Practical Risk Management: The Risk Challenger Program at TAP M&E

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1. Overview
TAP Portugal – the Airline

1945

1970

2000

2017

Source: TAP Portugal

178 destinations
- 88 with TAP Air
- 107 Europe
- 42 Americas
- 21 Africa
- 8 Middle East and Asia

77 aircraft
- 18 long-haul operation
- 43 medium-haul operation
- 16 regional operation (Portugal)

11.4 million Passengers

85.1 thousand tons Cargo and Mail

37 Third Party Customers Maintenance

29 airline companies

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TAP Group

TAP total workforce 13500

TAPGER, S.A.

TAP, S.A.

TAP M&E Portugal workforce 1900

Source: TAP Portugal
Lisbon
Airframe Maintenance (3 hangars, 26380 m²)
B737, A300, A310, A320Fam, A330, A340
Engine Overhaul Shop
CFM56-3/-5A/-5B/-5C/-7B, CF6-80C2/-E1, PW4000
Components Shops

Rio de Janeiro
Airframe Maintenance (1 hangar, 14500 m²)
B727, B737, B767, B777, MD11, A300, A310, A330, A340

Porto Alegre
Airframe Maintenance (5 hangars, 12500 m²)
B727, B737, BBJ, B767, A320Fam, EMB 120, ERJ 135/145, E-JET 170/175/190/195, Legacy
PWC Engine Shop
APU Overhaul Shop
Landing Gear Overhaul Shop
Components Shops
2. SMS Implementation
SMS Roadmap at TAP M&E

2007
- Analysis of ICAO Doc. 9859 Ed. 1
- Outreach Presentation to Top Management

2008
- Safety Reports and Technical Incidents analysis
- Transition from WinBASIS to SENTINEL

2009
- Risk Assessment procedures
- TAP Corporate Risk Management Manual

2010
- Safety Policy + Safety Objectives
- Safety Commitment from Top Management

2011
- Gap Analysis + Safety Culture Survey
- Safety Training, Safety Promotion campaign

2012
- SMS Manual, Safety Office, Reactive analysis
- Reporting, MORs, Investigations

2013
- Proactive and Predictive analysis
- SPIs and Safety Improvement Plans

2014
- Risk Management System
- Safety Audits

2015
- ERP, Management of Change
- Safety Assurance procedures

Source: TAP Maintenance & Engineering
The 4 Pillars of SMS

Adapted from ICAO Annex 19

Safety Policy and Objectives
Safety Promotion
Safety Risk Management
Safety Assurance

+ Safety Culture
Safety Management System

1. What is most likely to be the cause of your next accident or serious incident?

2. How do you know that?

3. What are you doing about it?

4. Is it working?
Safety Risk Management

- Risk Management is the SMS engine
- A robust SMS needs an effective Risk Management Process
- Developing an effective Risk Management Process has taken as much time and resources as building the other 3 SMS pillars
3. Practical Risk Management
WHY?

Promote
Safety Management
Risk Management

Comply
IOSA (MNT), EASA
EN 9110:2015
Customers’ SOPs

Improve
Expand Hazard Log
Update Risk Register

Perform
Brainstorming + HAZID
Scenario Analysis
Simplified Bow Tie

Engage
Managers and Team Leaders
Technicians and Support Staff
WHAT?

- **Context:**
  - **CAMO**
    - EASA Part M Subpart G
    - Continuing Airworthiness
  - **AMO**
    - EASA Part 145
    - Maintenance

*Future:* (DOA) Part 21 Subpart J
(MTO) Part 147
WHAT?

Strategic Risks
Environmental Risks
Personal Risks
Regulatory Risks
Human Resource Management Risks
Risks of Doing Nothing

Supply Chain Risks

Product and Market Risks
Financial Risks
Operational Risks
Reputation Risks
Facilities and Equipment Risks
<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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</thead>
</table>
| **Morning** | • Event Logistics  
• Initial Setup | **Masterclass**  
• HAZID Methodology  
• Case Studies | **Group 2**  
• Brainstorming  
• HAZID  
• Prioritization | **Group 2**  
• Analysis of Top 5  
• Hazard Register | Team Work Presentation |
| **Afternoon** | **Workshop**  
• Introduction  
• Risk Management | **Group 1**  
• Brainstorming  
• HAZID  
• Prioritization | **Group 1**  
• Analysis of Top 5  
• Hazard Register | HAZID for Top Managers | Team Work Presentation |

Validation of Results
WHO?

Risk Management Workshop

- Participation:
  - 24 participants (typical), 60 máx
  - Diverse skills and functions
  - 4 hrs

- Contents:
  - Risk management
  - Incident and accident analysis
  - Case studies

- Results:
  - Knowledge consolidation
  - Risk oriented mindset
WHAT-IF?

HAZID Methodology

Interactive method consisting of:

- Multi skill team brainstorming
- Scenario mapping in defined contexts
- Inclusion of what-if change scenarios
- Prioritization of top risks in the organisation
- Simplified Bow Tie diagramatic analysis
- Evaluation of existing controls and effectiveness
- Identification of mitigation strategies
HOW?

Practical HAZID

- Methodology:
  - 4 teams, 6 people per team (typical)
  - HAZID training (2 hrs)
  - Hazard ID + Risk Prioritization (2 hrs)
  - Top 5 Bow Tie analysis (4 hrs)
- Discussion of results:
  - Presentation to *top management*
  - Team elements and leaders
  - 3 hrs
  - Hazard Log & Risk Register *update*
4. Typical Results
Risk Portfolio Update

- Top Risks

- Top 10 (Risk Challenger + Voting among managers)

For example purposes
At Reduced Cost

- Internal
  - Graphic media developed in-house
  - Documents preparation
  - Give-aways
  - Sessions’ work space preparation
  - Image and sound
  - Pins and cards
...and some external cost...!
Thank you!

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