

## Managing Major Hazards: The Lessons Of The Moura Mine Disaster

The contributions in Risks Challenging Publics, Scientists and Government looks at risks not just as a technical, social, political or economic matter, but as originating and challenging the various disciplines. Contextual aspects, usually defined by engineers as "margin conditions", are generally not looked at, but deserve much more attention, pa

Regulatory Governance and Risk Management will be the first book addressing the diffusion of risk-based governance in the coal mining industry from a health and safety standpoint. More specifically, it aims to understand a puzzling phenomenon. Since the 1990s, the approach of risk-based governance has been widely adopted in almost all developed countries in Europe and commonwealth countries. It, however, has diffused much more slowly in the U.S. Using a diffusion approach and comparisons between Australia and the U.S., the book explores the mechanisms that both drive and prevent the diffusion of risk-based governance in the coal mining industry. This book has two major selling points. First, this is a timely work given the Upper Big Branch coal mine explosion occurred in April, 2010. After this disaster, many asked why an enhanced level of enforcement after 2006 has not prevented catastrophic accidents from occurring and why risk-based governance, which helps other countries achieve better safety performance, has been largely ignored in the U.S. This book answers these questions and makes recommendations on how to remove barriers in moving toward risk-based governance. Second, this book is readable because it embeds theories into storytelling and gives particular emphasis on the influence of key strategic individuals.

The assessment and management of risk to society from the operation of chemical process plants and other industrial activities in which dangerous substances are produced, used, handled or stored will remain a topic of great importance in the next decade. In order to evaluate this specific risk on a qualitative and/or quantitative basis, the concepts of risk analyses are linked together in this book. The "performance based" and "goal oriented" regulatory requirements of the European Council's new "Seveso II Directive" for the identification of large scale industrial hazards, prevention of sudden and uncontrolled releases of dangerous substances from industrial plants and mitigation of serious consequences of industrial accidents to people and the environment are examined. The fact that risk assessment and management are key elements to such forms of regulation is also demonstrated. While the "Seveso II Directive" defines "what" has to be achieved on the control of major hazards involving dangerous substances within the European Union, the methods of risk assessment and management give guidance on "how" to achieve it. The text provides a practical guide for decision-makers in regulatory bodies and companies with a non-technical background. Scientists and engineers who are not yet familiar with the concepts of risk assessment and who want a survey of some fundamentals of, and principal results from, risk assessment studies and approaches primarily for applications in the context defined by the "Seveso Directives" will also find this book invaluable.

In this book, the editors, with 25 notable contributors, expand the knowledge of crisis management, focusing on case studies of high-profile events that have occurred in recent history. Part One of the text aims at theoretical development through empirical case studies and also postulates a crisis typology and charts specific theoretical and administrative challenges. The "case bank," which comprises the bulk of the book, is presented in four additional sections. The first deals with the development of crises and compares the impact of the fragmented and complex international environment that allowed the "safe area" in Bosnia to be overrun by Bosnian Serbs in 1995. The final chapter chronicles the incredible human costs of mismanaged crisis in the Rwanda massacres in 1994. The second section explores the many decisional dilemmas that confront crisis managers. Cases include the fire at the Piper Alpha oil rig, the 1999 Turkish earthquakes, the Eindhoven, Holland plane crash, and crisis management in the Mad Cow epidemic disease in the U.K. The third section explores the long-term dimensions of crises and crisis management and particularly the development of national traumas such as the assassination of Sweden's Prime Minister Olaf Palme in 1986, the 1992 Amsterdam air crash, and the TWA flight 800 disaster in 1996. The final section shifts focus to future scenarios such as speculative information technology disasters, potentially devastating viral epidemics, deteriorating environmental and societal conditions in Russia, the southwest U.S. coming water shortage, and the outlook for Japan, one of the world's most disaster-prone countries. Summarizing the research findings of the past decade, the authors describe patterns in the paths toward crises, the dilemmas and coping mechanisms that emerge during the thick of crisis, and, very importantly, the pathways that lead away from crisis.

Managing Risk and Resilience in Airline Flight Safety

Regulatory Governance and Risk Management

Close Calls

Major Hazards and Their Management

Anticipating Risks and Organising Risk Regulation

Lees' Process Safety Essentials

An Example of Integrating Quantitative and Qualitative Methods

***When corporations carry on their business in a grossly negligent manner, or take a cavalier approach to risk management, the consequences can be catastrophic. The harm may be financial, as occurred when such well-regarded companies as Enron, Lehman Brothers, Worldcom and Barings collapsed, or it may be environmental, as illustrated most recently by the Gulf oil spill. Sometimes deaths and serious injuries on a mass scale occur, as in the Bhopal gas disaster, the Chernobyl nuclear explosion, the Paris crash of the Concorde, the capsiz of the Herald of Free Enterprise, and rail crashes at Southall, Paddington and Hatfield in England.What role can the law play in preventing such debacles and in punishing the corporate offenders? This collection of thematic papers and European country reports addresses these questions at both a theoretical and empirical level. The thematic papers analyse corporate criminal liability from a range of academic disciplines, including law, sociology/criminology, economics, philosophy and environmental studies, whilst the country reports look at the laws of corporate crime throughout Europe, highlighting both common features and irreconcilable differences between the various jurisdictions.***

***Extreme weather and climate events, interacting with exposed and vulnerable human and natural systems, can lead to disasters. This Special Report explores the social as well as physical dimensions of weather- and climate-related disasters, considering opportunities for managing risks at local to international scales. SREX was approved and accepted by the Intergovernmental Panel on Climate Change (IPCC) on 18 November 2011 in Kampala, Uganda.***

***This book explores the challenges, opportunities, applications, and implications of applying qualitative research to critical questions of research and practice in the field of organizational risk and safety. The book brings together a diverse perspective to explore the practice of conducting qualitative research as well as to debate the quality of research and knowledge, drawing on a range of different perspectives and traditions. It offers novel and innovative developments in data collection and data analysis methods and tools that can be applied to safety, risk, and accident analysis in complex systems. It also will present practical issues associated with data access and empirical research in challenging and high-stakes environments. This book will provide academics, researchers, students, and professionals in the fields of safety, accident analysis, and risk with a broad-range and expert guide to the key issues and debates in the field, as well as a set of exemplary cases and reflective narratives from leading researchers in the field.***

***This book consists of ten chapters, focusing on how to combine quantitative with qualitative methods in a research project. The approach of combining both methods is called 'Triangulation'. In the social sciences, triangulation is often used in combining several research methods to study one subject. However, it is not in itself a method in the same way as a quantitative or qualitative approach with a specific paradigm. Triangulation is a plan, structure and investigation strategy deployed to obtain answers to problems identified at an earlier stage, and is widely used by researchers due to its capability in cross-checking the validity of findings and its minimal risk of bias. This book details the triangulation approach through its use in a real research project. Although, there are a number of books which discuss general research guidelines and methods, there is a notable lack of such books in social sciences which provide an example of integrating quantitative and qualitative methods in one research project. As such, the contents of this book will be useful to students, academicians and practitioners conducting research work.***

***Risks Challenging Publics, Scientists and Governments***

***Safety, Culture and Risk***

***Implementing Enterprise Risk Management***

***Lives in Peril***

***Risk Assessment and Management in the Context of the Seveso II Directive***

***Managing Major Hazards***

***MANAGING CRISES***

Written by the former Deputy Counsel and Risk Manager for the Big Dig from 1996 to 2005, Virginia Greiman, this book describes the numerous risks faced by the project manager and the lessons learned that have never before been written about despite the huge volume of news articles and reports that have been published on the Big Dig. New insights based on excerpts of interviews offer new perspective on the challenges and accomplishments of the Big Dig, and separates this book from other texts in the field.

A new approach to safety, based on systems thinking, that is more effective, less costly, and easier to use than current techniques. Engineering has experienced a technological revolution, but the basic engineering techniques applied in safety and reliability engineering, created in a simpler, analog world, have changed very little over the years. In this groundbreaking book, Nancy Leveson proposes a new approach to safety—more suited to today’s complex, sociotechnical, software-intensive world—based on modern systems thinking and systems theory. Revisiting and updating ideas pioneered by 1950s aerospace engineers in their System Safety concept, and testing her model extensively on real-world examples, Leveson has created a new approach to safety that is more effective, less expensive, and easier to use than current techniques. Arguing that traditional models of causality are inadequate, Leveson presents a new, extended model of causation (Systems-Theoretic Accident Model and Processes, or STAMP), then shows how the new model can be used to create techniques for system safety engineering, including accident analysis, hazard analysis, system design, safety in operations, and management of safety-critical systems. She applies the new techniques to real-world events including the friendly-fire loss of a U.S. Blackhawk helicopter in the first Gulf War, the Vioxx recall, the U.S. Navy SUBSAFE program and the bacterial contamination of a public water supply in a Canadian town. Leveson’s approach is relevant even beyond safety engineering, offering techniques for “reengineering” any large sociotechnical system to improve safety and manage risk.

Lives in Peril demonstrates how and why seafarers are a vulnerable group of workers. It argues they are made so by the organisation and structure of their employment; the prioritisation of profit over safety by the actors that engage and control their labour; the limits of enforcement of the regulatory framework that is in place to protect them; and by their weakness as collective actors in relation to capital. The consequences of this vulnerability are seen in data on their occupationally-related morbidity and mortality - evidence that probably only represents a partial picture of the actual extent of the physical, mental and emotional harm resulting from work at sea. This volume’s central argument is that this situation is likely to remain broadly unchanged as long as global maritime governance and regulation remains in thrall to the neo-liberal economic and political arguments that drive globalisation, and fails to enforce regulatory standards more robustly.

Written by a security expert with more than 25 years' experience, this book examines how fundamental staff awareness is to establishing security and addresses such challenges as containing threats, managing policies, developing programs, and getting a business to buy into a security plan. --from publisher description.

Managing Critical Infrastructure Risks

Selected Contributions to the Australian Aviation Psychology Symposium 2000

Enterprise Risk Management

Lees' Loss Prevention in the Process Industries

Emergency Planning

Threats, Dilemmas, Opportunities

Special Report of the Intergovernmental Panel on Climate Change

Examines workplace risk management in the context of a major mine disaster

Essential insights for risk management if you want to understand enterprise risk management from some of the leading academics and practitioners of this exciting new methodology. Enterprise Risk Management is the book for you. Through in-depth insights into what practitioners of this evolving business practice are actually doing as well as anticipating what needs to be taught on the topic, John Frasar and Betty Simkins have sought out the leading experts in this field to clearly explain what enterprise risk management is and how you can teach, learn, and implement these leading practices within the context of your business activities. In this book, the authors take a broad view of ERM, or what is called a holistic approach to ERM. Enterprise Risk Management introduces you to the wide range of concepts and techniques for managing risk in a holistic way that correctly identifies risks and prioritizes the appropriate responses. This invaluable guide offers a broad overview of the different types of techniques; the role of the board, risk tolerances, risk profiles, risk workshops, and allocated resources, while focusing on the principles that determine business success. This comprehensive resource also provides a thorough introduction to enterprise risk management as it relates to credit, market, and operational risk, as well as the evolving requirements of the rating agencies and their importance to the overall risk management in a corporate setting. Filled with helpful tables and charts, Enterprise Risk Management offers a wealth of knowledge on the drivers, the techniques, the benefits, as well as the pitfalls to avoid, in successfully implementing risk management. Discusses the history of risk management and more recently developed enterprise risk management practices and how you can prudently implement these techniques within the context of your underlying business activities Provides coverage of topics such as the role of the chief risk officer, the use of anonymous voting technology, and risk indicators and their role in risk management Explores the culture and practices of enterprise risk management without getting bogged down by the mathematics surrounding the more conventional approach financial risk management This informative guide will help you unlock the incredible potential of enterprise risk management, which has been described as a proxy for good management.

This unique book expands the contribution of aviation psychology and human factors to the aviation industry within the Asia Pacific region, with participation from many other parts of the globe, and key local and international experts, developing the safety, efficiency and viability of the industry. It is a forward-looking work, providing new strategies for psychology and human factors to increase the safe and effective functioning of aviation organisations and systems, pertinent to both civil and military operations. This is the formal refereed proceedings of The Australian Aviation Psychology Symposium, Manly Beach, Sydney 2000. The symposium had a diverse range of contributions and Development Workshops, bringing together practitioners from aviation psychology and human factors, flight operations management, safety managers, pilots, cabin crew, air traffic controllers, engineering and maintenance personnel, air safety investigators, staff from manufacturers and regulatory bodies, and applied aviation industry researchers and academics. This book will be of interest to anyone involved in human factors, safety or aviation psychology within both the civil and military aviation industry.

Safety management in the workplace is an issue of critical importance to business managers as well as those of responsibility for OHS in any organisation. However, although the concepts of safety, culture and risk have become increasing matters of concern and are often discussed, they are concepts that are not often clearly understood.This new book from Professor Andrew Hopkins focuses on these concepts, and deals with the complex issues in a clear, informative style that will both inform organisations and companies, and assist them to be better able to create safe environments for their employees and clients, and to mitigate risk.Content:The first three parts of the book advocate the development of risk-awareness. Part 1 is a general discussion of organisational culture.Part 2 is an empirical investigation of how organisational culture affects safety, using the Glenbrook train crash as a case study.Part 3 is a second case study of how organisational culture interfered with safety, focussing on the F111 inquiry at Amberley Air Force Base, Queensland.Part 4 is an extended discussion of the concept of risk, dealing with issues of risk management.

Lessons of the Financial Crisis for Risk Management

The lessons of the Moura Mine disaster

Hazards XVIII

Today's Leading Research and Best Practices for Tomorrow's Executives

Preparedness, Prevention and Response

Unsafe Acts, Accidents and Heroic Recoveries

Using Social Science to Understand and Improve Wildland Fire Organizations

Anticipating risks has become an obsession of the early twenty-first century. Private and public sector organisations increasingly devote resources to risk prevention and contingency planning to manage risk events should they occur. This 2010 book shows how we can organise our social, organisational and regulatory policy systems to cope better with the array of local and transnational risks we regularly encounter. Contributors from a range of disciplines - including finance, history, law, management, political science, social psychology, sociology and disaster studies - consider threats, vulnerabilities and insecurities alongside social and organisational sources of resilience and security. These issues are introduced and discussed through a fascinating and diverse set of topics, including myxomatosis, the 2012 Olympic Games, gene therapy and the financial crisis. This is an important book for academics and policy makers who wish to understand the dilemmas generated in the anticipation and management of risks.

A practical, real-world guide for implementing enterprise risk management (ERM) programs into your organization Enterprise risk management (ERM) is a complex yet critical issue that all companies must deal with in the twenty-first century. Failure to properly manage risk continues to plague corporations around the world. ERM empowers risk professionals to balance risks with rewards and balance people with processes. But to master the numerous aspects of enterprise risk management, you must integrate it into the culture and operations of the business. No one knows this better than risk management expert James Lam, and now, with Implementing Enterprise Risk Management: From Methods to Applications, he distills more than thirty years' worth of experience in the field to give risk professionals a clear understanding of how to implement an enterprise risk management program for every business. Offers valuable insights on solving real-world business problems using ERM Effectively addresses how to develop specific ERM tools Contains a significant number of case studies to help with practical implementation of an ERM program While Enterprise Risk Management: From Incentives to Controls, Second Edition focuses on the "what" of ERM, Implementing Enterprise Risk Management: From Methods to Applications will help you focus on the "how." Together, these two resources can help you meet the enterprise-wide risk management challenge head on—and succeed.

This book offers a strategic approach to managing environmental security threats and infrastructure vulnerabilities. It emphasizes beliefs that the convergence of seemingly disparate viewpoints and often uncertain and limited information is possible only by using one or more available risk assessment methodologies and decision-making tools such as risk assessment and multi-criteria decision analysis (MCDA).

Many organisations live with hazards that have the potential to cause disasters. This was the case at Moura underground coal mine in Central Queensland, where 11 men died in an explosion in 1994. Andrew Hopkins shows that the explosion was the result of organisational failure, and uses it to draw lessons about managing major hazards. He argues that there are always tell-tale signs of impending disaster, and that organisations need to find ways of gathering this information and reacting to it appropriately. The Moura story also demonstrates the need to move responsibility for risk management up the corporate hierarchy to ensure that it is not overshadowed by production pressures. Otherwise disasters will repeat themselves in horrifyingly similar ways. Managing Major Hazards is a gripping story and essential reading for occupational health and safety professionals, executives working in hazardous industries, policy makers, and readers interested in risk management and disaster studies.

Decision Making

Risk Management, Systems Thinking and Situation Awareness

Large-scale Disasters Lessons Learned

Systems Thinking Applied to Safety

Handbook of Safety Principles

Rethinking Risk in National Security

Engineering a Safer World

First published in 1999, this second edition has been revised and updated, taking into account new information, research and policy debates. The amount of international information has been increased and a chapter on New Zealand has been added. Takes a holistic and multidisciplinary approach to managing occupational health and safety. Includes references, a bibliography and an index. Bohle is professor in the School of Industrial Relations and Organisational Behaviour and Quinlan is professor of industrial relations at the University of NSW. Both authors have published widely on occupational health and safety.

Over 40 papers and posters that share the latest practices in emergency planning related to fixed chemical, pharmaceutical, LNG, and petroleum facilities, storage facilities, transportation, and security.

The September 11th terrorist attacks, the Chernobyl nuclear accident, Hurricane Andrew and the Kobe earthquake are all recent examples of large-scale disasters that have taken a massive toll in human lives, wealth and property. They have disrupted ...

Drawing on extensive and detailed fieldwork within airlines—an industry that pioneered near-miss analysis— this book develops a clear set of practical implications and theoretical propositions regarding how all organizations can learn from 'near-miss' events and better manage risk and resilience.

Managing the Human Factor in Information Security

A Malaysian Study of Mixed Methods

Contemporary Ergonomics and Human Factors 2013

Proceedings of the international conference on Ergonomics & Human Factors 2013, Cambridge, UK, 15-18 April 2013

Process Safety – Sharing Best Practice

The Lessons of the Moura Mine Disaster

How to Win Over Staff and Influence Business Managers

***The report into the Piper Alpha disaster recommended that experience gained in the control of hazards onshore should be applied to improve safety standards offshore. These papers review what has been learnt so far with regard to major hazards and consider the application onshore and offshore.***

***Managing Major HazardsThe Lessons of the Moura Mine Disaster***

***The broad and developing scope of ergonomics - the application of scientific knowledge to improve people's interaction with products, systems and environments - has been illustrated for 27 years by the books which make up the Contemporary Ergonomics series.This book presents the proceedings of the international conference on Contemporary Ergonomics***

***Causes of major disasters are many and diverse, and the risks associated with them endanger human lives, property, the environment, the economy, and even the country's political and social well-being. It is clear that, with rapid population growth, environmental degradation, climate change, poorly regulated industries, and continued economic uncertainty, the chances are that communities may become more vulnerable to disasters. The dramatic losses in recent years from volcanic eruptions, earthquakes and landslides, wildland fires, droughts and floods, cyclones and storm surges attest to the fact that we are still a long way from applying even the knowledge we have today to make communities safe. Tackling this problem requires a sound evaluation of disaster mitigation policies and tools. As a contribution to the International Decade for Natural Disasters Reduction (IDNDR), the fifth international symposium HAZARDS-93 was held in Qingdao, P.R. China on 29 August - 3 September, 1993. China is a country frequently hit by almost all kinds of disasters. Its history is one of combating natural disasters and working towards their reduction. More than 250 scientists, engineers and government officials from 20 countries met for the purpose of engaging in a free exchange of knowledge, experience and ideas regarding the scientific and socio-economic aspects of mitigating losses from natural and man-made disasters. A total of 180 papers were presented at 28 sessions covering a very broad range of topics related to disaster management. The twenty-one articles included in this book deal with the scientific and management issues of land-based and marine hazards which cause the most severe economic losses, deaths and environmental degradation in many parts of the world. The book also includes specific recommendations addressed to the IDNDR Secretariat, national governments and scientific experts to increase the effectiveness and efficiency of disaster management. Thus, Land-Based and Marine Hazards: Scientific and Management Issues forms an excellent reference for scientists, engineers, policy-makers and the insurance industry.***

***Profit or Safety in the Global Maritime Industry?***

***Hazards***

***Risk Management for Islamic Banks***

***Management Obligations for Health and Safety***

***Managing Occupational Health and Safety***

***A Multidisciplinary Approach***

***Major Hazards Onshore and Offshore***

***Safety in the process industries is critical for those who work with chemicals and hazardous substances or processes. The field of loss prevention is, and continues to be, of supreme importance to countless companies, municipalities and governments around the world, and Lees' is a detailed reference to defending against hazards. Recognized as the standard work for chemical and process engineering safety professionals, it provides the most complete collection of information on the theory, practice, design elements, equipment, regulations and laws covering the field of process safety. An entire library of alternative books (and cross-referencing systems) would be needed to replace or improve upon it, but everything of importance to safety professionals, engineers and managers can be found in this all-comprising three volume reference instead. The process safety encyclopedia, trusted worldwide for over 30 years Now available in print and online, to aid searchability and portability Over 3,600 print pages cover the full scope of process safety and loss prevention, compiling theory, practice, standards, legislation, case studies and lessons learned in one resource as opposed to multiple sources An integrated risk-management framework for Islamic banks. This guide shows students and professions how to identify, measure and mitigate risk in Shariah-compliant banks. Using simulated Islamic bank financial statements, it demonstrates the integrated risk management process, and investigates how risk regulatory insights have implications for banking policy.The global financial crisis of 2008 has increased the need for risk management in Islamic banks. However, the process is complicated: Islamic banks worldwide provide diverse financial facilities and services under one roof yet lack a uniform risk map and a structured risk management framework.***

***Lees' Process Safety Essentials is a single-volume digest presenting the critical, practical content from Lees' Loss Prevention for day-to-day use and reference. It is portable, authoritative, affordable, and accessible — ideal for those on the move, students, and individuals without access to the full three volumes of Lees'. This book provides a convenient summary of the main content of Lees', primarily drawn from the hazard identification, assessment, and control content of volumes one and two. Users can access Essentials for day-to-day reference on topics including plant location and layout; human factors and human error; fire, explosion and toxic release; engineering for sustainable development; and much more. This handy volume is a valuable reference, both for students or early-career professionals who may not need the full scope of Lees', and for more experienced professionals needing quick, convenient access to information. Boils down the essence of Lees'—the process safety encyclopedia trusted worldwide for over 30 years Provides safety professionals with the core information they need to understand the most common safety and loss prevention challenges Covers the latest standards and presents information, including recent incidents such as Texas City and Bunefield***

***This book explores the human contribution to the reliability and resilience of complex, well-defended systems. Usually the human is considered a hazard - a system component whose unsafe acts are implicated in the majority of catastrophic breakdowns. However there is another perspective that has been relatively little studied in its own right - the human as hero, whose adaptations and compensations bring troubled systems back from the brink of disaster time and again. What, if anything, did these situations have in common? Can these human abilities be 'bottled' and passed on to others? The Human Contribution is vital reading for all professionals in high-consequence environments and for managers of any complex system. The book draws its illustrative material from a wide variety of hazardous domains, with the emphasis on healthcare reflecting the author's focus on patient safety over the last decade. All students of human factors - however seasoned - will also find it an invaluable and thought-provoking read.***

***From Methods to Applications***

***Innovation and Consolidation in Aviation***

***Occupational Health and Safety in the Coal Mining Industry***

***Land-Based and Marine Hazards***

***Megaoproject Management***

***The Organisational Causes of Disasters***

***Methodological Foundations, challenges and future directions***

In recent years, the safety management field has placed leadership and commitment at the center of effective workplace health and safety programs. At the same time, personal liability for workplace health and safety has increased, resulting in poor outcomes for individual managers. Discussing the minimum expectations that courts and tribunals have of managers, Management Obligations for Health and Safety examines the relationship between those expectations and effective safety performance. The book looks at safety management from the perspective of management obligations. What expectations are placed on managers at all levels of an organization to ensure that the workplace and systems of work are safe, and how are these expectations considered and analyzed by courts and public inquiries? As importantly, the book explores how management actions in relation to these obligations and expectations influence, positively or negatively, the safety performance of an organization. With examples drawn from legal and quasi-legal processes, one of the more enlightening and thought-provoking features of this book is the extensive use of cross examination taken from various proceedings. No one person reacts the same to finding him- or herself responsible for managing the aftermath of a death at work, or having to deal with the immediate pressure of being subject to interviews and investigation by safety regulators (much less the drawn-out experience of the legal process), but one of the most constant reactions is "Why didn't anybody tell me about this?" Stressing the importance of safety culture, this book details the true nature of the expectations that are placed on managers by virtue of their obligation to provide a safe workplace.

Presents papers on safety management, safe process design, issues from Seveso/COMAH, compliance with standards, transport and storage, chemical reactions, risk assessment and analysis, human factors and behaviour.

This book examines the role of risk management in the recent financial crisis and applies lessons from there to the national security realm. It rethinks the way risk contributes to strategy, with insights relevant to practitioners and scholars in national security as well as business. Over the past few years, the concept of risk has become one of the most commonly discussed issues in national security planning. And yet the experiences of the 2007-2008 financial crisis demonstrated critical limitations in institutional efforts to control risk. The most elaborate and complex risk procedures could not cure skewed incentives, cognitive biases, groupthink, and a dozen other human factors that led companies to take excessive risk. By embracing risk management, the national security enterprise may be turning to a discipline just as it has been discredited.

The wildland fire community has spent the past decade trying to understand and account for the role of human factors in wildland fire organizations. Social research that is relevant to managing fire organizations can be found in disciplines such as social psychology, management, and communication. However, such research has been published primarily for scientific and business audiences, and much of the fire community has not been exposed to it. Here, we have compiled and organized knowledge from a variety of social science disciplines so that it can be used to improve organizational practices related to firefighter and public safety, to assess the effectiveness of safety campaigns, and to improve firefighter safety trainings. This annotated reading list summarizes approximately 270 books, articles, and online resources that address scientific and management concepts helpful for understanding the human side of fire management. The first section, Human Factors and Firefighting, introduces readers to key workshops and writings that led to the recognition that human factors are prime ingredients of firefighter safety. The second section, Foundations for Understanding Organizations, consists of social science research that provides a foundation for understanding organizational dynamics. This section includes readings on decision making and sensemaking, organizational culture, identification and identity, leadership and change, organizational learning, and teams and crews. The third section, Understanding Organizations in High Risk Contexts, explores organizations that deal regularly with risk, uncertainty and crisis. This section includes readings on risk and uncertainty, high reliability organizing, and crisis communication. The publication concludes with Internet resources available for those interested in the management of fire organizations.

Field Artillery

Hazard Identification, Assessment and Control  
Scientific and Management Issues  
European Developments in Corporate Criminal Liability  
Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation

#### The Human Contribution

Presents recent breakthroughs in the theory, methods, and applications of safety and risk analysis for safety engineers, risk analysts, and policy makers Safety principles are paramount to addressing structured handling of safety concerns in all technological systems. This handbook captures and discusses the multitude of safety principles in a practical and applicable manner. It is organized by five overarching categories of safety principles: Safety Reserves; Information and Control; Demonstrability; Optimization; and Organizational Principles and Practices. With a focus on the structured treatment of a large number of safety principles relevant to all related fields, each chapter defines the principle in question and discusses its application as well as how it relates to other principles and terms. This treatment includes the history, the underlying theory, and the limitations and criticism of the principle. Several chapters also problematize and critically discuss the very concept of a safety principle. The book treats issues such as: What are safety principles and what roles do they have? What kinds of safety principles are there? When, if ever, should rules and principles be disobeyed? How do safety principles relate to the law; what is the status of principles in different domains? The book also features: • Insights from leading international experts on safety and reliability • Real-world applications and case studies including systems usability, verification and validation, human reliability, and safety barriers • Different taxonomies for how safety principles are categorized • Breakthroughs in safety and risk science that can significantly change, improve, and inform important practical decisions • A structured treatment of safety principles relevant to numerous disciplines and application areas in industry and other sectors of society • Comprehensive and practical coverage of the multitude of safety principles including maintenance optimization, substitution, safety automation, risk communication, precautionary approaches, non-quantitative safety analysis, safety culture, and many others The Handbook of Safety Principles is an ideal reference and resource for professionals engaged in risk and safety analysis and research. This book is also appropriate as a graduate and PhD-level textbook for courses in risk and safety analysis, reliability, safety engineering, and risk management offered within mathematics, operations research, and engineering departments. NIKLAS MÖLLER, PhD, is Associate Professor at the Royal Institute of Technology in Sweden. The author of approximately 20 international journal articles, Dr. Möller's research interests include the philosophy of risk, metaethics, philosophy of science, and epistemology. SVEN OVE HANSSON, PhD, is Professor of Philosophy at the Royal Institute of Technology. He has authored over 300 articles in international journals and is a member of the Royal Swedish Academy of Engineering Sciences. Dr. Hansson is also a Topical Editor for the Wiley Encyclopedia of Operations Research and Management Science. JAN-ERIK HOLMBERG, PhD, is Senior Consultant at Risk Pilot AB and Adjunct Professor of Probabilistic Risk and Safety Analysis at the Royal Institute of Technology. Dr. Holmberg received his PhD in Applied Mathematics from Helsinki University of Technology in 1997. CARL ROLLENHAGEN, PhD, is Adjunct Professor of Risk and Safety at the Royal Institute of Technology. Dr. Rollenhagen has performed extensive research in the field of human factors and MTO (Man, Technology, and Organization) with a specific emphasis on safety culture and climate, event investigation methods, and organizational safety assessment.

A sequel to Hazard Analysis and Risk Assessment, this text demonstrates how to manage major hazards inside and outside the plant.

Inside Hazardous Technological Systems

An Annotated Reading List

Lessons on Risk and Project Management from the Big Dig

Lessons Learned