

Presentation to the Royal Aeronautical Society

# SAFETY MANAGEMENT SYSTEMS

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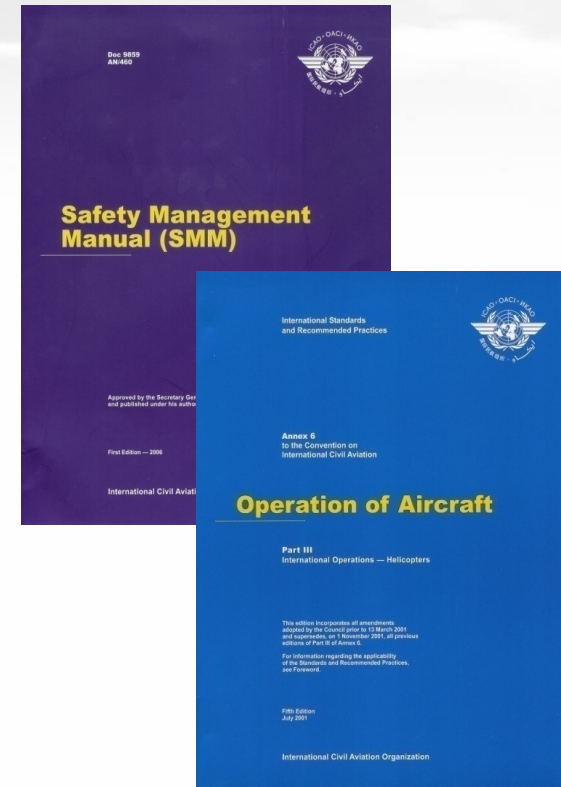
# INTRODUCTION

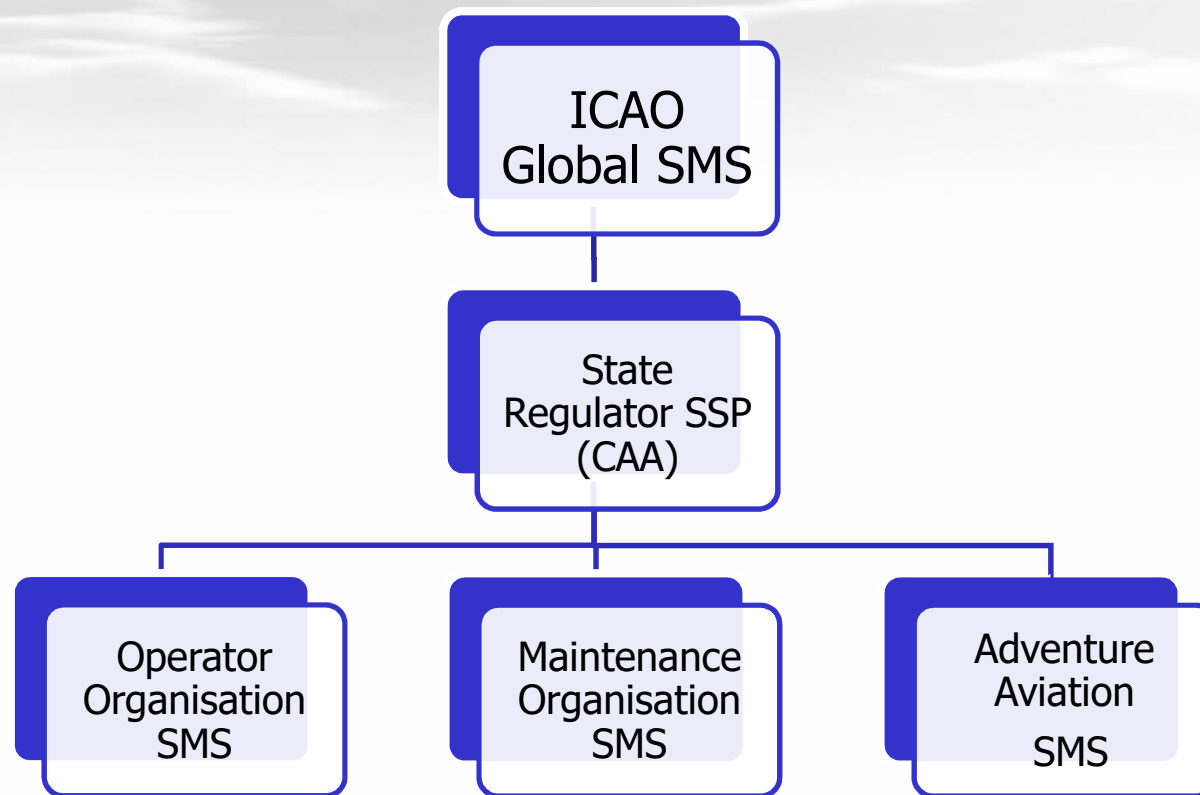
- SMS is an example of better way of achieving a safety outcome. Where previously Regulations were prescriptive in nature, Rules then became safety outcome based with compliance as the focus, now under SMS there is a shift in focus to the identification and management of risks by participants within their operations.
- Our existing exposition and quality assurance requirements provide a management tool to achieve compliance based safety performance. SMS develops this further by focusing more on hazard identification and risk management. This is undertaken both by the regulator at the state level via the State's Safety Programme, and by participants operating SMS within their organisation.



# ICAO

- SMS Definition: *A systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures*
- Service providers are responsible for **establishing an SMS**
- States are responsible, under the State Safety Programme (SSP), for the **acceptance and oversight of service providers' SMS**







# ICAO SMS framework

1. Safety policy and objectives
  - 1.1 – Safety policy
  - 1.2 – Management commitment and safety accountabilities
  - 1.3 – Appointment of key safety personnel
  - 1.4 – Coordination of emergency response planning
  - 1.5 – SMS documentation
2. Safety risk management
  - 2.1 – Hazard identification
  - 2.2 – Risk assessment and mitigation
3. Safety assurance
  - 3.1 – Safety performance monitoring and measurement
  - 3.2 – The management of change
  - 3.3 – Continuous improvement of the SMS
4. Safety promotion
  - 4.1 – Training and education
  - 4.2 – Safety communication







# CAA SMS framework

AC100 defines the 13 elements of SMS as follows and compared with QMS:

1. Safety Policy and Accountability (Enhanced)
2. Coordinated Emergency Response Planning (Enhanced)
3. Development, Control and Maintenance of Safety Management Documentation
4. Hazard Identification (New)
5. Risk Management (New)
6. Safety Investigation (Enhanced)
7. Monitoring and Measuring Safety Performance (Enhanced)
8. Management of Change (New)
9. Continuous Improvement of the SMS (Enhanced)
10. Internal Audit Programme (Retained but not required by ICAO)
11. Management Review (Retained but not required by ICAO)
12. Safety Training and Competency (New)
13. Communication of Safety-Critical Information (New)






# Benefits of SMS

- Safety & Efficiency are positively linked, through targeted safety initiatives
- Improvements from worker participation in SMS
- Reduced losses/downtime and enhanced productivity
- Better able to anticipate safety issues before they lead to an unacceptable situation





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- SMS improves framework for integration of existing disparate systems (aviation safety, security, health & safety, hazardous substances, environmental)
  - Information from CAA on industry / global trends increases participants awareness of risks
  - NZ aviation becomes aligned with international community, a positive factor for bi-lateral agreements and mutual recognition, giving improved access to markets and acceptance of products overseas

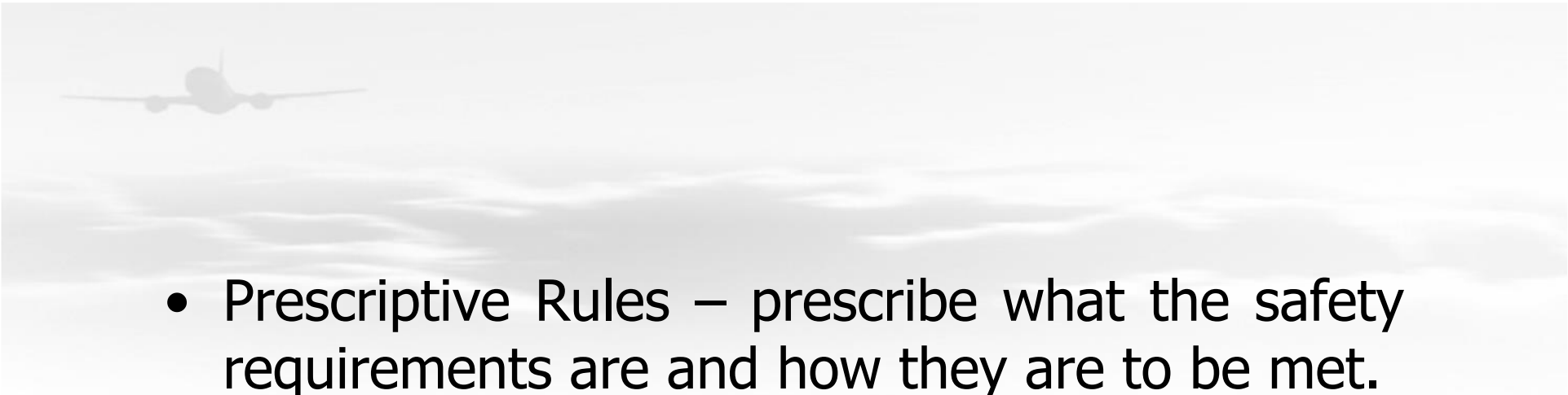




# Performance-based Environment

- The notion of **safety performance** is an essential ingredient of the effective operation of an SMS
- It serves for developing a **performance-based regulatory environment**, in order to measure the actual performance of an SMS
- *"One cannot manage what one cannot measure"*



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- Prescriptive Rules – prescribe what the safety requirements are and how they are to be met.
  - Performance based Rules – Specify the safety requirements to be met (via AC100), but provide flexibility in terms of how safety requirements are met.





# Prescriptive vs Performance-based Safety

## Prescriptive

### Rules as administrative controls

- ❖ Rule framework
- Inspections
- Audits

✓ *Rule compliance*

## Performance-based

### Rules as risk controls

- ❖ Rule framework, but:
  - Data based identification and prioritisation of safety risks
- ❖ Develop rules to control safety risks

✓ *Effective safety performance*



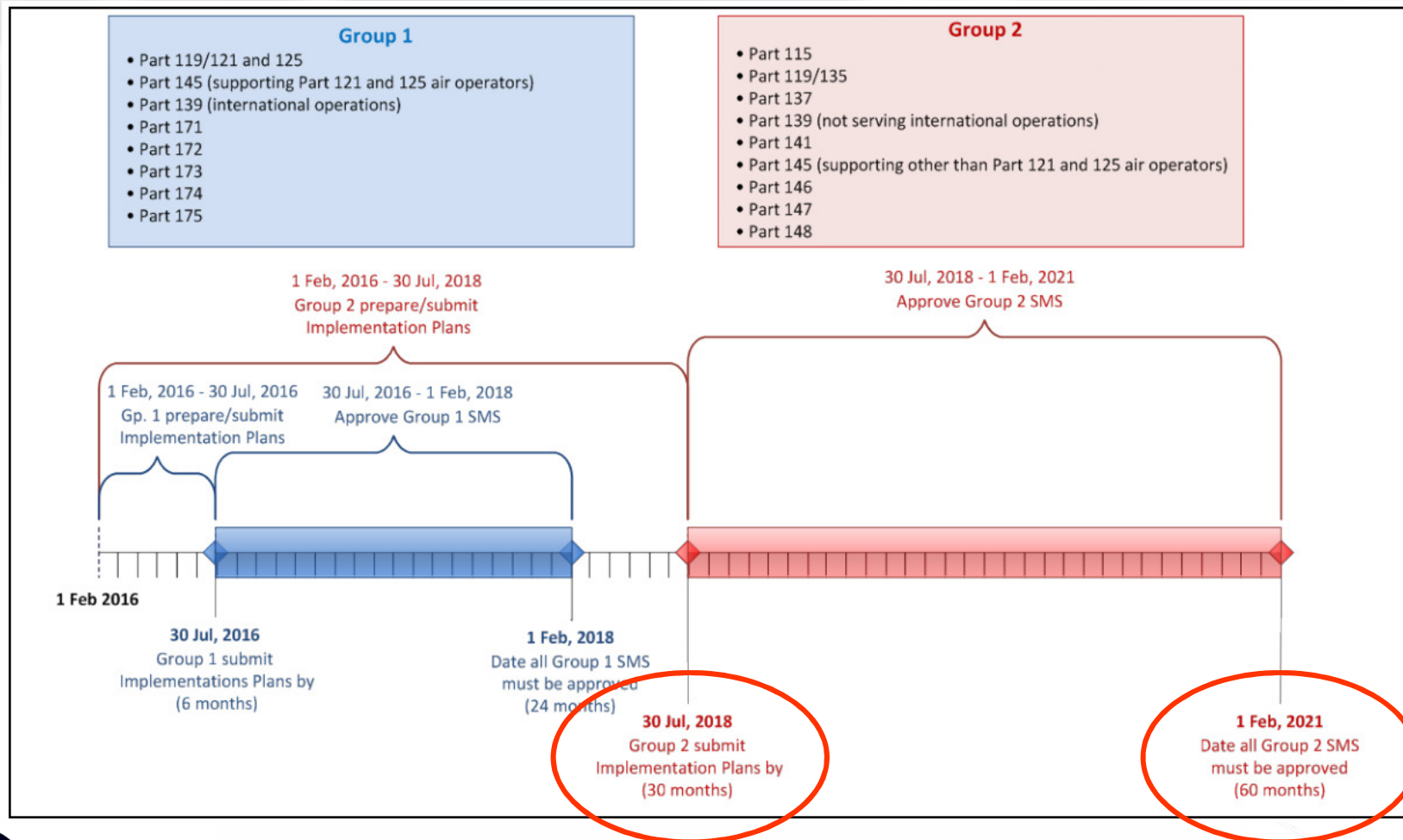


# SMS Certification

1. CAA reviews / approves submitted Implementation Plan, including nominated certification date
2. Submitted SMS documentation reviewed by CAA.
3. On-site audit by CAA, includes:
  - Utilising published Evaluation Tool as a compliance matrix, to verify the SMS has been implemented and is present and suitable.
  - Review of SMS records. (e.g. Hazards / Risks / Safety Training / Safety Promotion)
  - Senior Person interview
  - Interview of workers to assess awareness of implemented SMS



# SMS Implementation Plan & Process





1. Implementation Plan	
<p><b>Applicant – to submit</b></p> <p>Existing certificate holders: by 30 July 2016 for Group 1 or 30 July 2018 for Group 2</p> <p>New applicants (not renewals) after 01 February 2016: included with certificate application</p>	<p><b>CAA Process</b></p>
<p>Implementation Plan, including—</p> <ul style="list-style-type: none"> <li>· Gap Analysis / Tasking</li> <li>· Timelines</li> <li>· Resource requirements</li> <li>· Responsibilities</li> </ul> <p>Application for approval of SMS Implementation Form - CAA 24100/01</p> <ul style="list-style-type: none"> <li>· Proposed Date for Implementation</li> <li>· Proposed Senior Person for safety management</li> <li>· Declaration by chief executive</li> </ul>	<p>Assess and approve Implementation Plan</p> <p>Set Date for Implementation, having regard to—</p> <ul style="list-style-type: none"> <li>· the capability of the organisation</li> <li>· the complexity of the organisation</li> <li>· the risks inherent in the activities of the organisation</li> <li>· the date of any certificate renewal</li> <li>· any resource or scheduling impacts on the organisation or the Authority or both</li> <li>· the date for implementation must not be later than; 01 Feb 2018 for Group 1, or 01 Feb 2021 for Group 2</li> </ul> <p>Amend Organisational Certificate's supporting conditions document (e.g. Operations Specification) to include set Date for Implementation</p>





## 2. SMS Certification - Date for Implementation

### **Applicant – to submit**

at least 60 days prior to set Date for Implementation

### **CAA Process**

Application for Amendment to Certificate Forms

*Amendment form applicable to Organisational Certificate Rule Part & Senior Person change(s)*

Completed CAA SMS Evaluation Tool

Amended Exposition

Rules Matrices–Part 100 and associated organisational certification rules

### **SMS Certification**

- Assessment and Review
- Inspection and Demonstration
- Senior Person interview(s)

Amend Organisational Certificate's supporting conditions document (e.g. Operations Specification) to reflect approval of SMS



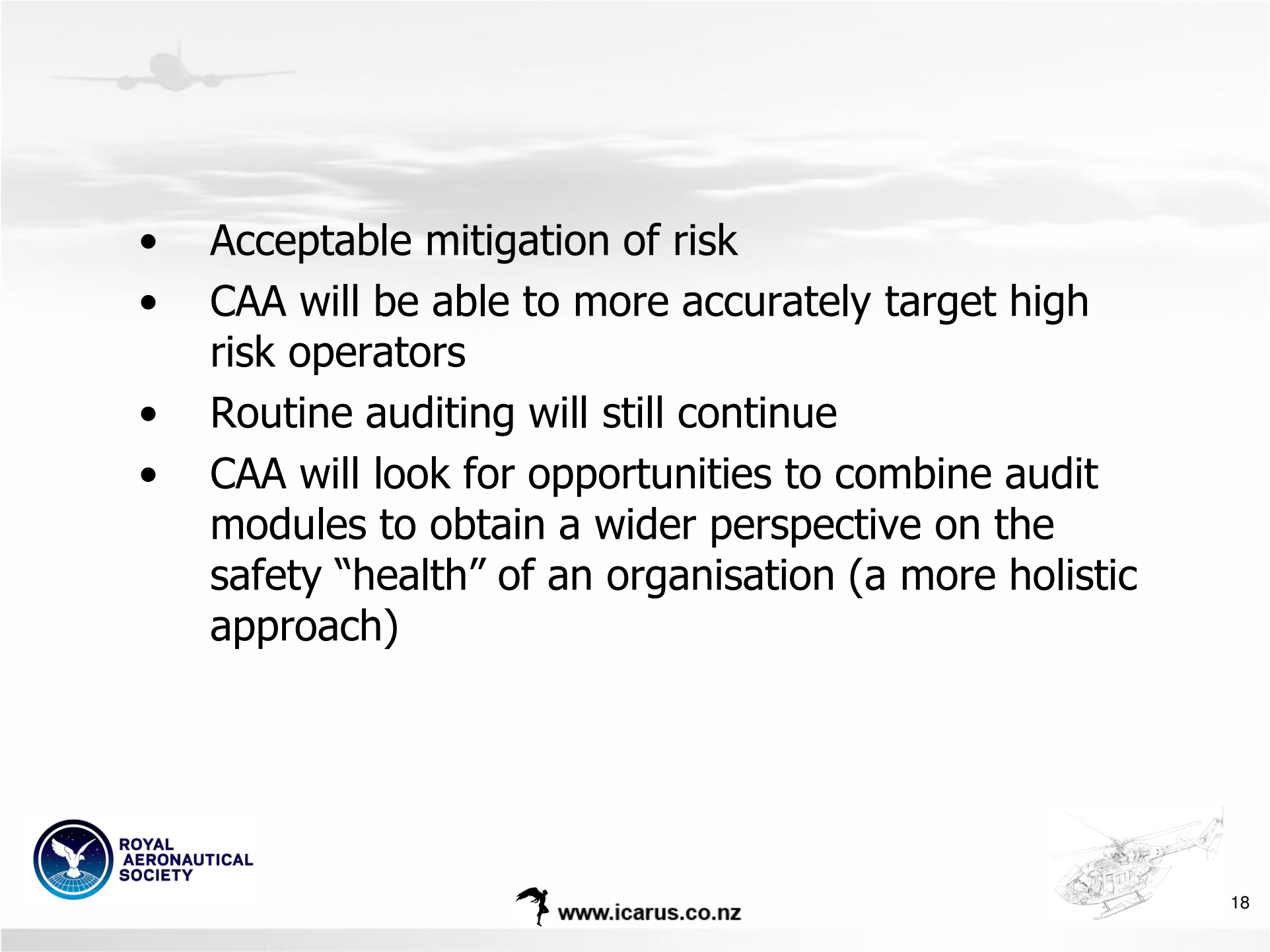




# Ongoing CAA Surveillance

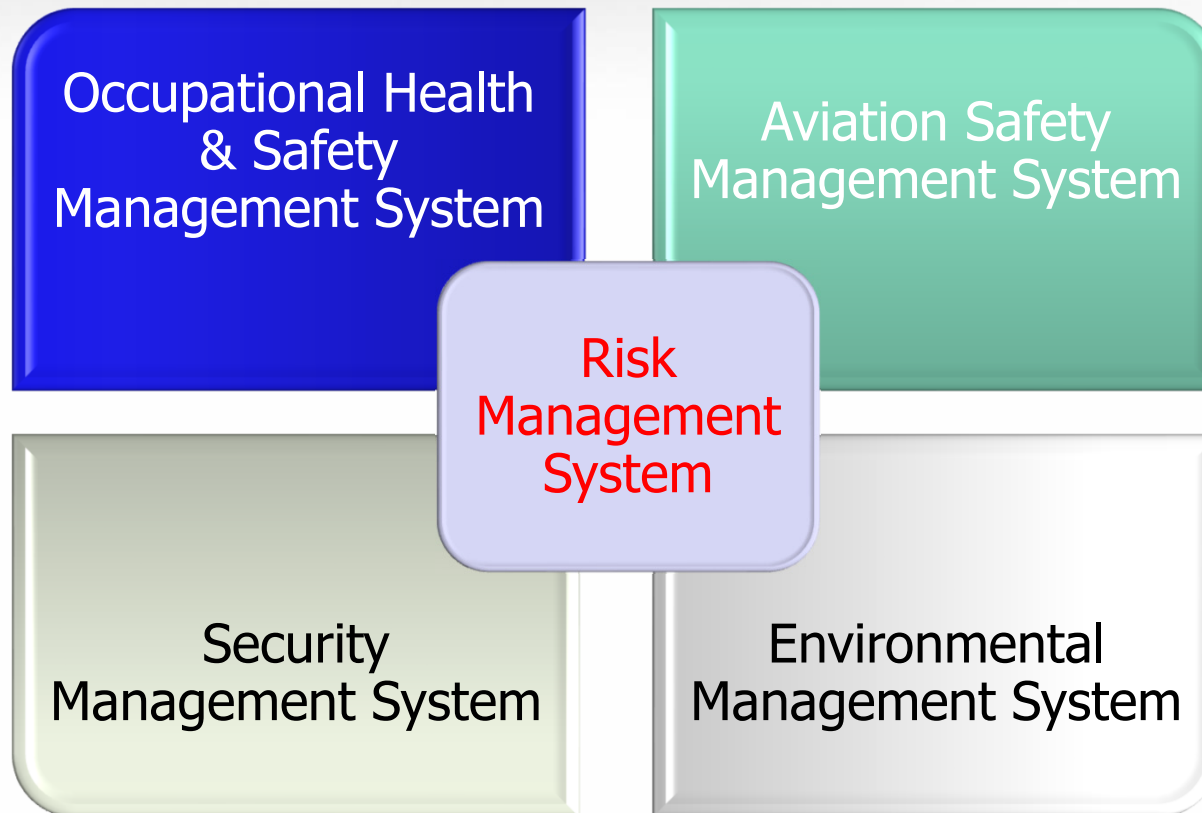
- SMS assessment utilising the Evaluation Tool, to verify that the SMS is progressing to “*Operating and Effective*”
- Outcome /performance based surveillance, including effectiveness of the organisation in addressing hazards & findings
- SMS is not just a management tool, it applies to everyone in the organisation – CAA surveillance will include interviews with front line & support staff
- Assessment of risk management programmes (process, training, risk register)



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- Acceptable mitigation of risk
  - CAA will be able to more accurately target high risk operators
  - Routine auditing will still continue
  - CAA will look for opportunities to combine audit modules to obtain a wider perspective on the safety “health” of an organisation (a more holistic approach)



# Too many systems?





# Benefits of an Integrated Safety Management System (iSMS)

- Each SMS element cannot be considered in isolation, rather the context and interrelationships within the total SMS needs to be considered.
- Consider taking this one-step further, by integrating aviation SMS with other systems, such as Health & Safety at Work, with the visible outputs being:
  - A single Safety Manual, covering all aspects of safety management.
  - Elimination of duplicate processes.
  - An holistic and enhanced safety culture.





# Summary

- SMS is a performance or outcome based approach to safety, where hazard identification and risk management is utilised to achieve safety goals.
- Whereas QMS largely resided in the QA Office, SMS is inclusive of all personnel, hence promotion of SMS is a key aspect of implementation.
- There are significant benefits in combining an Aviation SMS with Health & Safety at Work requirements.





# The End

## Questions?

