Roland Müller · Andreas Wittmer Christopher Drax Editors

Aviation Risk and Safety Management

Methods and Applications in Aviation Organizations



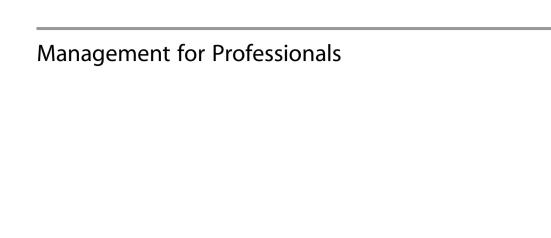
Management for Professionals

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Preface

This book closes a gap as there is no literature currently in circulation that specifically addresses risk management issues in the aviation industry. The aim of this book is to show the theoretical background and implementation phases of a multifaceted risk management system, to gain a gradation for smaller operators who do not have the complexity of large operators for whom the system was initially developed. This approach illustrates the leeway available to adapt processes and reveals the interfaces between risk management and safety management. The book describes how to approach corporate risk management, with reasonable effort, appropriate to the size and complexity of the specific operator. It provides an idea of what the key considerations are and how to effectively operate such a system with the various interfaces. Furthermore, it provides an indication about the time investment needed in the set-up and the continuous process of corporate risk management from a cost and benefit perspective. Specifically, a safety management system (SMS), fatigue risk management and air traffic control risks are provided as specific practical cases of risk management.

An empirical study shows the level of implementation of corporate risk management in the aviation industry in practice. Based on the comparison of theory and practice, and the knowledge provided by the empirical study, different checklists and samples for the optimization of risk management are provided. Documents illustrating risk policy, the job description of a risk manager, a questionnaire for an SMS gap analysis, emergency director checklist, master risk list, hazard reporting procedure, air safety report, safety manager evaluation sheet, SWANS report, etc. are provided in appendices for the particular chapters. Furthermore, a time/cost table for the implementation and continuous development of corporate risk management is included.

This book addresses all actors in the aviation industry, such as aviation companies, consultants, and educators. It provides the opportunity for all actors to build and optimize their risk management systems/procedures. For the strategic management level, this publication makes clear why risk management has to be established as a culture in a company and must be fully supported by top management.

Finally we would like to thank everyone who supported us during the process of writing this book, especially the authors Ernst Kohler, Stefan Becker and Heinz Wipf who provided additional content. Furthermore, many thanks go to Nicole

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Denk who helped with translations and supported us administratively, and to David Roberts who supported us with the final editing. We are grateful for all the support we have received and which helped to finalize this book that fills a void in the current literature.

Sankt Gallen, Switzerland Lorsch, Germany January 2014 Roland Müller Andreas Wittmer Christopher Drax

Abbreviations

A/C Aircraft

AEMS Airplane Emergency Medical Services
ALARP As low as reasonable practicable
AMC Acceptable Means of Compliance

AOC Air Operator Certificate

ArG Arbeitsgesetz Art. Artikel/Article

BAZL Bundesamt für Zivilluftfahrt

BCMS Business Continuity Management System

BIA Business Impact Analysis

BoD Board of Directors

CAA Civil Aviation Authority
CEO Chief Executive Officer
CFIT Controlled Flight into Terrain

CFO Chief Financial Officer

COSO Committee of Sponsoring Organizations of the Tradeway Commission

CRM Corporate Risk Management CRM Crew Resource Management

CRO Chief Risk Officer

CS Certification Specification

DME Distance Measuring Equipment

DOT Department of Transportation

EASA European Aviation Safety Agency

EBITDA Earnings before interest, taxes, depreciation and amortization

EC European ConventionEEG ElectroencephalogramERM Enterprise Risk Management

EU European Union

FAA Federal Aviation Administration FMEA Failure Mode Effects Analysis FOCA Federal Office of Civil Aviation FPM Fellow Program in Management FRMS Fatigue Risk Management System viii Abbreviations

GM Guidance Material HAZID Hazard Identification

HEMS Helicopter Emergency Medical Services

HSG Hochschule St. Gallen

IBAC International Business Aviation Council ICAO International Civil Aviation Authority

ICS Internal Control System IFR Instrumental Flight Rules

ISO International Organization for Standardization

JAA Joint Aviation Authorities KSS Karolinska Sleepiness Scale

LFG Luftfahrtgesetz LFV Luftfahrtverordnung

LOFT Line Oriented Flight Training LVA Luftverkehrsabkommen

MCTOM Maximum Certified Take-off Mass

MDA Minimum Descent Altitude

MSAWS Minimum Safe Altitude Warning System

NPA Notice of Proposed Amendment

OM Operational Manual

OPS Operations
Pax Passenger/s
PF Pilot Flying
PNF Pilot Not Flying

QMS Quality Management System QRA Quantitative Risk Analysis

RIMS Risk & Insurance Management Society

RVOG Regierungs- und Verwaltungsorganisationsgesetz

SAG Safety Action Group

SARPS Standards and Recommended Practices SEC Securities and Exchange Commission

SMM Safety Management Manual SMS Safety Management System

SPS Samn Perelli Scale SRB Safety Review Board USD United States Dollar

VAS-F Visual Analogue Scale to Evaluate Fatigue Severity

VFR Visual Flight Rules

VOR Very High Frequency Omni Directional Radio Range

WOCL Window of Circadian Low

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