

# KHÓA HỌC 2021 - 2022

# QUẢN LÝ RỦI RO

# NÂNG CAO

ADVANCED RISK MANAGEMENT

Giảng viên: Geraint Bermingham

Ngày 13-14/12/2021

ĐẠT  
**VHAT**  
CẤP CHỦ ĐỘNG  
**4.0**

# Introductions

## **Geraint Bermingham**

*BEng (Hons), Post Graduate Diploma (Nuclear technology),*

Geraint has about 35 years of formal risk management experience, 25 years in complex organizational and operational settings.

He gained this experience initially as a British Royal Navy nuclear submarine officer, and subsequently based in New Zealand.

He has also worked in the USA, Singapore, Indonesia, Korea and Australia.

Geraint was the New Zealand representative on the committee that developed the first global risk management standard ISO31000 and assisted the Australian committee for the development of ISO31010 (Dependability) as well as AS/NZS HB89 (Risk assessment techniques).

Chair of RiskNZ (professional institute), for 3 consecutive 2-year terms.

Awarded NZ Risk Professional of the Year: 2014



# Experience

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A range of experience:

- Nuclear submarine engineering – nuclear power plant risk
- Submarine operations – complex systems risk
- Aircraft carrier operations - dynamic operations risk
- Maritime recovery – health and safety / operational risk
- Airline risk management – business and safety risk
- Aviation sector risk assessment – Safety risk
- Aviation regulation risk support – Safety risk and human factors
- Risk management across most sectors – business risk



# Introductions – Attendees

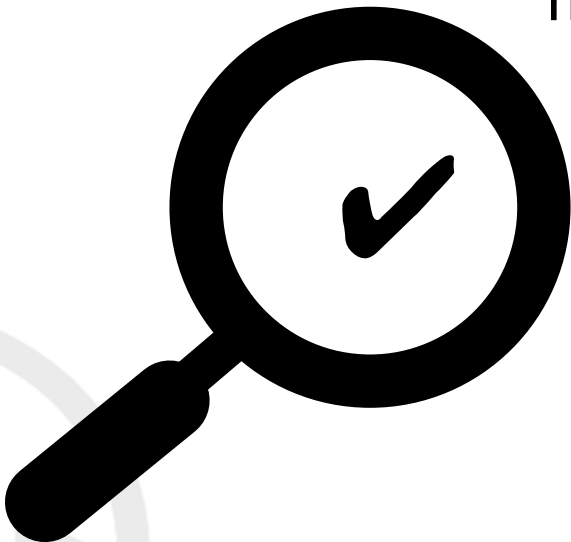
1. Preferred name
2. Role within the airline
3. Experience with formalised risk management
4. Where speaking from





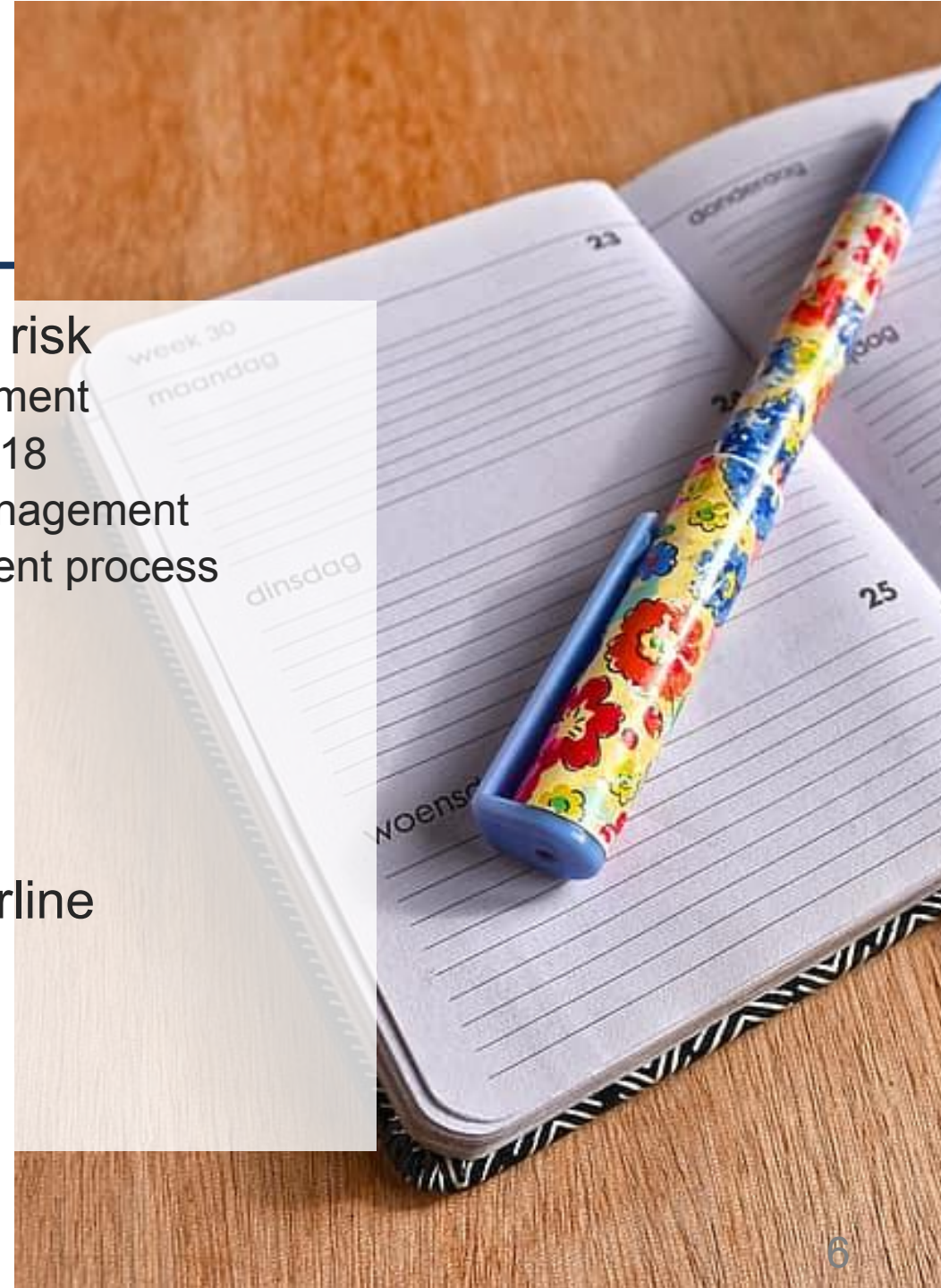
## **The objective of this training course is:**

To develop a good working level understanding of general risk management, as applicable to all parts of a complex business and to form the foundation for the development of core expertise in risk management.



# Agenda

- Recap – the fundamentals of risk
  - A brief history of risk management
  - Introduction to ISO 31000: 2018
  - Principles of effective risk management
  - Introduction to risk management process
- Applying the principles
- Theory
- Building blocks
- Applying the process in an airline
- Assessing the risks
- Recap course content



# The Nature and Perceptions of Risk

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Discuss in working groups

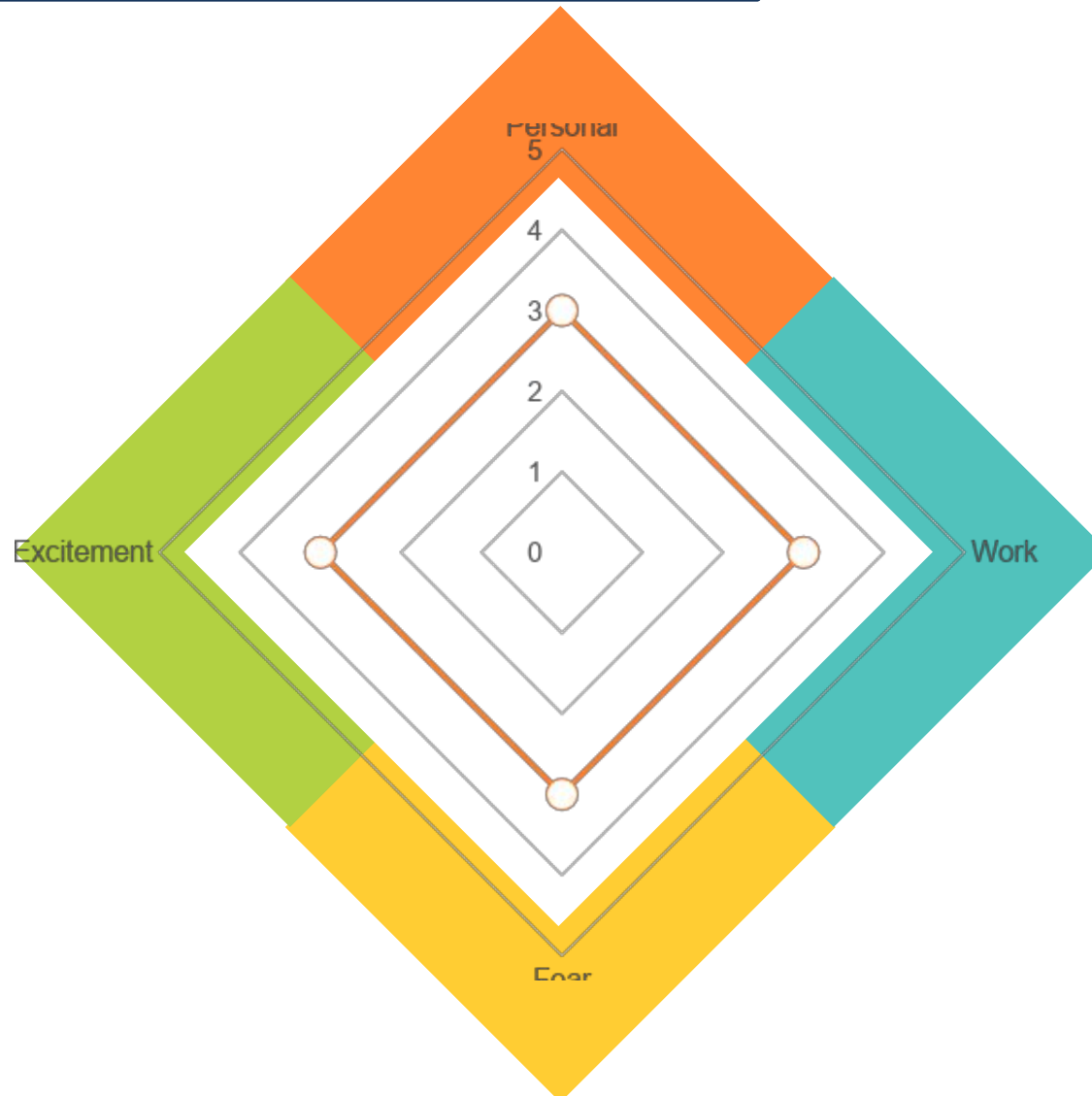


Around the room



# The Nature and Perceptions of Risk

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# The Fundamentals of Risk and Risk Management

- History
- Principles
- Framework
- Process
- Developing Metrics
- Applying Risk Management in an Airline

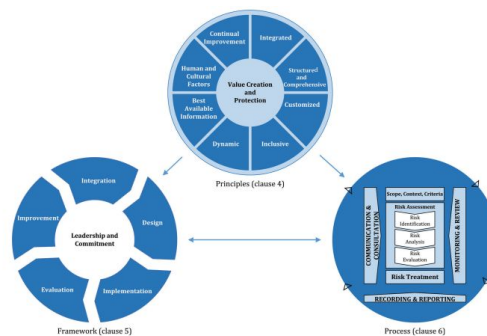
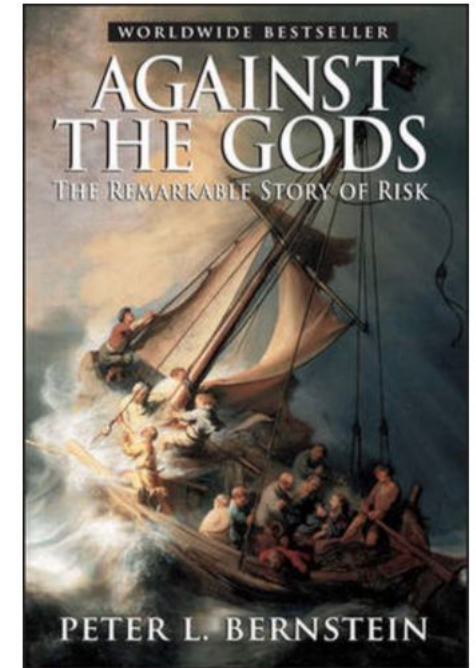


Figure 1 — Principles, framework and process

Rating	?	?	?	?
Catastrophic				
Severe				
Major				
Serious				
Important				

# Fundamentals of Risk

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Definition:

**Risk -**

The effect of  
uncertainty on  
objectives.



# “Risk”

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## Risk: effect of uncertainty on objectives

**NOTE 1** – An effect is a deviation from the expected – positive and/or negative.

**NOTE 2** – Objectives can have different aspects (such as financial, health and safety, and environmental goals) and can apply at different levels (such as strategic, organisation-wide, project, product, and process).

**NOTE 3** – Risk is often characterised by reference to potential events and consequences, or a combination of these.

**NOTE 4** – Risk is often expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated likelihood of occurrence.

**NOTE 5** – Uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of, an event, its consequence, or likelihood.

# Fundamentals of Risk

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Definition:

**Objective** -  
a thing aimed  
at or sought; a  
goal.

# Fundamentals of Risk

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Definition:

**Uncertainty** -  
refers to situations  
involving imperfect or  
unknown information.

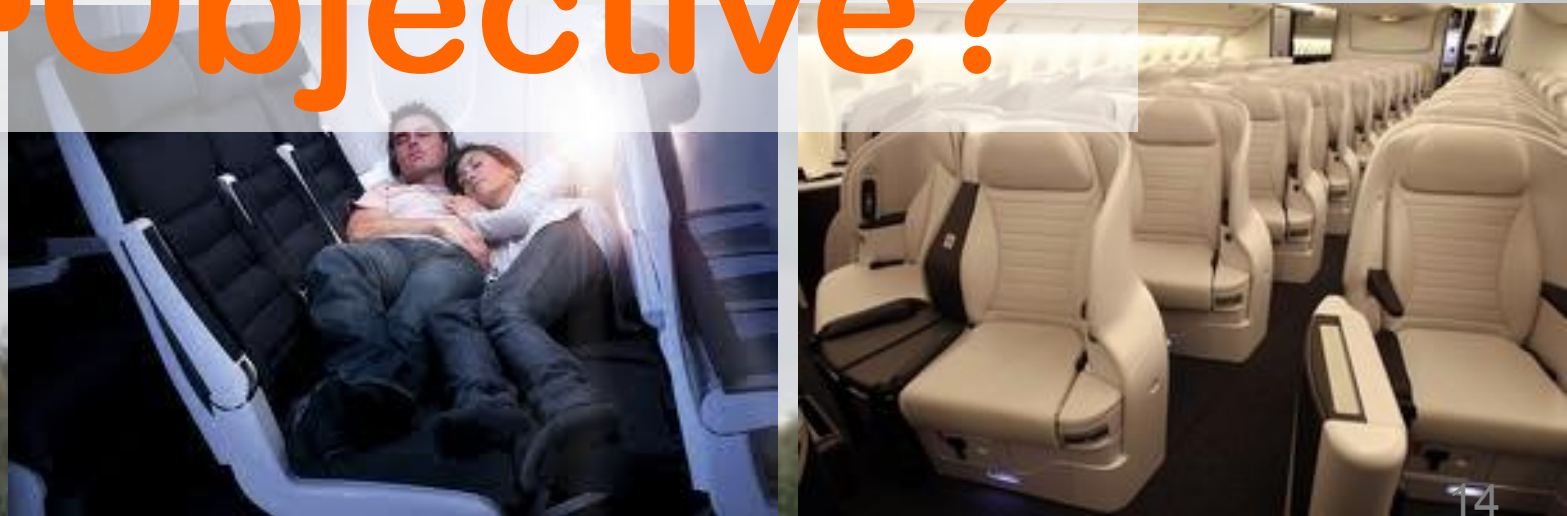
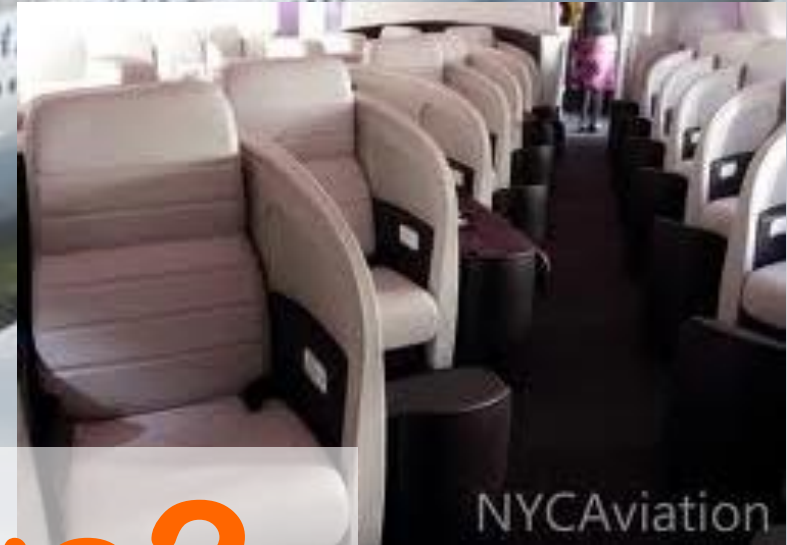


# Boeing 777-300 ER Introduction Project

• \$300M

TWO + YEARS

• Objective?



A photograph of an airplane cabin interior. A female cabin crew member, wearing a purple patterned top and a dark striped skirt, is leaning forward and smiling at a female passenger. The passenger is standing and wearing a grey cardigan over a white shirt. In the background, a male crew member is seated at a console, wearing a headset and smiling. The cabin has white walls, overhead storage bins, and airplane windows. The text "To 'WOW' the customer!" is overlaid in large white letters.

To “WOW” the customer!

# What are the Objectives?

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Around the room



# The Customer Journey

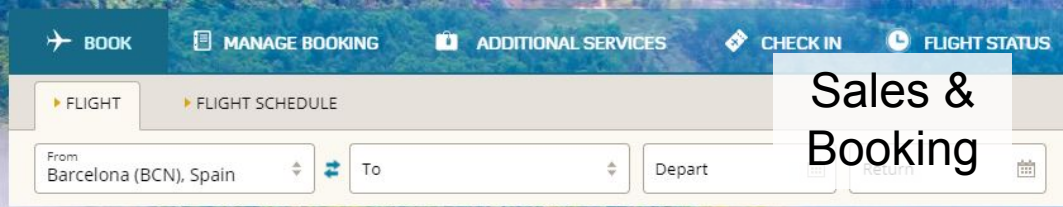
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The purpose of the airline is to:

- Fly customers from A to B.
- Be a sustainable and safe business

All the departments within the airline ultimately support that purpose.

We are going to look at how each department supports the customer through the journey and in doing so identify the objective and then define risk for each department.



Check-in  
&  
Loading



Retention



Disembarking



Flying





Image source: <https://vietnamnews.vn>

Up next: Theory

Image source: <https://vietnamnews.vn>

# Development of formalized approaches

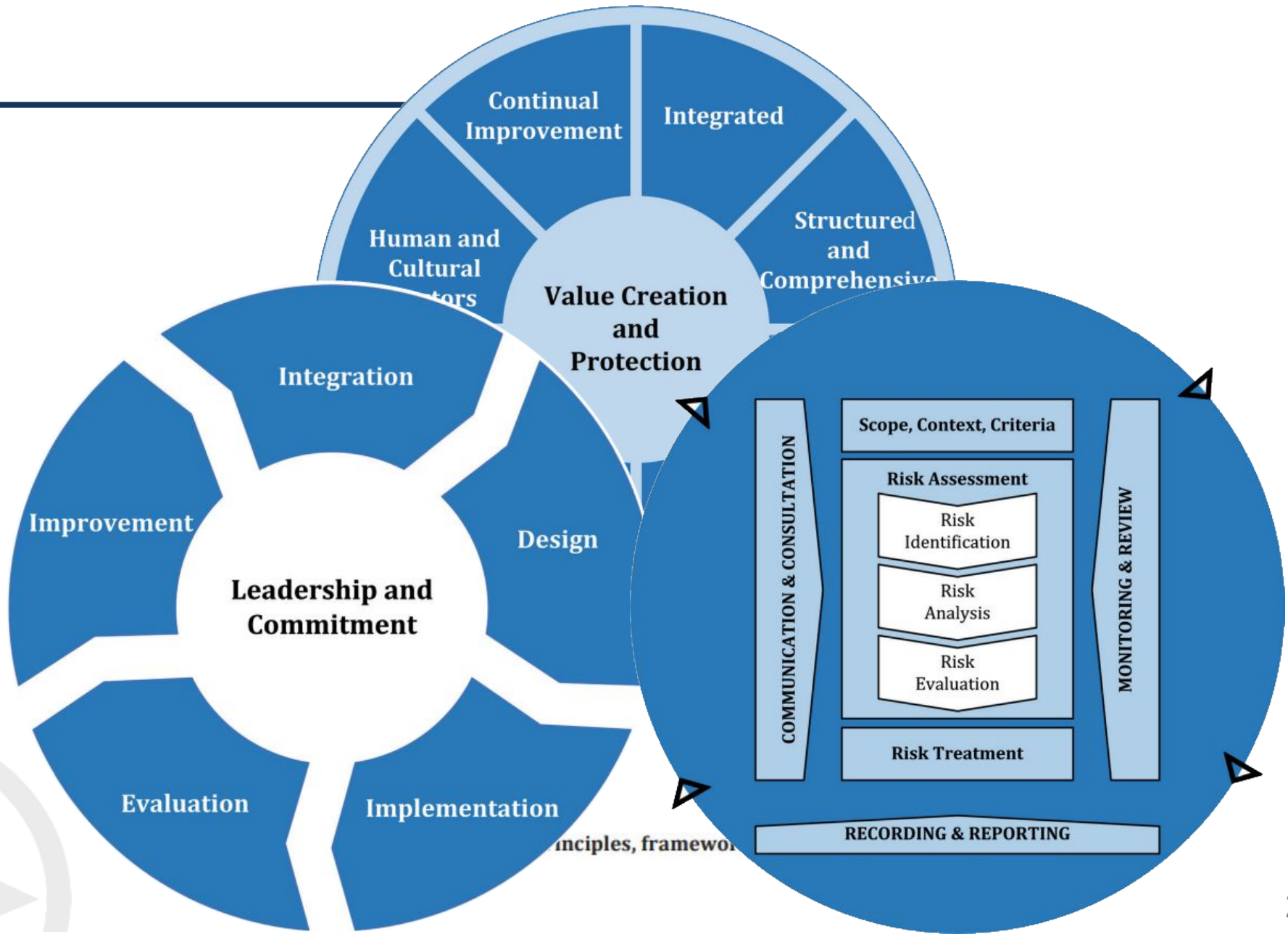
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## ISO 31000

- ISO 31000 – the new global risk management Standard
- Top document – will lead all other ISO risk Standards
- Terminology (Guide 73)
- Principles
- Essential framework
- Fundamental process
- Already influencing (eg; IT security / IT projects / engineering dependency [ISO 31010], debate in ICAO SMS circles, excellent reviews (including from USA))



# Introduction to ISO 31 000: 2018





# Introduction to ISO

18



Figure 1 — Principles, framework and process



Up next: Applying the Principles






Up next: Applying the Principles

Image source: <https://vietnamnews.vn>

# Applying the Principles in your department

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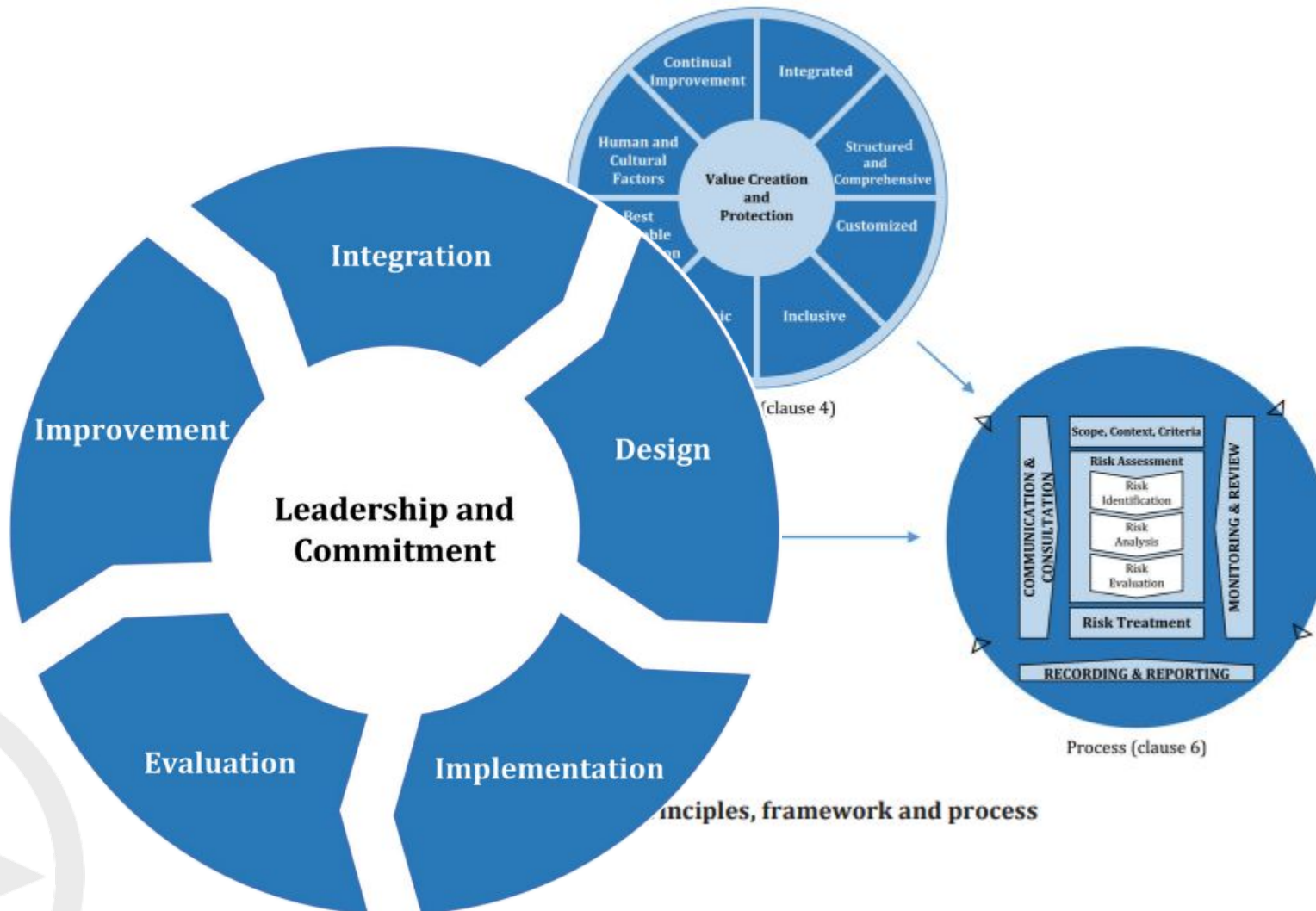


**Discuss**  
**Around the room**  
**examples**

- a) Integrated
- b) Structured and comprehensive
- c) Customised
- d) Inclusive
- e) Dynamic
- f) Best Available Information
- g) Human and Cultural Factors
- h) Continuous Improvement



# Introduction to ISO 31 000: 2018





# Introduction to the risk management framework

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## Leadership and Commitment

- Integration
- Design
- Implementation
- Evaluation
- Improvement



Framework (clause 5)

# Introduction to ISO 31 000: 2018

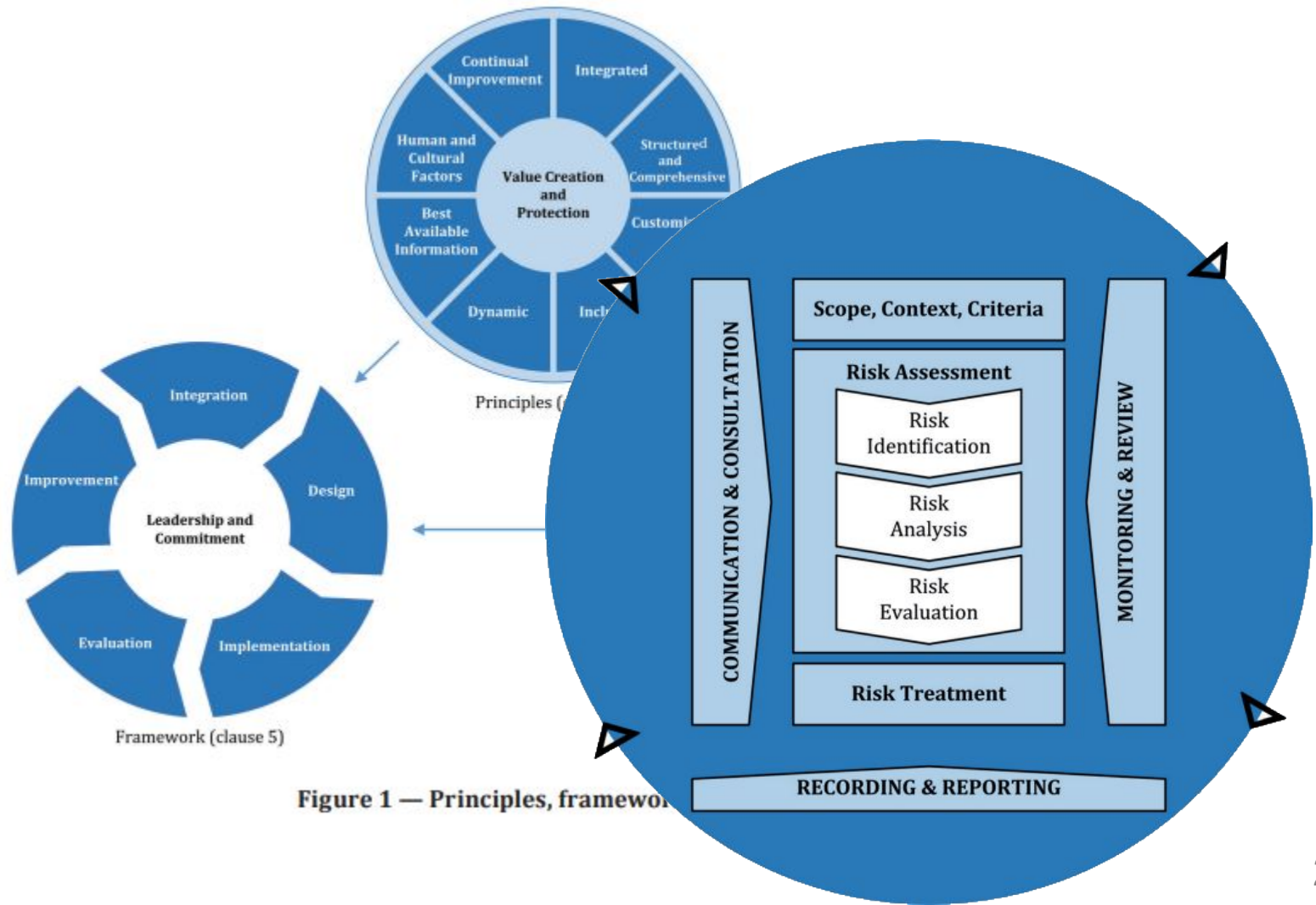
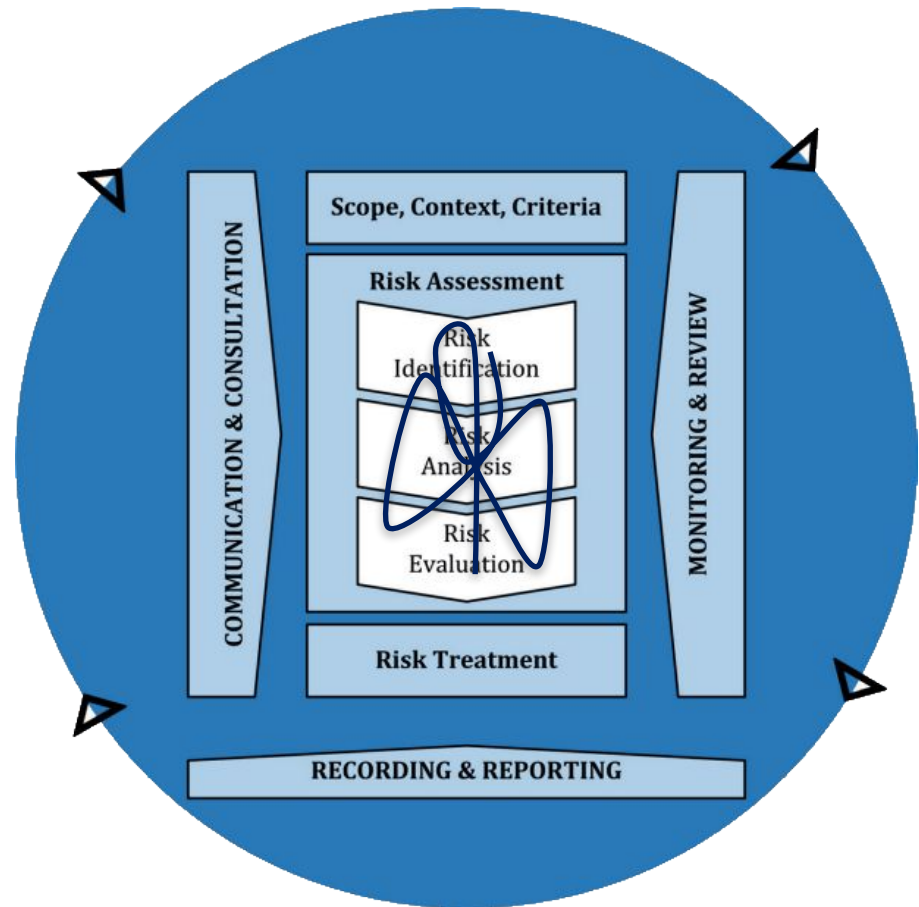


Figure 1 — Principles, framework

# Introduction to Risk Management Process

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# Process is required within Safety

*“Proactively manage changes, identify hazards and manage safety risks in operation, maintenance and training activities, analyse and eliminate or reduce associated risks”*

## SAFETY - QUALITY POLICY

Safety and Quality are core values of Vietnam Airlines and we believe in providing our customers with these values and maintaining a safe environment for our employees. The Management and all staff always understand thoroughly that the existence and development of the Company tightly links to customers' trust.

We commit ourselves to:

- ✦ Promote digital transformation in safety and quality. Develop and apply proactive SMS that heading towards a predictive SMS concept. The system bases on statistical data analysis and supports open sharing of information on all safety issues within the Company as well as encourages all employees to report significant errors, potential hazards in business activities;
- ✦ Promote Safety Culture towards a generative level, focusing on Just Culture in which employees must be accountable for their actions and, in return, are provided assurance that they will be treated in a fair manner following an incident or safety occurrence through applying Behaviour Definition and Implementation Guide of Just Culture;
- ✦ Proactively manage changes, identify hazards and manage safety risks in operation, maintenance and training activities, analyze and eliminate or reduce associated risks;
- ✦ Ensure that each member of the Vietnam Airlines shall always consciously abide by the requirements, regulations on safety - quality in operations with the continuous improvement of operation safety and health safety for our customers and the whole company employees;
- ✦ Strictly apply safety and quality management system as described in the "Safety Management System Manual" and "Quality Manual" in compliance with all requirements of Regulatory Aviation Authorities, applicable legal regulations and always heading to the highest aviation industry standards;
- ✦ Provide sufficient resources and necessary conditions to implement Safety - Quality policy and objectives. Continuously improve the management system, create reliable working environment with the highest sense of responsibility in the entire Company to satisfy customers' demand and expectation.

The existence, development and prestige of Vietnam Airlines are built on safety and quality of our service delivery.



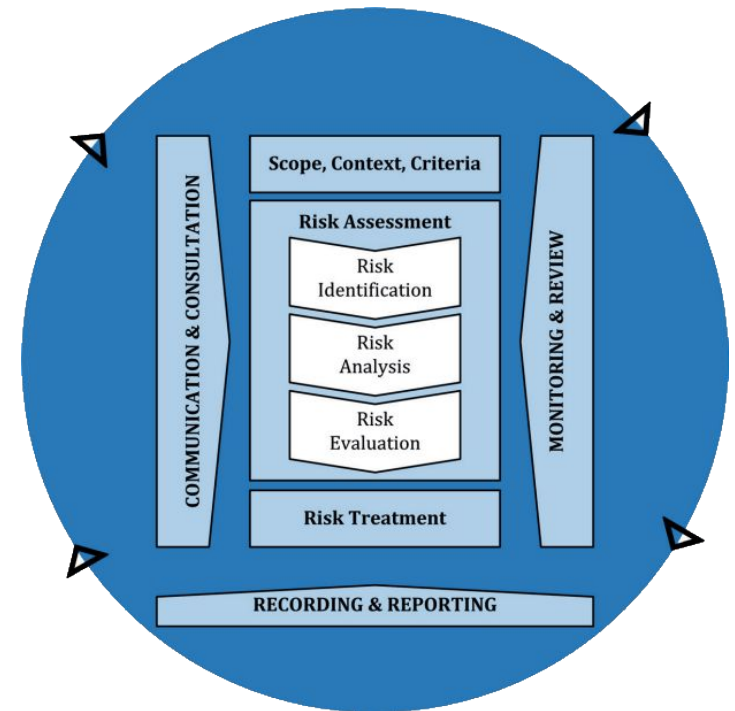
PRESIDENT & CEO  
VIETNAM AIRLINES

  
Le Hong Ha

# Applying the Process in your department

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- Theory
- Risk registers for airlines
- Applying the Process





# Risk Analysis approaches (31010)

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- Qualitative
  - Matrix
- Semi-quantitative
  - Numerically based Matrix
- Quantitative
  - QRA
  - Statistical

# Risk Analysis approaches

## Quantitative vs Qualitative

Which of these matrices is semi-quantitative and which qualitative?

	Likely	Pos	UnL
High	9	6	3
Med	6	4	2
Low	3	2	1

^ Linear scale 1, 2, 3

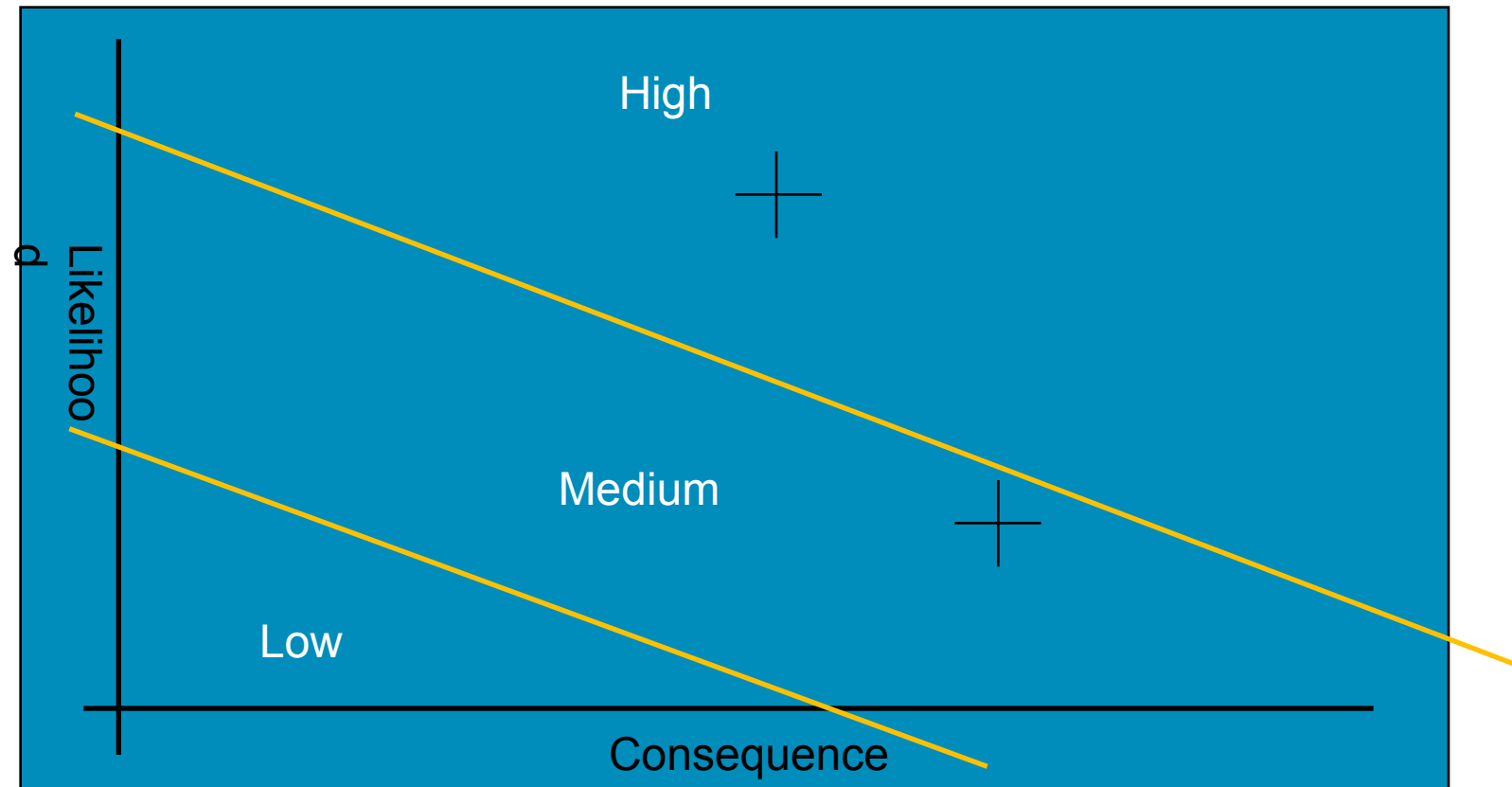
	Likely	Pos	UnL
High	10000	1000	100
Med	1000	100	10
Low	100	10	1

< Log scale 1, 10, 100

# Risk Analysis approaches

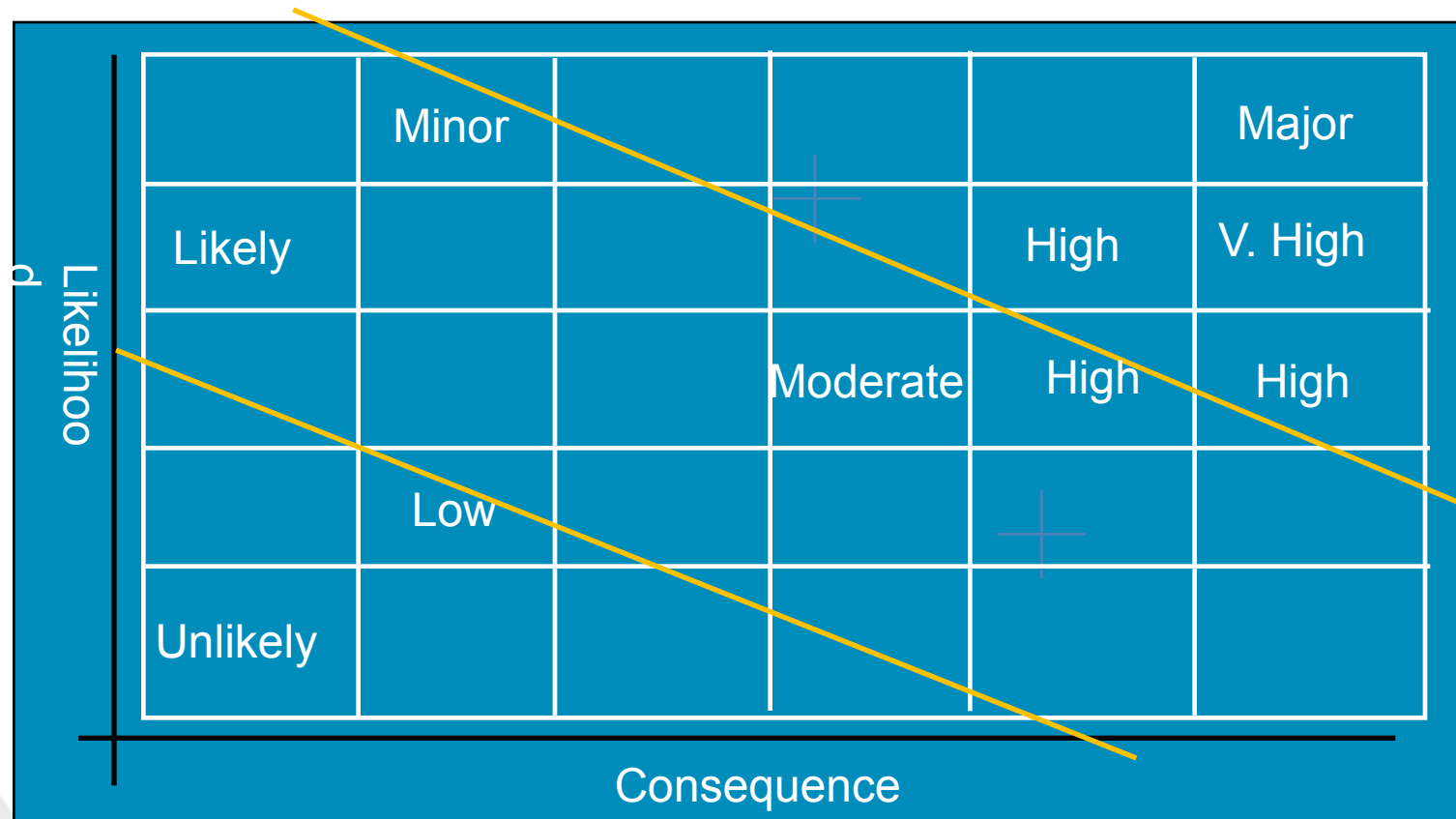
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$R = L \times C$  ..... but!

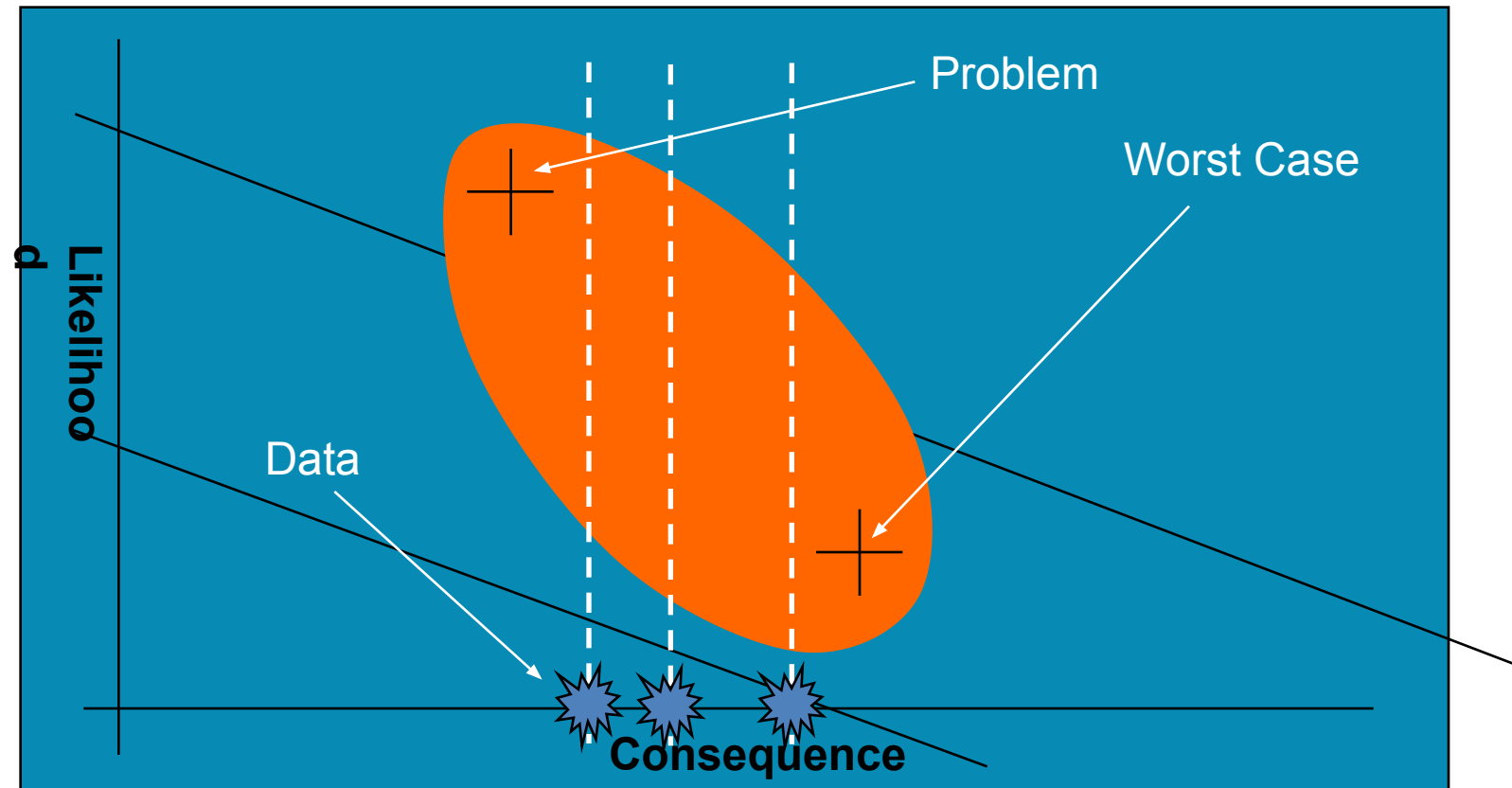


# Risk Analysis approaches

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# Different Consequences







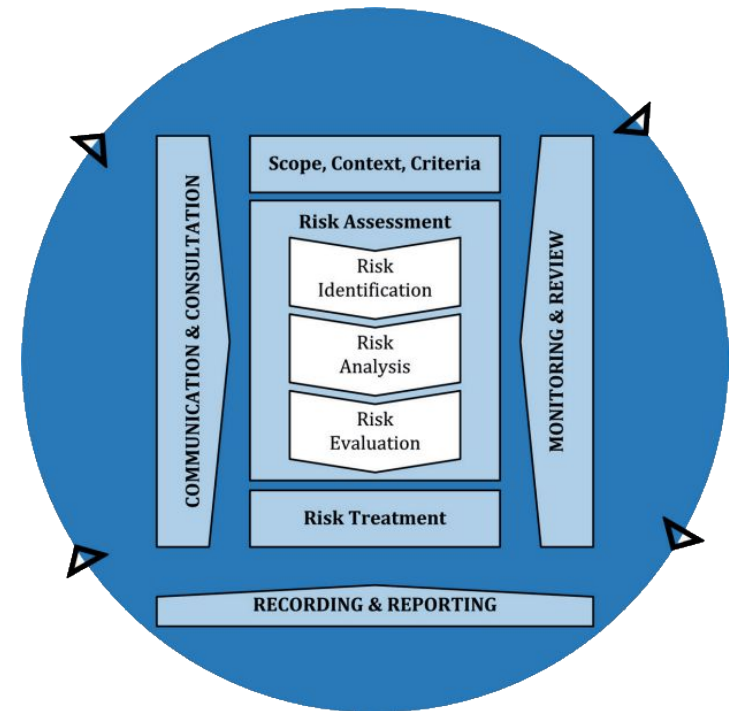
## Up next: Building Blocks

Image source: <https://vietnamnews.vn>

# Applying the Process in your department

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- Theory
- Risk Registers
- Applying the Process



# Consequence Metrics – Example

Rating	Generic Business Description	Immediate of Short-term Financial Outcome (NZD)	Safety Outcome
Catastrophic	Condition leading to rapid demise of the Group (collapse within weeks to months)	>\$500M	Hull loss or similar catastrophic incident where caused in full or in part by failure of the Group to manage safety
Severe	Severe condition that significantly degrades or weakens the Group	\$50M to \$500M	Multiple death (typically less than 5) caused by Group action or inaction
Major	Impact on the Group that is a concern at senior levels and that would typically require informing external stakeholders	\$5M to \$50M	Single fatality due to action or inaction
Serious	Impact on the Group that would typically be reported and managed within a Division, Subsidiary or Venture	\$500k to \$5M	Staff death or permanent sever injury or public injury
Important	Impact typically managed within a Department or Project	<\$500k	Injury

# Developing Consequence Metrics - Review

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Rating

?

?

?

?

?

Catastrophic

Severe

Major

Serious

Important



Any comments  
/ revisions

## Likelihood

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Infrequent

Certain

Seldom

Almost  
Certain

Occasional

Frequent

Probably

Improbable

Conceivable



# Example Scales

Likelihood Scale		
Term	Description (in terms of local and global aviation)	Per year
Very Frequent	Repeated event	10
Frequent	Do see it from time to time	1
Occasional	Does occur and may have personally seen it	0.1
Seldom	Known to occur from time to time	0.03
Infrequent	Heard of it (probably elsewhere)	0.01
Conceivable	Does or could occur under exceptional circumstances	0.001
Barely Conceivable	Can imagine such an event but not considered credible	0.0001

or

Probability Scale		
Term	Description	Per year
Certain	Expected to occur	Monthly
Almost certain	Expect to see it frequently	Annually
Probable	May occur in time (may see it more than once in a career)	1 in 10 years
Improbable	Could anticipate seeing it during a career	1 in 30 years
Highly Improbable	May occur in a lifetime	1 in 100 years
Conceivable	Rare event but don't anticipate seeing it	1 in 1,000 years
Barely Conceivable	Never occurred and not anticipated	1 in 10,000 years



# Combining into Matrix – Probability Weighted

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	Important	Serious	Major	Severe	Catastrophic
Almost certain					
Likely					
Possible					
Unlikely					
Extremely unlikely					

# Combining into Matrix – Consequence Weighted

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	Important	Serious	Major	Severe	Catastrophic
Almost certain					
Likely					
Possible					
Unlikely					
Extremely unlikely					

# Combining into Matrix - Balanced

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	Important	Serious	Major	Severe	Catastrophic
Almost certain					
Likely					
Possible					
Unlikely					
Extremely unlikely					

# Risk Delegation – who signs off the risks

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# Risk Delegation – who signs off the risks

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	Important	Serious	Major	Severe	Catastrophic
Almost certain					
Likely					
Possible					
Unlikely					
Extremely unlikely					

# Risk Delegation – Vietnam Airlines

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	Important	Serious	Major	Severe	Catastrophic
Almost certain					
Likely					
Possible					
Unlikely					
Extremely unlikely					



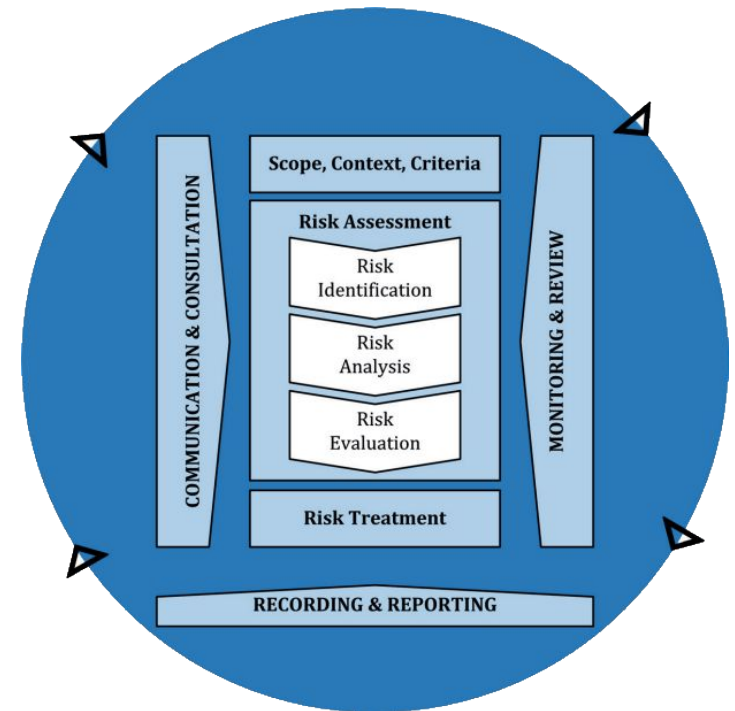
Up next: Applying the Process - Exercise

Image source: <https://vietnamnews.vn>

# Applying the Process in your department

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- Theory
- Risk registers
- Applying the Process





# Risk Register

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Risk	Current Risk			Mitigations	Residual Risk		
	Likelihood	Impact	Severity		Likelihood	Impact	Severity
1.							
2.							
3.							
4.							
5.							

# The Customer Journey

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The purpose of the airline is to:

- Fly customers from A to B.
- Be a sustainable and safe business

All the departments within the airline ultimately support that purpose.

We are going to look at how each department supports the customer through the journey and in doing so identify the objective and then define risk for each department.

# Objectives

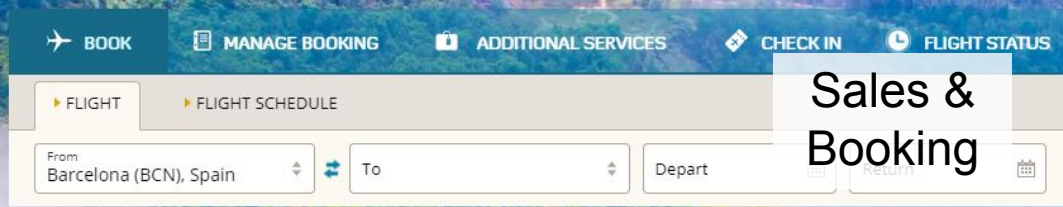
## Tự hào - Vươn cao

### 3.0 VỀ ĐỊNH HƯỚNG HOẠT ĐỘNG NĂM 2020

Với phương châm “**Tự hào - Vươn cao**”, năm 2020 Vietnam Airlines sẽ đặt ra các mục tiêu, nhiệm vụ trọng tâm như sau: đảm bảo an ninh an toàn của hoạt động sản xuất kinh doanh, nâng cao chất lượng dịch vụ, đảm bảo hiệu quả sản xuất kinh doanh, nâng suất lao động, nâng cao hình ảnh và vị thế của Hãng hàng không quốc gia.









# Building your own Risk Register – for real

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Need:

- Risk Register Template
- Likelihood and Consequence Metrics
- Risk Matrix

Key Steps:

- Describe your context
- Identify your objectives
- What could prevent you meeting your objectives?
- Build your risk register

# Building your own Risk Register – for real

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Risk

Current Risk

Mitigations

Residual Risk

Likelihood

Impact

Severity

Likelihood

Impact

Severity

1.

2.

3.

4.

5.

Identifying risks for your  
department

Around the room



# Up next: Assessing the Risks

# Assessing Risk - Refer to Slide Pack 2

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## Pandemic risks - Refer to Slide Pack 3

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# Building a Risk Register

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Risk	Current Risk			Mitigations	Residual Risk		
	Likelihood	Impact	Severity		Likelihood	Impact	Severity
1.							
2.							
3.							
4.							
5.							

Rate the current risks as identified earlier using the metrics developed Around the room

# Important factors when building a risk register

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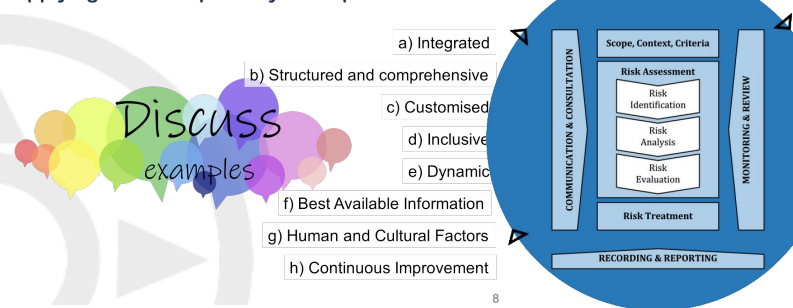
- Be objective
- Review / discuss the ratings
- Collaborate
- Challenge yourself / challenge the group



# Recap

- Applying the principles
- Theory
- Building blocks
- Applying the process
- Assessing the risks

## Applying the Principles in your department



		Important	Serious	Major	Severe	Risk	Current Risk			Mitigations	Residual Risk		
							Likelihood	Impact	Severity		Likelihood	Impact	Severity
	Almost certain					1.							
	Likely					2.							
	Possible					3.							
	Unlikely					4.							
	Extremely unlikely					5.							



# THANK YOU!

ĐẠT  
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4.0



# APPLIED SCALES AND RISK REGISTERS RISK IDENTIFICATION - APPLIED TO THE AIRLINE

**Giảng viên: Geraint Bermingham**

*Ứng dụng*

*Thang đo và Bảng đăng ký Rủi ro*

*Nhận dạng rủi ro - Áp dụng cho hãng hàng không*

ĐẠT  
**VHAT**  
CẤP CHỦ ĐỘNG  
**4.0**

# Scales and Risk Registers

To manage risk, we need

1. Measure likelihood
2. Measure consequence

Have an agreed set of scales for these



# Suggested Vietnam Airlines Scales

Consequence	Insignificant	Minor	Moderate	Major	Severe	Catastrophic
Category	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
<b>Operational safety and security</b>	Deviation addressed by Standard Operating Procedures (SOPs).	Deviation from normal conditions or situation requiring normal actions by crew, staff or management. Continued safety not in question.	Deviation from normal conditions or situation that could be unsafe requiring normal actions by crew, staff or management to ensure continued safety. Report expected.	Unsafe flight or aviation condition requiring normal actions by crew, staff or management to recover to a safe condition of situation. Detailed investigation expected.	Damage to aircraft or critical unsafe flight or aviation condition or situation requiring emergency action to prevent loss of aircraft.	Hull loss.
<b>Aviation compliance (operational / engineering)</b>	Non-material non-compliance - simple to address.	Reportable non-compliance - Some effort to address and sign off.	Significant and systematic non-compliance. Regulatory concern. Significant effort to address issues.	Grounding of a fleet, part of the airline or a subsidiary.	Loss of operating certificate for a short period, or that of a subsidiary.	Loss of operating certificate for an extended period (weeks / months).
<b>Person safety (public / staff)</b>	Unsafe condition requiring timely action to address.	Injury to a member of the public caused by action or inaction by VA.	Major injury to a member of the public caused by action or inaction by VA.	Fatality caused by action or inaction by VA.	A number of fatalities caused by action or inaction by VA.	Multiple fatality event
<b>Business compliance</b>	Non-material non-compliance - Routine internal action	Non-compliance - Some effort to address failings.	Significant and systematic non-compliance. Management concern and reporting.	Significant and systematic non-compliance. Executive VP concern and action required to address.	Significant and systematic non-compliance and management failings. Board concern and action required to address.	
<b>Financial</b>	Manageable at Manager level	Manageable at departmental level	Manageable at senior manager level	Requires direct management at President and Executive Vice President level to recover.	Requires direct oversight and management by the Board. Possible loss of a Subsidiary	Financial collapse of Vietnam Airlines Company Limited
<b>Brand / reputation (customers, alliance, codeshare partners, government)</b>	Some negative attention but with no measurable effect and not requiring direct action by the airline.	Short term negative media reporting requiring action to address.	Extended bad press resulting in short term loss of customer loyalty and need to recover this.	Extensive negative global media coverage leading to loss of stakeholder loyalty and efforts to recover reputation.	Prolonged loss of stakeholder and customer loyalty to to VA brand and extended efforts to recover reputation.	Prolonged loss of stakeholder or customer confidence to fly with VN / HVN with loss of sustainability of the brand.
<b>Customer service (passengers / cargo)</b>	Short term (hours) disruption to customer service. Typically one or a few flights.	Disruption to customer service in the order of a day with customers possibly cancelling travel with VA. Possibly several flights effected.	Disruption to customer service in the order of a day with customers possibly cancelling travel with VA. Possibly several flights effected.	Disruption to customer service in the order of days with customers not booking or cancelling travel with VA. Many services effected.	Very significant disruption or partial shut down to customer service in the order of many days with customers not booking or cancelling travel with VA. Most services effected.	Total or near total shut down customer service for an extended period (weeks / months).
<b>Environmental</b>	Localized impact on environment - simple clean up.	Non-compliance with regulations - simply fixed. Localised impact on environment - extended clean up.	Area impact on environment - extended clean up required. Regulatory agency involved.	Long term impact on environment - extended and difficult clean up required. Probable regulator agency action and fines.	Long term recovery or permanent damage to ecosystems. Probable prosecutions or fines.	

# Suggested Vietnam Airlines Scales

*Categories 1 and 2 of 8*

Consequence	Insignificant	Minor	Moderate	Major	Severe	Catastrophic
Category	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
<b>Operational safety and security</b>	Deviation addressed by Standard Operating Procedures (SOPs).	Deviation from normal conditions or situation requiring normal actions by crew, staff or management. Continued safety not in question.	Deviation from normal conditions or situation that could be unsafe requiring normal actions by crew, staff or management to ensure continued safety. Report expected.	Unsafe flight or aviation condition requiring normal actions by crew, staff or management to recover to a safe condition of situation. Detailed investigation expected.	Damage to aircraft or critical unsafe flight or aviation condition or situation requiring emergency action to prevent loss of aircraft.	Hull loss.
<b>Aviation compliance (operational / engineering)</b>	Non-material non-compliance - simple to address.	Reportable non-compliance - Some effort to address and sign off.	Significant and systematic non-compliance. Regulatory concern. Significant effort to address issues.	Grounding of a fleet, part of the airline or a subsidiary.	Loss of operating certificate for a short period, or that of a subsidiary.	Loss of operating certificate for an extended period (weeks / months).



# Suggested Vietnam Airlines Scales

*Categories 3 and 4 of 8*

Consequence	Insignificant	Minor	Moderate	Major	Severe	Catastrophic
Category	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
<b>Person safety (public / staff)</b>	Unsafe condition requiring timely action to address.	Injury to a member of the public caused by action or inaction by VA.	Major injury to a member of the public caused by action or inaction by VA.	Fatality caused by action or inaction by VA.	A number of fatalities caused by action or inaction by VA.	Multiple fatality event
<b>Business compliance</b>	Non-material non-compliance - Routine internal action	Non-compliance - Some effort to address failings.	Significant and systematic non-compliance . Management concern and reporting.	Significant and systematic non-compliance . Executive VP concern and action required to address.	Significant and systematic non-compliance and management failings. Board concern and action required to address.	

# Suggested Vietnam Airlines Scales

*Categories 5 and 6 of 8*

Consequence	Insignificant	Minor	Moderate	Major	Severe	Catastrophic
Category	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
<b>Financial</b>	Manageable at Manager level	Manageable at departmental level	Manageable at senior manager level	Requires direct management at President and Executive Vice President level to recover.	Requires direct oversight and management by the Board. Possible loss of a Subsidiary	Financial collapse of Vietnam Airlines Company Limited
<b>Brand / reputation (customers, alliance, codeshare partners, government)</b>	Some negative attention but with no measurable effect and not requiring direct action by the airline.	Short term negative media reporting requiring action to address.	Extended bad press resulting in short term loss of customer loyalty and need to recover this.	Extensive negative global media coverage leading to loss of stakeholder loyalty and efforts to recover reputation.	Prolonged loss of stakeholder and customer loyalty to to VA brand and extended efforts to recover reputation.	Prolonged loss of stakeholder or customer confidence to fly with VN / HVN with loss of sustainability of the brand.

# Suggested Vietnam Airlines Scales

*Categories 7 and 8 of 8*

Consequence	Insignificant	Minor	Moderate	Major	Severe	Catastrophic
Category	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
<b>Customer service (passengers / cargo)</b>	Short term (hours) disruption to customer service. Typically one or a few flights.	Disruption to customer service in the order of a day with customers possibly cancelling travel with VA. Possibly several flights effected.	Disruption to customer service in the order of a day with customers possibly cancelling travel with VA. Possibly several flights effected.	Disruption to customer service in the order of days with customers not booking or cancelling travel with VA. Many services effected.	Very significant disruption or partial shut down to customer service in the order of many days with customers not booking or cancelling travel with VA. Most services effected.	Total or near total shut down customer service for an extended period (weeks / months).
<b>Environmental</b>	Localized impact on environment - simple clean up.	Non-compliance with regulations - simply fixed. Localised impact on environment - extended clean up.	Area impact on environment - extended clean up required. Regulatory agency involved.	Long term impact on environment - extended and difficult clean up required. Probable regulator agency action and fines.	Long term recovery or permanent damage to ecosystems. Probable prosecutions or fines.	

# Suggested Vietnam Airlines Scales

Likelihood	Description	Expected	Probability / chance
A: Almost certain	Expected to occur	Daily / weekly	>95%
B. Likely	Will occur in most circumstances	Monthly	51- 95 %
C. Possible	May occur	Every year or two	11 - 50%
D. Unlikely	Could occur but not expected	Once a decade on average	2 - 10%
E. Very unlikely	May occur but exceptional	Very rarely occurs in the industry	0.1 - 1 %
F. Conceivable only	Possible but not expected to be seen	Has occurred in the industry	<0.1%

# Suggested Vietnam Airlines Matrix

	Consequence					
Likelihood	Level 1 Incidental	Level 2 Minor	Level 3 Moderate	Level 4 Major	Level 5 Severe	Level 6 Catastrophic
A: Almost certain	Low	Medium	High	Extreme	Extreme	Extreme
B. Likely	Low	Medium	High	High	Extreme	Extreme
C. Possible	Very low	Low	Medium	High	High	Extreme
D. Unlikely	Very low	Low	Low	Medium	High	High
E. Very unlikely	Very low	Very low	Low	Low	Medium	High
F. Conceivable only	Very low	Very low	Very low	Low	Medium	Medium



# Objectives



## TẦM NHÌN SỨ MỆNH

- Giữ vững vị thế Tập đoàn hàng không số 1 tại Việt Nam.
- Vietnam Airlines trở thành hãng hàng không hàng đầu châu Á được khách hàng tin yêu lựa chọn, là Hãng hàng không Quốc gia, lực lượng vận tải chủ lực tại Việt Nam.
- Cung cấp dịch vụ đa dạng, chất lượng đáp ứng tốt nhất nhu cầu mọi khách hàng.
- Tạo dựng môi trường làm việc thân thiện, chuyên nghiệp, nhiều cơ hội phát triển thành đạt cho người lao động
- Kinh doanh có hiệu quả, đảm bảo lợi ích bền vững cho cổ đông.

# Objectives



## GIÁ TRỊ CỐT LÕI

- An toàn là số 1, nền tảng cho mọi hoạt động.
- Khách hàng là trung tâm. Chúng tôi thấu hiểu sự phát triển của tổ chức đi cùng với sự tin yêu của khách hàng.
- Người lao động là tài sản quý giá nhất. Mọi chính sách đãi ngộ được xây dựng trên cơ sở công bằng và lợi ích xứng đáng để duy trì sự gắn kết và tạo sức mạnh đoàn kết trong tổ chức.
- Lấy sáng tạo là phương châm hoạt động, chúng tôi luôn đổi mới không ngừng trên mọi lĩnh vực với tư duy đột phá để đạt được thành công lớn.
- Tập đoàn hàng không có trách nhiệm. Chúng tôi ý thức rằng trách nhiệm xã hội là một phần trong hoạt động kinh doanh để đưa ra quyết định và hành động gắn liền với sự phát triển bền vững của xã hội.

# Objectives

## Tự hào - Vươn cao

### 3.0 VỀ ĐỊNH HƯỚNG HOẠT ĐỘNG NĂM 2020

Với phương châm “**Tự hào - Vươn cao**”, năm 2020 Vietnam Airlines sẽ đặt ra các mục tiêu, nhiệm vụ trọng tâm như sau: đảm bảo an ninh an toàn của hoạt động sản xuất kinh doanh, nâng cao chất lượng dịch vụ, đảm bảo hiệu quả sản xuất kinh doanh, nâng suất lao động, nâng cao hình ảnh và vị thế của Hãng hàng không quốc gia.



# Risk Register (simple)

Risk	Current Risk			Mitigations	Residual Risk		
	Likelihood	Impact	Severity		Likelihood	Impact	Severity
1.							
2.							
3.							
4.							
5.							

# Effect of mitigation

	Important	Serious	Major	Severe	Catastrophic
Almost certain		2		1	
Likely					
Possible					
Unlikely		2	1		
Extremely unlikely			3		3

The diagram illustrates the effect of mitigation on risk levels. It shows a 5x6 grid of risk levels, with rows representing likelihood and columns representing severity. The grid is color-coded: green for low risk, yellow for medium risk, orange for high risk, and red for very high risk. Arrows indicate a path of mitigation from high risk to low risk.

Arrows indicate the effect of mitigation:

- From **Almost certain** (Severe) to **Unlikely** (Major) (labeled 1)
- From **Unlikely** (Major) to **Extremely unlikely** (Major) (labeled 3)
- From **Extremely unlikely** (Catastrophic) to **Extremely unlikely** (Major) (labeled 3)



# Risk Register (more detailed)

Risk	Current Risk				Mitigations	Residual Risk			
	Likelihood	Impact	Probable case	Worst case		Likelihood	Impact	Probable case	Worst case
1.									
2.									
3.									
4.									
5.									

# Building your own Risk Register – for real

Need:

- Risk Register Template
- Likelihood and Consequence Metrics
- Risk Matrix

Key Steps:

- Describe your context
- Identify your objectives
- What could prevent you meeting your objectives?
- Build your risk register

# Building your own Risk Register – for real

Risk	Current Risk			Mitigations	Residual Risk		
	Likelihood	Impact	Severity		Likelihood	Impact	Severity
1.							
2.							
3.							
4.							
5.							

Identifying risks for your  
department

Around the room

# The Customer Journey

The purpose of the airline is to:

- Fly customers from A to B.
- Be a sustainable and safe business

All the departments within the airline ultimately support that purpose.

We are going to look at how each department supports the customer through the journey and in doing so identify the objective and then define risk for each department.



Up next: Assessing your Risks

Image source: <https://vietnamnews.vn>



# Building a Risk Register

Risk	Current Risk			Mitigations	Residual Risk		
	Likelihood	Impact	Severity		Likelihood	Impact	Severity
1.							
2.							
3.							
4.							
5.							

Rate the current risks  
as identified earlier  
using the metrics  
developed

Around the room

# Important factors when building a risk register

- Be objective
- Review / discuss the ratings
- Collaborate
- Challenge yourself / challenge the group
- If you don't identify a risk you cant manage it!



# APPLIED RISK PANDEMIC RECOVERY RISK RISK ASSESSMENT FOR REAL

**Giảng viên: Geraint Bermingham**

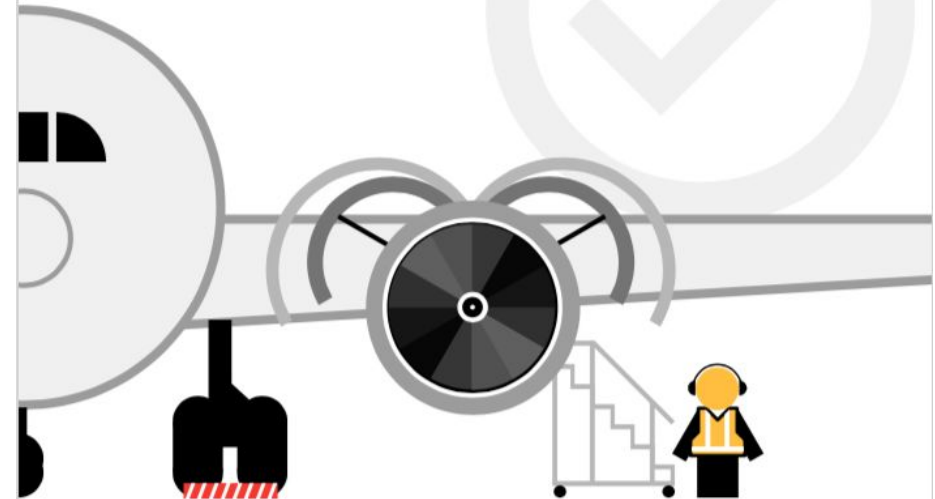
Rủi ro áp dụng  
Rủi ro trong phục hồi đại dịch  
Đánh giá rủi ro trong thực tế

# Pandemic Recovery Risk assessment process - Exercise



## Guidance for Managing Aircraft Airworthiness for Operations During and Post Pandemic

Edition 2 - 07 October 2020



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1 Guidance for Managing Aircraft Airworthiness for Operations During and Post Pandemic  
Not controlled when downloaded or printed

Edition 2 - 07 October 2020

## 5.2 Safety Risk Assessment(SRA)

The Safety Risk Assessment template provides a sample of the most common hazards, risks and mitigation actions. It is not intended to be an exhaustive list. Each operator must verify and adjust their risk assessment in accordance with company policies and operations.

- It is assumed that each mitigating action that an operator would pursue is implemented only by the competent personnel with appropriate training, qualification and authorization.

Event	Hazard	Consequence	Existing Controls	Risk			Mitigation Action	Ownership	New Controls	Risk		
		(worst case scenario)		Probability	Severity	Rating				Probability	Severity	Rating
Organization's Capability and Resources (e.g. certifications, personnel, GSE, consumables and parts, accessibility etc.)												
Expiration of validity of operator's AOC	The operator loses its regulatory established quality/roles/responsibilities towards management of the continuing airworthiness of its fleet of aircraft and, consequently, the recognition of the operator's actions for aircraft continuing airworthiness could be lost.	Invalidation of Operator's performed aircraft airworthiness related actions/work  Grounded fleet				Intolerable	Ensure the continued validity of the AOC by requesting to the CAA of the State of the Operator an extension of the AOC validity (based on exemption or alleviation mechanism) until emergence from pandemic restrictions.					Tolerable (with mitigation actions)
Expiration of validity of CAMO certification of an organization executing continuing airworthiness work for the operator's fleet.	The said CAMO loses the regulatory recognition to perform the continuing airworthiness services within the scope of its approval.	The Operator cannot receive continuing airworthiness services from said CAMO organization  Grounded fleet				Intolerable	The Operator subcontracts the respective continuing airworthiness work/services to another CAMO with valid certification or develops the required in-house capability					Tolerable (with mitigation actions)



# Safety Risk Scales (ICAO)

ICAO Safety Risk Scale (Consequence)		
Severity	Meaning	Value
Catastrophic	— Equipment destroyed — Multiple deaths	A
Hazardous	— A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely — Serious injury — Major equipment damage	B
Major	— A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of an increase in workload or as a result of conditions impairing their efficiency — Serious incident — Injury to persons	C
Minor	— Nuisance — Operating limitations — Use of emergency procedures — Minor incident	D
Negligible	— Few consequences	E

ICAO Safety Risk Scale (Probability)		
Likelihood	Meaning	Value
Frequent	Likely to occur many times (has occurred frequently)	5
Occasional	Likely to occur sometimes (has occurred infrequently)	4
Remote	Unlikely to occur, but possible (has occurred rarely)	3
Improbable	Very unlikely to occur (not known to have occurred)	2
Extremely improbable	Almost inconceivable that the event will occur	1

Ref: ICAO Doc 9859 AN/474 Safety Management Manual (Figures 2-11 and 2-12)

# Safety Risk Matrix (ICAO)

ICAO Safety Risk Matrix (showing default criteria)					
Risk Likelihood	Risk severity				
	A	B	C	D	E
5	Intolerable	Intolerable	Intolerable	Tolerable	Tolerable
4	Intolerable	Intolerable	Tolerable	Tolerable	Tolerable
3	Intolerable	Tolerable	Tolerable	Tolerable	Acceptable
2	Tolerable	Tolerable	Tolerable	Acceptable	Acceptable
1	Tolerable	Acceptable	Acceptable	Acceptable	Acceptable

Ref: ICAO Doc 9859 AN/474 Safety Management Manual (Figure 2-13)

# Safety Risk Acceptance Criteria (ICAO)

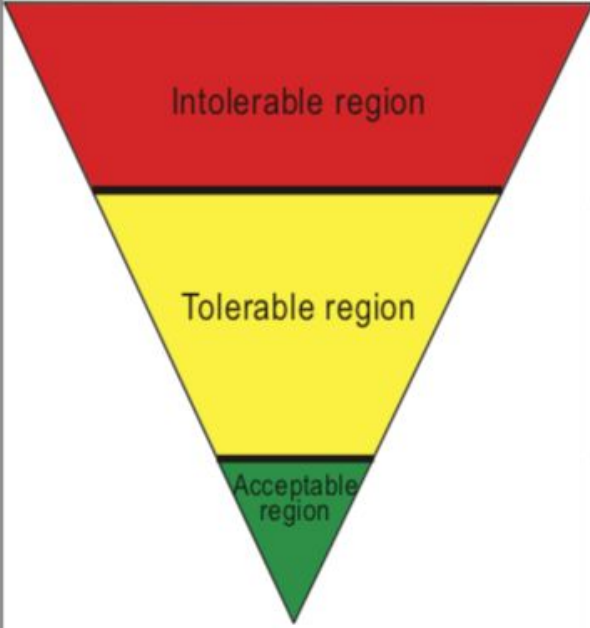
Tolerability description	Assessed risk index	Suggested criteria
 Intolerable region  Tolerable region  Acceptable region	<b>5A, 5B, 5C, 4A, 4B, 3A</b>	Unacceptable under the existing circumstances
	<b>5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C, 1A</b>	Acceptable based on risk mitigation. It may require management decision.
	<b>3E, 2D, 2E, 1B, 1C, 1D, 1E</b>	Acceptable

Figure 2-14. Safety risk tolerability matrix

No.	Event	Hazard
1	Expiration of validity of operator's AOC	The operator losses its regulatory established quality/roles/responsibilities towards management of the continuing airworthiness of its fleet of aircraft and, consequently, the recognition of the operator's actions for aircraft continuing airworthiness could be lost.
2	Expiration of validity of CAMO certification of an organization executing continuing airworthiness work for the operator's fleet.	The said CAMO loses the regulatory recognition to perform the continuing airworthiness services within the scope of its approval.
3	Expiration of validity of AMO certificate of an organization responsible for execution of maintenance work on operator's fleet	The said AMO loses the regulatory recognition to perform aircraft maintenance work within the scope of its approval.
4	Expiration of individual aircraft CofA or supporting ARC for an aircraft in the operator's fleet	The Operator would lose some of its lift capability by having the individual aircraft grounded and the asset would be immobilized at its current location
5	Parking aircraft in positions designated outside the typical areas for aircraft stationed or in-traffic surfaces (e.g. apron-taxiway-runway) of an airport.	Aircraft presence limited/missing signalization Congestion Limited access and support for required periodic execution of parked aircraft maintenance tasks (may require aircraft re-positioning)

*AOC (Air Operator's Certificate), AMO (Approved Maintenance Org), CofA (Certificate of Airworthiness)  
CAMP (Continuing Airworthiness Management Organisation)*

No.	Event	Hazard
6	Improper parking / stowage for the local environmental conditions	Environmental conditions (wind/storm, humidity, temperature, salinity, etc) leading to aircraft damage (tip over, corrosion etc.)
7	Prolonged parking without required protective covers and plugs installed	Limited availability of AMM specified aircraft standard sets of protective covers and plugs for prolonged parking.
8	Prolonged parking with inadequate preservation or maintenance	Necessary maintenance tasks required for parked aircraft tailored for each individual tail number in the proper time frame (threshold and periodicity) not tracked
9	Prolonged parking with inadequate record keeping	Missing or incomplete records documenting the aircraft maintenance work executed during the prolonged parking period
10	Operation of aircraft engines (idle or above) including T/R operation as required by maintenance tasks.	Aircraft parked in area generally not used for aircraft presence with engines in operation



No.	Event	Hazard
11	FOD ingested during operation of aircraft engines (idle or above) including T/R operation as required by maintenance tasks.	Aircraft parked in area generally not used for aircraft presence with engines in operation
12	Microbiological contamination of aircraft fuel system	Non-compliance with individual aircraft fuel contamination program: scheduled aircraft fuel samples collection time and periodicity, collection procedure (i.e. per each fuel tank), laboratory analysis and results' assessment.
13	Aircraft flying while not having the required state of airworthiness	Missing maintenance actions due before aircraft RTS
14	Configuration not fit for flight (e.g. lacking airworthiness validity of some parts and/or software uploads) due to changes during the parking period	Degraded aircraft capabilities and performance
15	Unskilled personnel performing RTS check-flights	Degraded personnel capabilities and performance due to minimal operations (e.g. maintenance check flights, pilot training flights)

*RTS (Return to Service), FOD (Foreign Object Damage), T/R (Thrust reverser)*

No.	Event	Hazard
16	Maintenance task extension	Operator incomplete tracking of "out of phase" maintenance tasks generated as a result of tasks' due threshold/periodicity extension use
17	Missed maintenance task(s)	Operator incomplete tracking of maintenance work-package including the planning and execution of tasks which are not part of the "regular" scheduled maintenance work packages based on the OMP, for each tail number
18	Avionics generated spurious messages (i.e. maintenance messages and Flight Deck Effects) at aircraft RTS	Aircraft avionics systems extended “power-off” state and “out of sequence” operation of aircraft systems could induce “nuisance messages” on return to normal system operations at aircraft RTS
19	Unreliable speed and altitude indications	Air data pitot/static probes, ports and lines contaminated by dirt buildup and insect nesting during extended parking of the aircraft
20	Microbiological contamination of aircraft fuel system	Corrosion of metallic structures, fuel quantity indication problems, and blocking of the scavenger systems and fuel filters during flight

*RTS (Return to Service, EFB (Electronic Flight Bag)*