting the next higher?

Evidence - Please provide references to supporting documentation e.g. Sections of the SMS, Procedures, Policies etc.
• Long maturity level statements are broken down into short single element questions:

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<th>3.2</th>
<th>A clearly defined safety management function/safety manager that is independent of line management.</th>
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<tr>
<td><strong>A</strong></td>
<td>Is there an understanding in your organisation that a safety management function, or a safety manager position, should be created to develop the SMS?</td>
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<tr>
<td><strong>B</strong></td>
<td>Has a safety management function, or a safety management position, been formed to develop and maintain the SMS?</td>
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<td><strong>C</strong></td>
<td>Is the safety management function (or safety manager) independent of operational line management?</td>
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<td>Does the safety management function (or safety manager) have the authority to develop and maintain an effective SMS?</td>
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<td></td>
<td>Does the safety manager have access to the resources required for the proper development and maintenance of the SMS?</td>
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<tr>
<td><strong>D</strong></td>
<td>Does your leadership at the highest level recognise its role in the SMS and actively support the development, implementation, maintenance, and promotion of the SMS throughout the organisation (including support departments)?</td>
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<tr>
<td><strong>E</strong></td>
<td>Is there clear evidence that the highest organisational level plays a pro-active role in the continuous improvement of the SMS?</td>
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Sample Results

1 Development of a Positive and Pro-active Safety Culture
2 Safety Policy
3 Safety Accountabilities
4 Coordination of Emergency Response Plan
5 SMS Documentation
6 Compliance with International Obligations
7 Safety Risk Management
8 Safety by Design
9 Safety Interfaces
10 Fatigue-related Risk Management
11 Safety Reporting, Investigation and Improvement
12 Operational Safety Surveys and SMS Audits
13 Safety Performance Monitoring and Measurement
14 Management of Change
15 Continual Improvement of the SMS
16 Training and Education
17 Safety Communication
Benefits of benchmarking

**ANSP Benefits**
- Provides independent assurance that the effort which you are devoting to improving your SMS is paying off;
- Benchmarks your performance against other ANSPs
  - Results can remain confidential
  - More ANSP are happy for others to know their maturity results
- It’s a lead indicator!

**CANSO Benefits**
- The more ANSPs who participate the better able CANSO is to determine where organisations are struggling and then develop and implement interventions:
What’s the right level for my ANSP?

- Do specific safety risks need to be addressed?
- How complex is the airspace?
- What benefit will your business gain?
- Does your organisation have a big change agenda?
- Are their internal or external expectations?
Safety Risk Factors (APAC Regional Safety Implementation Strategy)

- Human Performance: workload, fatigue, comms and coord
- Ability to integrate human factors into incident investigations
- Technology and tools not meeting traffic demand/complexity
- Airspace Design limitations which are also impacted by military airspace requirements
- Safety Change Management
- Runway Safety Issues

Organised by
Hosted by
Lead Sponsor
Which part of the SMS needs to be most effective given your ANSP’s current and future context?

Phase 4: Roof
- Surveys and audits
- Timely compliance with international obligations

Phase 3: Second Floor
- Fatigue Related Risk Management
- Safety by Design
- Safety Interfaces

Phase 2: First Floor
- Safety Performance Monitoring & Measurement
- Continuous Improvement of the SMS
- Safety Communication
- SMS Documentation
- Coordination of Emergency Response

Phase 1: Footings
- Organisational and Individual Safety Responsibilities
- Safety Policy

Safety Policy
- Phase 1: Footings
- Organisational and Individual Safety Responsibilities
- Safety Policy

Safety Interfaces
- Phase 2: First Floor
- Safety Communication
- SMS Documentation
- Coordination of Emergency Response

Fatigue Related Risk Management
- Phase 3: Second Floor
- Surveys and audits
- Fatigue Related Risk Management

Safety by Design
- Phase 3: Second Floor
- Surveys and audits
- Fatigue Related Risk Management
- Safety by Design

Survey and audits
- Phase 4: Roof
- Surveys and audits
What’s the right level for my ANSP?

- FAA
- NATS
- CAAS
- DFS
- Airways
- Airservices

- How mature is your SMS?
- What is driving this level of maturity?
- Are there any SMS elements which your organisation believe need to be at a higher level of maturity than others? And why?
- What would your advice be to those in the Asia Pacific who are evolving their SMS?
SEANS-Safety

• Consistent CANSO will be conducting a trial of the new Standard of Excellence in Air Navigation Services – Safety (SEANS) program in the Latin America and Caribbean region
• SEANS-Safety will allow CANSO to set the industry standard for ANSP safety management
• Other benefits include:
  • data collection and analysis
  • Comprehensive, independent SMS assessments
  • Impartial, standardised means of demonstrating ANSP SMS capability internally, to CANSO and externally (eg regulators, ICAO)