GRU AIRPORT AEROPORTO INTERNACIONAL DE SÃO PAULO

OPERATIONAL SAFETY MANAGEMENT

SAFETY MANAGEMENT SYSTEM – CHALLENGES AND PERSPECTIVES

GRUPO SAFETY

SM ICG SAFETY MANAGEMENT INTERNATIONAL COLLABORATION GROUP

GRU AIRPORT Aeroporto Internacional de São Paulo

40 million passengers a year

- INTRODUCTION – SOME TRENDS
- QMS & SMS – CONCEPTUAL CONSIDERATIONS
- GRU AIRPORT – SAFETY MANAGEMENT SYSTEM
- FINAL CONSIDERATIONS

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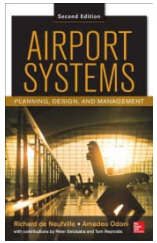
- FINAL CONSIDERATIONS

Observation of some trends...



Airport Systems
Planning, Design and Management

Four trends dominated the airport/airline industry at the start of the twenty-first century:

Long-term growth

5% a year worldwide

Privatization of Airports

Replacement government as ownership

Globalization

The formation of transnational airline alliances and airport companies

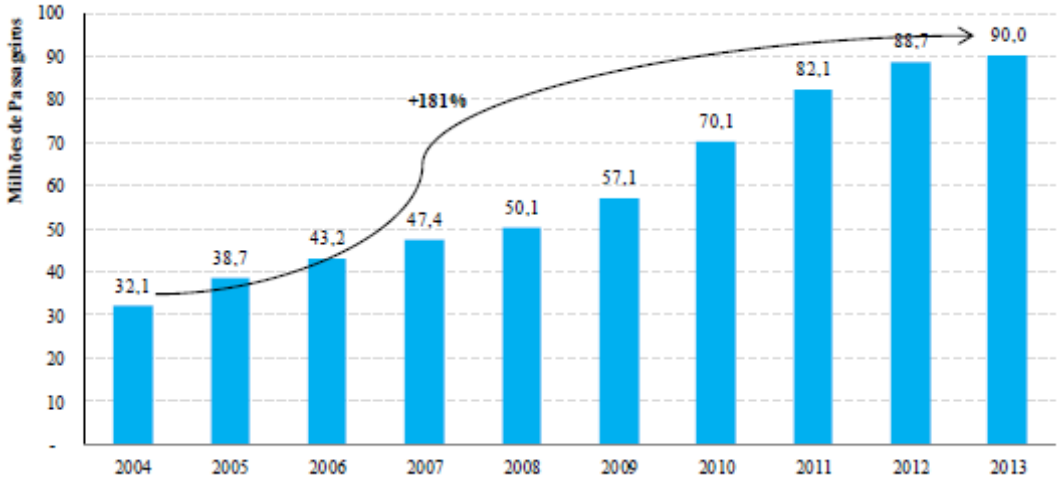
Technical changes

Facilities and integration passenger & cargo handling

Massachusetts Institute of Technology

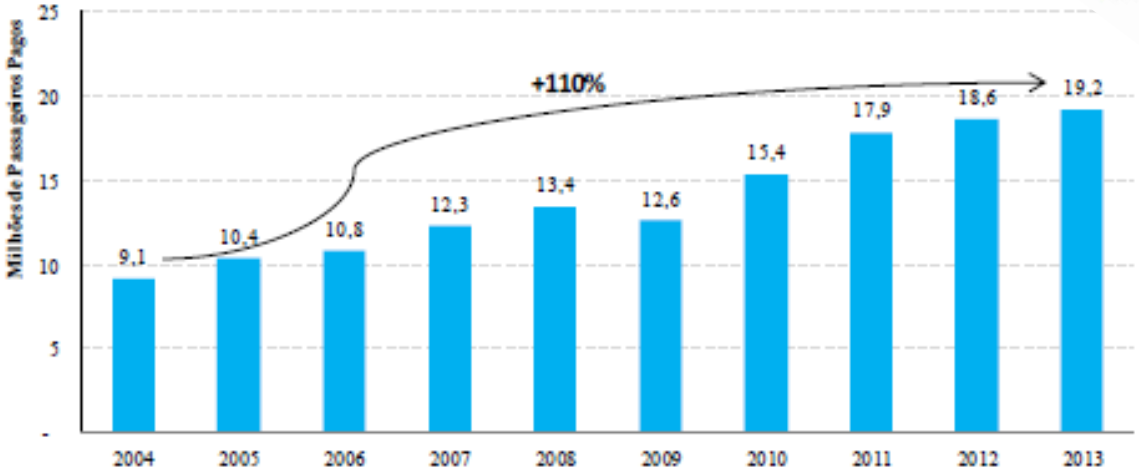
Dr. Richard de Neufville
Dr. Amedeo R. Odoni

Observation of some trends...



AIRLINE TRAFFIC PASSENGER DEMAND BETWEEN 2004 – 2013 – DOMESTIC FLIGHTS

Observation of some trends...



AIRLINE TRAFFIC PASSENGER DEMAND BETWEEN 2004 – 2013 – INTERNATIONAL FLIGHTS

Observation of some trends...

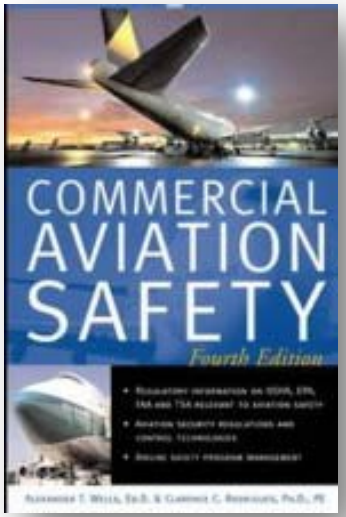
Adequate processes do not exist...within the commercial aviation industry...to ensure that the lessons learned from specific experience...are captured...and made available to the aviation industry...”

CPS
Commercial Airplane Certification Process Study

Study co-chaired by FAA and industry, supported by experts from several major companies and organizations – March 2002

Web accessible at: http://www.ifairworthy.com/pdf/CPSReport.pdf

Observation of some trends...



Today´s aviation safety practitioner has to contend with more than just the safety dictates of the FAA and the NTSB. OSHA and EPA also have regulatory jurisdiction over the aviation sector.

It is therefore important that today´s aviation safety professional gain a broad understanding of relevant OSHA and EPA regulations. Failure to do so could lead to unsafe operating conditions and regulatory violations that could result in millions of dollars in fines.

Alexander T. Wells – Clarance C. Rodrigues
Embry´Riddles Aeronautilcal University

OSHA – Occupational Safety and Health Administration

EPA – Environmental Protectionh Agency

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GRU AIRPORT AEROPORTO INTERNACIONAL DE SÃO PAULO

Management is the greatest innovation of twenty century...

...a set of encoded knowledge, which focus is getting results.

Management is about results, not effort.

THE SCIENCE OF MANAGEMENT

AUTHOR: CLEMENTE NÓBREGA - PHYSICAL AND MASTER IN NUCLEAR ENGINEERING - 2004

GRUPO SAFETY

This is the best graph to show a good safety performance...

SMS Course

MODULE 10
Phased approach to SSP and SMS Implementation

MODULE 8
SMS planning

MODULE 9
SMS operation

MODULE 5
Risks

MODULE 6
SMS regulation

MODULE 7
Introduction to SMS

MODULE 1
SMS course introduction

MODULE 2
Basic safety concepts

MODULE 3
Introduction to safety management

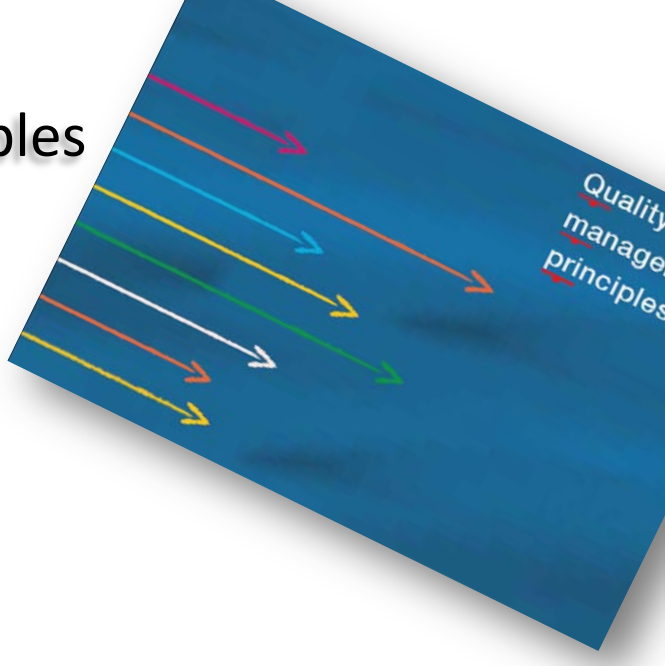
MODULE 4
Hazards

SMS Course

MODULE 3
Introduction to safety management

- The safety stereotype
- The management dilemma
- Need for safety management
- Strategies for safety management
- The imperative of change
- Safety management – Eight building blocks
- Four responsibilities for managing safety

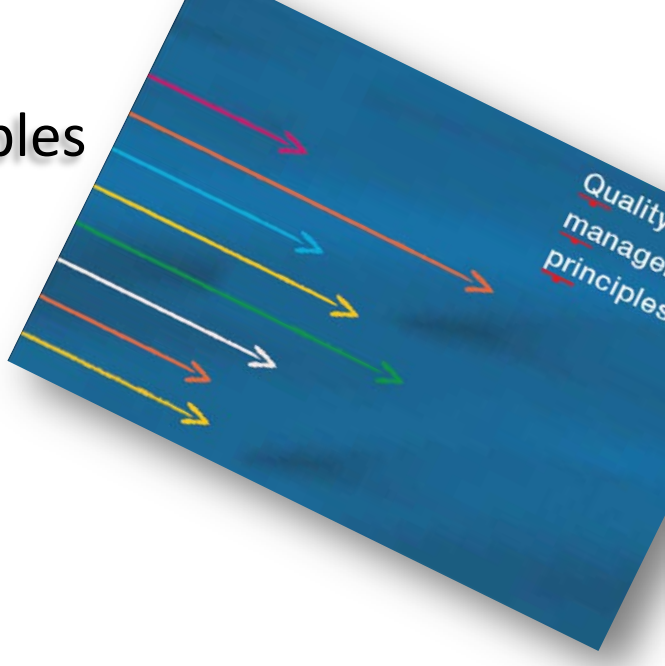
Quality Management Principles



This document introduces the **eight** quality management principles on which the quality management system standards of the ISO 9000 series are based.

http://www.iso.org/iso/qmp_2012.pdf

Quality Management Principles



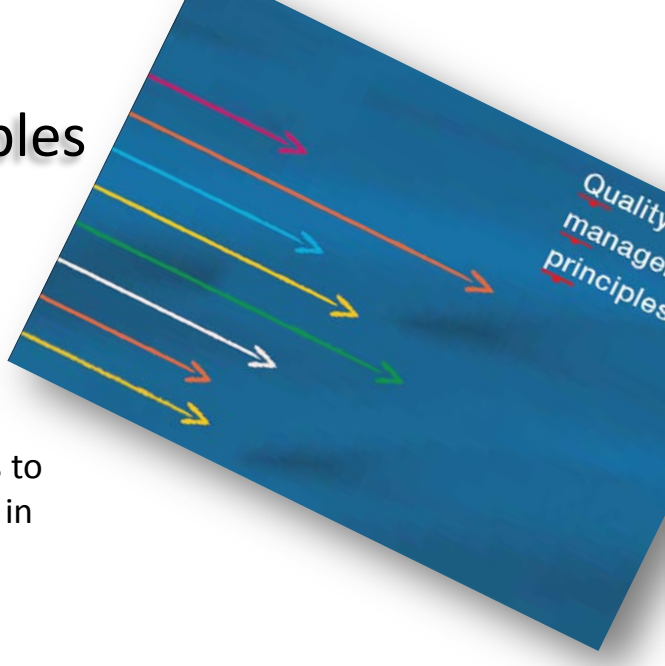
Process Approach

A desired result is achieved more efficiently when activities and related resources are managed as a process.

Key benefits

- Lower costs and shorter cycle times through effective use of resources.
- Improved, consistent and predictable results.
- Focused and prioritized improvement opportunities.

Quality Management Principles



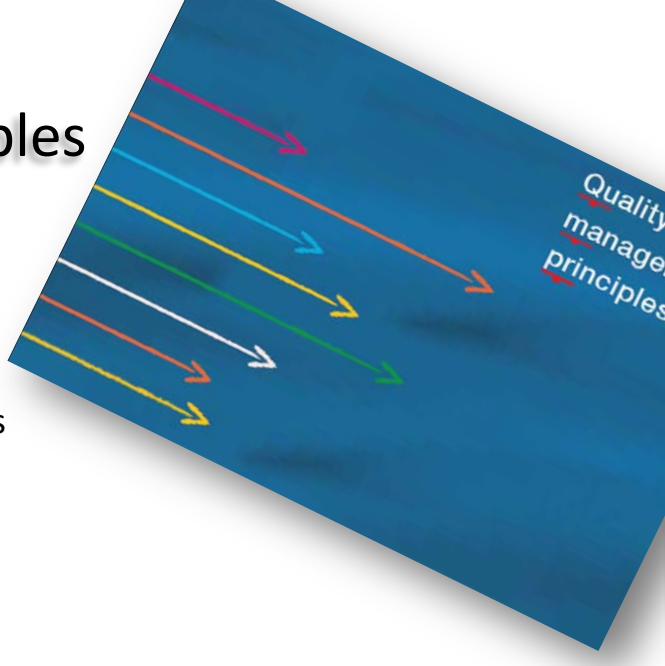
System approach to management

Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.

Key benefits

- Integration and alignment of the processes that will achieve the best desired results.
- Ability to focus effort on the key processes.
- Providing confidence to interested parties as to the consistency, effectiveness and efficiency of the organization.

Quality Management Principles



Continuous improvement

Continuous improvement of the organization's overall performance should be a permanent objective of the organization.

Key benefits

- Performance advantage through improved organizational capabilities.
- Alignment of improvement activities at all levels to an organization's strategic intent.
- Flexibility to react quickly to opportunities.

Differences between brazilian regulation

RBAC 153

Brazilian Civil Aviation Rules 153

153.25
Responsability for the management of Operational Safety

RBAC 121

Brazilian Civil Aviation Rules 121

121.1225
Policy and Objectives

121.1227
Safety Risk Management

121.1229
Safety Assurance

121.1231
Safety Promotion

An example of a requirenment about safety management with focus in a process approach

153.57 OPERATIONAL SAFETY ASSURANCE

(a) The aerodrome operator shall establish requirements and provide resources to ensure operational safety through:
(1) monitoring and measurement of operational safety performance;
(2) Change management; **(tool)**
(3) SMS ongoing improvement.

ORG 3.2.2

The Operator *should* have a process to identify changes within or external to the organization that have the potential to affect the safety of aircraft operations, and:
i) For internal changes, ensure safety risk is considered before such changes are implemented;
ii) For external changes, evaluate the adequacy of existing risk controls when such changes will affect the operational environment. **[SMS] (GM)**

Quality Concepts

Quality

Degree to which a set of inherent characteristics fulfils requirement.

ISO 9000:2005 STANDARD

Quality Concepts

Quality Management

A quality management includes all the activities that organizations use to direct, control, and coordinate quality.

ISO 9000:2005 STANDARD

Quality Concepts

Quality Management System

Provides a management framework with the necessary controls to address the risks and monitor and measure the performance of your business .

ISO 9001

Safety Concepts

SAFETY

Within the context of aviation, safety is —the state in which the possibility of harm to persons or of property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and safety risk management.

Safety Concepts

SAFETY MANAGEMENT

An understanding of these cultural components, and the interaction between them, is important to *safety management*…

Safety management processes identify hazards with the potential to adversely affect safety…

Safety Concepts

SAFETY MANAGEMENT SYSTEM

A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Both concepts working together

QMS

SMS

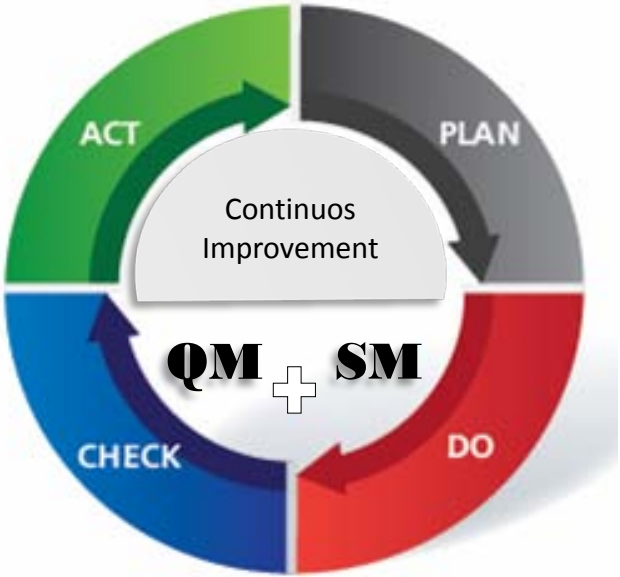
Both concepts working together

SQMS

Safety and Quality Management System

Both concepts working together

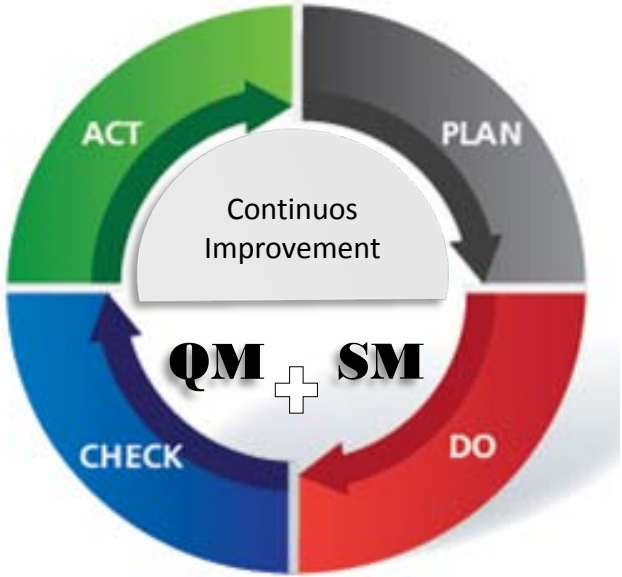
SQMS



Both concepts working together

SQMS

INPUTS

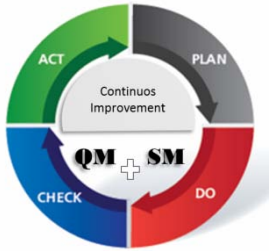


OUTPUTS

Both concepts working together

INPUTS

- ACCIDENTS AND INCIDENTS REPORTS;
- SAFETY REPORT SYSTEM
- AUDIT REPORT
- RUNWAY INSPECTION
- RAMP OPERATION SAFETY AUDIT



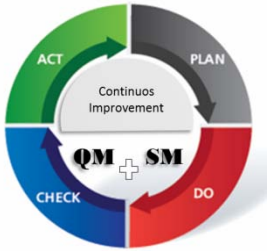
SQMS

Both concepts working together

Both concepts working together

- POLICY AND OBJECTIVES
  - ✈ Safety Board Meeting **process**
  - ✈ Targets and objectives **process**
  - ✈ Documents management **process**
- SAFETY RISK MANAGEMENT
  - ✈ Hazard Identification **process**
  - ✈ Risk assessment **process**
- SAFETY **QUALITY** ASSURANCE
  - ✈ Safety Audit **process**
  - ✈ Safety Performance Indicator **process**
  - ✈ Change management **process**
- PROMOTION AND EDUCATION
  - ✈ Safety Training **process**
  - ✈ Safety comunication **process**

Both concepts working together



SQMS

OUTPUTS

- PERFORMANCE IMPROVEMENT;
- SAVE MONEY;
- COMPLIANCE IMPROVEMENTS;
- SAFETY CULTURE IMPROVEMENTS
- TREND ANALYSIS

- INTRODUCTION – SOME TRENDS
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OPERATIONAL SAFETY MANAGEMENT

PRESIDENT

SAFETY MANAGER

- WORK SAFETY COORDINATOR
- ENVIRONMENT COORDINATOR
- OPERATIONAL SAFETY COORDINATOR
- ENGINEERING COORDINATOR
- HUMAN FACTORS COORDINATOR
- SAFETY QUALITY ASSURANCE COORDINATOR

OPERATIONAL SAFETY MANAGEMENT

WORK SAFETY COORDINATOR

WORK SAFETY ENGINEER

WORK SAFETY TECHNICIAN

OPERATIONAL SAFETY MANAGEMENT

ENVIRONMENT COORDINATOR

ENVIRONMENT ENGINEER

VETERINARY

BIOLOGIST

ENVIRONMENT TECHNICIAN

ENVIRONMENT TECHNICIAN

OPERATIONAL SAFETY MANAGEMENT

OPERATIONAL SAFETY COORDINATOR

OPERATIONAL SAFETY SUPERVISION

OPERATIONAL SAFETY ASSISTANT (OFFICE)

ADMINISTRATIVE SUPORT

OPERATIONAL SAFETY ASSISTANT (RAMP)

OPERATIONAL SAFETY MANAGEMENT

OPERATIONAL SAFETY ENGINEERING COORDINATOR

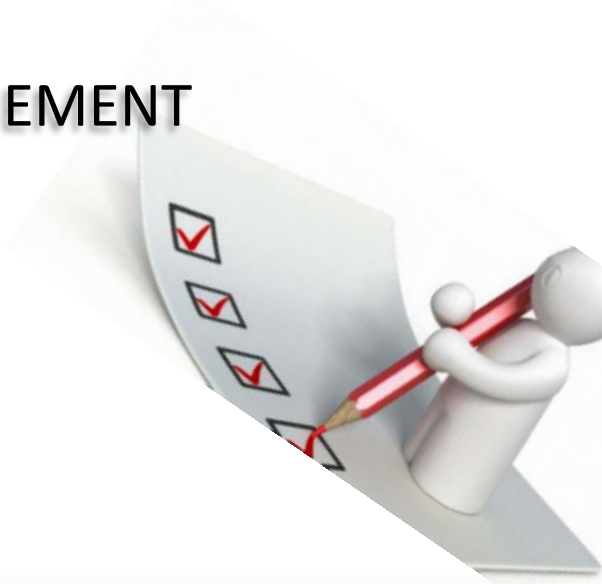
HUMAN FACTORS COORDINATOR

OPERATIONAL SAFETY MANAGEMENT

SAFETY QUALITY ASSURANCE COORDINATOR

- SAFETY QUALITY ASSURANCE SPECIALIST
- SAFETY QUALITY ASSURANCE ANALYST
- ADMINISTRATIVE SUPPORT

OPERATIONAL SAFETY MANAGEMENT



INTRODUÇÃO

Esta Ferramenta foi desenvolvida pelo Safety Management International Collaboration Group (SMICG) para ser utilizada na avaliação do Sistema de Gerenciamento da Segurança Operacional (SGSO) de uma organização, podendo ser empregada tanto em uma avaliação inicial, como também na vigilância continuada e supervisão do SGSO. A ferramenta é baseada em uma série de indicativos que ajudam na avaliação do sistema implantado na organização, e foi adaptada pela Gerência de Segurança Operacional do **GRU**AIRPORT, para indicar o nível de conformidade com a regulamentação vigente e as melhores práticas recomendadas pela indústria do transporte aéreo.

A Análise do Faltante (Gap Analysis) compara os processos e procedimentos relacionados ao Sistema de Gerenciamento de Segurança Operacional de um provedor de serviço com os requisitos da autoridade de aviação civil, bem como com as melhores práticas recomendadas pelos organismos internacionais.

Safety Management Manual

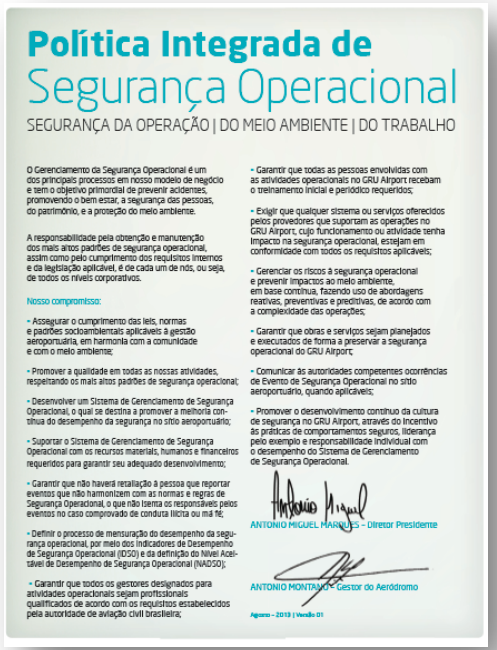
Document or set of documents , prepared by the aerodrome operator , which consolidates the policy, objectives , *process*, procedures, methodologies and other requirements adopted to ensure the operational safety.

RBAC 153

INTEGRATED SAFETY MANAGEMENT SYSTEM

Operational Safety – Work Safety - Environment

Operational Safety Integrated Policy



Política Integrada de
Segurança Operacional

SEGURANÇA DA OPERAÇÃO | DO MEIO AMBIENTE | DO TRABALHO

O Gerenciamento da Segurança Operacional é um dos principais processos em nosso modelo de negócio e tem o objetivo primordial de prevenir acidentes, promovendo o bem estar, a segurança das pessoas, do patrimônio, e a proteção do meio ambiente.

A responsabilidade pela obtenção e manutenção dos mais altos padrões de segurança operacional, assim como pelo cumprimento dos requisitos internos e da legislação aplicável, é de cada um de nós, ou seja, de todos os níveis corporativos.

Nosso compromisso:

- Assegurar o cumprimento das leis, normas e padrões socioambientais aplicáveis à gestão aeroportuária, em harmonia com a comunidade e com o meio ambiente;
- Promover a qualidade em todas as nossas atividades, respeitando os mais altos padrões de segurança operacional;
- Desenvolver um Sistema de Gerenciamento de Segurança Operacional, o qual se destina a promover a melhoria contínua do desempenho da segurança no sítio aeroportuário;
- Suportar o Sistema de Gerenciamento de Segurança Operacional com os recursos materiais, humanos e financeiros requeridos para garantir seu adequado desenvolvimento;
- Garantir que não haverá retaliação à pessoa que reportar eventos que não harmonizem com as normas e regras de Segurança Operacional, o que não torna os responsáveis pelos eventos no caso comprovado de conduta ilícita ou má fé;
- Definir o processo de mensuração do desempenho da segurança operacional, por meio dos Indicadores de Desempenho de Segurança Operacional (IDSO) e da definição do Nível Aceitável de Desempenho de Segurança Operacional (NADSO);
- Garantir que todos os gestores designados para atividades operacionais sejam profissionais qualificados de acordo com os requisitos estabelecidos pela autoridade de aviação civil brasileira;
- Garantir que todas as pessoas envolvidas com as atividades operacionais no GRU Airport recebam o treinamento inicial e periódico requeridos;
- Exigir que qualquer sistema ou serviços oferecidos pelos provedores que suportam as operações no GRU Airport, cujo funcionamento ou atividade tenha impacto na segurança operacional, estejam em conformidade com todos os requisitos aplicáveis;
- Gerenciar os riscos à segurança operacional e prevenir impactos ao meio ambiente, em base contínua, fazendo uso de abordagens reativas, preventivas e preditivas, de acordo com a complexidade das operações;
- Garantir que obras e serviços sejam planejados e executados de forma a preservar a segurança operacional do GRU Airport;
- Comunicar às autoridades competentes ocorrências de Evento de Segurança Operacional no sítio aeroportuário, quando aplicáveis;
- Promover o desenvolvimento contínuo da cultura de segurança no GRU Airport, através do incentivo às práticas de comportamentos seguros, liderança pelo exemplo e responsabilidade individual com o desempenho do Sistema de Gerenciamento de Segurança Operacional.

ANTONIO MIGUEL MARQUES – Diretor Presidente

ANTONIO MONTANO – Gestor do Aeródromo

Agosto – 2013 | Versão 01

INTEGRATED SAFETY MANAGEMENT SYSTEM

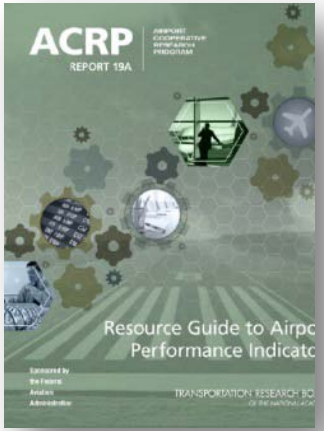
COMITÊ SEGURANÇA CSO OPERACIONAL

OPERATIONAL SAFETY BOARD

LOCAL RUNWAY LRST SAFETY TEAM

HANDLING GROUND GHOST TEAM OPERATION SAFETY

INTEGRATED SAFETY MANAGEMENT SYSTEM



AIRPORT COOPERATIVE
RESEARCH PROGRAM
REPORT 19A

GUIDE TO AIRPORT
PERFORMANCE MEASURES
AIRPORT COUNCIL
INTERNATIONAL

ANAC
Agência Nacional de Aviação Civil - Brasil

WORKSHOPS FOR
DEVELOPMENT AIRPORT
INDICATORS

INTEGRATED SAFETY MANAGEMENT SYSTEM

38 Safety Performance Indicators – SPI

- Cargo
- Work Safety
- Airside Operation
- Maintenance and Egeneering
- Air Navigation
- Environment
- Safety Culture

INTEGRATED SAFETY MANAGEMENT SYSTEM

DIRTY DOZEN

Developed by **Gordon Dupont**
1993

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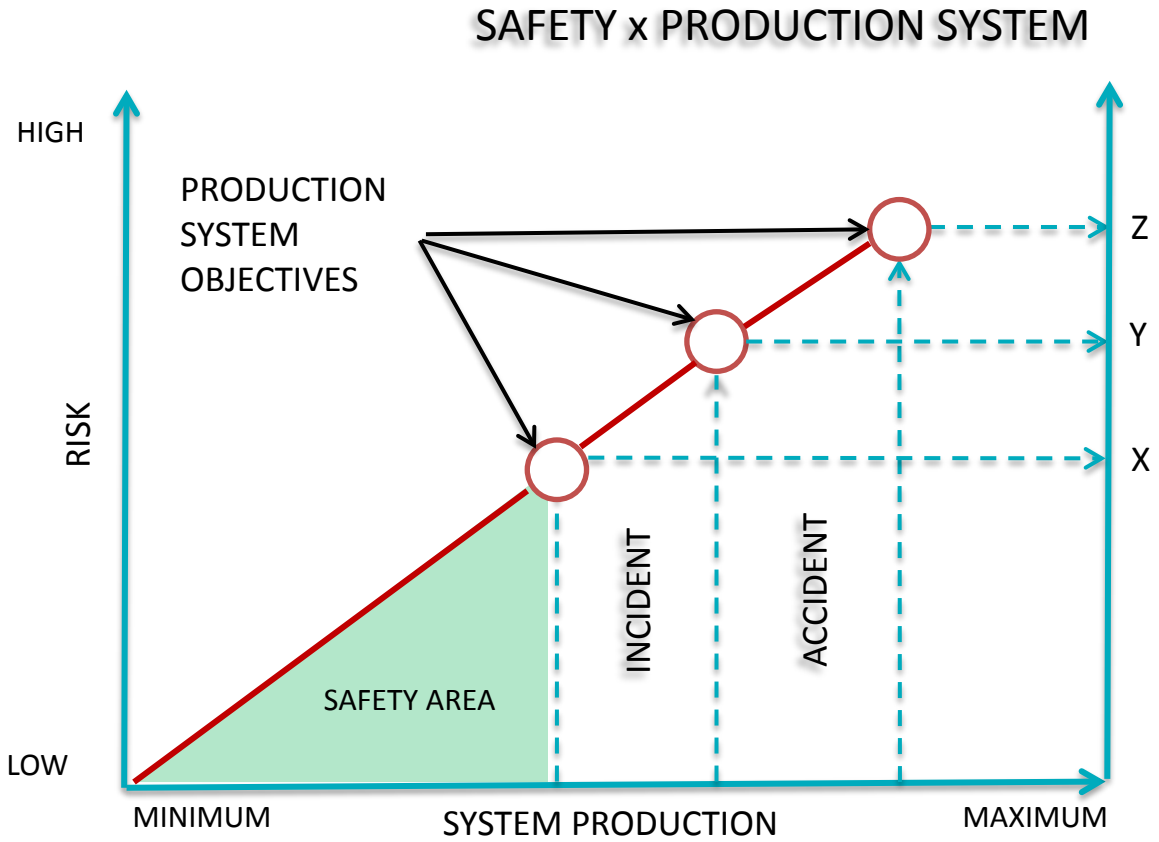
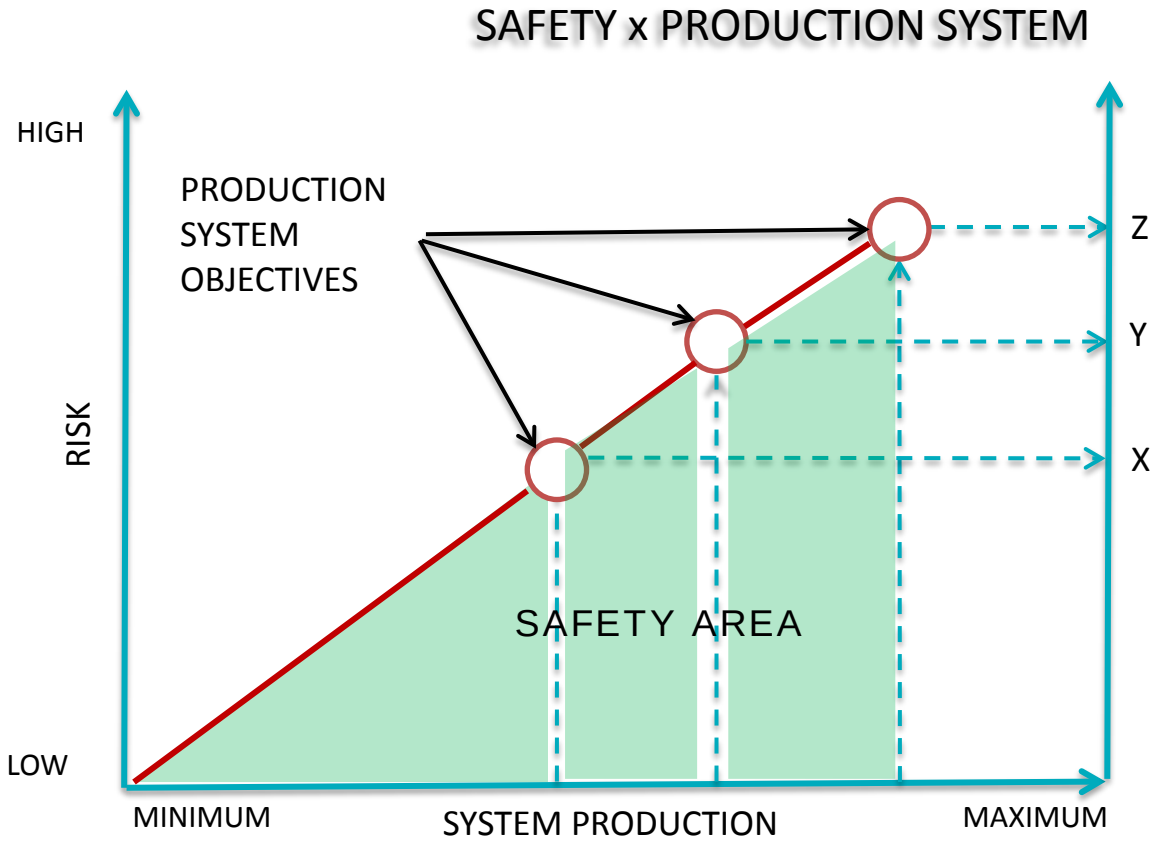
Final considerations...



Final considerations...



Final considerations...

Management Dilemma

Final considerations...

Safety Management System Dilemma

Safety Approach

Safety Management System Approach

Final considerations...

RBAC XXX

Brazilian Civil Aviation Rules XXX

Safety Management System Regulation

Final considerations...

SAFETY MANAGEMENT SYSTEM

Final considerations...

Quality

Safety

Both sides of the same coin

Thank you!

History is a vast early warning system.
Norman Cousins

Capt. Marcos Eugenio de **Abreu**
marcos.eugenio@gru.com.br