Pegasus Airlines – Risk Based Approach to Management System

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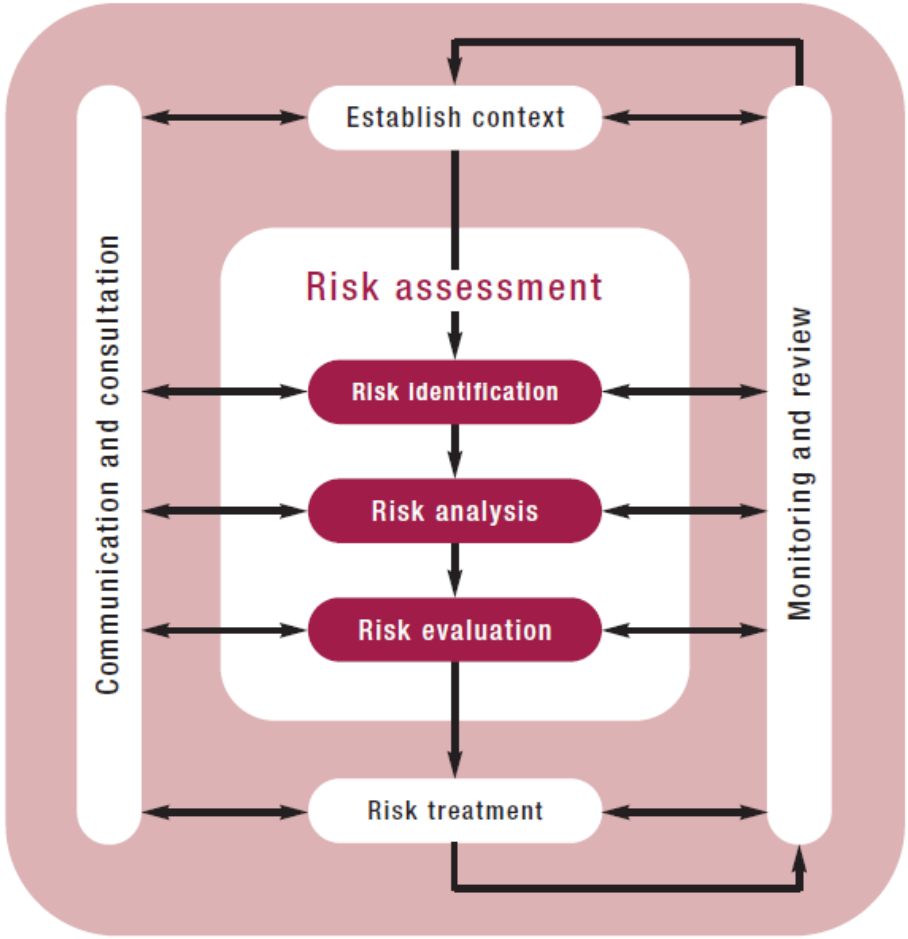
2014-05-16

Risk Management System

Safety Management System actually uses the elements of ISO 31000 Risk Management. Our philosophy is to coordinate all risks of the company via an internationally recognized standard.

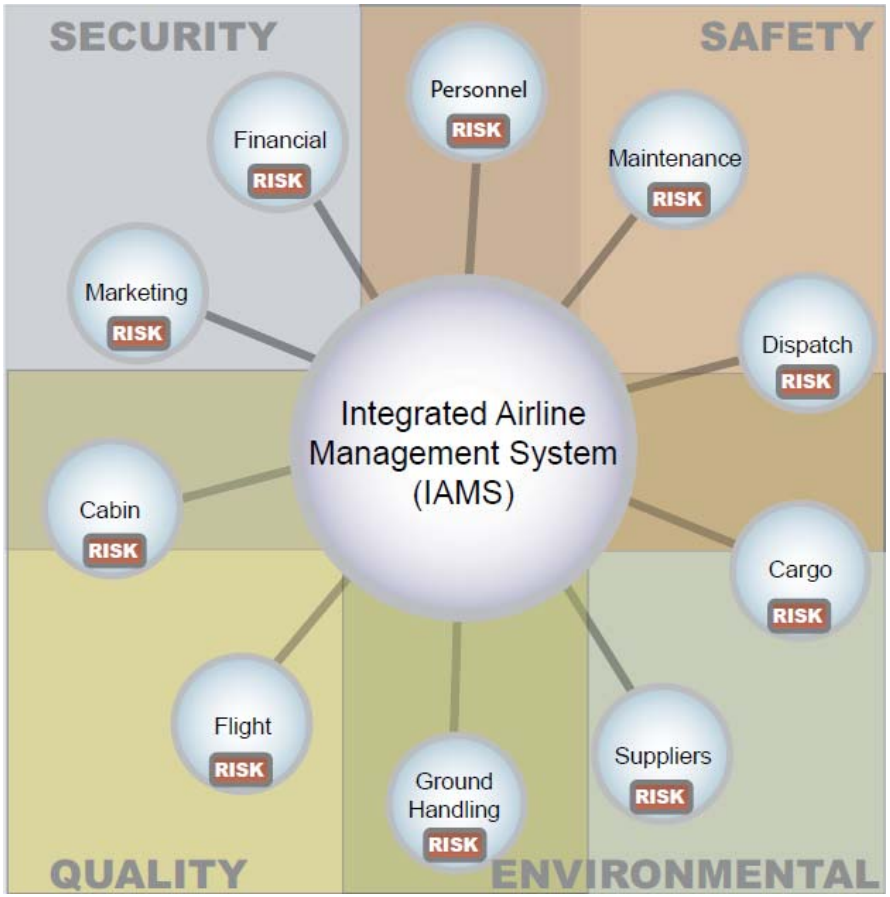
Risk Management Process According to ISO 31000



Establishing the Context

To achieve an integrated risk management system, first we had to establish context. We have built a department that monitors all operational areas to see if risks are managed properly.

Integrated Airline Management System



Some items to consider:

- Risk Management itself should be done by departments themselves; the role of the centralized risk management function should only be overseeing the process.
- Definition of risk criteria and risk assessment methodologies are key to systematic risk management. Departments should be trained according to these decisions and everyone should speak the same language.
- Establishing the context is a continuous, evolving process.

Integration of Management Systems

As stated in ICAO Doc 9859 Safety Management Manual Section 2.9, the organization should integrate organizational management systems designed to achieve specific organizational goals.

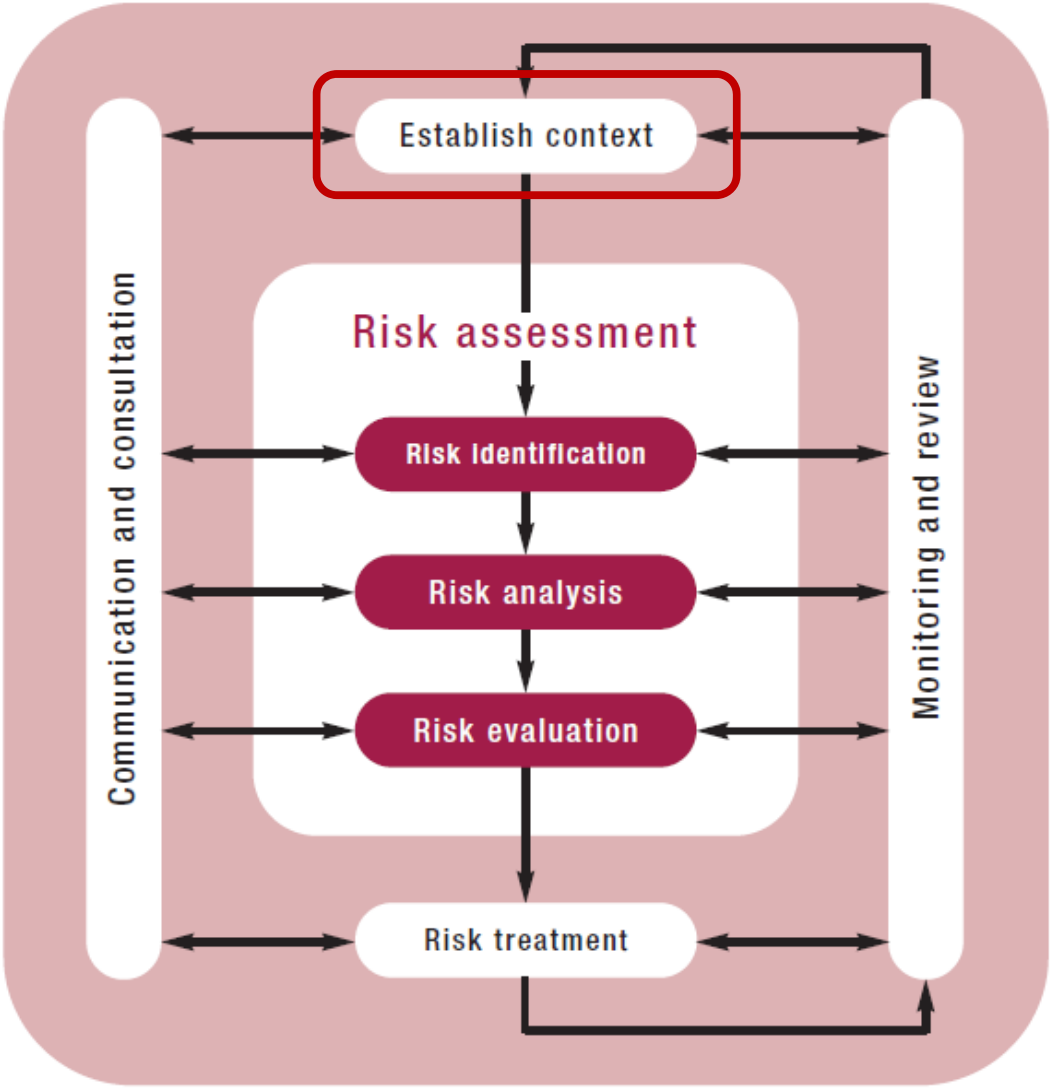
Benefits

- reduction of duplication and therefore of costs;
- reduction of overall organizational risks and an increase in profitability;
- balance of potentially conflicting objectives; and
- elimination of potentially conflicting responsibilities and relationships.

ICAO Doc 9859 Table 5-1. Summary comparison of QMS and SMS

QMS	SMS
Quality	Safety
Quality assurance	Safety assurance
Quality control	Hazard identification and risk control
Quality culture	Safety culture
Compliance with requirements	Acceptable level of safety performance
Prescriptive	Performance-based
Standards and specifications	Organizational and human factors
Reactive > Proactive	Proactive > Predictive

Hazard Identification



Hazard Identification

We always try to have technological hazard identification methods:

1. Reporting (AQD: Aviation Quality Database)
2. Audits and LOSA
3. Teledyne End to End Solutions and Flight Data Monitoring System
4. Safety Surveys
5. Trend Analysis
6. Management of Change Studies
7. New Destination Risk Assessment Studies
8. External Events and Studies

1 Reporting and AQD

AQD

Environmental | Health and Safety | Human Factors | Security | Safety | Audits | Risk Assessments | Operations

A single view of your data

2 Audits

Various audits are being coordinated through AQD Audit Module.

- Safety and Quality Audits
- DGCA Audits
- IOSA
- Integrated Management System Audits
- Audits from the Ministry of Labour regarding Occupational Health and Safety Risks
- SAFA/SANA Audits

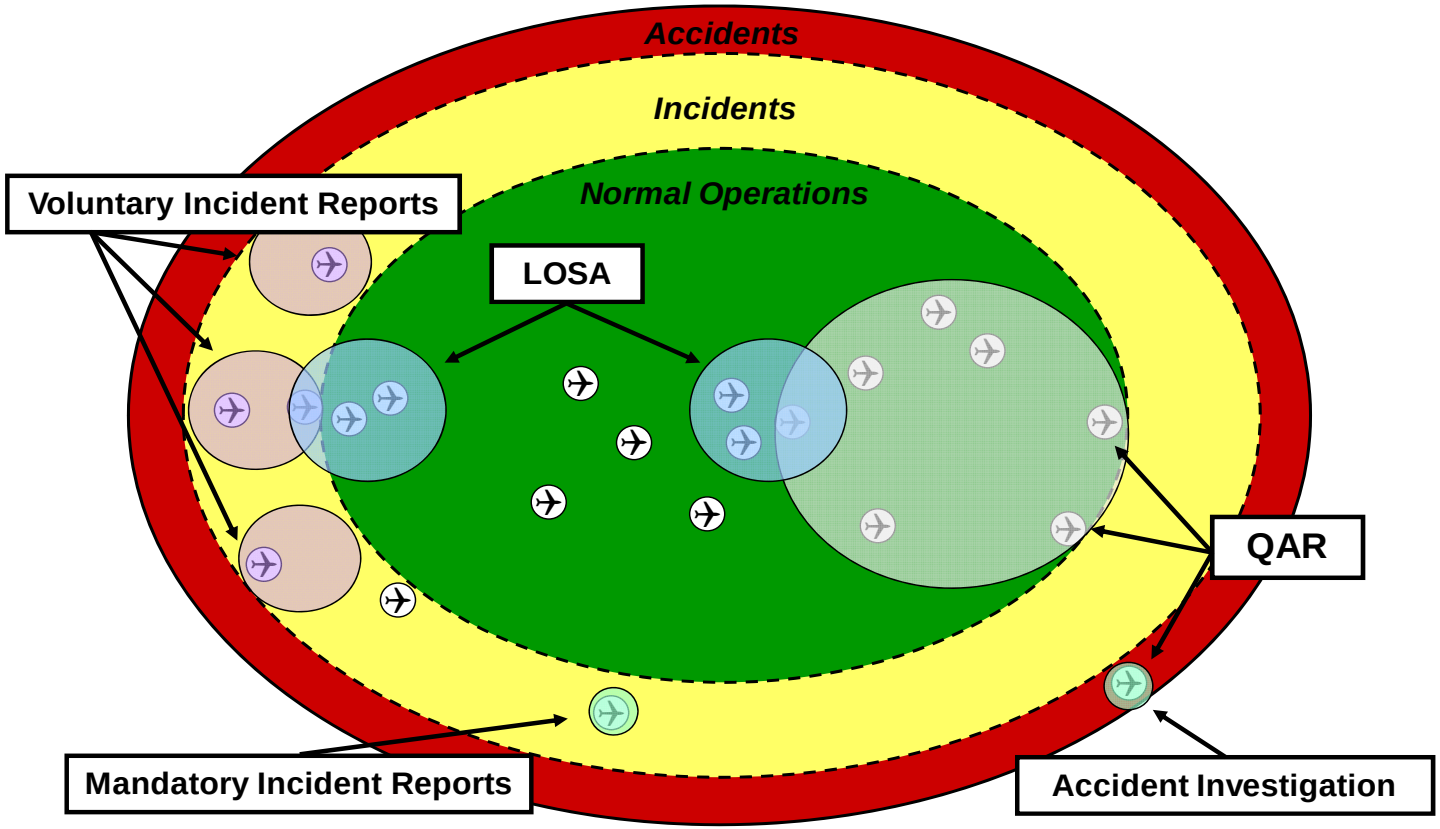
AUDIT CHECKLIST
Technical Department

AUDIT CODE		AUDITEE	
AUDIT DATE		AUDIT LOCATION	

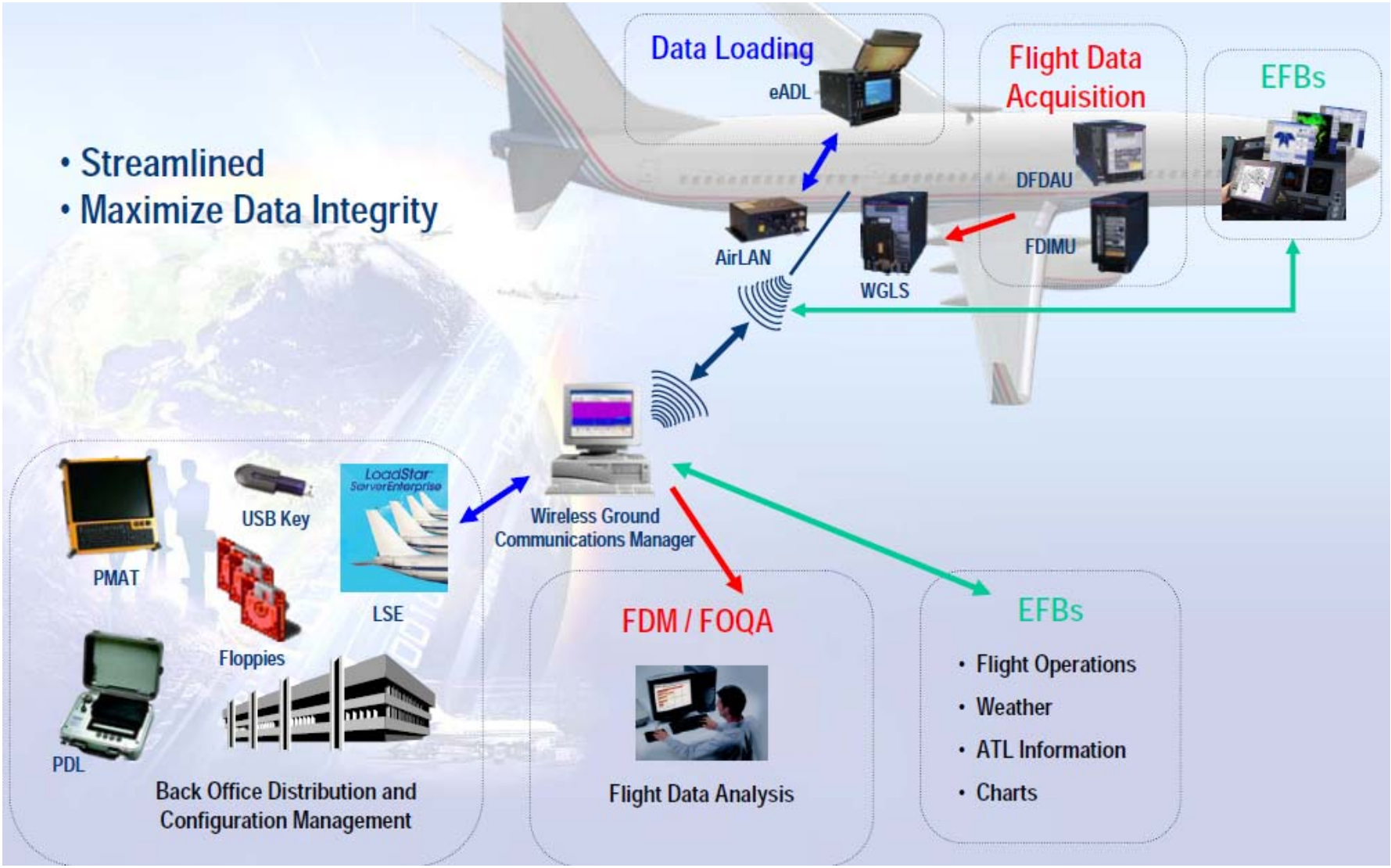
ITEM	SUBJECT	REF.	SAT.	NC LEVEL	NCR NO	REMARKS
A	**GENERAL**					
1	The Operator *should* have processes in maintenance operations that include a combination of reactive and proactive methods for safety data collection and analysis to identify hazards that present existing or potential risks to aircraft operations.					
2	The Operator *should* have a safety risk assessment and mitigation program in maintenance operations that specifies processes to ensure: i) Hazards are analyzed to determine the existing and potential safety risk(s); ii) Safety risks are assessed to determine the requirement for risk control action(s); iii) When required, risk mitigation actions are developed and implemented.					
3	The Operator shall have an operational reporting system implemented in maintenance operations that: i) Encourages and facilitates feedback from personnel to report safety hazards, expose safety deficiencies and raise safety concerns; ii) Includes analysis and management action as necessary to address safety issues identified through the reporting system.					
4	The Operator *should* have a confidential safety reporting system implemented within maintenance operations in a manner that encourages and facilitates the reporting of events, hazards and/or concerns resulting from or associated with human performance in maintenance operations.					
5	The Operator *should* have processes for setting performance measures as a means to verify the safety performance of maintenance operations and to validate the effectiveness of					

2 LOSA (Line Operations Safety Audits)

Via LOSA we are trying to identify inured errors in the operation. We try to conduct LOSA at least once in two years.



3 Teledyne End to End Solutions and Flight Data Monitoring System



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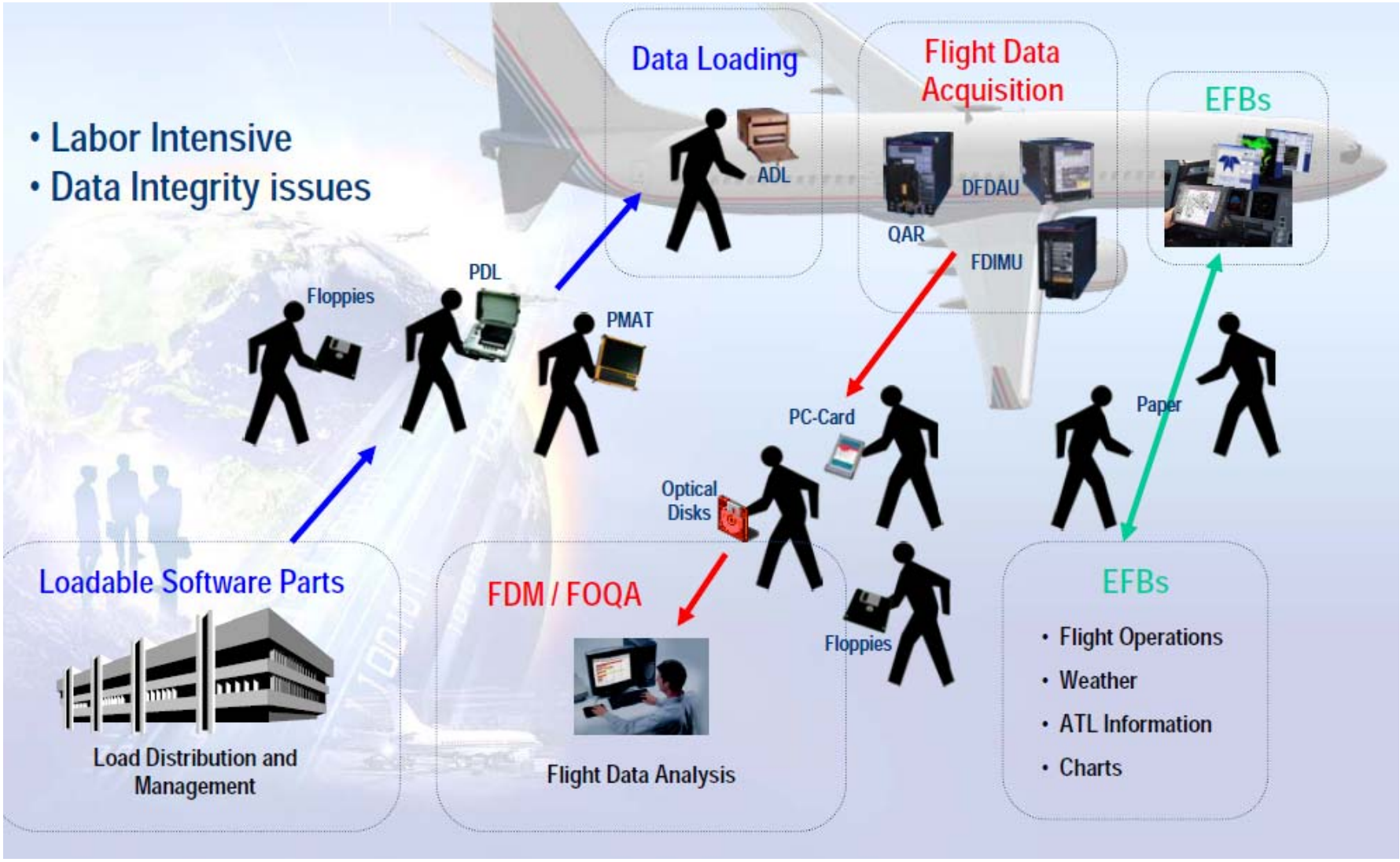
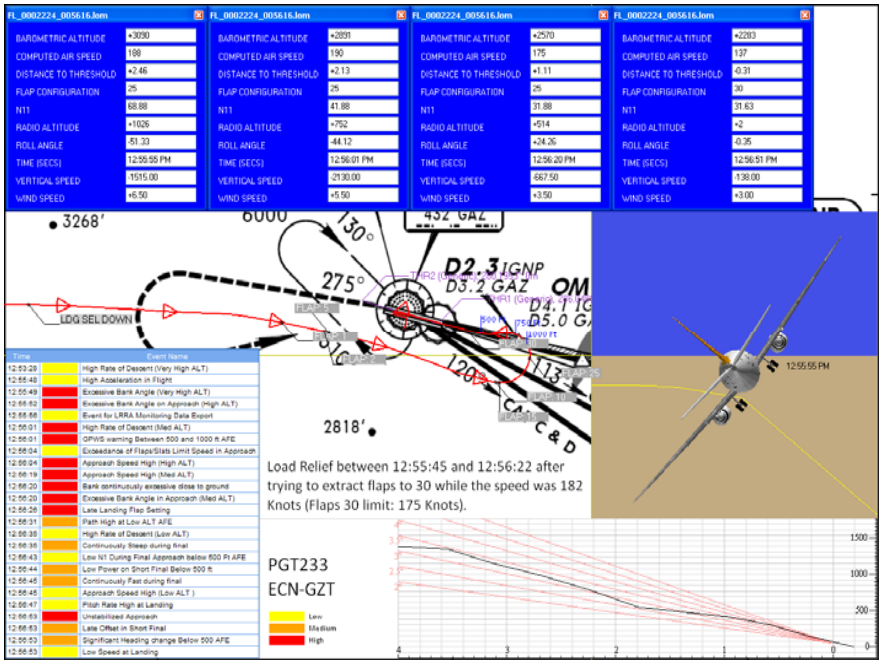


3 Teledyne End to End Solutions and Flight Data Monitoring System

We use AirFASE and Vision software to monitor flight safety trend of the airline.

AirFASE Event Investigations



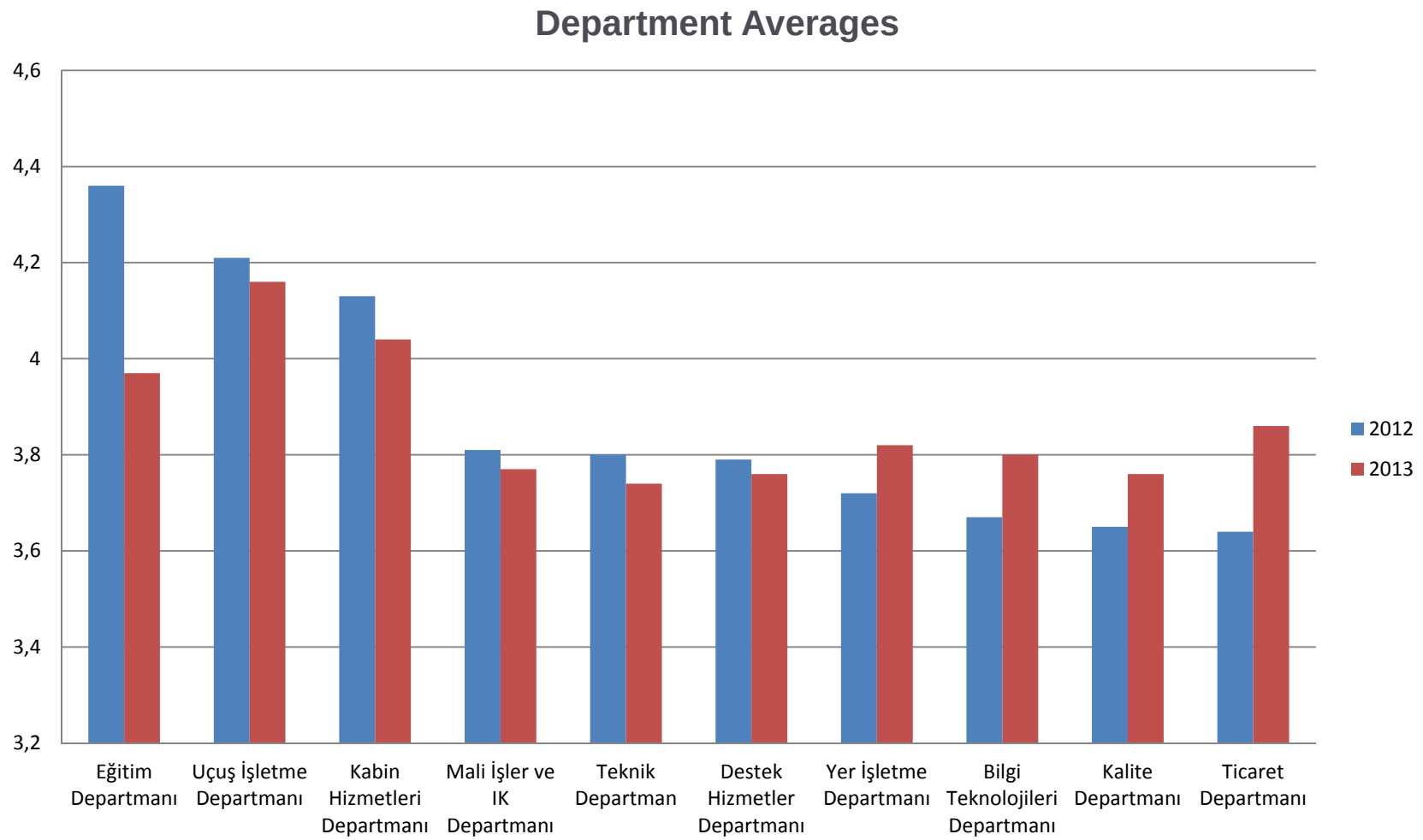
Vision Event Investigations

Engineering AirFASE

- Engineering AirFASE for **predictive** trend monitoring of technical performance.

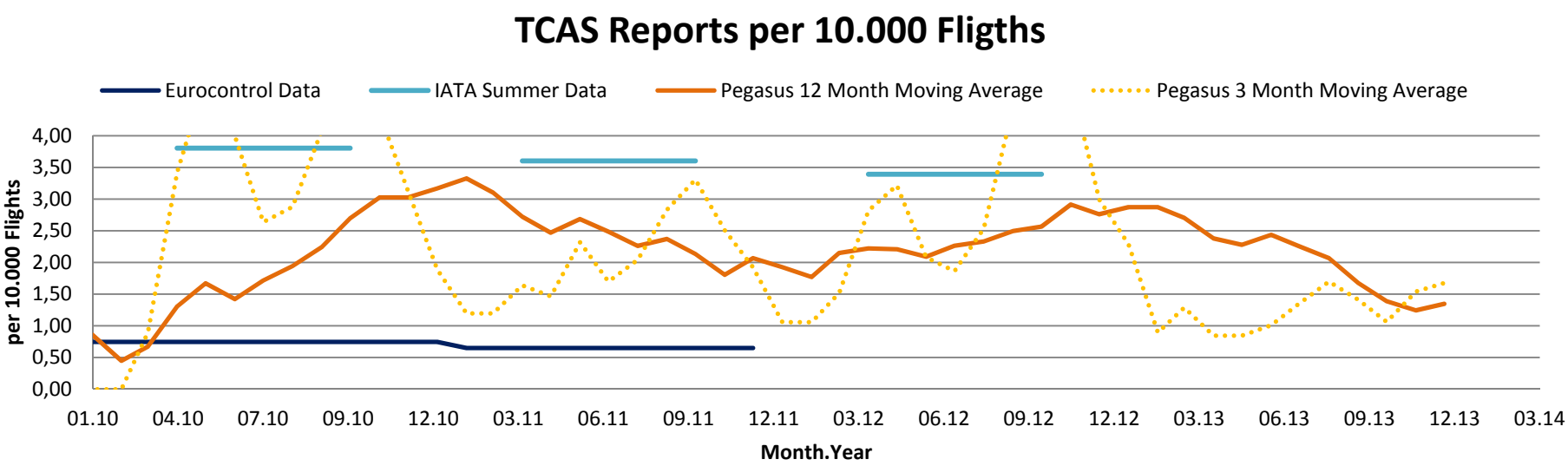
4 Safety Surveys

Through our intranet system, we conduct online safety surveys every year and compare the results with the previous year.



5 Trend Monitoring

To monitor company safety trend, we are preparing graphics of occurrence numbers using moving average method. We always try to compare ourselves with global statistics.



We join various reporting initiatives to be aware of global trends.

- IATA FDX (Flight Data eXchange)
- IATA Steades
- Eurocontrol EVAIR

6 Management of Change Studies

We are conducting detailed management of change studies before serious changes affecting the company. IATA corporate risk methodology is used here in conjunction with bowtie methodology.

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7 New Destination Risk Assessment Studies

Before new destinations, a group of specialists from various departments visit the airport for hazard identification and risk analysis.

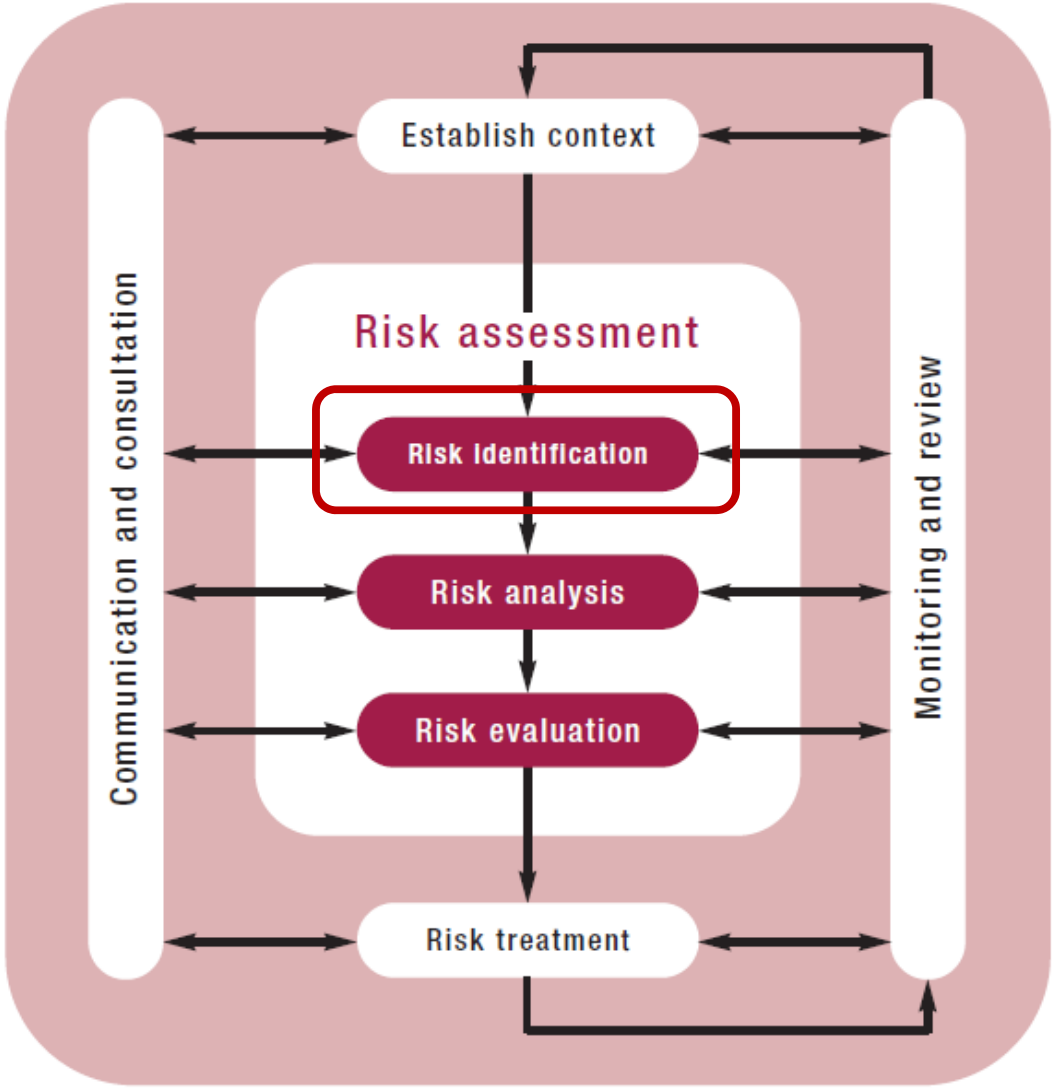
flypgs.com PEGASUS	SAFETY MANAGEMENT DEPARTMENT	No	PGT CHKL SM-01
		Page	1 of 33
	NEW DESTINATION CHECKLIST	Revision	1
		Date	01.03.2014

ITEM	ISSUE	OPEN	CLOSED	EXPLANATION AND NOTES
GENERAL				
1.	Airport Name			
2.	ICAO Designation			
3.	IATA Designation			
4.	Country			
5.	City			
6.	Operation Start Date			
7.	Checklist Completion Deadline			
AIRPORT AUTHORITY				
8.	Name of the Authority	✔		
9.	Address	✔		
10	Contact Name and Title	✔		

8 External Events and Studies

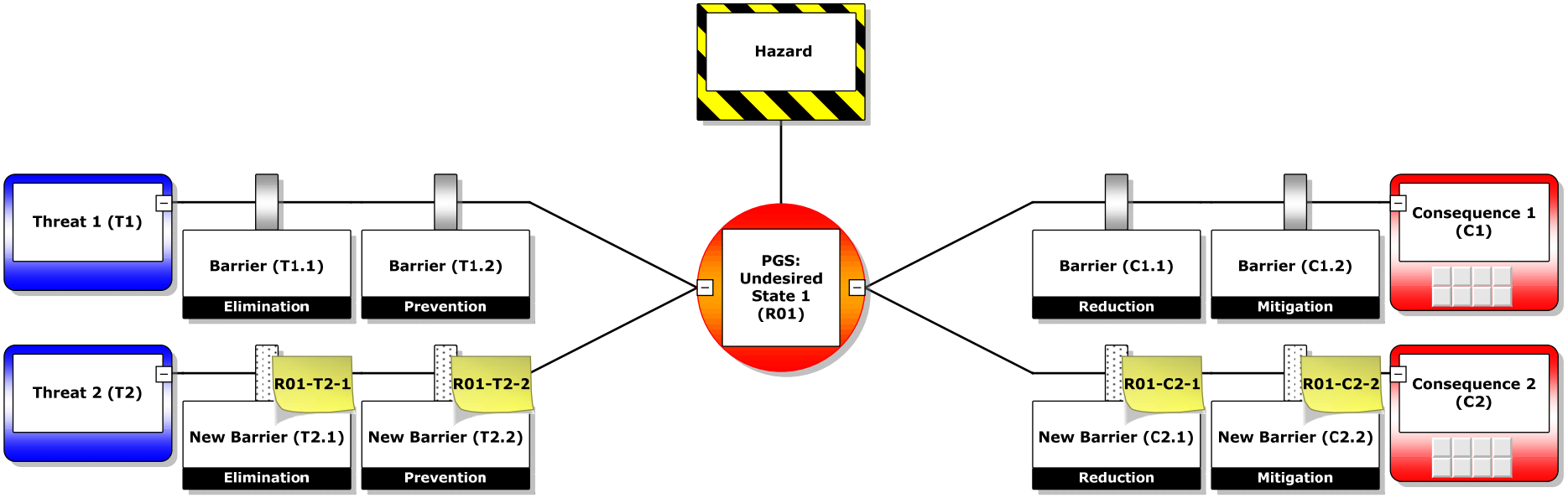
We also use external events, studies and emerging issues for hazard identification.

Risk Analysis



Risk Analysis - BowTie Methodology

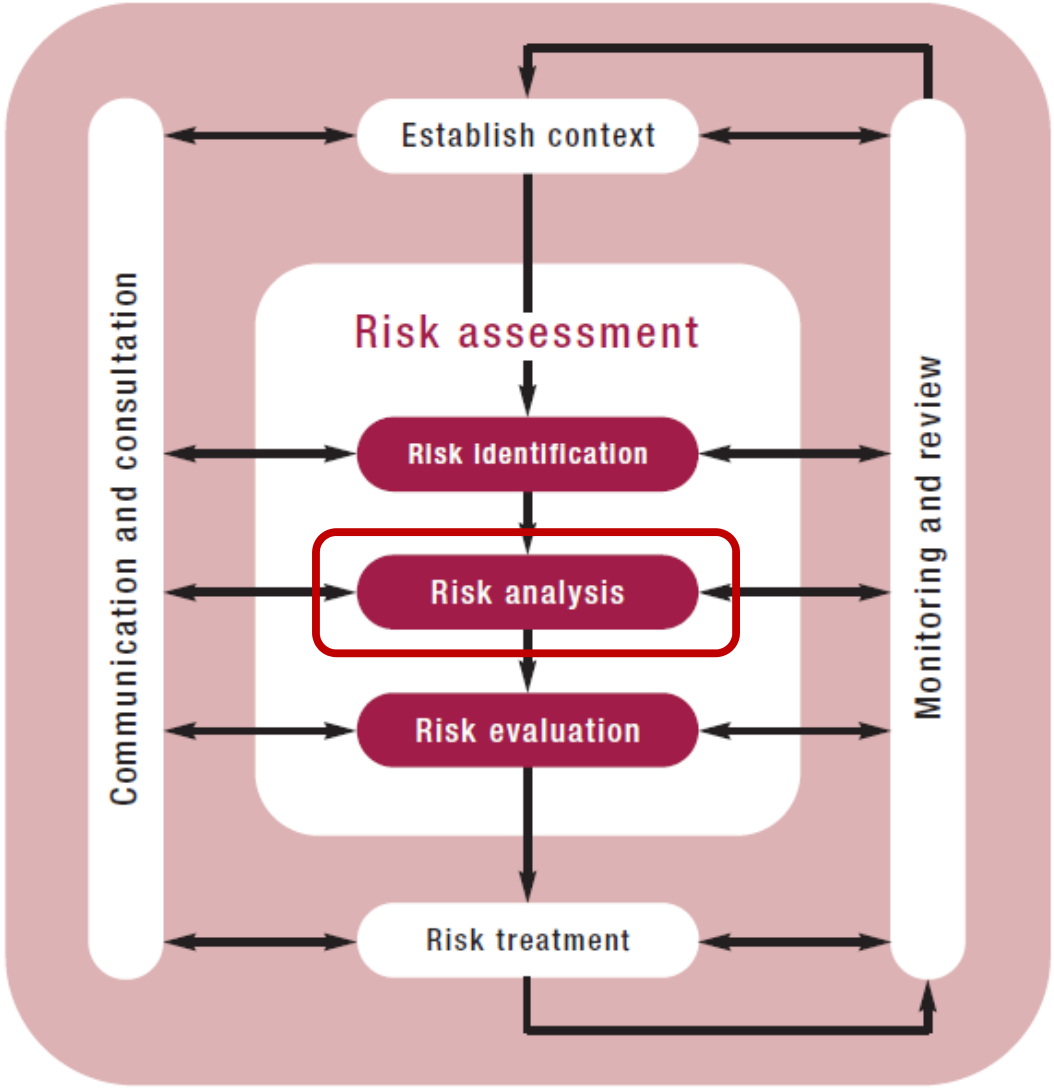
Risk analysis is done using bowtie methodology.



We always try to put at least one technological barrier to minimise the effects of human factors.

Bowtie graphs are being built using BowTieXP software which makes it very easy to communicate risks to the various levels of the company.

Risk Evaluation



Risk Evaluation

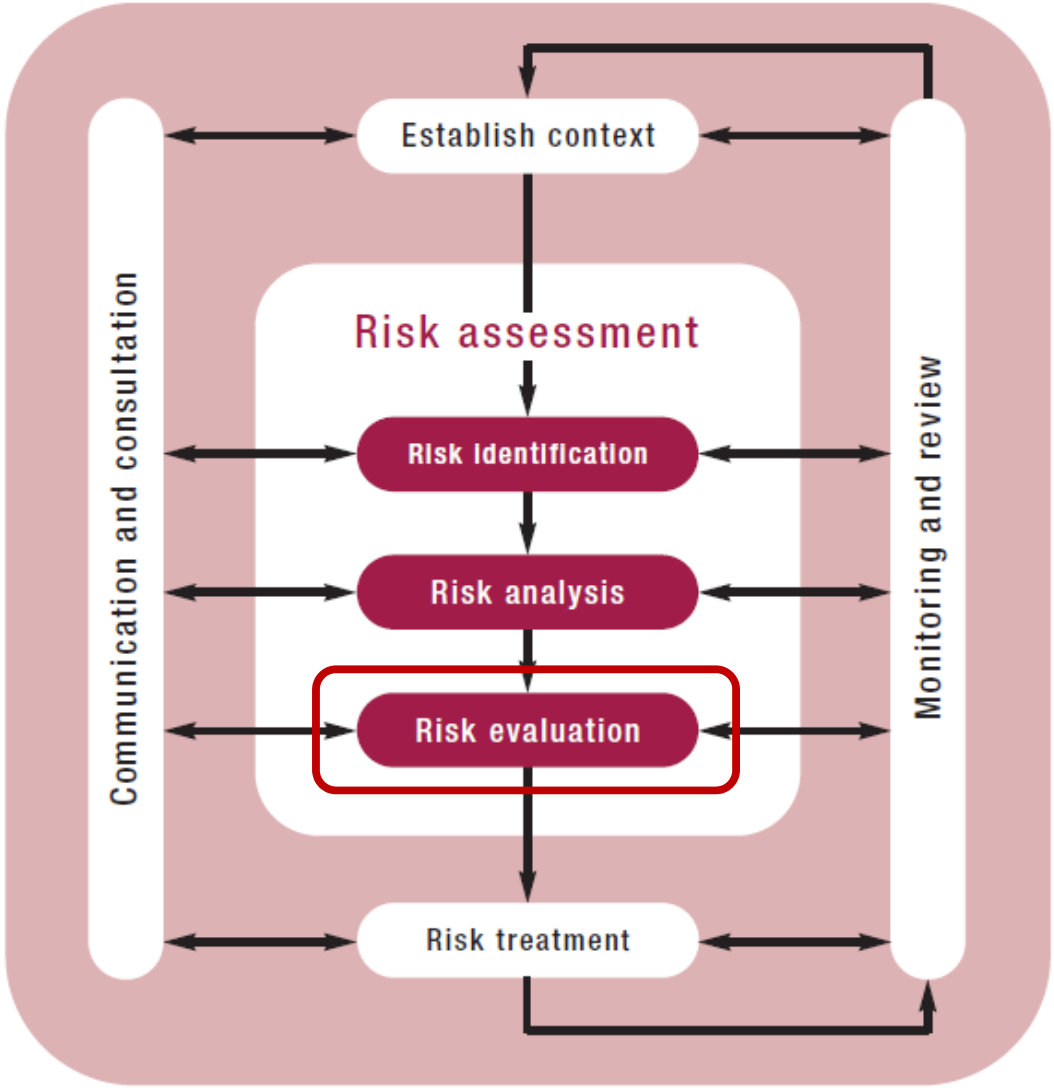
After risks are analysed, we evaluate them using the risk matrix.

Pegasus Airlines Risk Matrix

Basic probability assessment	Likely to occur many times	Likely to occur sometimes	Unlikely but possible, may occur once in a few years	Extremely unlikely but may happen in aviation	Nearly impossible
Objective probability assessment (per flight cycles)	1 to 10^{-3}	10^{-3} to 10^{-5}	10^{-5} to 10^{-7}	10^{-7} to 10^{-9}	$< 10^{-9}$

People	Financial	Reputation	Environment	Risk Severity		Risk Probability: Frequent (5)	Probable (4)	Rare (3)	Extremely Rare (2)	Extremely Improbable (1)
Multiple fatality	> 10.000.000 Euro	International exposure	Irreversible damage to environment	Catastrophic	A					
Single fatality	200.000 - 10.000.000 Euro	National exposure	High but reversible damage	Major	B					
Serious injuries requiring hospitalization	20.000 - 200.000 Euro	Industry or regulator exposure only	Significant but reversible damage	Moderate	C					
Minor injuries requiring medical attention	100 - 20.000 Euro	Minor exposure, can be forgotten quickly	Minor and reversable damage	Minor	D					
No Injury	No damage, < 1000 Euro	No exposure	No damage to environment	Negligible	E					

Risk Treatment



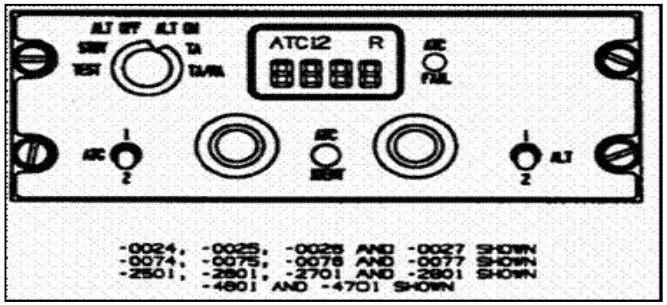
Risk Treatment

If a risk is in an unacceptable area, we minimise it by strengthening a barrier or adding a new one.

Honeywell Launch Customer

RDR-4000 Weather Radar Software Upgrade on B737NG Aircraft

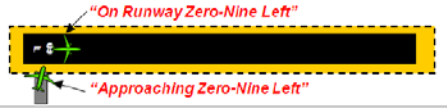
TCAS ATC PANEL

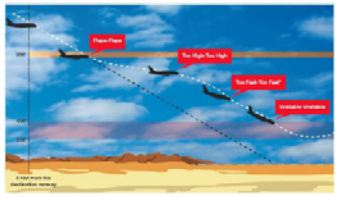


SmartRunway™ and SmartLanding™

SmartRunway - Focused on runway/taxiway risks (runway incursions)
SmartLanding - Focused on approach and landing risks (runway excursions)

SmartRunway
Includes RAAS



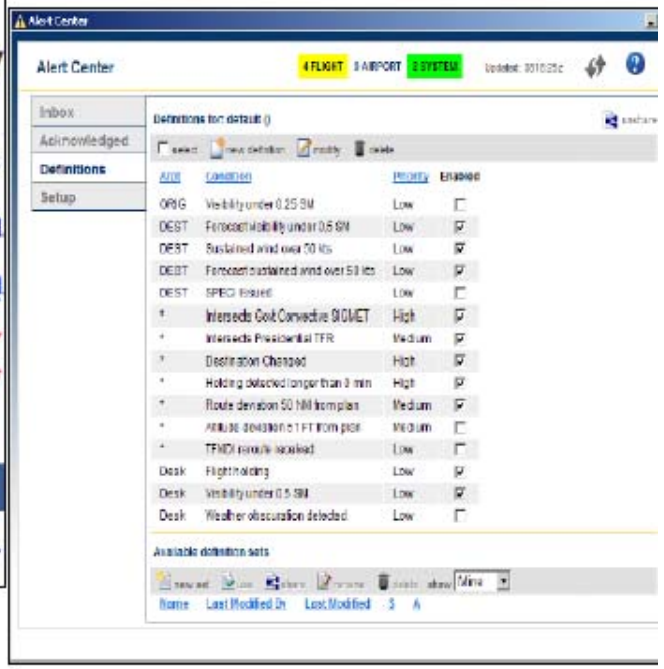


SmartLanding
Includes Stabilized Approach Alerting

Risk Treatment

Priority is always technological improvements that can minimise human errors.

Adverse Weather Tracking and Alerting



Risk Treatment

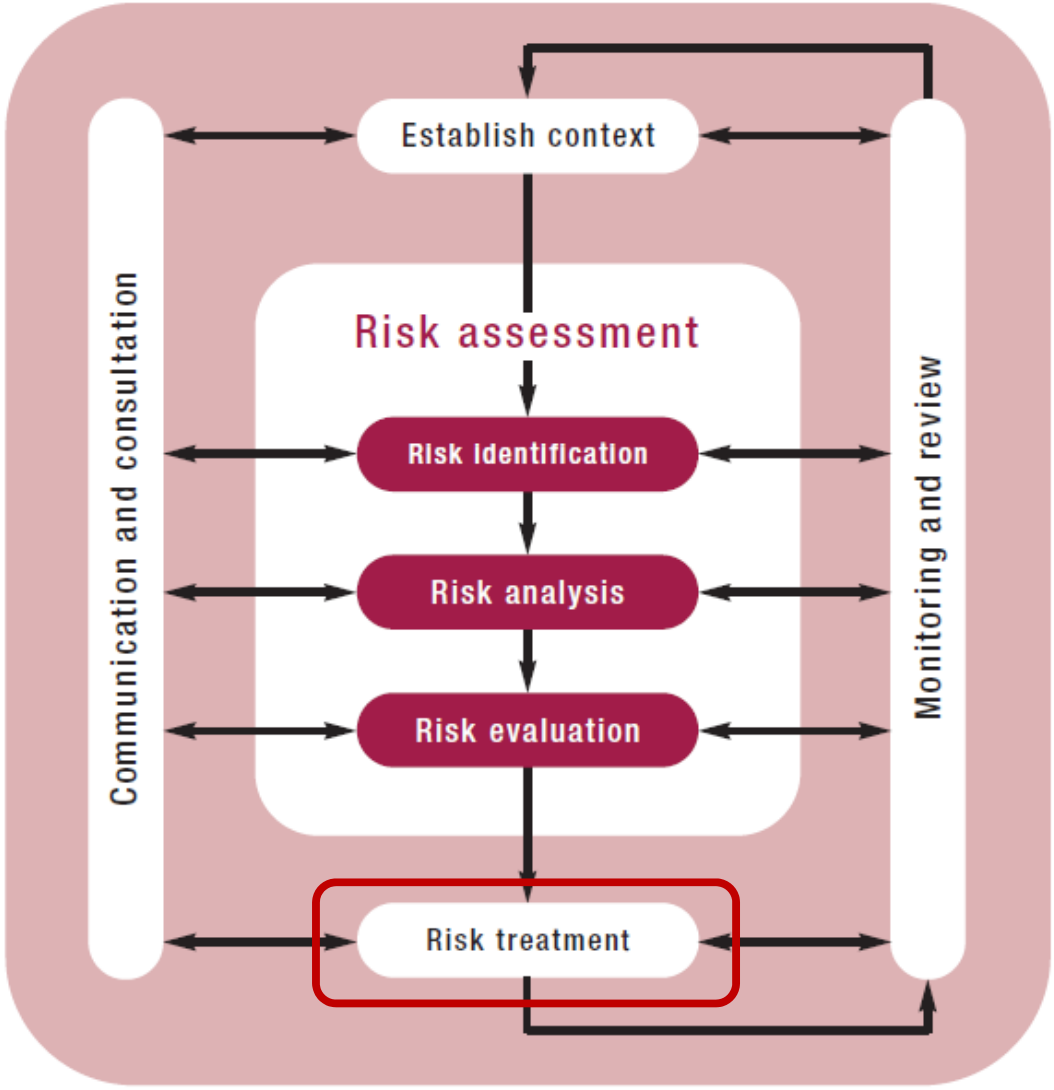
A good emergency response system is also a necessary barrier. Apart from documentation, trainings and exercises we enhance it with technological improvements.

KENYON
INTERNATIONAL EMERGENCY SERVICES

FACT24
ALERTING AND
CRISIS MANAGEMENT

KENYON
RESPONSE™
BE READY.

Communication and Consultation

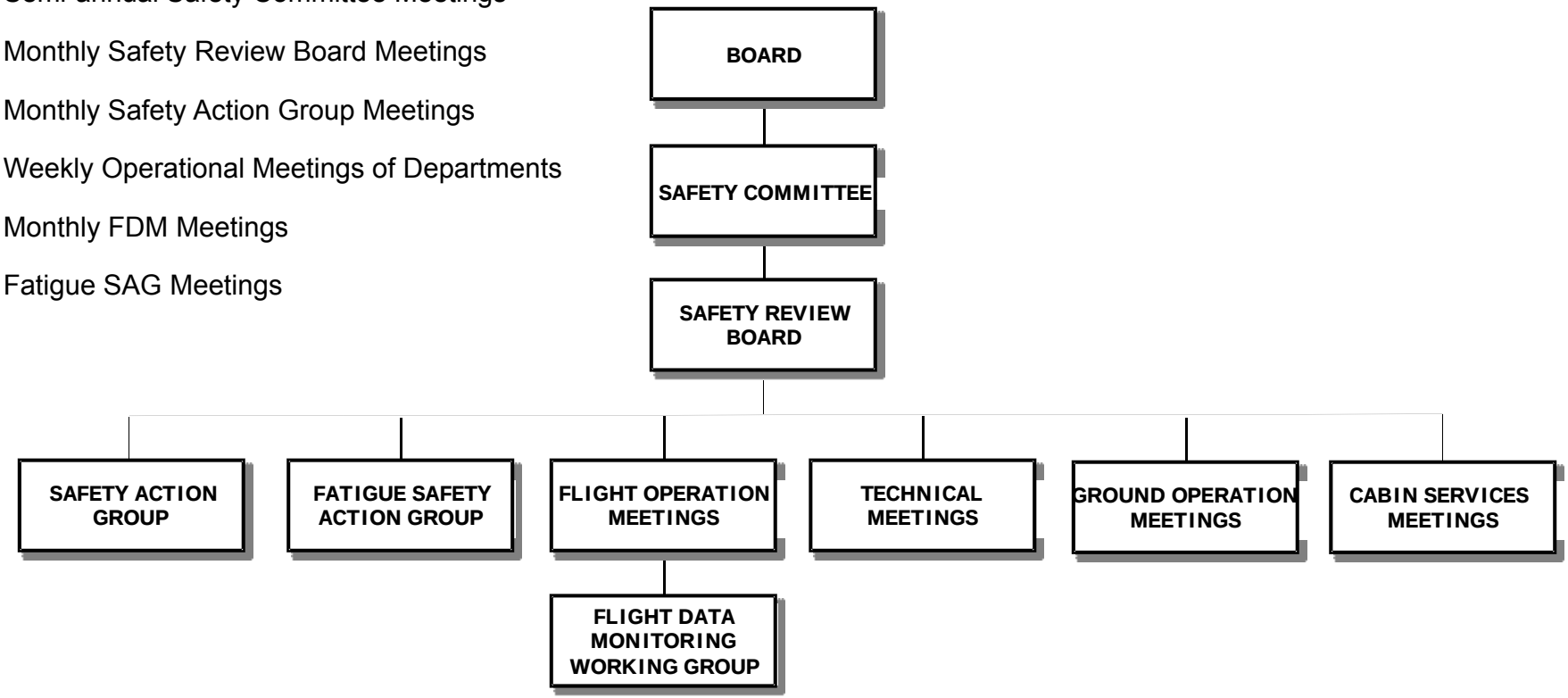


Communication and Consultation

We facilitate or take part in various meetings for the purposes of risk communication and consultation.

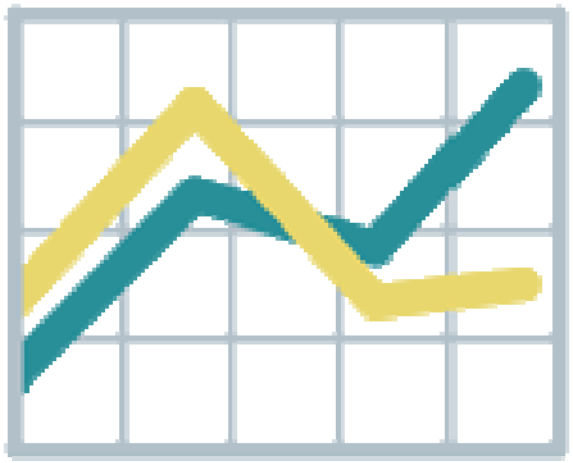
Safety Meetings

- Quarterly Board Meetings
- Semi-annual Safety Committee Meetings
- Monthly Safety Review Board Meetings
- Monthly Safety Action Group Meetings
- Weekly Operational Meetings of Departments
- Monthly FDM Meetings
- Fatigue SAG Meetings



Safety Performance Indicators

Safety performance indicators are defined in the start of every year and safety objectives of departments are chosen accordingly.



- SPIs are monitored after every quarter first by Safety Action Group and then by Safety Review Board.
- We try to choose same SPIs every year to monitor our trend.

Safety Promotion

We communicate risks to people via various technological means, using magazines, bulletins, read and signs and EFB.

READ AND SIGN
Non-Standard Phraseology Instructions

No	178
Page	1
Date	27/12/13

ATT: ALL PILOTS

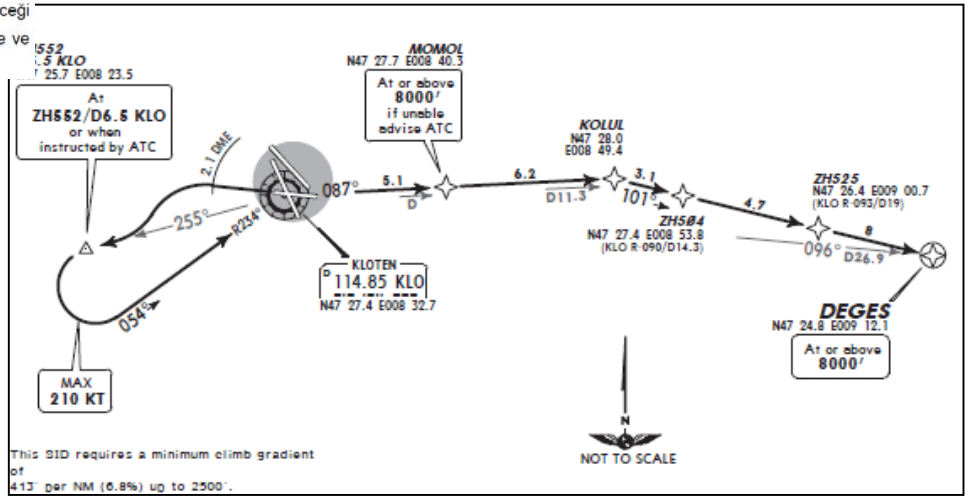
From : Safety Management Department
Subject : Non-Standard Phraseology Instructions

Değerli Arkadaşlarım,

Sizlerle geçtiğimiz günlerde Bologna Havalimanı'nda yaşamış olduğumuz bir olayı paylaşmak istiyoruz. Kuleden gelen, standart phraseology'nin dışında bir taksi talimatı yanlış anlaşılmaya yol açmış ve piste giriş noktası olan A bekleme noktası dikkate alınmayıp, taksiye devam edilmiştir. Bu yüzden son yaklaşma trafiği, kule talimatıyla pas geçmiştir. Standart hava trafik konuşma kalıpları dışında verilen talimatların bu tarz özellikler içeren meydanlarda tekrar sorgulanarak operasyona devam edilmesinin bahse konu olayları engelleyeceği değerlendirilmektedir. Bologna meydanının yayınlamış olduğu özellik arz eden konuyu içeren Safety Notice ve BLQ Jeppesen Chart'ı ekte bilgilerinize sunulmuştur.

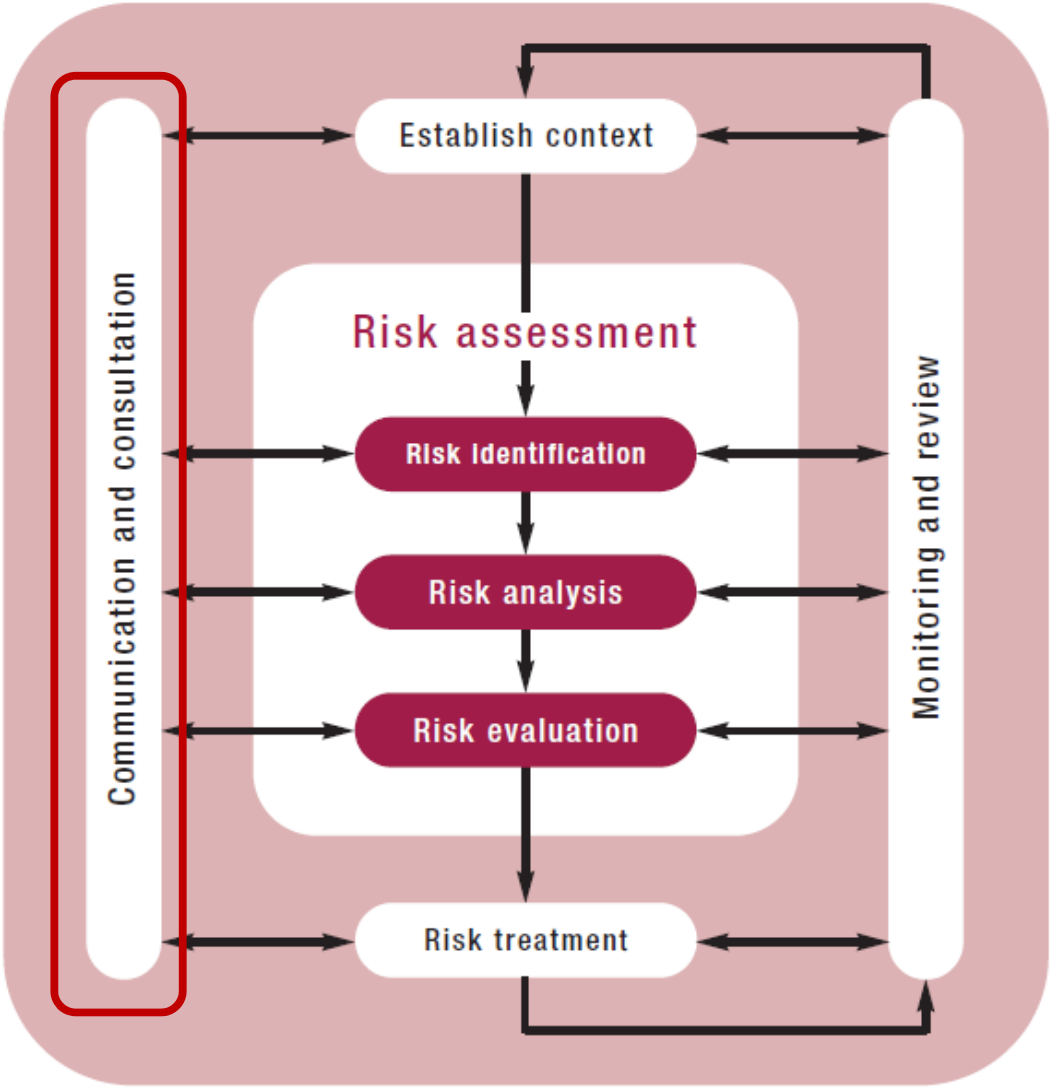
Summary of Occurrences

- Magazines
- Bulletins
- Read and Signs
- Special Airports section in EFB



SPECIAL AIRPORTS

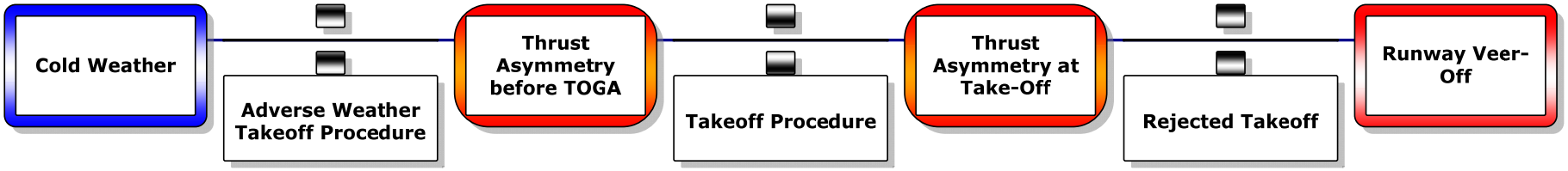
Monitoring and Review

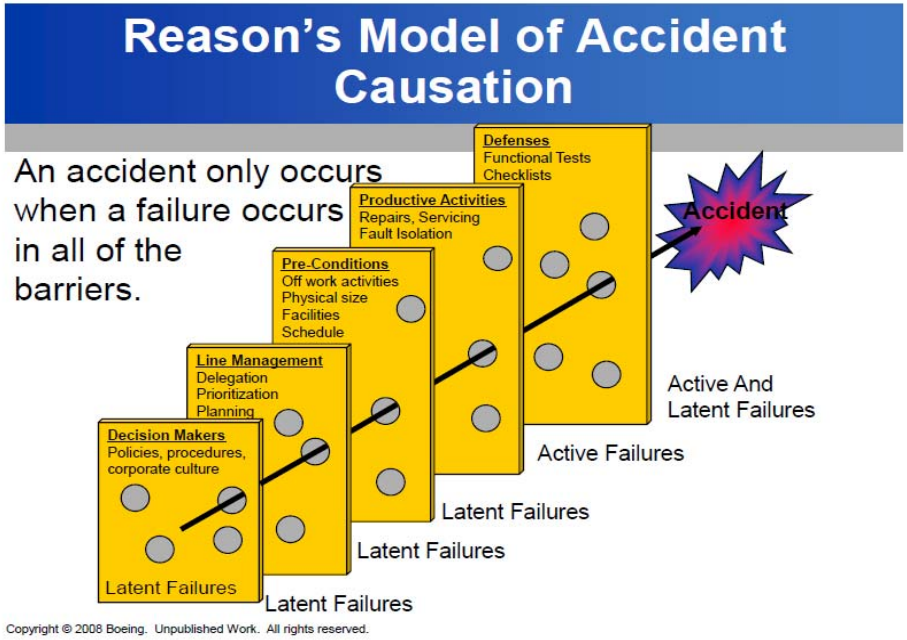


Monitoring and Review

Risk management is a continuous process. We always monitor and review our existing barriers to see if they are still efficient and effective.

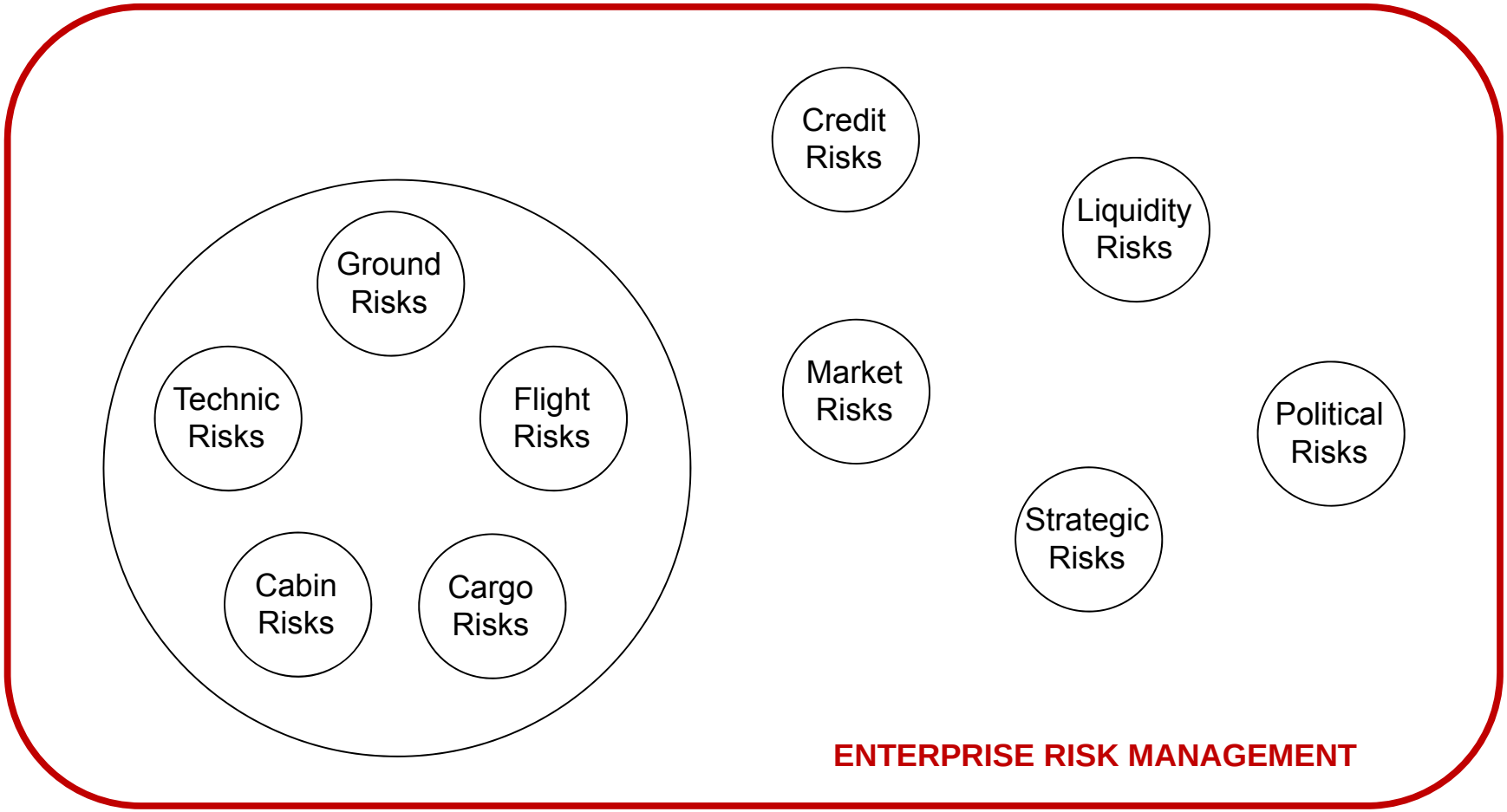
IncidentXP





Enterprise Risk Management

Now, our aim is to continue standardizing and improving the risk culture of other departments in the company by establishing Enterprise Risk Management.

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