

# **Human Factors in AIR TRAFFIC CONTROL**



**Edited by MARK W. SMOLENSKY and EARL S. STEIN**

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# Human Factors In Air Traffic Control

**V. D. Hopkin**



## **Human Factors In Air Traffic Control:**

*Human Factors In Air Traffic Control* V. D. Hopkin, 2017-11-22 This text discusses the skills and abilities that air traffic controllers need Its approach is international as air traffic control practices throughout the world have to be mutually compatible and agreed

**Flight to the Future** National Research Council, Division of Behavioral and Social Sciences and Education, Board on Human-Systems Integration, Panel on Human Factors in Air Traffic Control Automation, 1997-02-28

Despite the strong safety record of the national airspace system serious disruptions occasionally occur often as a result of outdated or failed equipment Under these circumstances safety relies on the skills of the controllers and pilots and on reducing the number of aircraft in the air The current and growing pressures to increase the capacity to handle a greater number of flights has led to a call for faster and more powerful equipment and for equipment that can take over some of the tasks now being performed by humans Increasing the role of automation in air traffic control may provide a more efficient system but will human controllers be able to effectively take over when problems occur This comprehensive volume provides a baseline of knowledge about the capabilities and limitations of humans relative to the variety of functions performed in air traffic control It focuses on balancing safety with the expeditious flow of air traffic identifying lessons from past air accidents The book discusses The function of the national airspace system and the procedures for hiring training and evaluating controllers Decisionmaking memory alertness vigilance sleep patterns during shift work communication and other factors in controllers performance Research on automation and human factors in air traffic control and incorporation of findings into the system The Federal Aviation Administration s management of the air traffic control system and its dual mandate to promote safety and the development of air commerce This book also offers recommendations for evaluation the human role in automated air traffic control systems and for managing the introduction of automation into current facilities and operations It will be of interest to anyone concerned about air safety policymakers regulators air traffic managers and controllers airline officials and passenger advocates

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**Air Traffic Control: Human Performance Factors** Anne R. Isaac, Bert Ruitenber, 2017-03-02 From the Foreword by Captain Daniel Maurino ICAO Air Traffic Control will remain a technology intensive system People controllers must harmoniously interact with technology to contribute to achieve the aviation system s goals of safe and efficient transportation of passengers and cargo This book considers human error and human factors from a contemporary and operational perspective and discusses the parts as well as the whole I hope you enjoy reading it as much as I did The motivation for writing this book comes from the author s long standing belief that the needs of Air Traffic Service personnel are inadequately represented in the aviation literature There are few references to air traffic control in many of the books written for pilots and about pilots and this is also observed at the main international conferences In line with the ICAO syllabus for human factors training for air traffic controllers the book covers the main issues in air traffic control with regard to human performance physiology including stress fatigue and shift work problems psychology with emphasis on human error and its management social psychology including issues of communication and working in teams the environment including ergonomic principles and working with new technologies and hardware and software issues including the development of documentation and procedures and a study of the changes brought about by advanced technologies Throughout the text there are actual examples taken from the air traffic control environment to illustrate the issues discussed A full bibliography is included for those who want to read beyond these issues It has been written for all in air traffic services from ab initio to the boardroom it is important that the men and women in senior management positions have some knowledge and awareness of the fundamental problems that limit and enhance human performance

**Human Factors in Air Traffic Control** Mark W. Smolensky, Earl S. Stein, 1998-03-18 The study of human factors has progressed greatly in the past 10 years particularly with regard to the literature available in applied areas The authors of this text focus on the most important aspects of this literature the increasing concern over the deregulation of airlines and the increase in aviation accidents The book covers general system safety human perception information processing and cognitive load capacity during air traffic control performance as well as team coordination selection and training of personnel work station and software design and communication issues

**Human Factors Impacts in Air**

**Traffic Management** Mark Rodgers, 2017-03-02 In research and application of Human Factors in Air Traffic Management ATM systems design development and operation there remains a lack of clarity regarding the range and integration of activities associated with the need for greater attention to issues such as human error interface design and teamwork especially in systems with increased levels of automation This book seeks to redress this situation by presenting case studies of human factors applications in which there is demonstrable success in terms of improvement in operational systems Individual examples are used to outline how each human factors study evolved what it entailed how it was resourced and how the results contributed to operational performance Case studies include training methods human error team resource management situation assessment terminal automation replacement systems collaborative decision making to improve the effectiveness of traffic flow management and the role of human factors in ATM

**Human Factors In Air Traffic Control** V. David Hopkin, 1995 This text discusses the skills and abilities that air traffic controllers need Its approach is international as air traffic control practices throughout the world have to be mutually compatible and agreed Provided by publisher

Human Factors In Air Traffic Control V. D. Hopkin, 2017-11-22 This text discusses the skills and abilities that air traffic controllers need Its approach is international as air traffic control practices throughout the world have to be mutually compatible and agreed

**The Future of Air Traffic Control** Panel on Human Factors in Air Traffic Control Automation, Board on Human-Systems Integration, Division of Behavioral and Social Sciences and Education, National Research Council, 1998-02-09 Automation in air traffic control may increase efficiency but it also raises questions about adequate human control over automated systems Following on the panel's first volume on air traffic control automation Flight to the Future NRC 1997 this book focuses on the interaction of pilots and air traffic controllers with a growing network of automated functions in the airspace system The panel offers recommendations for development of human centered automation addressing key areas such as providing levels of automation that are appropriate to levels of risk examining procedures for recovery from emergencies free flight versus ground based authority and more The book explores ways in which technology can build on human strengths and compensate for human vulnerabilities minimizing both mistrust of automation and complacency about its abilities The panel presents an overview of emerging technologies and trends toward automation within the national airspace system in areas such as global positioning and other aspects of surveillance flight information provided to pilots and controllers collision avoidance strategic long term planning and systems for training and maintenance The book examines how to achieve better integration of research and development including the importance of user involvement in air traffic control It also discusses how to harmonize the wide range of functions in the national airspace system with a detailed review of the free flight initiative

*Human Factors Aspects of Air Traffic Control* Harry J. Older, Bernard J. Cameron, 1972 Advances in Human Aspects of Aviation Steven J. Landry, 2012-07-11 Since the very earliest years of aviation it was clear that human factors were critical to the success and safety of the system As aviation has

matured the system has become extremely complex Bringing together the most recent human factors work in the aviation domain Advances in Human Aspects of Aviation covers the design of aircrafts for the **Handbook of Human Factors in Air Transportation Systems** Steven James Landry,2017-11-22 One of the primary applications of human factors engineering is in the aviation domain and the importance of human factors has never been greater as U S and European authorities seek to modernize the air transportation system through the introduction of advanced automation This handbook provides regulators practitioners researchers and educators a comprehensive resource for understanding and applying human factors to air transportation **Human Factors** Organisation de l'aviation civile internationale,1993 Human Factors in Aviation Earl L. Wiener,David C. Nagel,2014-06-28 Since the 1950s a number of specialized books dealing with human factors has been published but very little in aviation Human Factors in Aviation is the first comprehensive review of contemporary applications of human factors research to aviation A must for aviation professionals equipment and systems designers pilots and managers with emphasis on definition and solution of specific problems General areas of human cognition and perception systems theory and safety are approached through specific topics in aviation behavioral analysis of pilot performance cockpit automation advancing display and control technology and training methods **Handbook of Aviation Human Factors** John A. Wise,V. David Hopkin,Daniel J. Garland,2016-04-19 A complete examination of issues and concepts relating to human factors in simulation this book covers theory and application in space ships submarines naval aviation and commercial aviation The authors examine issues of simulation and their effect on the validity and functionality of simulators as a training device The chapters contain in d *Human Factors in Air Traffic Control Systems Design* KENNETH W. COLMAN,DOUGLAS. COURTNEY,WALLACE H. WALLACE,COURTNEY AND CO PHILADELPHIA PA.,1958 **Human Factors in Air Traffic Control** ,1993 **Human Factors in the Design and Evaluation of Air Traffic Control Systems** Kim M. Cardosi,Elizabeth D. Murphy,1995 The Future of Air Traffic Control National Research Council,Division of Behavioral and Social Sciences and Education,Board on Human-Systems Integration,Panel on Human Factors in Air Traffic Control Automation,1998-01-26 Automation in air traffic control may increase efficiency but it also raises questions about adequate human control over automated systems Following on the panel s first volume on air traffic control automation Flight to the Future NRC 1997 this book focuses on the interaction of pilots and air traffic controllers with a growing network of automated functions in the airspace system The panel offers recommendations for development of human centered automation addressing key areas such as providing levels of automation that are appropriate to levels of risk examining procedures for recovery from emergencies free flight versus ground based authority and more The book explores ways in which technology can build on human strengths and compensate for human vulnerabilities minimizing both mistrust of automation and complacency about its abilities The panel presents an overview of emerging technologies and trends toward automation within the national airspace system in areas such as global positioning and other aspects of surveillance

flight information provided to pilots and controllers collision avoidance strategic long term planning and systems for training and maintenance The book examines how to achieve better integration of research and development including the importance of user involvement in air traffic control It also discusses how to harmonize the wide range of functions in the national airspace system with a detailed review of the free flight initiative     Human Factors Checklist for the Design and Evaluation of Air Traffic Control Systems Kim M. Cardosi, Elizabeth D. Murphy, 1995

## Whispering the Strategies of Language: An Emotional Quest through **Human Factors In Air Traffic Control**

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