



**AAR-100**

**Human Factors Newsletter # 01-14**

**(July 7, 2001 – July 20, 2001)**

**ATC Research Grant:** The Office of the Chief Scientist for Human Factors has awarded a grant to Embry-Riddle Aeronautical University (ERAU) for research concerning near-term implementation of the Automatic Dependent System - Broadcast (ADS-B). The research will answer the following questions: (1) how should ADS-B information be presented to controllers; (2) what changes will ADS-B induce in roles between controllers and pilots; and (3) what new procedures will be necessary for controllers and pilots regarding display interpretation and evolving roles. Building on the results of prior ERAU research that showed that, under Free Flight, controllers require more precise intent information, the proposed research will examine the impact of the display of intent information to the controller. The project will encompass a series of simulations that will investigate the differing information requirements for air traffic control in different airspace environments, specifically en route and transition arrival sectors and low-level over-water helicopter routes. These simulations will investigate the issues of information needs, the use of predicted radar vectors, limitations of ADS-B, the problem of mixed equipment, and development of new procedures. The hypotheses to be investigated are: (1) controller workload and situational awareness will improve as a result of better and more complete intent information from ADS-B; and (2) controller workload will be reduced if ADS-B derived information is displayed in a more detailed manner with highlighting symbology. (P. Krois, AAR-100)

**Aviation Security Human Factors:** On June 28, AAR-510 personnel began developing the Security Optimization Human Factors Integration and Evaluation Laboratory. This facility will support aviation security human factors R&D at the William J. Hughes Technical Center. The laboratory will be arranged to conduct a broad range of long-term and applied research, evaluate advanced security concepts and equipment, analyze procedures, conduct initial test and evaluation, perform proof-of-concept studies, and consider a wide array of human-centered issues that impact security system performance. (C. George, AAR-1)

**Laboratory Visit:** The William J. Hughes Technical Center's Human Factors Laboratory hosted Mr. Greg Burke who is acting AUA-1. They provided a comprehensive briefing on all acquisition support activities to include both en route and terminal projects. Mr. Burke indicated that he was impressed with the research and the energy level of the small group. (E. Stein, WJHTC)

**Air Carrier Training:** Recently, three books have been published that were authored by FAA staff and researchers from the Air Carrier Training Human Factors Program. (E. Edens, AAR-100):

- "Improving Teamwork in Organizations" was edited by Eduardo Salas and Clint Bowers from the University of Central Florida and Eleana Edens of AAR-100. This book focuses on the concept of Crew Resource Management that was developed for the aviation industry and how that concept can be applied in other settings. The book is a collection of chapters written by researchers from the Air Carrier Training Human Factors Program. The book synthesizes and integrates what this program has developed over the past 12 years. The book is intended for academics, graduate students, and professionals in psychology and management.
- "Scientific Information Systems" was written by Robert Holt, from George Mason University and describes statistical methods that were developed, with FAA funding, for the aviation industry and in particular those air carriers that participate in the Advanced Qualification Program. These methods and systems consider careful and comprehensive analysis of all factors relevant to critical job performance. The book discusses how to blend scientific methods with the broad capabilities of computer database information systems. The book is intended for management professionals, training specialists, researchers, managers of team-based workplaces and those interested in the safety of human systems, regulatory agencies concerned with safety and legal professionals active in this area.
- "Facilitation and Debriefing in Aviation Training and Operations" was written by R. Key Dismukes from NASA Ames and Guy M. Smith from Northwest Airlines. This book is a practical guide designed to enable individual pilots, training departments and airline managers to better understand and use the techniques of facilitation. The book is based on FAA funded research at several major air carriers. It presents the philosophy of facilitation combined with practical applications designed to improve training and flight operations. The book is intended for managers and instructors in airline training departments, flight training organizations, flight schools and researchers in flight training.

**Special Recognition:** Dr. Melchor J. Antunano, CAMI Director, has been selected 2001-2002 president of the Space Medicine Branch of the Aerospace Medical Association. Also, Dr. Scott A. Shappell has been installed as the 2001-2002 president of the Aerospace Human Factors Association. Dr. Shappell is the Human Factors Research Branch Manager at CAMI. Congratulations to both.

**Air Traffic Control:** On July 17th, human factors specialists briefed Greg Burke, AUA-1, on system acquisition and operations concept projects conducted by the William J. Hughes Technical Center's NAS Human Factors Branch (ACT-530). They also demonstrated the Research, Development and Human Factors Laboratory's rapid prototyping tools and air traffic control simulation capabilities. (M. McAnulty, WJHTC)

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

Mark D. Rodgers  
FAA (AAR-100)



**August 5-10, 2001** – 9<sup>th</sup> International Conference on Human-Computer Interaction, New Orleans, LA <http://hcie2001.engr.wisc.edu/>

**August 7-8, 2001** – Volpe National Transportation Systems Center National Symposia on Transportation: Enabling Technologies, US DOT Volpe Center, Cambridge, MA  
<mailto:brewerl@volpe.dot.gov>

*August 15-16, 2001 – Air Safety Forum, Hyatt Regency Hotel, Washington, DC*  
<http://www.alpa.org/>

**August 16-19** – Taipei Aerospace Technology Exhibition, Taipei World Trade Centre, Taipei  
<http://www.taipeitradeshows.com.tw/etate>

*August 27-31, 2001 – FAA Academy International Aviation Training Symposium, Myriad Center, Oklahoma City, OK* <http://www.iats.com/>

**September 4-6, 2001** – MRO Europe 2001, Scottish Exhibition & Conference Centre, Glasgow, Scotland <http://www.aviationnow.com/conferences>

**September 10-14, 2001** – Aerospace Congress & Exhibition by Aerospace North America and SAE, Washington State Convention and Trade Center, Seattle, WA [mail to:kthomson@sae.org](mailto:kthomson@sae.org)

*September 16-20, 2001 – 49<sup>th</sup> International Congress of Aviation and Space Medicine, Geneva, Switzerland* <http://icasm2001.org/>

*September 17-19, 2001 – SAFE Association Symposium on Safety, Survival and Flight Equipment, Opryland Hotel, Nashville, TN* <http://www.safeassociation.com/>

**September 18-20, 2001** – NBAA Annual Meeting and Convention, New Orleans, LA  
<http://www.nbaa.org/>

*September 25-26, 2001 – 18<sup>th</sup> Annual ALPA Communications for Safety Conference, Doubletree Hotel, Denver, CO* <http://safety.natca.net/>

**September 26-28, 2001** – Human Issues in Aviation Systems Symposium, Toulouse, France  
<mailto:wise@db.erau.edu>

**October 8-12, 2001** – Human Factors and Ergonomics Society 45<sup>th</sup> Annual Meeting, Human Factors/Ergonomics: It Works, Minneapolis, MN <http://www.hfes.org/>

**October 14-18, 2001** – Aerospace Expo 2001, Los Angeles Convention Center, Los Angeles, CA <http://www.aviationnow.com/conferences>

**October 22-25, 2001**- Annual Cabin Safety Research Technical Group Meeting, Taj Mahal Hotel and Casino, Atlantic City, NJ

**November, 2001** – DOD Technical Advisory Group Meeting, San Diego, CA  
<http://dticam.dtic.mil/hftag/>

**November 4-8, 2001** – ATCA 46<sup>th</sup> Annual International Program & Exhibits, Washington Convention Center, Wash, D.C. <http://atca.org/>

*November 5-8, 2001 – Joint meeting of the Flight Safety Foundation 54<sup>th</sup> International Air Safety Seminar, the International Federation of Airworthiness 31<sup>st</sup> Conference, and International Air Transport Association. Theme: Keeping People Safe in a Global Environment. Athens, Greece*  
<http://www.flightsafety.org/>

*November 8-10, 2001 – AOPA Expo 2001, Fort Lauderdale, FL* <http://aopa.org/expo>

**November 27-30, 2001** - The Third International Aviation Security Technology Symposium, Tropicana Resort & Casino, Atlantic City, NJ, sponsored by the FAA Aviation Security R&D Division and National Safe Skies Alliance. Symposium topics include: Trace Detection, Bulk Detection, Human Factors, Technical Integration, Operational Testing and Evaluation, Deployment, Aircraft Hardening, Emerging Technologies, and other related topics.  
[http://www.safeskiesinternational.org/symposium\\_2001.htm](http://www.safeskiesinternational.org/symposium_2001.htm)

**December 3-5, 2001** – MRO Asia 2001, Regal Hotel, Hong Kong  
<http://www.aviationnow.com/conferences>

**December, 2001** – EUROCONTROL Air Traffic Management R&D Seminar, Santa Fe, New Mexico <http://eurocontrol.fr/>

*May 5-9, 2002 – 73<sup>rd</sup> Annual Scientific Meeting of the Aerospace Medical Association, Queen Elizabeth's Hotel, Montreal, Canada* <http://www.asma.org/>

**September 23-27, 2002** – Human Factors and Ergonomics Society 46<sup>th</sup> Annual Meeting, Pittsburgh, PA <http://www.hfes.org/>

**April 7-27, 2003** – Aviation World's Fair, Newport News/Williamsburg, VA  
<http://www.worlds-fair.com/>

*May 4-9, 2003 – 74<sup>th</sup> Annual Scientific Meeting of the Aerospace Medical Association,  
Convention Center, San Antonio, TX <http://www.asma.org/>*

*May 2-7, 2004 – 75<sup>th</sup> Annual Scientific Meeting of the Aerospace Medical Association, Egan  
Convention Center, Anchorage, AK <http://www.asma.org/>*

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



Comments or questions regarding this newsletter?  
Please contact Bill Berger at (202) 267-8532  
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