

Recent Accomplishments of the Human Factors Program

Question: Please describe some recent accomplishments of the FAA's human factors research program. Who were the customers for this research, and what agency outputs were delivered to those customers as a result of this research ?

Answer:

1. Human Performance/Training: FAA researchers have developed the capability to collect and analyze pilot performance data to evaluate the effectiveness of air carrier training programs. Air carriers can then tailor their programs to address identified training requirements. FAA researchers are also working with major air carriers to develop training instructor assessment tools to standardize evaluators.
2. Pilot Situational Awareness: Problems with situational awareness can be readily linked to human errors in the cockpit. To address this issue, FAA researchers are focusing on "team" situational awareness rather than the traditional "individual" situational awareness. Guidelines were distributed to the air carriers in February 1998 for integration into their Crew Resource Management Training Programs.
3. Cockpit Automation: The FAA has been investigating (1) the effects of culture on automation use, (2) strategies that air carriers currently use to train automation use and the perceived effectiveness of these programs, and (3) the use of various approaches to automated and non-automated aircraft and the potential impact on safety.
4. Air Traffic Control: Sponsored the National Research Council (NRC) assessment of human factors issues in current and future Air Traffic Control systems. The NRC books entitled *Flight to the Future-Human Factors in Air Traffic Control* and *The Future of Air Traffic Control- Human Operators and Automation* contain recommendations from a panel of aviation human factors experts.
5. Standard Terminal Automation Replacement System (STARS): The Early Display Capability (EDC) System Initial Diagnostic Usability Assessment revealed human factors issues that will be addressed before the system is fielded. A timely and structured research and engineering process has been established to mitigate risks.
6. New Selection Tool for Airway Facilities Technicians: This new tool will allow the FAA to selected highly qualified technicians who begin the job needing only training in FAA systems. Use of this tool will one year in training time.

BACKGROUND FOR WITNESS INFORMATION ONLY

Note to Answer 1. FAA researchers have identified the appropriate data to be collected and questions to be asked to evaluate training effectiveness, and have demonstrated analysis techniques and illustrated the significance of the results to industry groups, with written materials provided to carriers.

Note to Answer 2. Situational awareness research was conducted at several “partner” major and regional air carriers.

Note to Answer 3. Many presentations have been delivered to industry on the effects of culture on automation use. The study addressing the current state of automation training will be distributed to the air carriers in April 1998. The study addressing various approaches to automated vs. non-automated aircraft will be delivered to air carriers in March 1998.

Note to Answer 4. Primary focus of the study is the relationship between humans and the tools provided to assist in accomplishment of system tasks. The first phase of the study (*Flight to the Future-Human Factors in Air Traffic Control*) focused on understanding (baselining) the current system. The second phase (*The Future of Air Traffic Control-Human Operators and Automation*) provides an assessment of future automation alternatives.

Note to Answer 5. A multidisciplinary team including members from the STARS Program Office, NATCA, Air Traffic, and Human Factors is developing solutions for design deficiencies identified during the EDC prototype evaluation. This team is working with controllers to identify design alternatives.

Note to Answer 6. The selection tool has been developed and will enter use in 1998.