

Using PDCA Lifecycle to Keep your SMS Simple

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Designing your SMS is Important

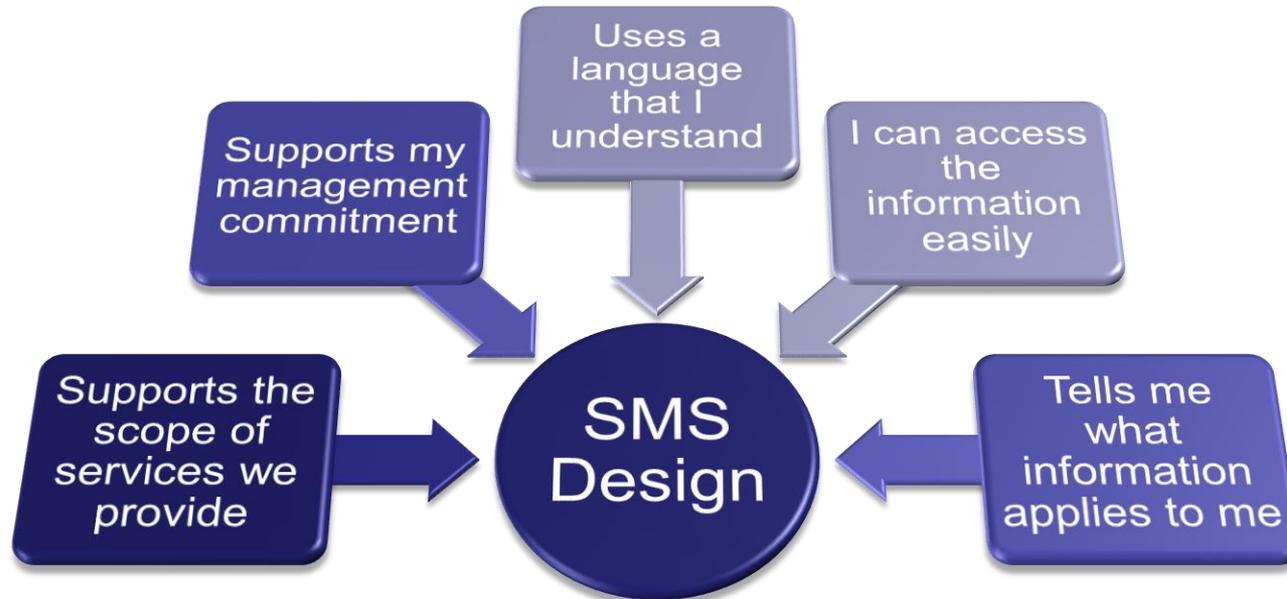


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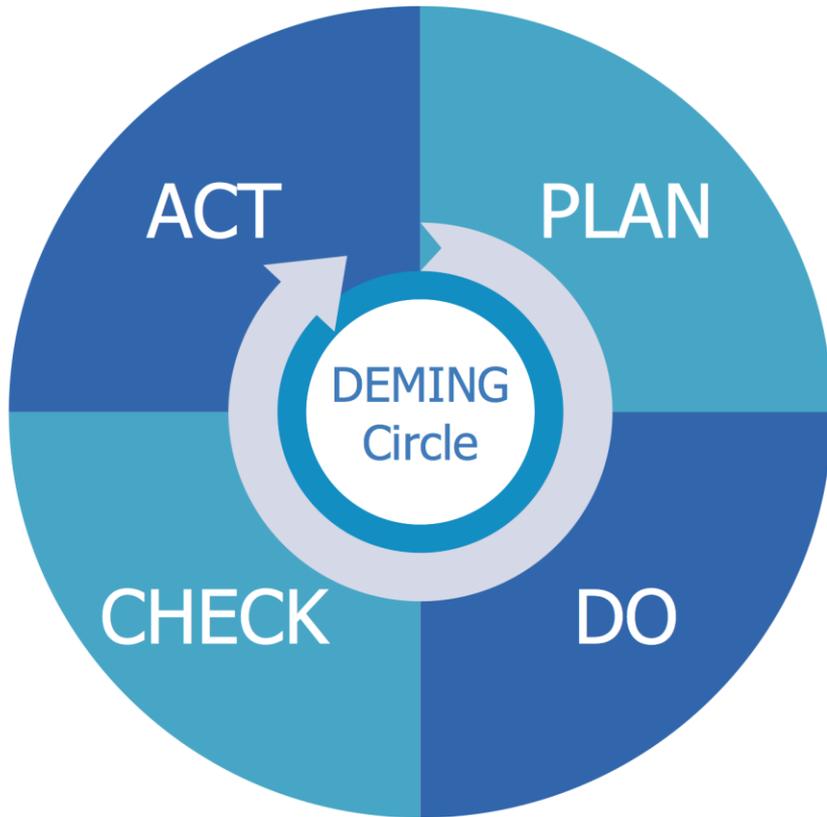


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.. What are the users needs?



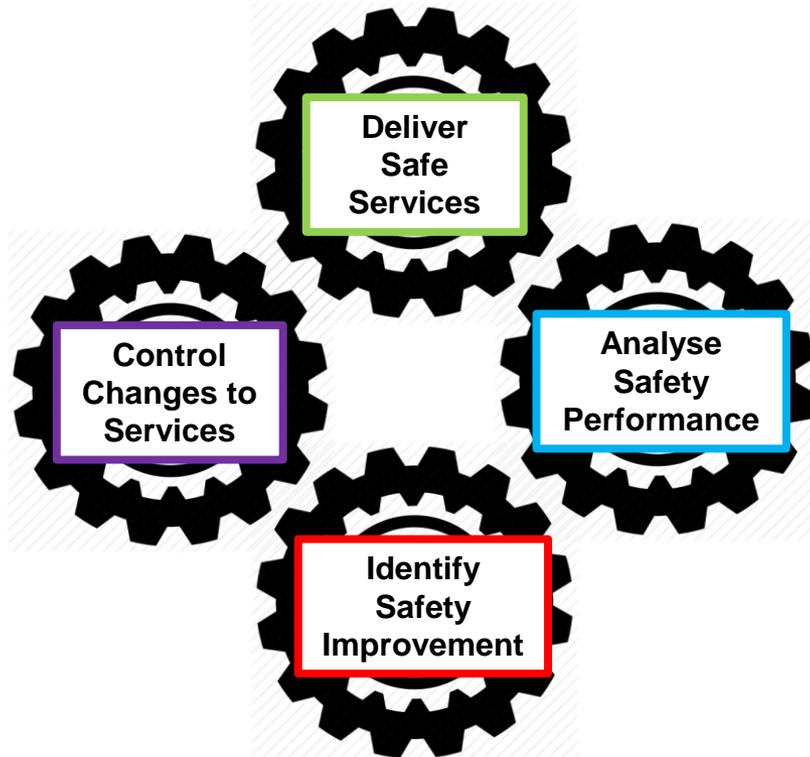
PDCA Lifecycle



PDCA 'Deming' Lifecycle:

Recognised **Continuous Improvement** lifecycle frequently used as the basis for the control and continuous improvement of **services** and products.

PDCA Tailored to SMS



Translate the PDCA Lifecycle into a language that reflects Safety.

The safety continuous improvement lifecycle.

A 5th element is introduced to manage the organisational and cultural elements that we know underpin our SMS.

Supporting Organisation and Culture



Defining the Objective of your SMS



Safety culture			
Elements: Development of a positive and proactive safety culture			
Safety policy and objectives			
Definition: Development of a positive and proactive safety culture			
Characteristics: Development of a positive and proactive safety culture			
Development of a positive and proactive safety culture			
Safety risk management	Safety advancement	Safety assurance	Safety promotion
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ICAO Annex 19 and Doc9859 Requirements



Expert practical knowledge!!!



CANSO Objectives



Set of **Objectives** that define **WHAT** the **organisation** shall do to **manage safety risk** in each segment.



Example SMS Objectives

Core Principles	SMS Objectives
Principle #1: Deliver Safe Services	1-1: Service methods of operations describe how the service is provided in normal, abnormal, fall-back and emergency scenarios.
	1-2: All hazards associated with the service are mitigated and the residual risk accepted.
	1-3: Safety performance monitoring indicators and associated targets are identified.
Principle #2: Analyze Safety Performance	2-1: Safety performance of the service is monitored, and data collated from internal and external sources.
	2-2: Incidents are investigated, and the findings documented and communicated to stakeholders.
	2-3: Safety performance monitoring data is reviewed and analyzed with respect to safety performance indicators and targets to identify trends in performance.
Principle #3: Identify Safety Improvements	3-1: Safety improvement actions are identified to manage adverse trends in safety performance.
	3-2: Safety improvement actions are communicated to internal and external stakeholders, where appropriate.
	3-3: The priority of each improvement action is set and a plan developed for managing safety improvement.
Principle #4: Control Changes to Services	4-1: All planned changes to the services are identified, described and assessed for their safety impact.
	4-2: All hazards associated with the change to the service are mitigated and the residual risk accepted.
	4-3: The equipment installation, commissioning and transition activities are managed to ensure no adverse impact on delivery of Services.
Principle #5: Supporting Organization and Culture	5-1: Safety accountabilities and responsibilities for staff are allocated, appropriately discharged and maintained.
	5-2: Safety staff are competent (qualified, trained and continuously monitored) to perform their Safety related activities.
	5-3: A Safety culture (including a Just Culture) is embedded within the operation and periodically examined.
	5-4: The effectiveness of safety management activities is independently reviewed and actioned as appropriate.
	5-5: The Safety management system is actively promoted to all staff.
	5-6: Safety management groups at all levels of the organization promote Safety.

PDCA Alignment with ICAO Annex 19

ICAO SMS Component	PDCA SMS Framework
1. Safety policy and objectives	<p style="color: red;">Principle #0: Safety policy</p> Principle #5: Supporting Organization and Culture
2. Safety risk management	Principle #1: Deliver Safe Services Principle #4: Control Changes to Services
3. Safety assurance	Principle #1: Deliver Safe Services Principle #2: Analyse Safety Performance Principle #4: Control Changes to Services Principle #5: Supporting Organization and Culture
4. Safety promotion	Principle #5: Supporting organization and Culture

The ICAO Pillars don't accurately reflect their purpose if you trace it to the PDCA SMS Lifecycle.



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How do you make the wheel turn?



The wheel will only turn if there is close collaboration in your organisation. This collaboration is easy if you share a common Safety Risk Model.



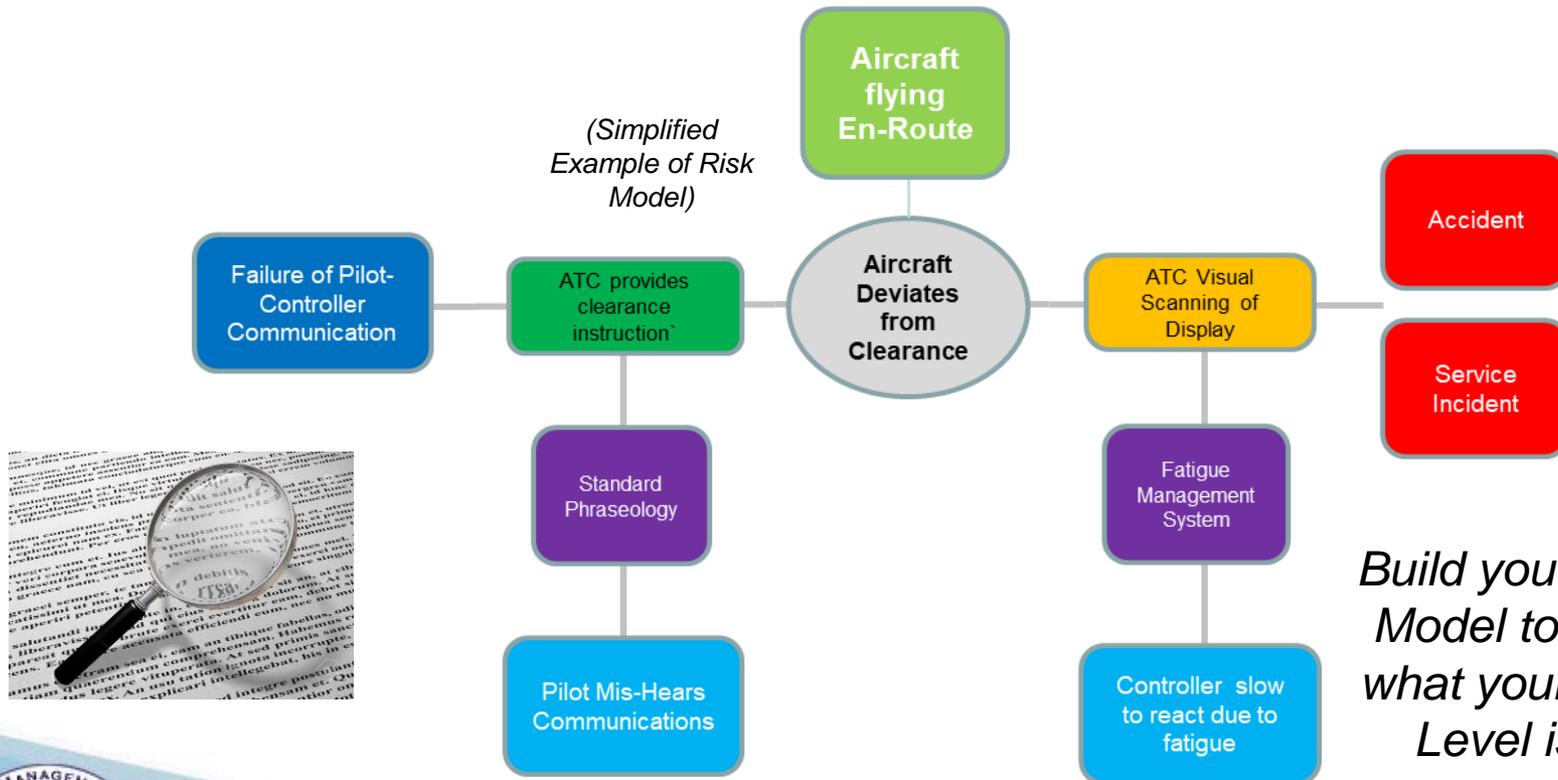
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BOWTIE - <https://www.caa.co.uk/Safety-initiatives-and-resources/Working-with-industry/Bowtie/>
STAMP - <https://psas.scripts.mit.edu/home/materials/>

Deliver Safe Services

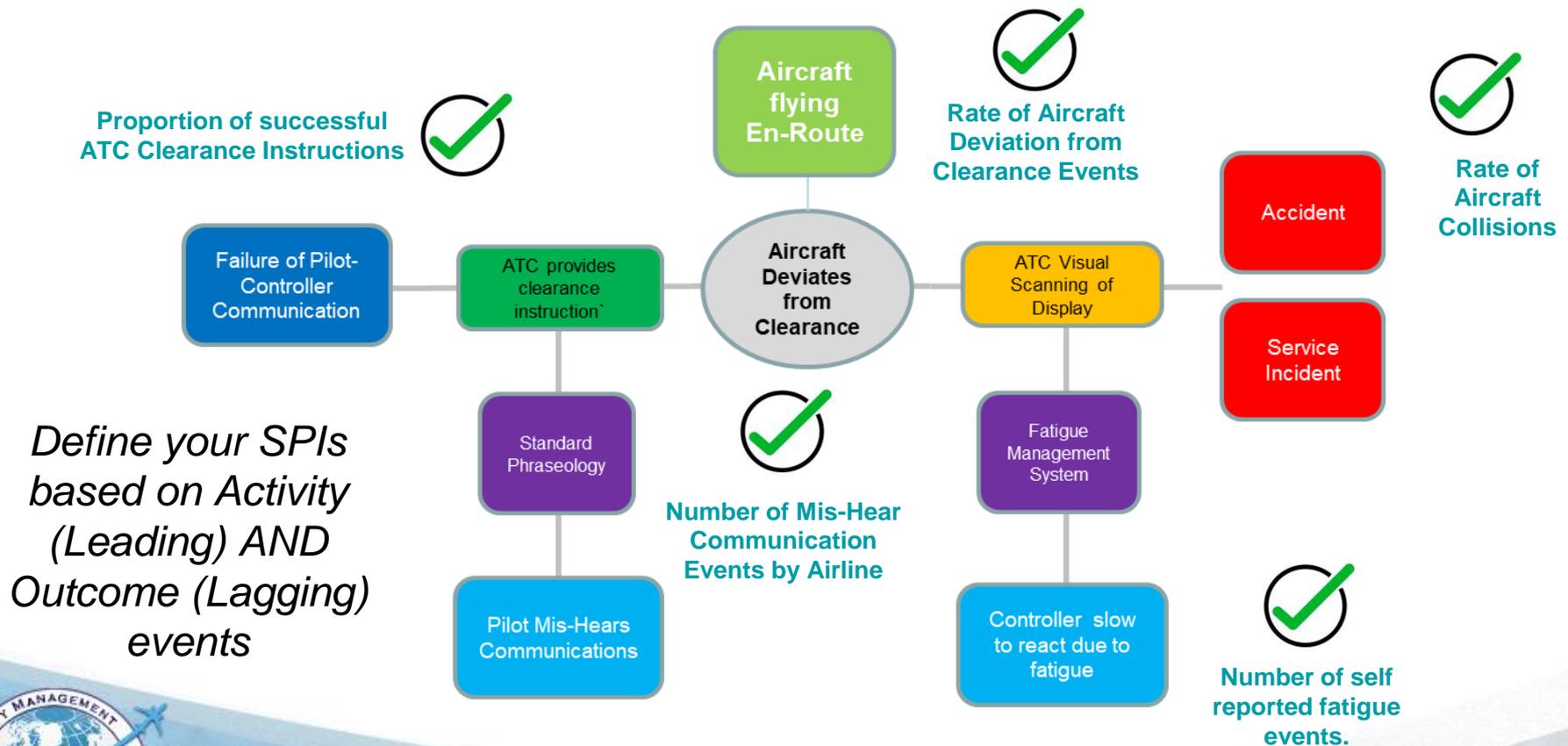
The goal of this principle is:

- ❖ The hazards are identified and associated safety risks for all services are accepted by management as tolerable. Safety performance indicators and targets are agreed.



Build your Safety Risk Model to understand what your Safety Risk Level is TODAY!

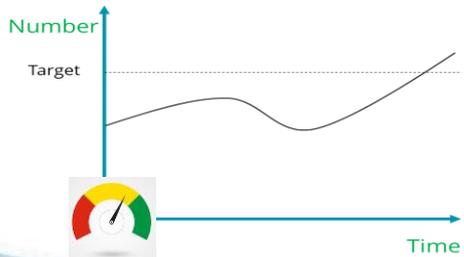
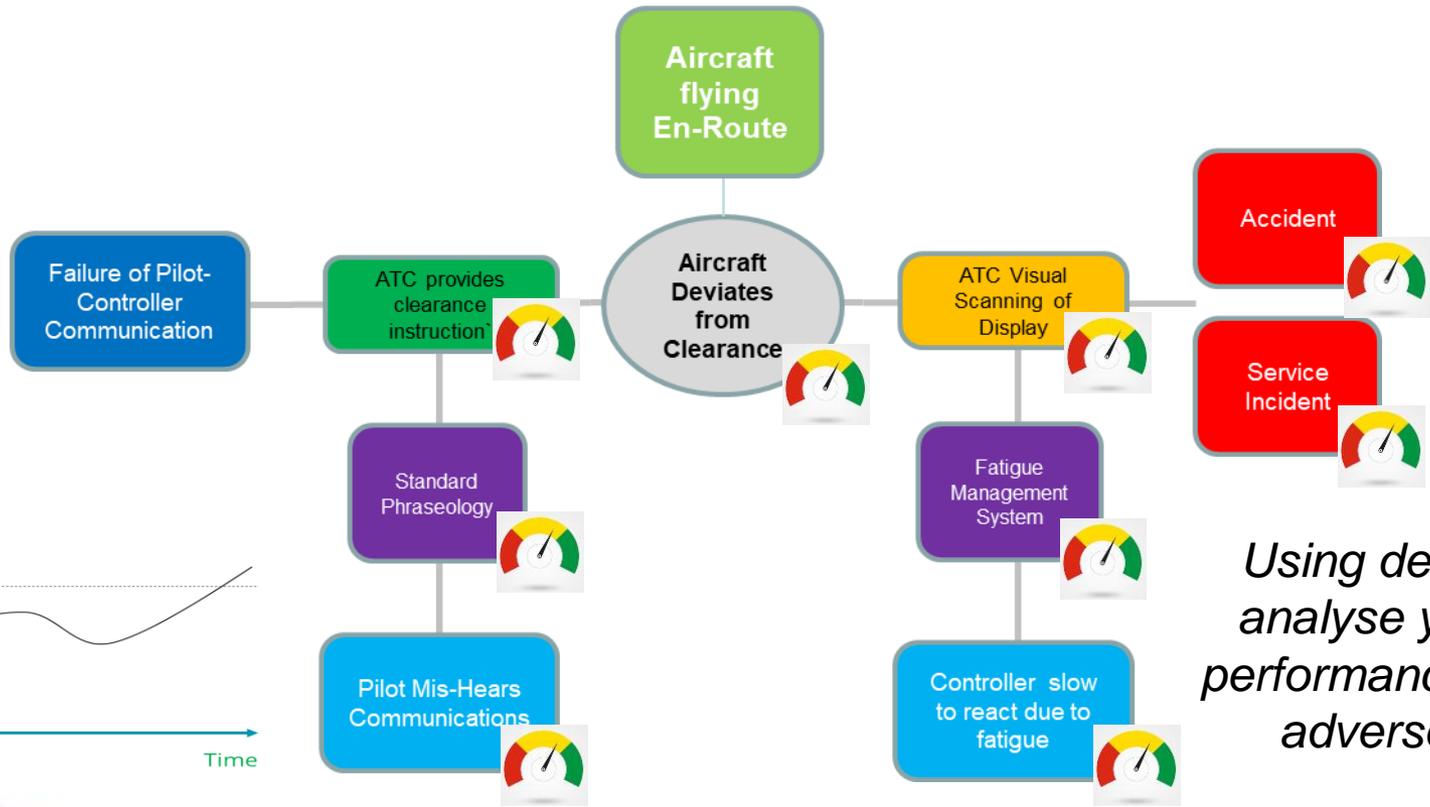
IDENTIFICATION OF SAFETY PERFORMANCE INDICATORS



Analyse Safety Performance

The goal of this principle is:

- ❖ The safety performance of services delivered is analysed, understood and communicated to stakeholders.

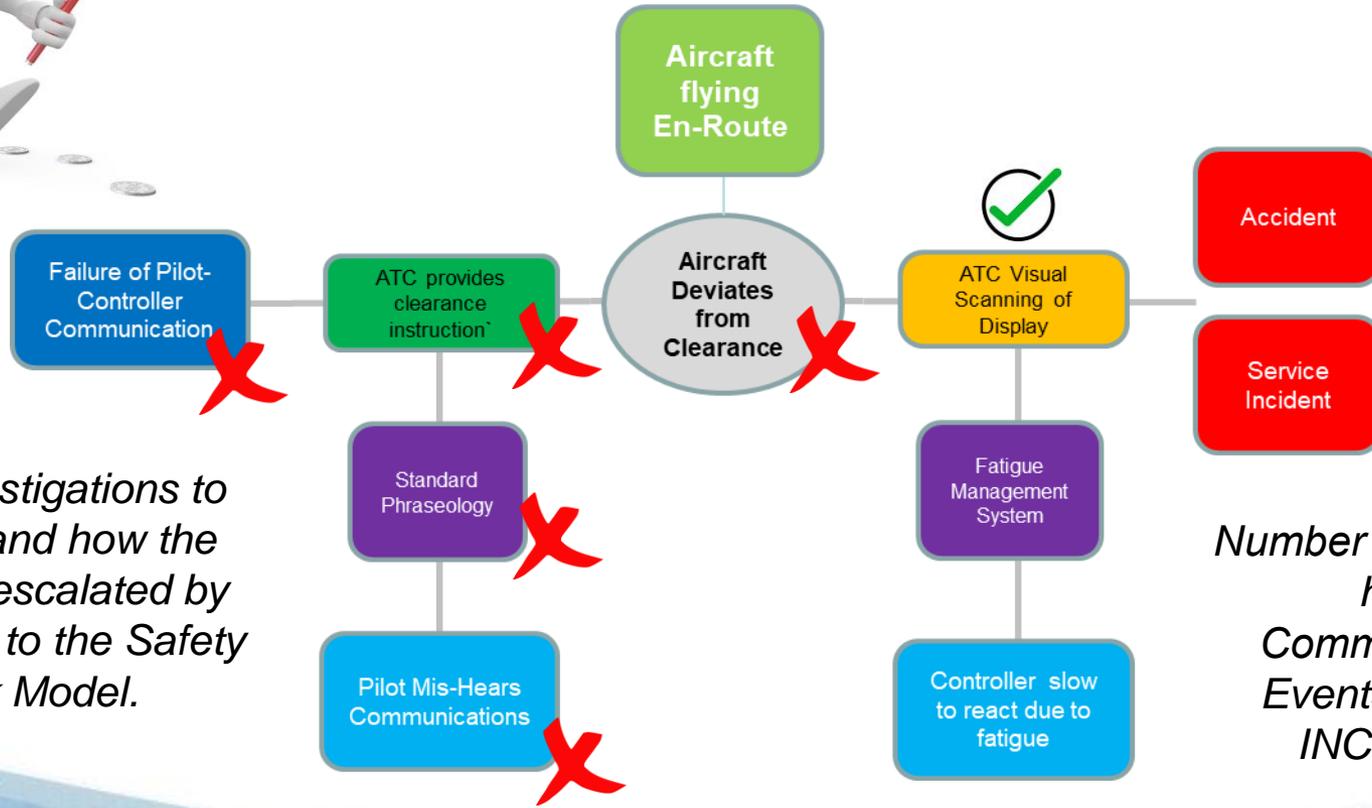


Using defined SPIs analyse your safety performance to identify adverse trends.



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Understanding Incidents through investigations



Use investigations to understand how the incident escalated by reference to the Safety Risk Model.

Number of 'Pilot Mis-hears Communications' Events is on the INCREASE!



Identify Safety Improvement

The goal of this principle is:

- ❖ Safety improvement actions (short, medium and long term) are defined to manage any current or predicted adverse trends in performance.



*Cleared Flight level / Selected Flight Level Check

Target improvement actions to improve performance and communicate it using the Safety Risk Model.

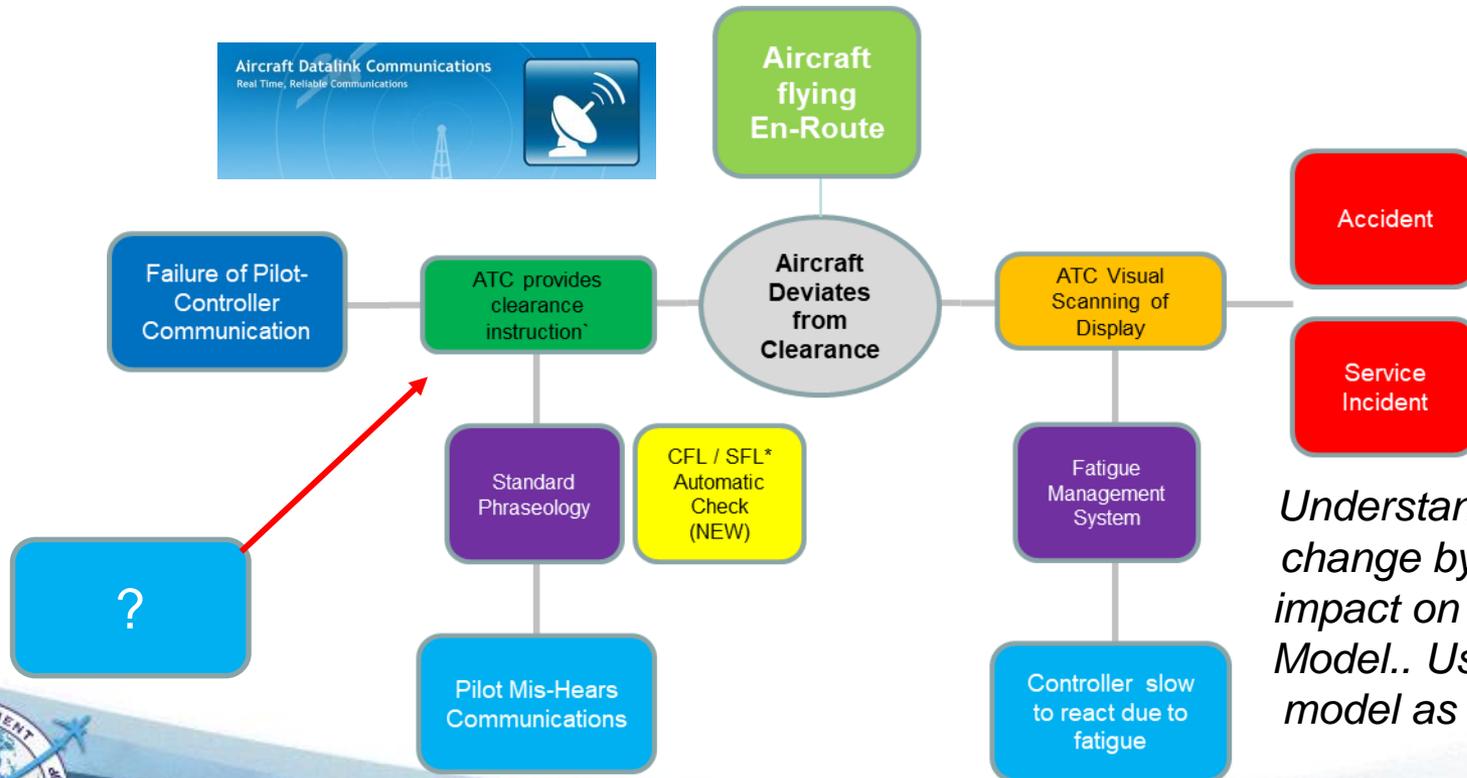


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Control Changes to Services

The goal of this principle is:

- ❖ Changes to Services are controlled to ensure that the changes are as effective as possible and do not adversely impact the performance of the service during implementation.

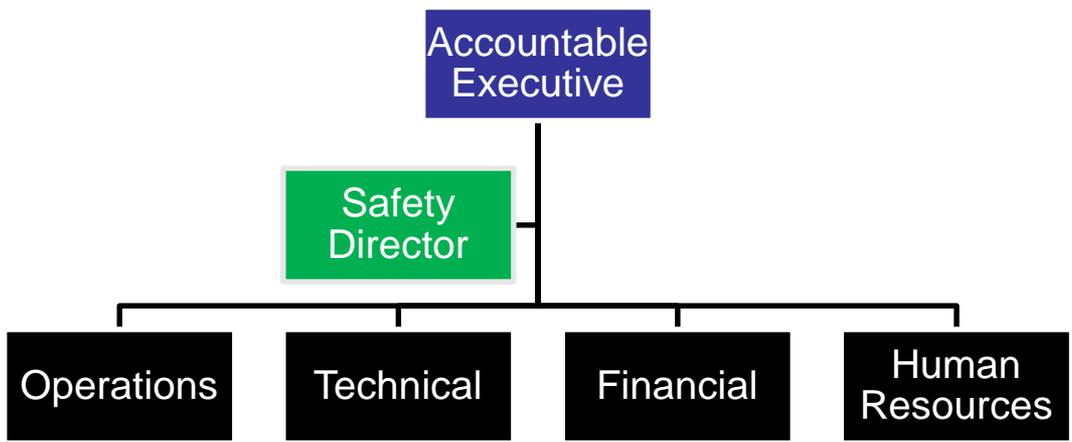


Understand impact of change by assessing impact on Safety Risk Model.. Use the same model as day to day!

Supporting Organisation and Culture

The goal of this principle is:

- ❖ The organisation and culture underpins the safety management activities and ensures that it remains as effective and efficient as possible.



Start at the top. Understand your accountability chain and champion management commitment. Use the PDCA SMS Lifecycle to structure those accountabilities.



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Example Statement

SMS Principle	Statement
General	I shall ensure that the correct allocation of resources necessary for the effective, efficient and safe performance of the Services is provided within my Directorate.
Deliver Safe Services	I shall ensure that the safety risk of each service under my responsibility is evaluated and mitigations are identified such that the safety risk is reduced as low as reasonably practicable (ALARP) and no worse than tolerable as defined in the SMS
Analyse Safety Performance	<p>I shall ensure that the safety performance of services is understood through the completion of reporting and analysis activities to optimize efficiency and service delivery.</p> <p>I shall immediately notify the CEO and Safety Director of any safety issues within my Directorate.</p> <p>I shall ensure all employees who are involved in an incident are treated with respect in line with our Just Culture policy.</p>
Identifying Safety Improvements	I shall ensure that short, medium and long term safety improvements to resolve adverse trends in safety performance are identified and implemented as required.
Control Changes to Services	<p>I shall ensure that all changes to service under my area are introduced safely and do not adversely impact the safety of the services provided.</p> <p>I shall ensure that decisions made within my area properly consider and prioritize safety requirements in conjunction with business needs.</p>
Organization and culture	<p>I shall ensure that all Directorate staff have received the required level of safety training, role specific training and are at the required level of competency to carry out their roles safely.</p> <p>I shall coordinate and communicate with external stakeholders as necessary on issues relating to safety.</p> <p>I shall demonstrate active leadership in safety by promoting the ethos of safety improvement, and encouraging the adoption of a questioning and challenging culture amongst staff.</p> <p>I shall ensure that all staff actively contribute to the culture survey and I will support implementation of any improvement activities.</p> <p>I shall ensure that the SMS is appropriately implemented and maintained within my Directorate.</p>

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