



AAR-100

Human Factors Newsletter # 00-11

(June 10, 2000 – June 30, 2000)

- **National Runway Safety Summit:** On June 26-28, 2000, the FAA hosted a National Runway Safety Summit in Washington, DC. The Runway Safety Program is an FAA system-wide and industry-wide initiative to reduce incidents and accidents directly attributable to runway incursions and to improve overall airport surface operations. The Summit focused on the findings, recommendations, actions, and results of regional workshops, a Symposium on Human Factors and Runway Incursions, and other industry-wide activities presently underway to improve runway safety. The Chief Scientist for Human Factors led a panel discussion of human factors initiatives that focus on human error and efforts to stem the tide of runway incursions. The initiatives were developed during the Symposium on Human Factors and Runway Incursions. (L. Cole, ATS-20)
- **Runway Safety Symposium:** The Office of the Chief Scientist for Human Factors and the Runway Safety Program Office conducted a symposium entitled “Human Factors & Runway Safety – A Symposium on Human Error” in Arlington, VA in June. This symposium, along with nine regional runway safety meetings held throughout the country, is in preparation for the National Runway Safety Summit to be held later this month. The Administrator gave opening remarks, speakers from government, industry, and academia gave their perspectives on human factors in runway incursions, and workgroups met to develop a list of human factors initiatives to stem the tide of runway incursions. The results were briefed at the National Runway Safety Summit. (C. Overbey, AAR-100; M. McAnulty, ACT-530)
- **Human Error Modeling Workshop:** AAR-100 was represented at the NASA Ames Human Error Modeling Workshop held on June 22-23, 2000. The joint FAA/Eurocontrol Action Plan 12 on the reduction and management of human error in Air Traffic Management was presented. The workshop included demonstration of several modeling tools including MIDAS. Areas of research collaboration were discussed including runway incursions. (P. Krois, AAR-100)
- **NASA-Ames Research Center DAG-TM Workshop:** Human factors researchers from AAR-100 and the William J. Hughes Technical Center (ACT-530) attended a Distributed Air/Ground Traffic Management (DAG-TM) Workshop hosted by the NASA-Ames Research Center Advanced Air Transportation Technologies Program. The DAG-TM

concept describes one possible approach to implementation of the FAA's Free Flight initiatives. Approximately 200 participants from NASA, FAA, academia and industry attended the workshop. Researchers from ACT-530 presented preliminary results from the Air/Ground Integration Experiment recently completed in collaboration with ACT-540, NASA and Volpe. (R. Sollenberger, ACT-530).

- **Pilot Training:** AAR-100 researchers participated in instructor/evaluator training at United Airlines this month. The carrier is implementing AAR-100-developed "Gold Standards" methodology in their training in an attempt to improve quality assurance performance data. This data is used by AQP carriers to monitor effectiveness of the pilot training programs. United is also interested in using this methodology to select new instructors. (E. Edens, AAR-100)
- **Pilot Training:** Cathay Pacific safety managers are visiting Continental Airlines in an effort to adopt AAR-100 developed Line Oriented Safety Audits for their operations based in Hong Kong. Continental has successfully used this methodology for two years to proactively address safety issues. (E. Edens, AAR-100)
- **HOCSR:** Human Factors Researchers conducted a usability assessment of Phase 2 Oceanic for the Host and Oceanic Computer System Replacement (HOCSR) Program. This phase upgrades the system software. For the Oceanic sites, Phase 2 also involves changes to the Series 1 Replacement (S1R), S1R Alarm Panels, and the system status display. This upgrade brings with it many changes to the system messages used by computer operators, technicians, and other Airway Facilities personnel. Human factors researchers observed operational testing of the system, collected questionnaire data, and had a round-table discussion with participants from the field. Several human factors issues were identified including inconsistent and inaccurate status displays, and delayed error reporting on the Hardware Management Console. This last issue was identified in an earlier human factors assessment but has not been resolved. (T. Yuditsky, K. Allendoerfer ACT-530)
- **Checkpoint of the Future.** The Aviation Security Human Factors Program received a draft document entitled "Human Factors Functional Requirements Review for the Checkpoint of the Future." The review provides a first look at the functions, sub-functions, tasks, and sub-tasks associated with the checkpoint. AAR-510 will distribute the document for internal review. (Genia Embrey, AAR-1)
- **The Effects of Checkpoint Resource Management Training.** The Aviation Security Human Factors Program received a draft of "The Effects of Checkpoint Resource Management Training: Summary of a Small Pilot Study Conducted at the San Francisco International Airport." This report documents the background of Crew Resource Management and the shortfalls in current screener training. The report also presents the results and conclusions of the study. (Genia Embrey, AAR-1)

- **Safe Flight 21:** A scientist from the Human Factors Research Laboratory (AAM-510) traveled to San Jose, CA to participate in a meeting with NASA Ames representatives to discuss and obtain training materials and cockpit data collection materials. These materials will be used with cockpit observers who will be participating in the Safe Flight 21 Operational Evaluation Number 2. (C. Lowman, CAMI)
- **Human Performance:** Human factors representatives participated in a meeting with the Scientific and Article 55 Oversight Committees at HumRRO Incorporated, in Alexandria, VA. The meeting was focused on an initial review of the Congressionally-directed Shift Work and Fatigue Survey data. Two international members from the scientific committee presented data from Italian and Canadian Air Traffic Controllers that were compared with outcomes from US controllers. A discussion topic centered on the fact that the number of rotations involving midnight shifts and early morning shifts were most closely related with self-reported fatigue. As a result of the meeting, priorities were established with regard to recommended countermeasures and personal coping strategies. The scientific team members and Article 55 representatives also provided recommendations for additional analyses. (S. Shappell, T. Nesthus, D. Schroeder, CAMI)
- **Data Link:** Human factors representatives participated in the June Requirements and Technical Concepts for Aviation (RTCA) - Special Committee-194 Working Group planning meeting. The ATM Data Link Implementation Working Group (WG) 3 reviewed requests for support of WG2 concerning Flight Operations and ATM Integration. Efforts to support a review of human factors issues involving data link services in the Baseline 2 Operational Environment Definition for ATN documents were also initiated. (R. Prinzo, CAMI)
- **Weather:** A CAMI representative participated as a co-chair of the RTCA-SC 195 committee meeting. Guideline recommendations have focused primarily on color schemes for depicting various levels of precipitation. Other issues discussed include depiction and behavior of data blocks, depiction of various levels of predictive confidence, and update rate differences. The next meeting is scheduled for August 2000. (K. Williams, CAMI)
- **Aviation Maintenance:** Human factors representatives conferred with Mr. John Biver, Manager, Airframe Maintenance and other personnel at Duncan Aviation regarding initiation of general aviation maintenance human factors research. A tour of the facilities, one of the larger providers of maintenance for general aviation aircraft was provided. Discussions were focused around human factors issues in the work environment and the process used by Duncan Aviation to identify and ameliorate mistakes by maintenance personnel. Initial interest was expressed in possibly serving as an industry partner in future research. (D. Schroeder, CAMI; J. Watson, AAM-240)
- **HFACS:** CAMI representatives provided a briefing for Mr. Luis Castro (AAT-200) and the National Aviation Research Institute (NARI) research team members on the Human Factors Analysis and Classification System (HFACS) and the modified AT version of HFACS that is currently in use to study air traffic controller operational errors and incidents. HFACS-ATC served as the basis for a questionnaire the NARI team developed to interview controllers regarding human factors associated with ATC operational errors and incidents. A draft

questionnaire was developed during the June meeting at CAMI. (S. Shappel, J. Pounds, CAMI)

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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