# We Are All In This Together (For Better Risk Management)

Elaine Liew

# Presentation Outline

| No. | Details |
|---|---|
| 1 | Feedback on Risk Management Implementation |
| 2 | Integrated Risk Management – Is This Important? |
| 3 | Various Risk Management Methodologies |
| 4 | Risk Management Starting Point |

# Feedback on Risk Management Implementation

# Feedback on Risk Management Implementation
## - Comments from **Top Management**

- What are the **top risks** that the CEO & SMT should be focused on or decisions are required for mitigation strategies / actions?
- **Risk registers / reports** from operational / technical areas are **too detailed**
- There are **so many risk management standards / methodologies – which one is best fit** for our company? Are we in compliance with local regulatory requirements?
- Realisation of the importance of **embedding risk management into the working culture** – risk management is NOT a one man show, it is a collaborative effort throughout the organisation

# Feedback on Risk Management Implementation

## - Comments from **Implementation Project Members**

- How do we **capture all the risk** across the company? – 80:20 rule
- The **risk management standards** which have been developed for **technical areas are not user friendly or easy to use** for non technical / support areas
- Good risk management can help the company **minimise** the items in the **"what you don't know you don't know" category**

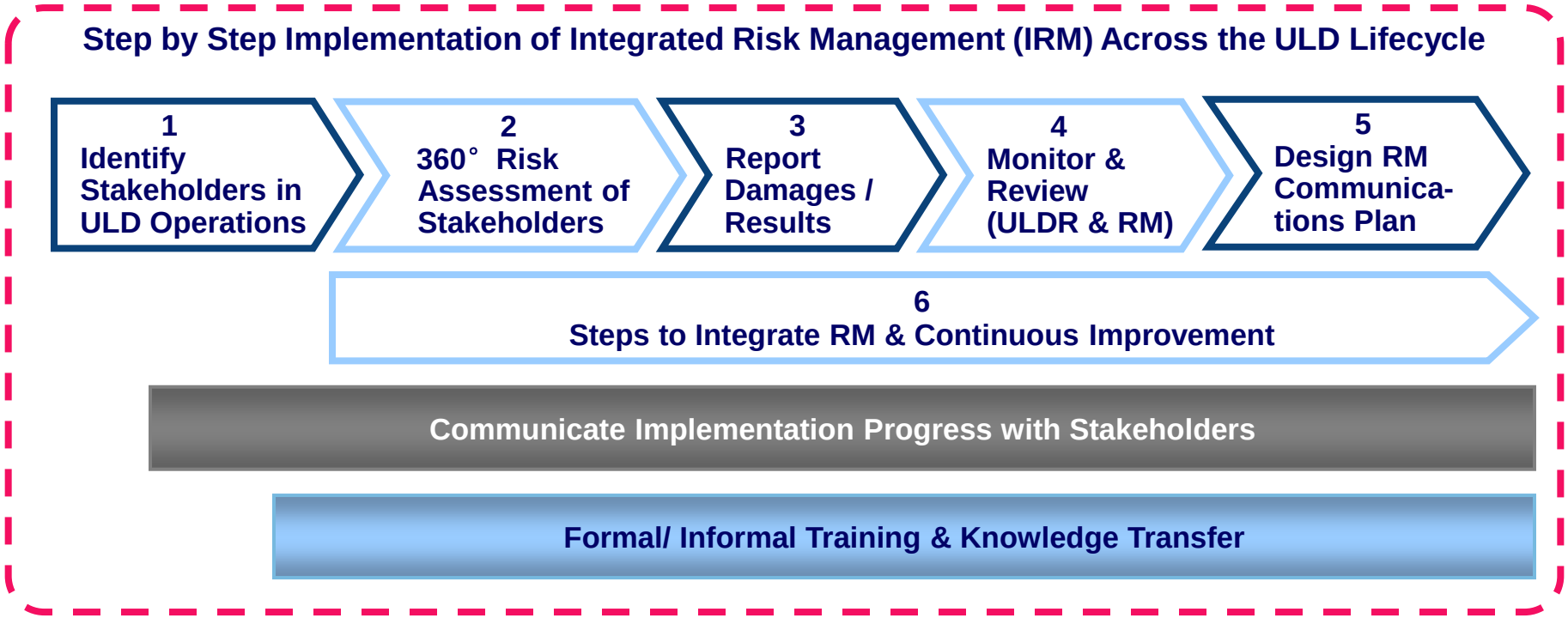
# Feedback on Risk Management Implementation

## - Other Feedback **Across The Company**

- **Risk registers are "live" documents** – information need to be updated in line with changes in operations / environment / industry (research, data collection and keeping abreast with industry updates are crucial)
- **Risk management** is an on-going and **continuous process**

# Integrated Risk Management – Is This Important?

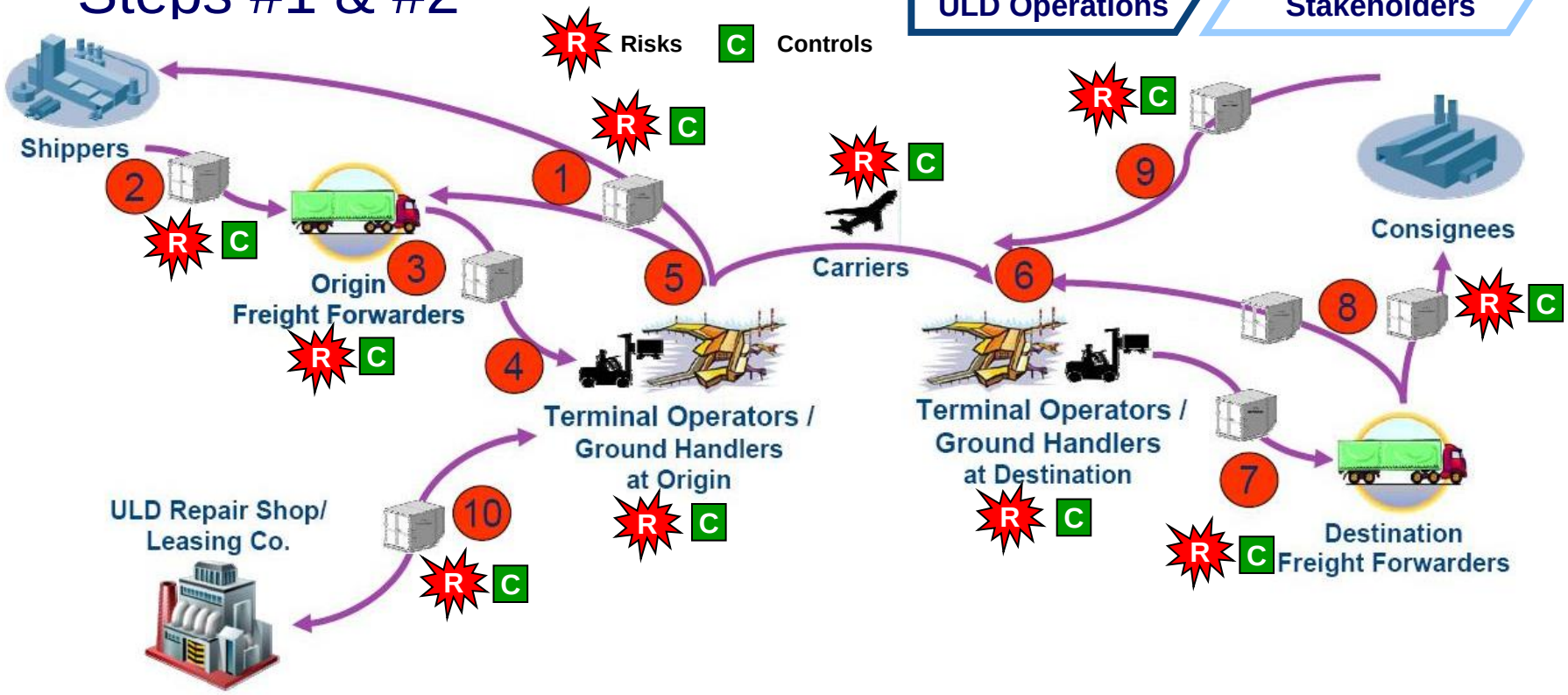
# Integrated Risk Management Across the ULD Lifecycle – "How-To" Achieve This



# IRM Across the ULD Lifecycle - Steps #1 & #2

1 Identify Stakeholders in ULD Operations

2 360° Risk Assessment of Stakeholders



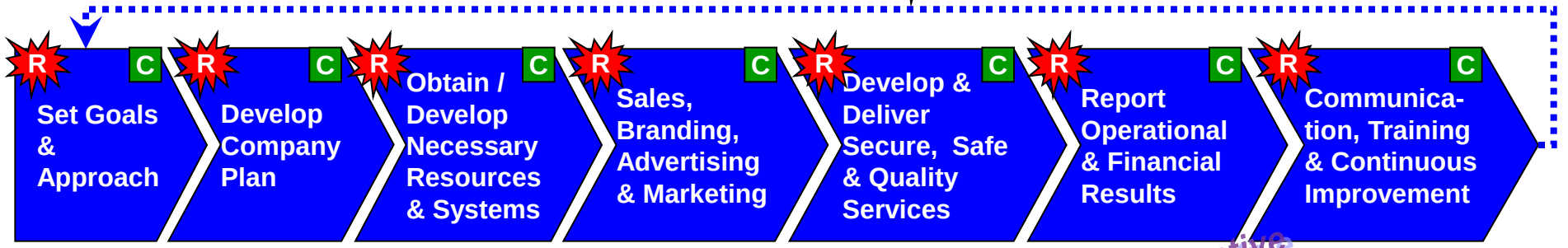

*ULD Operational Chain - Source: IATA website (http://www.iata.org/publications/tracker/jan-2013/Pages/ULDR.aspx)*

# IRM Across the ULD Lifecycle – Step #2 (Company Level)

**2 360° Risk Assessment of Stakeholders**

## Execution of Company Goals & Approach

R Risks  C Controls




**Areas Involved:**

| Senior Management Team | Human Resources | Sales & Marketing, Legal | Engineering, Ground Handling, Flight Operations, Cargo, etc. | Senior Management Team, Finance | Human Resources, Quality Assurance, Internal Audit |
|---|---|---|---|---|---|
| All Departments & Stations | | | All Departments & Stations | | |

# IRM Across the ULD Lifecycle - Steps #3 & #4

3 Report Damages / Results → 4 Monitor & Review (ULDR & RM)

| Nr. | Fltnr | Reg | Date | Airport | Issue | DoW | A/C Type | Description | COSTS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| Nr. | Issue | A/C Type | Description | COSTS |
|---|---|---|---|---|
| 8 | aircraft damage | A319 | Aft cargo sill latch broken | |
| 13 | panel damage | A340 | Cargo panel damaged | |
| 14 | aircraft damage | A319 | Found dent in rh aft belly fairing(next to aft cargo) | |
| 16 | cargo door damage | A320 | Dent/crack in rh cargo door | |
| 20 | cargo door damage | A330 | fwd cargo door damaged during loading by loading staff | |
| 28 | cargo door damage | A332 | Fuselage damaged by FWAG near lower rh corner | |

| Nr. | Issue | A/C Type | Description | COSTS |
|---|---|---|---|---|
| 1 | aircraft damage | B767 | Brake nbr.5 damaged | |
| 15 | aircraft damage | B763 | Aft cargo comp aft lower outb skin was damaged | |
| 30 | aircraft damage | B777 | Ceiling liner and 2 ceiling light assy damaged through VIE Cargo | |
| 41 | aircraft damage | B767 | Structure crack in pylon | |
| 42 | aircraft damage | B737 | Dent on L/H horizontal stabilizer leading edge | |
| 55 | cargo door damage | B737 | Fwd cargo door damaged during loading | |
| 56 | aircraft damage | B767 | Forward RH entry door escape slide bustle damaged by catering loader | |
| 60 | aircraft damage | B737 | Fwd cargo comp ceiling damaged during loading by FWAG | |
| 68 | panel damage | B777 | Fwd.compartment ceiling was found damaged | |

**IATA Ground Damage Database**

## IATA ULDR – Bridging the Gap

**Airworthiness & Flight Safety Regulations**

**Air Operator's Certificate**
Airlines shall comply with civil aviation regulations to ensure safety operations.

IATA ULD Regulations

Any party involved in ULD operations shall comply with civil aviation regulations.

"Bridging the Gap"

CAAs → Airlines → ULD Regulations → The Air Cargo Industry*

* Airlines, Ground Handlers, Cargo Terminal Operators, Freight Forwarders, Shippers, Consignees, Ground Transport Providers, Airports, ULD OEMs, ULD Repairers, ULD Pooling/ Leasing Providers

***Source: IATA website (http://www.iata.org/publications/tracker/jan-2013/Pages/ULDR.aspx)***

# IRM Across the ULD Lifecycle - Step #5

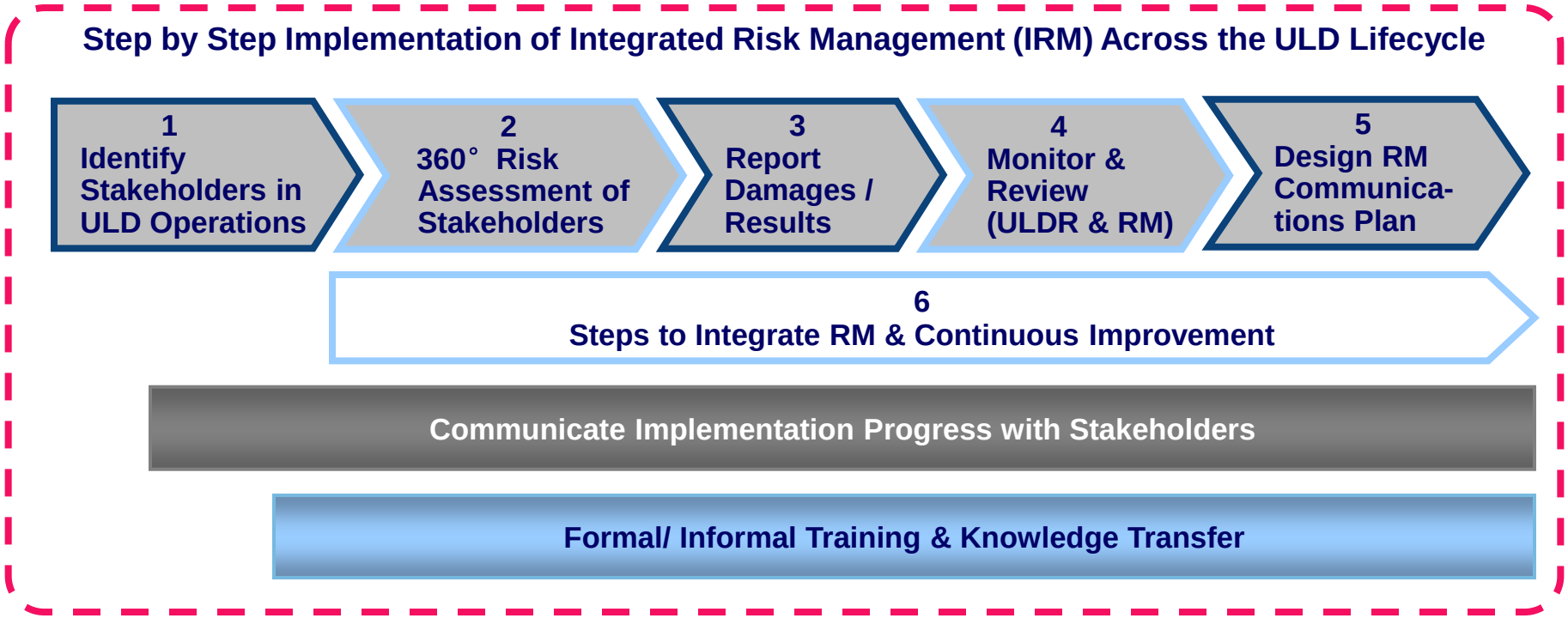
**5 Design RM Communica-tions Plan**

**Review / Improve Communications Process**



| Determine communications objective(s) | Identify target audience | Identify communications channel | Plan the activities | Conduct respective activities | Feedback mechanism |
|---|---|---|---|---|---|
| Examples:<br>• Introduction to risk management<br>• Updates to ULDR, risk management activities, etc. | Potential are:<br>• Senior management<br>• Middle management<br>• Front line and support staff | Modes of communications used to achieve communications objective | Example for planning a briefing / training / road show:<br>• Promoting the briefing<br>• Developing & review of the briefing materials<br>• Etc. | • Risk management briefings<br>• Timely updates via newsletter, internet / intranet blasts, etc. | • Conduct Customer Satisfaction Survey customised by activity<br>• Post-mortem analysis |

# Integrated Risk Management Across the ULD Lifecycle – "How-To" Achieve This



# Critical Requirements to Integrate Risk Management

- **Leadership from the front** is crucial
- **Having the right people (dedicated risk management team, co-sourcing partner, etc.) involved** – skill set, competency, commitment, synergy between all parties
- **Get to know the organisational culture & people** to find the best fit risk management implementation approach
- Get **clear buy-in** across the organisation and industry – risk management awareness, communications & training, link performance to reward (key performance indicator), regular reporting of the risk management implementation status & accomplishments

# Critical Requirements to Integrate Risk Management

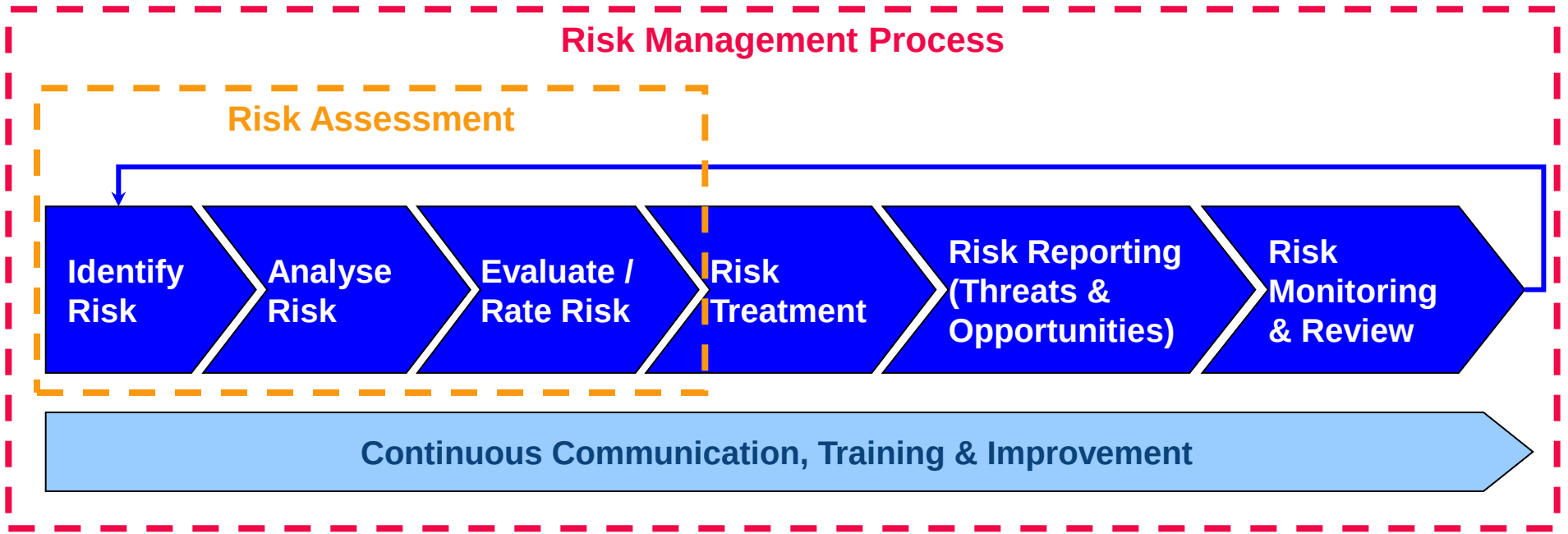
- Customise the **risk management methodology & approach** – simple, practical, flexible, consistent

- **Embed risk management into the working culture – integrate into operations** (e.g. involving senior management, Heads of Departments / Regions / Stations, appointing the right risk owners) **and management practices** (e.g. business planning cycle)

- Develop detailed **risk management database / software requirements** – must haves, nice-to-haves, etc.

# Various RM Methodologies

# Risk Management Process




**Risk assessment is only the part of the risk management process…**

# Sample Risk Matrix (Risk Map)

***Source: ICAO Safety Management Manual (DOC 9859, AN/474, 3rd Edition – 2013)***

| Risk probability | Risk severity | | | | |
|---|---|---|---|---|---|
| | Catastrophic A | Hazardous B | Major C | Minor D | Negligible E |
| Frequent 5 | 5A | 5B | 5C | 5D | 5E |
| Occasional 4 | 4A | 4B | 4C | 4D | 4E |
| Remote 3 | 3A | 3B | 3C | 3D | 3E |
| Improbable 2 | 2A | 2B | 2C | 2D | 2E |
| Extremely improbable 1 | 1A | 1B | 1C | 1D | 1E |

**Figure 2-13. Safety risk assessment matrix**

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

**Figure 2-14. Safety risk tolerability matrix**

| Risk index range | Description | Recommended action |
|---|---|---|
| 5A, 5B, 5C, 4A, 4B, 3A | High risk | Cease or cut back operation promptly if necessary. Perform priority risk mitigation to ensure that additional or enhanced preventive controls are put in place to bring down the risk index to the moderate or low range. |
| 5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C, 1A | Moderate risk | Schedule performance of a safety assessment to bring down the risk index to the low range if viable. |
| 3E, 2D, 2E, 1B, 1C, 1D, 1E | Low risk | Acceptable as is. No further risk mitigation required. |

**Figure 2-15 An alternate safety risk tolerability matrix**

# Risk Rating Parameters

***Source: ICAO Safety Management Manual (DOC 9859, AN/474, 3rd Edition – 2013)***

| *Severity* | *Meaning* | *Value* |
|---|---|---|
| Catastrophic | — Equipment destroyed<br>— 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<br>— Serious injury<br>— 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<br>— Serious incident<br>— Injury to persons | C |
| Minor | — Nuisance<br>— Operating limitations<br>— Use of emergency procedures<br>— Minor incident | D |
| Negligible | — Few consequences | E |

**Figure 2-12: Safety risk severity table**

| *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 |

**Figure 2-11: Safety risk probability table**

# Sample Risk Matrix (Risk Map)

***Source: Airport Handling Manual, 33rd Edition, January 2013***

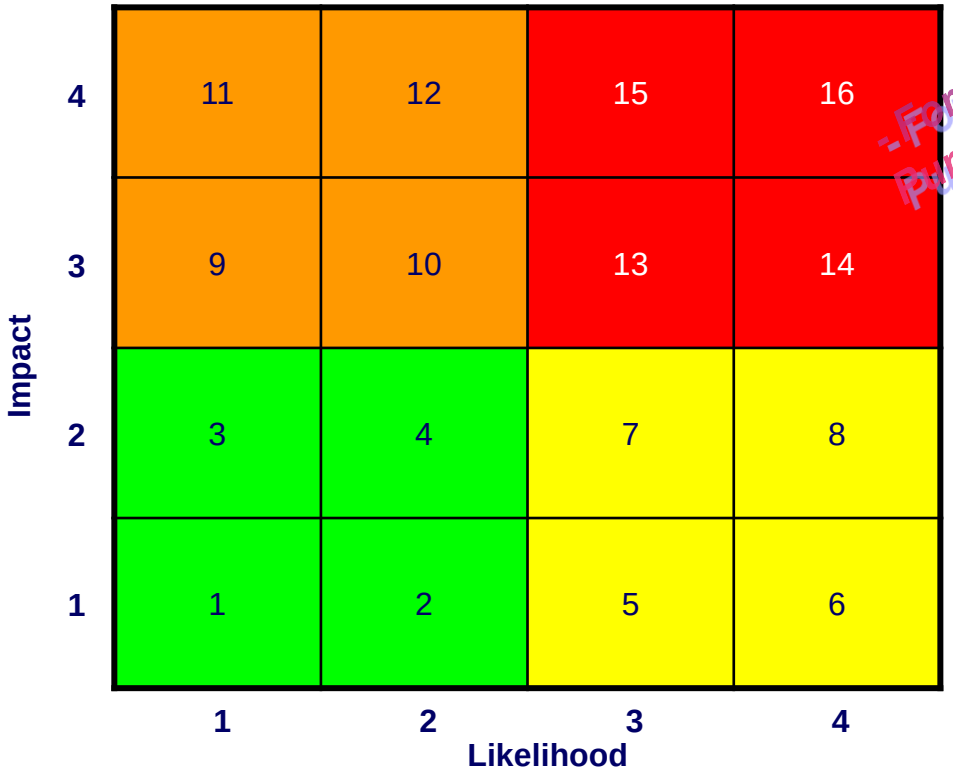
**Likelihood (L) or Probability (P)**
that an accident/damage occurs

| | | | | | | |
|---|---|---|---|---|---|---|
| often | **(5)** (> 1 per day / < 1 per month) | 5 | 10 | 15 | 20 | 25 |
| occasionally | **(4)** (> 1 per month / < 1 per year) | 4 | 8 | 12 | 16 | 20 |
| possible | **(3)** (> 1 per year / < 1 per 5 years) | 3 | 6 | 9 | 12 | 15 |
| unlikely | **(2)** (> 1 per every 5 years / < 1 per every 20 years) | 2 | 4 | 6 | 8 | 10 |
| practically impossible | **(1)** (> 1 per every 20 years / < 1 per every 100 years) | 1 | 2 | 3 | 4 | 5 |
| **Rating 15-25 (red area):** Substantial risk, safety is not ensured. Enhanced protective measures are urgently required. **Rating 8-12 (yellow area):** High risk, safety is not ensured. Protective measures are urgently required. **Rating 4-6 (green area):** Medium risk, safety is partially guaranteed. Normal protective measures are required. **Rating 1-3 (white area):** Small risk, safety is largely guaranteed. Organizational and staff-related measures may be required. | | **(1)** insignificant<br>No or minor injuries (first aid treatment) and/or negligible property damage | **(2)** minor<br>Minor injury or occupational illness resulting in lost work days and/or minor property damage | **(3)** moderate<br>Serious but non-permanent injuries and/or significant property damage | **(4)** critical<br>Permanent disability or occupational illness and/or major property damage | **(5)** catastrophic<br>May cause death or loss of property |

**Severity (S) or Scope of Damage (D)**

# Sample Risk Matrix

***Source: IATA Integrated Risk Management Guidance Manual, 2010 Edition***






| |
|---|
| **Very Significant** |
| **High Impact, High Likelihood – Immediate action required. Senior Management Team attention required** |
| **High** |
| **High Impact, Low Likelihood – Cause for concern. Department / Station Head attention / review required** |
| **Medium** |
| **Low Impact, High Likelihood – on management radar / watchlist. Current controls must be reviewed** |
| **Low** |
| **Low Impact, Low Likelihood – Not a major concern. Risks are managed by the current controls** |

# Risk Rating Parameters

***Source: IATA Integrated Risk Management Guidance Manual, 2010 Edition***

- Risk are rated for both the **impact** (significance) and **likelihood** (probability) of occurrence
- Examples of risk impact rating parameters are as follows:

| Category | Remarks |
|---|---|
| Financial | ↗ Based on level of approval required (refer to organisation's limits of approval)<br>↗ Impact to the organisation's profits |
| Reputation | Media / press & regulator concerns |
| Customer | Retention (or loss) & satisfaction |
| Business interruption | On time departures / arrivals |

Note: For additional information on the IATA IRM methodology, please refer to the IRM Diploma (http://www.iata.org/training/diploma_program/Pages/integrated-risk-management-%28irm%29-diploma.aspx)

# Risk Rating Parameters

***Source: IATA Integrated Risk Management Guidance Manual, 2010 Edition***

| Score | Likelihood | Description |
|---|---|---|
| **4** | **Very High** | Is expected to occur in most situations or is already happening (e.g. more than 70% probability) |
| **3** | **High** | Will probably occur in most situations (e.g. between 40% to 70% probability) |
| **2** | **Medium** | Might occur at some time (e.g. between 10% to 40% probability) |
| **1** | **Very Low to Unlikely** | May occur only in exceptional circumstances (e.g. less than 10% probability) |



Note: The risk likelihood rating parameters can be expressed in terms of percentages, number of occurrences over a certain time period, etc.

With Risk Analysis Tools in place, this provides additional information on trend analysis & forecasting capabilities as well as risk modelling and quantification that will help refine the organisation's risk rating parameters.

# Customized Risk Model for the Aviation Industry

***Source: IATA Integrated Risk Management Guidance Manual, 2010 Edition***



## STRATEGIC LEVEL

### *STRATEGIC*

- *Brand / Reputation*
- *Business Planning*
- *Capital Availability*
- *Capital Allocation*
- *Alliances / Partnerships*

### *PUBLIC REPORTING*

- *Financial Reporting*
- *Regulatory Reporting*

### *ENVIRONMENT / HAZARD*

- *Competitor*
- *Customer Preference*
- *Stakeholder Expectations*
- *Financial Markets*
- *Sovereign / Political*
- *Environmental*
- *Catastrophic Events*

## PROCESS LEVEL

### *OPERATIONS*

- *Operational Capacity*
- *Operational Efficiency*
- *Product Development*
- *Channel Effectiveness*
- *Customer Satisfaction*
- *Internal Governance*
- *Information Technology*
- *Organisational Resources*
- *Business Interruption*
- *Health & Safety*

### *FINANCIAL*

- *Price*
- *Liquidity*
- *Credit*

### *REGULATORY*

- *Financial Reporting Compliance*
- *Industry Operations / Licensing / Safety & Security Compliance*

# Comparison of the RM Methodologies

| RM Methodology Source | Pros | Cons |
|---|---|---|
| ICAO Safety Management Manual (DOC 9859, AN/474, 3rd Edition – 2013)<br><br>Airport Handling Manual, 32nd Edition, January 2012 | • Strong methodologies for operational risks in the aviation industry (e.g. safety & security related risks)<br><br>• Focus on prevention of incidents & accidents – Swiss Cheese Model, theory of practical drift, SHELL Model<br><br>• Risk matrix (5x5 model) is used based on practical reasons to ensure realistic action plans are identified to mitigate / manage the risks | • Risk management process may be too technical to be rolled out to other non-operational areas in the company (corporate planning, network & revenue management, sales & marketing, finance, IT, HR, business administration, etc.)<br><br>• Difficulty in utilizing the risk rating parameters for corporate risks and risks in other non-operational areas |

# Comparison of the RM Methodologies

| RM Methodology Source | Pros | Cons |
|---|---|---|
| IATA Integrated Risk Management Guidance Manual, 2010 Edition | • Overall methodology & components developed have been mapped to IOSA, ISAGO & AHM risk management requirements as well as international risk management standards (ISO31000, AIRMIC)<br>• This methodology is designed for easy collation & communication of risk management information – top-down & bottom-up (corporate / department / station level risks)<br>• Risk matrix (4x4 model) is used based on human behavioral reasons. The color coding has also been changed to address the uniqueness of risks faced in the industry | • This methodology is not a standard – currently, it is only a guidance<br>• For airlines / GSPs who have implemented the ICAO / AHM risk management methodologies, some work in terms of gap analysis & mapping of risk rating parameters are required to combine both methodologies |

# Risk Management Starting Point

# Risk Management Starting Point

At least the following 4 items should be started:

- Organizational structure – to reflect the RM Oversight Structure
- Risk reviews
- Risk register (any type to start with)
- Reporting (to GDDB)

# Going Forward…

- Risk management will be a “shall have” requirement in ISAGO
- Creation of task forces / working groups to develop a more comprehensive sample risk registers for GSPs
- Develop a publication ready GSP Risk Register Usage Manual
- Industry-wide consolidated effort on collection of data / information / reports to improve risk management knowledge, analytics and practices to reduce cost, incidents & accidents – GDDB
- Industry-led harmonisation of risk management methodologies across the various standards (ICAO, IOSA, ISAGO, AHM, etc.) to be in line with global risk management standards (ISO31000, AIRMIC, etc.)

# Contact Details

Carole Olson Gates
Director, Risk Management & Insurance
IATA
Tel: +1514 390 6805
Email: gatesc@iata.org

Elaine Liew
Consultant / Instructor
IATA
Mobile: +60 12 298 2003
Email: liewe@iata.org / elaine_liew_8@yahoo.co.uk

**Know Your Risks**

**Seize Your Opportunities**

**Realise Your Rewards**

# - Thank You -

# Appendix

APPENDIX 1

# List of Abbreviations

| | |
|---|---|
| AHM | Airport Handling Manual |
| CEO | Chief Executive Officer |
| GDDB | Ground Damage Database |
| GSP | Ground Service Provider |
| IATA | International Air Transport Association |
| ICAO | International Civil Aviation Organisation |
| IGHC | IATA Ground Handling Conference |
| IOSA | IATA Operational Safety Audit |
| IRM | Integrated Risk Management |
| ISAGO | IATA Safety Audit for Ground Operations |

| | |
|---|---|
| RM | Risk Management |
| SMS | Safety Management System |
| SMT | Senior Management Team |
| ULD | Unit Load Device |
| ULDR | ULD Regulations |