

SYMPOSIUM: DECISION MAKING IN FREE FLIGHT

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In its web-page introduction to free flight, the Federal Aviation Administration (FAA) describes free flight as "an innovative concept to improve the efficiency of the National Airspace System [in which] pilots operating under instrument flight rules will be able to select the aircraft's course, speed, and altitude in real time" (FAA, 1996). This symposium presents the results of experimental and theoretic investigations on (1) the ability of pilots and air traffic managers to master the demands of free flight and (2) the design of technology and decision aids tailored to need those demands.

INTRODUCTION

This symposium presents the vanguard in experimental and theoretic investigations of the decision making of commercial pilots, professional traffic managers, and designers of technology for the free flight environment. The broad scope of the papers reflects the nascent character of free flight. Dr. Denning discusses case studies of pre-flight planning in field tests of free flight. Dr. Braune presents a rigorous methodology for the design and development of glass cockpit technology. Mr. Knecht introduces a mathematic measure of aircraft separation that he applies to assess pilot performance in empirical studies and offers as a candidate for the conflict probe. Mr. Scallen reviews a series of experiments on the ability of commercial pilots to maintain separation while operating in a simulated free flight environment.

The breadth of topics in the symposium underscores the central role of human factors research in the evolution of free flight. All four topics address the FAA's goal of ensuring that the transition to free flight will not compromise safety.

TARGET AUDIENCES

The FAA indicates that "free flight is designed to provide the user community with the flexibility to better manage its operations and the capability to benefit from advanced avionics" (FAA, 1996). The symposium addresses the diverse interests of the aviation community.

THE HUMAN FACTORS RESEARCH COMMUNITY

The symposium has at least two practical benefits for researchers. First, the papers document alternative methodologies for conducting research in dynamic environments. Second, the presenters will identify research niches that need further investigation for the evolution of free flight.

DESIGNERS

The papers discuss how free flight will change demands on (1) users and service providers and on (2) decision technology. Designers who aim to enhance the fit of technology to users will come to appreciate the need for collaborative planning in all stages of the design process.

USERS AND SERVICE PROVIDERS

The symposium will present an informal forum for users and service providers to interact with development professionals at a pivotal stage in the evolution of free flight. Such interaction should help define key issues and ensure that research responds to the interests of end users.

ADMINISTRATORS

Representatives of administrative agencies will see the implications of several of the empirical findings presented during the symposium. Among these findings are constraints on the safe implementation of free flight and recommendations for procedures for effecting the transition to free flight.

All who attend the symposium will participate in a cooperative exploration and development of free flight concepts.

REFERENCES

- FAA, (1996). Federal Aviation Administration Free Flight Main Page. <http://asd.orlab.faa.gov/files/ffmain.htm> (June).