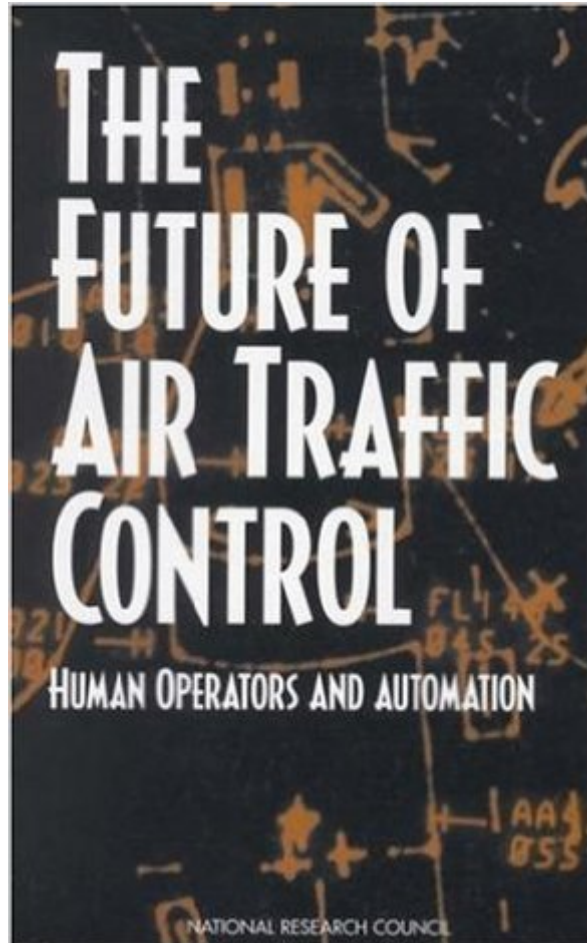# The Future Of Air Traffic Control: Human Operators And Automation

Synopsis

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 an 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.

Book Information

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Customer Reviews

This important follow-on to "Flight to the Future" covers the automation initiatives in ATC modernization. The various programs in development are detailed from the human-centered automation viewpoint, including assessments of the potential risk involved in implementing them. (Refinements in the various programs since the report was published make some of this detail dated, but the underlying automation approach has remained consistent.)This report is critical because it leads one to ask human factors questions beyond color scheme and font size and display lay-out: namely, what is the purpose of this function in the system, and what does the system gain *and lose* if that function is automated? That is, is automating this function going to provide enough benefit to system safety and performance to off-set the risks thereof?Not content to merely ask the questions, the NRC panel also presents over a dozen pages of solid recommendations for mitigating the risk of automating air traffic control functions, emphasizing the human-centered automation approach.

You can purchase this book for 25% off the .COM price at the National Research Council homepage.

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