Research Development & Human Factors Laboratory

Location
The Research Development and Human Factors Laboratory (RDHFL) is located at the FAA William J. Hughes Technical Center, Atlantic City International Airport, New Jersey.

Description
The RDHFL is a state-of-the-art research facility designed specifically to support aviation human factors research. The laboratory environment is a multifunctional facility capable of simulating the National Airspace System (NAS). The human factors laboratory research area consists of five experiment rooms (ERs): En Route, Terminal, Tower and Traffic Flow Management operational environments. Each lab has extensive performance measuring capabilities.

The Virtual Reality (VR) lab is used to design, visualize and evaluate proposed designs supporting the NAS. This approach allows designers to quickly and inexpensively work out modifications early in the design stage.

Mission
The mission of the RDHFL is to conduct human factors research to ensure a safe and effective implementation of NAS concepts and systems.

Special Features
The ERs can be used separately or together, depending on the specific experiment. Links between all five ERs and the briefing room are provided to distribute and collect video, audio, data and voice communication information. While an experiment is in progress, observers can view the process in the briefing room unobtrusively. The RDHFL is equipped with an extensive network capability. Voice communications and data networks exist between the RDHFL and ATC laboratories within the FAA William J. Hughes Technical Center. In addition, links are provided between the RDHFL and other federal laboratories.
Purpose

Aviation Human Factors is a multi-disciplinary activity. The end goal of this process is to improve systems performance by designing and operating systems and procedures that optimize the strengths of people and machines in the field. As the demands increase on the air space system, the application of human factors research and development is critical for continued safety and efficiency.

In 1988, the U.S. Congress mandated that the FAA make a special effort to focus on human factors in civil aviation (the Aviation Safety Research Act of 1988 [Public Law 100-591]). In response to that mandate, the FAA prepared and published the National Plan for Aviation Human Factors in 1991.

The RDHFL is a portion of the FAA William J. Hughes Technical Center’s commitment to human factors research in civil aviation. The Human Factors Environment National Plan specifies five major environments where concentrated and skilled human factors efforts are needed.

The RDHFL will foster and support research in three of these environments:

- The Air Traffic Control Environment
- The Technical Operations (Maintenance) Environment
- The Flight Deck/ATC Integration Environment

The RDHFL will make it possible to develop new technologies, examine innovative concepts, and acquire knowledge about the factors that affect human performance in these aviation environments.

Concepts and Systems Integration Branch Manager
Patrick Kelly
William J. Hughes Technical Center
Patrick.Kelly@faa.gov
609-485-7202

Point of Contact
Daniel Fumosa
William J. Hughes Technical Center
Concepts Integration Section Manager
Daniel.Fumosa@faa.gov
609-485-8914

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