



AAR-100

Human Factors Newsletter # 00-19

(October 21, 2000 – November 3, 2000)

ASDE-X: The Airport Surface Detection Equipment Model X (ASDE-X) Working Group met at the William J. Hughes Technical Center's Human Factors Laboratory to review the CHI interface prototype and initial visual display specifications. The Working Group proposed modifications to the visual display for further prototyping, identified a keyboard and trackball for use with the system, and discussed plans for an early user involvement event to refine the CHI. (E. Stein, WJHTC)

ADS-B: Human factors personnel from the William J. Hughes Technical Center participated in the Operational Evaluation of the Automatic Dependent Surveillance-Broadcast System (ADS-B) at the Louisville, KY airport. They observed air traffic control operations in the TRACON, and collected data from participating controllers about usability of the system for controlling traffic and about the display of ADS-B data on the ARTS Color Display. (E. Stein, WJHTC)

AUA Quarterly: The October 2000 edition of the AUA Quarterly contains an article about ACT-530 and Human Factors Laboratory support to acquisition programs. The article is based on briefings, demonstrations, and interviews conducted in August. (M. McAnulty, WJHTC)

ATC Automation: Dr. Kim Cardosi of the Volpe Center was an invited speaker in session three "Automation in ATC" of the 45th annual meeting of the Air Traffic Control Association. Her presentation focused on the benefits and limitations of automation and how to best implement ATC automation in today's environment. The moderator for the session was Steve Zaidman, Associate Administrator for Research and Acquisitions. Other panelists included Vince Galotti, ICAO; Curt Graeber, Boeing, Mike Harrison and Bill Voss, FAA; Bob Jacobsen, NASA-Ames; John Lauber, Airbus; Frank Petroski, MITRE/CAASD; and Randy Schwitz, NATCA. (D. Sussman, Volpe)

Usability Study of the Ancore Cargo Inspector: AAR-510 Human Factors personnel and Veridian Engineering contract personnel performed an initial usability assessment of the Ancore Cargo Inspector (ACI) in Santa Clara, California. The ACI uses pulsed fast neutron analysis technology to identify explosive materials. The ACI is scheduled to be installed at the El Paso Border Patrol next year. (C. George, AAR-1)

34th Annual Institute of Electrical and Electronics Engineers International Carnahan Conference on Security Technology: AAR-510 Human Factors personnel and Airport Security Technology Integration personnel participated in the Carnahan Conference in Ottawa, Ontario, Canada. Topics included the networked screener readiness test, the on-the-job training mastery test, bottle contents tester results, 3-D x-ray machine test results, and the Blast FX tool. (C. George, AAR-1)

ATC Simulations: CAMI researchers participated in a briefing to human factors scientists at the William J. Hughes Technical Center regarding the analysis of system data from high-fidelity ATC simulations using the Cochran-Weiss-Shanteau (CWS) performance index. Technical Center researchers provided an archival dataset for the initial test of the index applied to data from high-fidelity air traffic scenarios. Possible integration of CWS analyses to research being conducted at the Technical Center was also discussed. CWS analysis provides a metric to understand changes in ATC performance without using methods which interrupt the controller while he or she is controlling traffic or requiring over-the-shoulder ratings. (L. Bailey, J. Pounds, CAMI)

Flight Strip Reduction Study: A CAMI representative participated in a briefing to the User Request Evaluation Tool (URET) National Team on the results of the Flight Strip Reduction Study. She also collected ratings from NATCA team members that will be used to assess the importance of specific strip markings. (C. Manning, CAMI)

Safe Flight 21: CAMI personnel were in Louisville, KY to collect flight deck and air traffic control human factors data during the Safe Flight 21 Op Eval 2 Meeting. Twenty human factors observers initially were trained to use several data collection tools and then assigned to collect data onboard participating Op Eval 2 airplanes. Flight deck data collection focused on CDTI usability and the effects of CDTI on checklist procedures, departure and approach spacing, runway occupancy awareness, surface navigation, and acquisition of ground and airborne targets. One CAMI human factors observer listened to air traffic control communications during ground, local, and approach control operations. The observations focused on identifying traffic call signs used by controllers and pilots during each CDTI application and identify problem communications. Human factors experts from the William Hughes Technical Center, Volpe National Transportation Center, and MITRE also collected human factors data. (K. Joseph, R. Prinzo, C. Williams, CAMI)

Shift Work and Fatigue Study: A CAMI researcher visited the Houston Air Route Traffic Control Center in Houston, TX regarding the Congressional Shift Work and Fatigue Field Study. A total of 51 Air Traffic Control Specialists have completed baseline and daily computer-based testing. Some ATCSs are still involved in entering logbook data and wrist activity monitoring. All volunteers will have completed the entire protocol by November 11. The ID numbers for the last few volunteers will be changed by November 14, and all of the data will be turned over to CAMI personnel. The same researcher also attended a meeting with the Article 55 Team to provide an update on the Field Study as well as to assist in modifying the HumRRO pamphlet regarding the outcomes of the Shift Work and Fatigue Survey. (T. Nesthus, CAMI)

HOCSR: A research psychologist from the William J. Hughes Technical Center traveled to Rockville, MD to work with Lockheed Martin on developing and shaking down user scripts for the Host and Oceanic Computer System Replacement (HOCSR) Early User Involvement Event (EUIE). During the EUIE, users will exercise the CHI of a Monitor and Control position by

stepping through scripted procedures. Simulated faults will be injected into the system to demonstrate the visual and audible alarms. The EUIE is scheduled to take place during the week of Nov. 13, 2000 at the Integration and Interoperability Facility at the Technical Center. (T. Yuditsky, WJHTC)

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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November 6-9, 2000 - DOD HFE TAG-45, El Paso, Texas.
<http://dticam.dtic.mil/hftag/index/html>

November 15-16, 2000- Avionics 2000, 14th Annual Conference and Exhibition, Renaissance London Heathrow Hotel, UK <http://www.era.co.uk/conf/confpage.htm>

March 27-29, 2001- The Fifteenth Symposium on Human Factors in Aviation Maintenance, The Brewery Conference Centre, London, UK [mail to: enquiries@conferenceconsultancy.com](mailto:enquiries@conferenceconsultancy.com)

March 31 – April 5, 2001- CHI 2001, Seattle, WA <http://www.acm.org/chi2001>

June 3-8, 2001- Society for Information Display, International Symposium, Seminar & Exhibition, San Jose Convention Center, San Jose, CA [mail to: pdrzaic@elink.com](mailto:pdrzaic@elink.com)

October 2001- Annual Cabin Safety Research Technical Group Meeting, Taj Mahal Hotel and Casino, Atlantic City, NJ

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



Comments or questions regarding this newsletter?
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