



AAR-100

Human Factors Newsletter # 00-12

(July 1, 2000 – July 14, 2000)

- **REDAC:** The Research, Engineering & Development Advisory Committee (REDAC), Subcommittee on Human Factors met at the Volpe National Transportation Systems Center to review the Flight Deck Human Factors Program. The review covered three program areas, Air Carrier Training, Aviation Maintenance, and Flight Technologies and Procedures. An overview was presented for each program area, followed by presentations and discussion on individual projects. Also included was a tour of the laboratory facilities. (T. McCloy, AAR-100)
- **Voice Communication:** Researchers at the William J. Hughes Technical Center have been working with Flight Service representatives to develop a prototype interface for their voice communication switch. About 12 system users will visit the Technical Center the week of July 24th for a demonstration and early user evaluation. Researchers are also in the midst of developing an interface for ITWS on STARS displays for initial evaluation in August. This type of work allows users to have a direct opportunity to see and obtain a feel for the way a system may look when its fielded, and have input on how it could possibly better meet their needs. (E. Stein, FAATC)
- **HFACS:** A researcher from CAMI traveled to Washington, D.C. to conduct a video-teleconference at FAA HQ with the Eurocontrol data collection team in Brussels as an Action Plan 12 activity. The teleconference provided the Brussels team with training in using HFACS for operational error analysis. (C. Lowman, CAMI)
- **Preparation for Threat Image Projection (TIP) Laboratory Validation Study:** Personnel from the Aviation Security Human Factors Program (AAR-510) and explosives specialists from the Aviation Security's Laboratory Infrastructure Branch (AAR-540) prepared improvised explosive devices using real explosives and modular bomb set (MBS) components for the TIP Validation Study. This study used 510 bags. Ninety of these bags contained an explosive threat, a gun, a knife, a grenade, an MBS threat, or a non-threat item. The 90 threat bags were x-rayed to ensure that they had the appropriate amount of clutter and were labeled and loaded with the threat or non-threat so the image could be captured on the x-ray machine. (G. Embrey, AAR-1)

- **TIP Laboratory Validation Study:** The Human Factors Program (AAR-510), with the support of the Laboratory Infrastructure Branch (AAR-540), conducted a test to demonstrate that fictional threats as projected by TIP are as realistic as actual threats to airport security screeners. The validation test will determine if there are any differences among the screener's performances in determining real threats and TIP threats. Innocuous (non-threat) items were also projected to determine if there were any performance differences or extraneous clues. Sixteen certified airport security screeners were used to operate the x-ray machine and data collectors recorded their decisions of "threat" or "no threat." The preliminary results will be completed by July 21. (G. Embrey, AAR-1)
- **Delivery of On-the-Job Training (OJT) Decision Trees and Outlines:** The AAR-510 Human Factors Program is developing an OJT Mastery Test to ensure that screener candidates have acquired all of the skills and abilities needed to be successful checkpoint screeners. The contractor delivered the decision trees and outlines for this test. Once this information is reviewed, scripts and storyboards will be developed. This task is included in the AAR-500 Strategic Implementation Plan. (G. Embrey, AAR-1)
- **Delivery and Review of Scripts for Computer-Based Training (CBT) for IED Recognition Training for Cargo Screeners:** On July 6, personnel from the AAR-510 Human Factors Program, AAR-540 Explosive Specialists, and personnel from Galaxy Scientific Corporation met to review and incorporate changes to the scripts for IED recognition CBT for cargo screeners. This training is being developed to aid cargo screeners in what to look for when performing manual searches. It will consist of basic IED components, different types of explosives, and different types of bombs. This task is included in the AAR-500 Strategic Implementation Plan. (G. Embrey, AAR-1)
- **NIMS:** Representatives from CAMI participated in a July 10-11 meeting at FAA Headquarters with AAR-100, the AF sponsor, and representatives from the William J. Hughes Technical Center to review research progress and future human factors research requirements for the NAS Infrastructure Management System (NIMS). Additional human factor research activities associated with the latest NIMS acquisition and implementation plan were identified. (L. Bailey, CAMI)
- **General Aviation:** CAMI representatives conferred with sponsors from AFS-800 regarding FY 2001 research tasks for the General Aviation flight deck research program. They also participated in a Safe Flight 21 Operations Evaluation 2 planning meeting at the MITRE Center for Advanced Aviation System Development (CAASD) in Mc Lean, Va. (K. Joseph, CAMI)
- **General Aviation:** On July 11, researchers from CAMI conferred with the Small Airplane Directorate sponsor in Kansas City, MO, regarding plans for high-priority research tasks. Discussions involved definition of required field of view for the GAMA Human Factors guidelines document, simulator and airborne assessment of baseline pilot scanning behavior, and human factors support for an interpretation of the CFR regarding a specific airspeed indicator requirement. (D. Beringer, CAMI)

- **Air Traffic Selection and Training:** CAMI participated in a briefing for ATX-1 on the Air Traffic Selection and Training (AT-SAT) Parallel Forms project and computer software upgrade issues. ATX-1 requested that CAMI investigate the cost and timeframes associated with developing two Parallel Forms of AT-SAT that have incorporated the necessary software upgrades. (M. Heil, CAMI)
- **Shift Work/Fatigue:** CAMI participated in a briefing in Washington, D.C. regarding the results of the Congressionally mandated Shift Work/Fatigue study to the National Executive Board of NATCA. Dr. Pam Della Rocco from the William J. Hughes Technical Center provided the main briefing with Dr. Tom Nesthus and Mr. Jim Beadling (Article 55 NATCA Co-Chair) providing input regarding progress on the field studies. The Pittsburgh tower field study is completed, and the Houston ARRTC has been identified as the best candidate for the next field study. (T. Nesthus, CAMI)
- **Airway Facilities:** The William J. Hughes Technical Center human factors branch has sent its most recent publication to the printers. This is a technical note titled *Team Processes in Airways Facilities Operational Control Centers*. Copies will be available in the fall. (E. Stein, FAATC)

More information on human factors research can be found at the FAA Human Factors (AAR-100) web site <http://www.hf.faa.gov>

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July 30 – August 4, 2000- 14th Triennial Congress of the International Ergonomics Association and the Human Factors and Ergonomics Society 44th Annual Meeting “IEA 2000/HFES 2000”, San Diego Marriott Hotel and Marina, San Diego, CA <http://iea2000.hfes.org/>

August 27-September 1, 2000- 22nd International Council of the Aeronautical Sciences (ICAS) Congress, Harrogate, UK <http://www.aiaa.org/calendar/icas00cfp.html>

October 10-12, 2000- World Aviation Congress and Exposition, Town and Country Hotel, San Diego, CA <http://www.sae.org/calendar/wac00/index.htm>

October 15-19, 2000- Human Performance, Situation Awareness & Automation: User-Centered Design for a New Millennium, Marriott Riverfront, Savannah, GA
<http://www.ie.msstate.edu/hpsaa/index.html>

Note: Calendar events in Italics are new since the last Newsletter



Comments or questions regarding this newsletter?
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