

AirArabia

*Mostafa LAKHDAR
A320 Captain & DAC Inspector*

Aviation Safety Accident Prevention Program



Moving from Reactive Approach towards Risk Based Approach



1 Introduction

2 Main Challenges

3 Accident Prevention Program

4 Risk Management

5 Elements of Safety Risk Management

6 Acceptable Level of Safety

7 Opportunities to minimize number of occurrences

7 Advices of the day



Air Arabia

- ▶ Middle East & North Africa's first and largest Low Cost Carrier (LCC).
- ▶ Fly to over 170 destinations spread across Middle East, North Africa, Asia and Europe.
- ▶ Created on 2005 in Sharjah UAE.
- ▶ Operations started from Morocco Kingdom in May 2009

We are committed towards Safety

► Our mission goal is to prevent accidents and incidents from occurring, to save human lives and preserve our financial assets by:

↳ Identification

↳ Reduction

↳ Elimination

Aviation Hazards

↳ Development and effective implementation of preventative safety measures.



Main Challenges

- ▶ Safety Performance as consequence of Company Safety Culture
- ▶ Just Culture correctively understood, well perceived and truly lived
- ▶ Aviation is ripe for drift should not affect line operations
 - ↳ Preventing normalization of deviance:
 - ↳ In aviation, rationalizing can result in disaster.



Safety Awareness

▶ Luck ≠ Proficiency

- ↳ discerning where experience, personal growth, learning and gains in proficiency cross the line into deviance.
- ↳ maintaining skeptical and questioning attitude about our own competence and discipline.
- ↳ The problem for us as individuals is that preventing our own deviance from becoming normalized



Accident Prevention Program

- ▶ Air Accidents are a result of the vulnerability of the Command Structure and a sequence of unsafe events
- ▶ Prevention:
 - ↳ A committed effort to minimize the number of occurrences of manned aircraft which results in serious injury, death or extensive damages to aircraft.



Initial Accident Prevention Program

► Based on reactive approach

↳ Air Safety Reports

↳ Flight Data Monitoring

2.3	SAFETY MANAGEMENT SYSTEM	19
2.3.1	Application of Safety Management System	19
2.3.1.1	Introduction	19
2.3.1.2	Core Aspects of SMS	20
2.3.1.3	SMS Requirements	20
2.3.1.4	Documentation	20
		..... 2.2-3
2.3.2	Safety Policy and Objectives	21
2.3.2.1	Air Arabia Maroc Safety and Quality Policy	21
		..... 2.3-1
2.3.2.2	Non-punitive Safety Reporting	21
		..... 2.3-1
2.3.2.3	Just Culture Policy	22
		..... 2.3-1
2.3.2.4	No Blame Go-Around Policy	23
		..... 2.3-1
2.3.3	Responsibilities and Accountabilities	23
		..... 2.3-1
2.3.3.1	Responsibilities of Accountable Manager/Accountable Executive	24
		..... 2.3-2
2.3.3.2	HQSS Responsibilities	24
2.3.3.3	Nominated Postholders Responsibilities	25
2.3.3.4	Line Managers Responsibilities	26
		..... 2.4-1
2.3.3.5	Key Safety Personnel – Safety Responsibilities	26
		..... 21
2.3.3.6	Company Personnel Responsibilities	27
		..... 22
2.3.3.7	Safety Review Board	27
		..... 22
2.3.3.8	Safety Action Group	27
		..... 22
2.3.4	Safety Risk Management	28
		..... 23
2.3.4.1	Safety Data Collection	28
		..... 24
2.3.4.2	Occurrences and Hazard Identification Process	29
2.3.4.3	Risk Assessment and Mitigation	30
2.3.5	Safety Assurance	30
2.3.5.1	Safety Performance Monitoring	30
2.3.5.2	Management of Change	30

2.3.1	GEN
2.3.2	RES
2.3.3	COM
2.3.4	HUM
2.4	OPERAT
2.3.3	Mo
2.3.4	Ma
2.3.5	Lia
2.3.6	Sa
2.3.7	Ind

Previous Accident Prevention Program

▶ Reactive mode:

↳ Post safety occurrences management

↳ Taking measures (i.e., corrective actions) only after occurrence, to prevent re-occurrence.

↳ Processing incident/accident reports:

↳ Mitigate severity of safety events and threats

↳ Creating control measures to prevent initial occurrence

How did we manage Safety differently?



How to manage Safety differently?

▶ Introduction of Safety Management System:

↪ New approach and methodology to manage safety.

↪ Air operators did not understand it.

↪ A mind change was needed from mandatory compliance to performance monitoring.

1st Edition of ICAO Safety Management Manual was in 2006

1st Edition of ICAO Annex 19 was in July 2013

Actual Accident Prevention Program

- ▶ Risk based approach oriented

- ↳ means going beyond box ticking to evaluate the effectiveness of an Accident Prevention Program in practice.

- ↳ Identifying areas of risks

- ↳ Safety Risk Management

- ↳ Take proper actions to either Eliminate or Mitigate



Risk Management

▶ Basic purpose of each type of risk management :

↳ Reactive:

- mitigate severity of safety events and threats:
 - MOR, Incident reports, Accident reports

Risk Management

▶ Basic purpose of each type of risk management :

↳ Proactive:

- identify safety concerns before safety events happen:
 - Audits/inspections
 - Voluntary reporting
 - Surveys



Risk Management

▶ Basic purpose of each type of risk management :

↳ Predictive:

- anticipate future exposure based on past performance data:
 - System analysis
 - Safety case
 - Flight Data Analysis



Which strategy are we applying?

▶ We use All the 3 strategies :

↳ **REACTIVE:**

- In response to safety events; and
- In dealing with threats that suddenly arise the operating environment.

Which strategy are we applying?

► We use All the 3 strategies :

↳ **PROACTIVE:**

- Identifying issues before hazard occurrence;
- Trying to understand inputs of the program:
 - underlying behaviors, attitudes, and actions directly correlate to safety performance; and
- Uncovering precursors to risk:
 - relationship between certain root causes and hazard occurrence.

Which strategy are we applying?

▶ We use All the 3 strategies :

↳ **PREDECTIVE:**

- Management of change;
- Risk analysis in hypothetical scenarios; and
- Forecasting performance data (such as to stakeholders).

Elements of Safety Risk Management (SRM)

▶ Safety Risk Management as “Process”:

- ↳ **Hazard identification**, including identification of risks, mechanisms of hazards, and other safety weaknesses;
- ↳ **Understand** the safety behavior (human factors) and bureaucracy that influence safety; and
- ↳ Development of **control measures** designed to mitigate exposure.



Elements of Safety Risk Management (SRM)

- ▶ Assess and Control Hazards, Risk, and Consequences
 - ↳ Effectiveness of safety risk controls;
 - ↳ Likelihood of hazard or mishap occurring;
 - ↳ Most realistic level of severity should the hazard manifest itself; and
 - ↳ What kinds of risk control measures are needed to reduce exposure?



Elements of Safety Risk Management (SRM)

- ▶ Ability to control these elements will depend on ability to assess them.

Poor assessments lead to poor controls.

Elements of Safety Risk Management (SRM)

▶ Assess and Control Hazards, Risk, and Consequences

↳ Assessments include tools and processes, including:

↳ Risk analysis;

↳ Hazard and risk register; and

↳ A risk matrix.



Elements of Safety Risk Management (SRM)

- ▶ Absolute safety is impossible. We need to be able establishing thresholds for how much risk is acceptable.

ALoS is the answer to this problem



Acceptable Level of Safety

- ▶ Minimum level of acceptable risk for a hazard or risk.
 - Acceptable describes the need for no further mitigatory actions for a safety concern in question.
 - Valuation made based on the probability and severity of a safety concern.



Acceptable Level of Safety

- ▶ ALoS marks point at which, for a given hazard/potential mishap:
 - current level of safety performance is satisfactory;
 - impractical or far too expensive to take the measures needed to lessen exposure; and
 - Risk controls are strong enough that the residual risk is willingly taken on by the service provider.

Opportunities to minimize number of occurrences?

- ▶ Reviewing previous Accident/Incident reports from different perspectives:
 - ↳ Safety
 - ↳ Human
 - ↳ Machine
- ▶ Creating control measures to prevent initial occurrence
- ▶ Analyzing current operations to identify areas of potential concern in future, hypothetical situation.

Opportunities to minimize number of occurrences?

- ▶ Safety depends on data
 - ↳ Quantity and quality
 - ↳ Philosophy and technology are key.
- ▶ Reduce Human error factors:
 - ↳ Predict vulnerability to error in human/system operations
 - ↳ Threat Error Management: Avoid – Trap - Mitigate
 - ↳ Develop more effective training



Advices of the day

▶ Inoculating ourselves

- ↪ Beware the false illusion of invulnerability
- ↪ Prove to ourselves WE ARE safe
- ↪ Check our rationalization
- ↪ Listen to both Septics and Experts
- ↪ Self-censor
- ↪ Don't accept silence as agreement
- ↪ Don't ignore dissent

