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**About Aviation
Safety Management Systems**

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INTRODUCTION

In order to be aware of the factors that are driving the accident rate during the last decade, we must identify the hazards and trends of our aviation industry.

We must improve the level of safety, with accident prevention programs in airline companies.

In USA on 1995, aviation safety conference summit, the transport industry announced to the world they comments about zero accident rate for the airline industry.

This provocative challenge asked governments and airline industry officials to elevate margins of safety and anticipate rather than react to safety problems before they occur.

The current accident rate of about one accident every million of departures, suggests that with the present traffic growth we are going to see nearly an accident a week in the following years.

To overcome the safety issue in the aviation industry, it is necessary to identify the hazards and recognize the main barriers in our operation, utilize all the possible training tools to enhance the safety culture within the airlines and be proactive minder.

INCIDENTS AND ACCIDENTS

To successfully achieve a zero accident rate is indeed a hard goal.

However we in the flying community must as a team strives towards obtaining that mindset.

Although there has always been a genuine concern for safety throughout the airline industry, it appears that the lessons learned from past tragedies often go unnoticed, or worse yet, disregarded altogether.

The evidence is quite clear; the causes of accidents are frequently repeated, simply due to the common threat that is present on all accidents: human intervention.

There seems to be a discrepancy between our sincere desire to be safe and the evidence of continuously coming identical errors.

One of the main barriers that makes difficult the process of learning from incidents, is the incapacity to identify ourselves in the human errors that are always listed in an accident report or in a safety article.

We become passive readers and we often fail to apply those valuable and important lessons to our flying routine and behaviors. Incorrect and unsafe behaviors are always the basis on which accidents develop their fatal path.

To correctly understand how accidents and incidents develop, it is important to provide pilots and aviation professionals, regardless of experience levels, with research material and instructional guidelines against the actual aircraft accidents cases. Case studies, developed from a Human Factors prospective, are essential in the modeling of safer behaviors.

Human factors include accidents associated with crew resources management, distraction in cockpit, communication errors, cockpit discipline and fatigue.

Another area particularly involved in accidents and incidents prevention is the technical area. Mechanical deficiencies and maintenance oversights include accidents associated with aircraft maintenance and mechanical problems. For the first time, during 2003, aviation safety recorded a number of accidents related to maintenance problems, greater than those related to CFIT. The increased concern in technical problems and Human Factors in the maintenance area has seen an important regulatory action with amendment five of JAR-145, that establishes the framework for HF training and implementation within maintenance facilities.

Striving towards a zero accident rate can only be accomplished if everyone associated with aviation accepts that challenge with a personal goal to elevate the margins of safety, and anticipate rather than react.

As far as human performance is concerned, we need to evaluate the reasons why we tend to repeat the same avoidable mistakes over and over, and, most of all, we need an increased awareness of the impact that everyone single behavior has on safety.

Safety Manager's actions:

Safety Manager's role and responsibilities

The flight safety manager can issue directly to all flight crews or place in base safety advisory file, safety information for the purpose of increasing safety awareness and feedback.

Accident and incident prevention is the primary purpose of air safety management.

The secondary functions are protection against injury and death in an accident, and the saving of life and protection against further injury after an accident has happened.

The safety manager must have a direct reporting access, on safety issues to the CEO or the accountable manager of the company.

It is important that he maintains within the company the respect in all level of management in order to aim the objectives of his safety management goals.

Some of the essential responsibilities of a safety manager are:

Management of the safety plan

Facilitation of hazard management and risk assessment

Advice managers on safety matters, emergency response plan

Investigation on incidence and accidents

Staff training in safety and quality management

Control of safety and quality documents

Facilitation of safety review board and safety action group meetings.

None of the above duties can correctly be achieved without the complete involvement of the management.

Comply with the regulatory

The JAR OPS requires that an operator shall establish an accident prevention and flight safety programme that may be integrated with quality system, to achieve and maintain risk awareness by all persons involved in operations.

One such measure is to encourage individual operators to introduce their own safety management system. The implementation in the company leads to the business aim:

Safety performance at best practice and achieving beyond the minimum compliance with regulatory requirements.

Identify More barriers

Human factors researchers have deeply investigated on the nature of the many barriers that make it difficult to airline's operator to learn from previous errors. Crew Resource Management is the best answer produced up to know, and the goods results coming from its effective implementation within flight deck personnel, has pushed CRM training concepts and techniques into different areas like cabin crew departments and maintenance.

The principles of crew resource management are based on one simple premise:

The effective management of all available resources. Everyone in the aviation industry can benefit from such a concept, as studies have shown that most safe and accident free flights are the results of correct CRM implementation.

The importance of communications is another major topic in CRM training that has been positively addressed during the last years, but is the "personality and behavior" issue that still has a long way to go. Modification of some aspects of individual attitudes toward a participated safety behavior is a complex job, but it is also the main road to better safety performance.

Identify Hazards

By definition a hazard is an event that has the potential to result in damage or injury.

The degree of risk is based on the damage or harm will result from the hazard and the severity of the consequences.

It is the responsibility of the line managers to carry out risk assessments.

Workplaces and organizations are easier to manage than the minds of individual workers.

You cannot change the human conditions, but you can change the conditions under which people work.

The solution to many human performance problems is also technical rather than only psychological.

The effective way to identify the hazards can be achieved by brainstorming, using a selection of managers and staff.

Review of accidents, incidents records from both internal and external sources.

Hazards should be identified in order to provide a comprehensive assessment of the risks that a company can face.

There should be a periodic review on the hazard assessments and risks in the company.

Anytime the airline faces some change within the organization, its staff, procedures and equipment, there must be an assessment on the risk areas. The individual line managers should be responsible for measure or mitigate the risks of the hazards.

In order to aim for the safety it has to be appreciated what is manageable and what is not.

Many companies think that safety management is negative production process.

The reality about accidents is, they are not directly controllable

The company can only identify the hazards; it can't remove or avoid them.

They have to defend against them.

Hazards may be part of the business or remain within the business, so the company can only strive to minimize the risks but may not eliminate them altogether.

Introducing the Safety management system

It is defined as the systematic management of the risks associated with flight operations, related ground operations, and aircraft engineering or maintenance activities, to achieve high levels of safety performance.

A safety management system is an explicit element of the corporate management responsibilities, which sets and defines how to manage safety as an integral part of its overall business.

The correct implementation of the safety management system programme is a daily practice and exercise on safety prevention.

Instead of reacting exercise, managers should regularly measure and improve processes as: design, hardware, training procedures, maintenance, planning, communication and anything that can be related to the occurrence of accidents. These are the manageable processes that can determine a system safety health. These are the system processes that the managers should practice.

The safety management system is not an add on, but an essential part of the systems core business.

Improving the level of safety reporting process.

Accidents prevention starts from the analysis of the occurrences within the company. Safety report process can be highly improved by introducing a flight data monitor programme within the safety system of the airline.

Information collected from the aircraft Flight Data Recorders provide not only data and exceeded parameters, but also important trends, which are invaluable, both from the operational and technical point of view.

The Safety Manager must also promote the air safety report system within the company by implementing a no penalty reporting issue and a no blame culture within the company.

The safety report process requires also providing correct feedback information to the company's staff.

The feedback provided to the staff should generate more safety reports, thus inducing that healthy circular process that is the essence of any safety and quality system.

It is straightforward that this result can be obtained only if dedicated training in safety management is accomplished within the company, thus creating the required safety culture.

CONCLUSIONS

To cover all the possible procedures necessary to guarantee an absolute safe performance outcome is impossible. It is very unlikely that any safety program can cover all the possible barriers, hazards and accidents scenarios.

We can anticipate some of the probable hazards as analyzed above and regulate our behaviors with regard to those hazards and obvious dangers. There will always be a situation that is not covered by the company's rules or regulations.

There is always a no rule situation.

This does not mean that the company should give up the attempt to process a safety system.

That system is important to guide safe attitude and behavior in relation to identify and understand the barriers and hazards, which constitute an important record of the company's learning about the operational hazards, barriers that may lead to incidents and accidents.