



**AAR-100**

**Human Factors Newsletter # 03-19**

**November 1, 2003 – November 14, 2003**

**Technical Report Abstract:** *Using Vision Modeling to Define Occupational Vision Standards* (Bettina L. Beard, Talissa A. Frank and Albert J. Ahumada, Jr. NASA Ames Research Center, Moffett Field, CA, Clemson Univ., Clemson, SC

A methodology is introduced to assist in the construction of performance-based occupational vision standards. A simple image discrimination model is first calibrated using stimuli representative of airframe and power plant cracks. It is then used to predict simulated visibility for cracks of different lengths and widths. Visual acuity declines are simulated using a Gaussian blur function on the crack images. Crack width is shown to be a salient cue for crack detection. This modeling technique can generate the data necessary to construct empirically-based occupational vision standards. Future research will validate model predictions with human psychophysical data.

<http://www.hf.faa.gov/docs/508/docs/maint/FY02/VisionNASAAinterimRpt.pdf>

Point of Contact: Kip Krebs, AAR-100

**20 Years of Human Factors on CD ROM:** ACB-220 recently released a CD ROM of technical note publications entitled FAA NAS Human Factors Group Publications 1983-2003: 20 Years. This CD ROM, created by Vicki Ahlstrom and Kenneth Allendoerfer, represents twenty years of human factors research from the William J. Hughes Technical Center. The CD indexes technical notes in several ways, allowing the user to search for information by year, author, title, or by keyword or phrase. Through this system, users may become aware of other relevant research they did not know existed. The additional benefit is that the CD ROM costs a fraction of what it costs to produce and mail technical reports. The goal of this effort is to increase the transfer of research information while reducing costs. (E. Stein, WJHTC)

**Traffic Flow Management:** Human factors researchers from the William J. Hughes Technical Center (ACB-220) and from the Strategic Research and Management Analysis Division (ARQ-200) briefed several organizations on their findings from a study of Flight Service requirements for an Information Display System (IDS). They described three basic principles that are key in designing an effective IDS for Flight Service, and illustrated how these principles may be

implemented through a semi-interactive prototype. As a result of the briefing, an effort is underway to evaluate whether these principles are applicable and appropriate for all Air Traffic options. Meeting attendees included ATP-400, ARQ-1, ACA-1, and AOS-1. (T. Yuditsky, ACB-220, A. Smith, ARQ-200)

### **Air Transportation Human Factors:**

- Bob Helmreich, James Klinect, and Chris Henry, human factors grant researchers at the University of Texas, were featured speakers in Dublin, Ireland at the Fourth Line Operations Safety Audit (LOSA) Week jointly sponsored by the University of Texas Human Factors Research Project, ICAO and IATA. The conference was attended by 14 international regulatory bodies and 47 airlines, ranging from Korea to South Africa and the former Soviet Bloc as well as Western Europe. The meeting included a discussion of the use of the Threat and Error Management Model (TEMM) as a framework for analysis of operational data. Captain Don Gunther of Continental Airlines described the change process involved in using LOSA data to enhance safety. An international meeting concerning air traffic control was held in conjunction with the LOSA meeting. There was a consensus at this meeting that the TEMM could be usefully employed in air traffic management.
- The TEMM/Aviation Safety Action Program (ASAP) Pilot Reporting Form is a Web-based form that enables pilots to submit ASAP reports using the threat and error management model. The software for the new form and supporting database will be completed December 1, 2003. Continental Airlines and Frontier Airlines will start using this software on January 1, 2004. In return for the use of the software, these airlines have agreed to provide University of Texas researchers access to de-identified ASAP reports.
- On November 14, 2003, University of Texas researchers provided a full review and demonstration of the TEMM ASAP project to Northwest Airlines. The researchers also attended the Airbus Human Factors Symposium held in New York at the end of October where they presented an overview of the TEMM ASAP project and gave a demonstration of the new form. The research team has been contacted by several other carriers requesting support for their ASAP programs.

Point of contact: E. Edens, AFS-230

**Air Traffic Control:** As part of the CAMI research on the ATCS Age 56 Rule, Drs. Dana Broach, Dave Schroeder, and Carol Manning traveled to New York ARTCC (ZNY; Dr. Broach & Schroeder, Nov 4<sup>th</sup>) and the AWP Regional Office (Dr. Broach & Manning, Nov 6<sup>th</sup>) to conduct subject matter expert panels to identify factors distinguishing between controllers "having exceptional skills and abilities" from other controllers. Participants were 24 incumbent operations (1st level) supervisors from AEA and AWP centers, towers, TRACONS, and flight service stations. Research on this initiative continues. (D. Broach, CAMI)

**Electronic Flight Bag (EFB):** The final report titled "Human Factors Considerations in the Design and Evaluation of Electronic Flight Bags (EFBs) Version 2" has now been posted at [www.volpe.dot.gov/opsad/efb](http://www.volpe.dot.gov/opsad/efb), under the Volpe EFB Reports and Publications section. The file is in Adobe PDF format (3.4 MB, 206 pages). It contains bookmarks and links for easy navigation.

In addition to providing detailed information on general EFB design and evaluation, the document provides application-specific guidance for electronic documents, electronic checklists, flight performance calculations, and electronic charts. The document also includes an EFB industry snapshot and a summary version of high-priority guidance on EFB equipment design and evaluation. (D. Chandra, VNTSC, T. McCloy, AAR-100)

*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)



**November 17-20, 2003** – 56<sup>th</sup> Annual Air Safety Seminar, A Joint Meeting of Flight Safety Foundation, International Federation of Airworthiness, and International Air Transport Association, Bangkok, Thailand <http://www.flightsafety.org/seminars.html>

**November 17-22, 2003** – Airbus A300/A310 Technical Symposium, Seville, Spain <http://www.airbus.com/customer/events.asp>

*December 1, 2003* – *Call for Papers: Divisions 19 and 21, in conjunction with the Potomac Chapter of the Human Factors and Ergonomics Society, will be hosting the Annual Mid-year Symposium March 4<sup>th</sup> and 5<sup>th</sup>, 2004 at the Fort Belvoir Officer's Club, Fort Belvoir, Virginia. The deadline for submissions is Dec. 1, 2003. [jruffner@dcscorp.com](mailto:jruffner@dcscorp.com);*

**December 1-4, 2003** – International Symposium on Human Factors in Telecommunications, Berlin, Germany [http://impcs3.hhi.de/HFT/HFT\\_03.htm](http://impcs3.hhi.de/HFT/HFT_03.htm)

**December 2-4, 2003:** National Training Systems Association Inter-Service/Industry Training, Simulation and Education Conference (I/ITSEC), Orlando, FL <http://www.trainingsystems.org>

**December 3-5, 2003** – FAA System Engineering Annual Workshop with Information Systems Security – Meeting Real World Challenges, Holiday Inn, Atlantic City, NJ <http://se-iss.tc.faa.gov>

**December 9-12, 2003** - Institute of Electrical and Electronics Engineers (IEEE) Decision and Control Conference, Maui, HI <http://www2.acae.cuhk.edu.hk/~ycliu/cdc03/>

**December 12-13, 2003** – Workshop on HCI Research in MIS, Seattle, WA [http://melody.syr.edu/hci/pre\\_icis03\\_wksp/index.cgi](http://melody.syr.edu/hci/pre_icis03_wksp/index.cgi)

**January 11-15, 2004** – Transportation Research Board Annual Meeting, Washington, DC  
<http://www4.trb.org/trb/annual.nsf>

**January 13-15, 2004** – SAE SEAT –Aircraft Seat Committee Meeting, Phoenix, AZ  
[mlemank@sae.org](mailto:mlemank@sae.org)

**January 13-16, 2004** – International Conference on Intelligent User Interfaces/Computer-Aided Design of User Interfaces, Island of Madeira, Portugal <http://www.iuiconf.org/>

**January 18-22, 2004** – Conference on Visualization and Data Analysis, San Jose Marriott and San Jose Convention Center, San Jose, CA <http://vw.indiana.edu/vda2004/>

**January 21 – 23, 2004** - AHS 4th Decennial Specialists' Meeting on Aeromechanics, Fisherman's Wharf, San Francisco, CA. For more information contact the Technical Chairman, Tom Maier at [tmaier@mail.acr.nasa.gov](mailto:tmaier@mail.acr.nasa.gov)

*February 9, 2004 – Call for proposals (workshops, lecture papers, symposia, panels, debates, special-format sessions, and posters), Human Factors and Ergonomics Society 48<sup>th</sup> Annual Meeting to be held September 20-24, 2004, New Orleans, LA*

*March 4-5, 2004 - Divisions 19 and 21, in conjunction with the Potomac Chapter of the Human Factors and Ergonomics Society, will be hosting the Annual Mid-year Symposium March 4<sup>th</sup> and 5<sup>th</sup>, 2004 at the Fort Belvoir Officer's Club, Fort Belvoir, Virginia. [jruffner@dcscorp.com](mailto:jruffner@dcscorp.com)*

**March 8-11, 2004** – SAE World Congress, Cobo Hall, Detroit, MI  
<http://www.sae.org/congress/index.htm>

**March 15-17, 2004** – 16<sup>th</sup> Annual European Aviation Safety Seminar, Barcelona, Spain  
[http://www.flightsafety.org/eass04\\_cfp.html](http://www.flightsafety.org/eass04_cfp.html)

**March 22-24, 2004** – Eye Tracking Research and Applications Symposium, Menger Hotel, San Antonio, TX <http://www.e-t-r-a.org/>

**March 22-25, 2004** – HPSAA II Conference, Human Performance, Situation Awareness, and Automation Technology, hosted by Embry-Riddle Aeronautical University and the University of Central Florida, Hilton Oceanfront Resort, Daytona Beach, FL  
<http://faculty.erau.edu/vincenzd/hpsaa>

**March 23-26, 2004** – 4<sup>th</sup> International Workshop on Smart Appliances and Wearable Computers, Tokyo, Japan <http://www.unl.im.dendai.ac.jp/TWSAWC/>

**April, 2004** – SAE General Aviation Technology Conference and Exhibition, Century II Convention Center, Wichita, KS <http://www.sae.org/calendar/aeromtgs.htm>

**April 18-21, 2004** – FAA Worldwide Airport Technology Transfer Conference, Hilton Atlantic City Hotel, Atlantic City, NJ <http://www.airtech.tc.faa.gov/att04/>

**April 20-22, 2004** – SAE General Aviation Technology Conference and Exhibition, Century 21 Convention Center, Wichita, KS <http://www.sae.org/calendar/aeromtgs.htm>

**April 24-29, 2004** – CHI 2004, Conference on Human Factors in Computing Systems, Vienna, Austria <http://www.acm.org/sigchi/chi2004/>

**April 25-28, 2004** – SAE Cabin Safety Technical Committee Meeting, Oklahoma City, OK [mlemank@sae.org](mailto:mlemank@sae.org)

**April 27-29, 2004** – 49<sup>th</sup> Annual Corporate Aviation Safety Seminar, Tucson, AZ [http://www.flightsafety.org/cass04\\_cfp.html](http://www.flightsafety.org/cass04_cfp.html)

**May 3-6, 2004** – SAE Aircraft Oxygen Equipment Committee, Anchorage, AK [mlemank@sae.org](mailto:mlemank@sae.org)

**May 3-6, 2004** – 75<sup>th</sup> Annual Scientific Meeting of the Aerospace Medical Association, Egan Convention Center, Anchorage, AK <http://www.asma.org/>

**May 6-8, 2004** - AHS International 60th Annual Forum and Technology Display, Virginia Beach, VA. Contact [Staff@vtol.org](mailto:Staff@vtol.org)

**May 10-12, 2004** – Royal Aeronautical Society 10<sup>th</sup> AIAA CEAS Aeroacoustics Conference, Manchester Town Hall, UK <http://www.aerosociety.com/homepage.asp>

**May 11-13, 2004** – SAE SEAT – Aircraft Seat Committee, Savannah, GA [mlemank@sae.org](mailto:mlemank@sae.org)

**May 26-27, 2004** – Royal Aeronautical Society Conference – Flight Simulation 1929-2029, A Centennial Perspective, London, UK <http://www.aerosociety.com/homepage.asp>

**June 15-17, 2004** – SAE Digital Human Modeling for Design and Engineering Meeting, Oakland University, Rochester, Michigan <http://www.sae.org/calendar/aeromtgs.htm>

**July 27-August 2, 2004** – 52nd Annual AirVenture, Oshkosh, WI <http://airventure.org/>

**July 28 – August 1, 2004** – 112<sup>th</sup> Convention of the American Psychological Association. Honolulu, Hawaii <http://www.apa.org/convention>

**August 1-4, 2004** – Designing Interactive Systems, Cambridge, MA <http://www.sigchi.org/DIS2004/>

**September 20-24, 2004** – Human Factors and Ergonomics Society 48<sup>th</sup> Annual Meeting, Sheraton New Orleans Hotel, New Orleans, LA <http://www.hfes.org/>

**September 29 – October 1, 2004** – 2004 International Conference on Human Computer Interaction (HCI-Aero), Toulouse, France <http://www.eurisco-international.com/hci-aero2004>.

**October, 2004** – 18<sup>th</sup> Airbus/JetBlue Human Factors Symposium, New York City, NY  
<http://www.airbus.com/customer/events.asp>

**October 4-7, 2004** – SAE SEAT – Aircraft Seat Committee Meeting, Albuquerque, NM  
[mlemank@sae.org](mailto:mlemank@sae.org)

**October 18-19, 2004** – National Academies Institute of Medicine Annual Meeting, National Academy of Sciences, Washington, DC <http://wwwsearch.nationalacademies.org/>

**October 23-27, 2004** – NordiCHI 2004, Tampere, Finland <http://www.cs.uta.fi/nordichi2004/>

**October 25-28, 2004** – SAE S-9 Cabin Safety Technical Committee Meeting, San Diego, CA  
[mlemank@sae.org](mailto:mlemank@sae.org)

**October 25-28, 2004** – DoD Maintenance Seminar and Exhibition, Hilton Americas, Houston, TX <http://www.sae.org/calendar/aeromtgs.htm>

**April 11-15, 2005** – SAE 100<sup>th</sup> Anniversary World Congress, Cobo Hall, Detroit, MI  
<http://www.sae.org/congress/about/news/congressdates.htm>

**May 9-12, 2005** - 76<sup>th</sup> Annual Scientific Meeting of the Aerospace Medical Association, Kansas City, MO <http://www.asma.org/>

**August 18-21, 2005** - 113<sup>th</sup> Convention of the American Psychological Association, Wash, DC  
<http://www.apa.org/convention>

**September 26-30, 2005** – Human Factors and Ergonomics Society 49<sup>th</sup> Annual Meeting, Royal Pacific Resort at Universal Orlando, Orlando, FL <http://hfes.org/meetings/menu.html>

**October 24-25, 2005** – National Academies Institute of Medicine Annual Meeting, National Academy of Sciences, Washington, DC <http://wwwsearch.nationalacademies.org/>

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



Comments or questions regarding this newsletter?  
Please contact Bill Berger at (334) 271-2928  
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