



ATOP-R&D

Human Factors Newsletter # 05-15

August 6, 2005 – August 19, 2005

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Technical Note: On August 16, 2005, Judith Bürki-Cohen, Volpe NTSC presented a paper titled "The Effect of Simulator Motion Cues on Initial Training of Airline Pilots," at the American Institute of Aeronautics and Astronautics Modeling and Simulation Technologies Conference in San Francisco. The paper by Bürki-Cohen, J. & Go, T.H. will be published in Proceedings of the Aeronautics and Astronautics Modeling and Simulation Technologies Conference, August 15-18, 2005, San Francisco, CA.

Summary. Two earlier studies conducted in the framework of the Federal Aviation Administration/Volpe Flight Simulator Human Factors Program examining the effect of simulator motion on *recurrent* training and evaluation of airline pilots have found that in the presence of a state-of-the-art visual systems, motion provided by a six-degree-of-freedom platform-motion system only minimally affected evaluation, and did not benefit training of pilots that were familiar with the airplane. This paper gives preliminary results of a study on the effect

of simulator platform motion on initial training of airline pilots that have never flown the simulated airplane.

This research activity supports the Administrator's Flight Plan Goal for Increased Safety, Objective 1: Reduce the commercial fatal accident rate.

Point of Contact: E. Edens, ATO-P R&D

Human Factors Policy Order 9550.8: The Human Factors Research and Engineering Division is in the process updating Human Factors Policy Order, 9550.8. It will soon be formatted and formally released for comment. Revisions to the order accomplish the following:

- Supersedes FAA Order 9550.8 (Human Factors Policy), dated October 27, 1993
- Updates organization terminology (e.g. ATO)
- Expands description of intended outcomes of policy
- Delineates responsibilities across FAA organizations and for Human Factors Research and Engineering Division
- Provides a checklist for research, applications, infrastructure support, and program reviews
- Supplements definitions
- Clarifies role of Human Factors Coordinating Committee and relationship with Human Factors Coordinators

A copy of the draft order can be made available to anyone wishing to view or comment on it by contacting bill.ctr.berger@faa.gov. The draft order is also available at: <http://www.hf.faa.gov/docs/508/docs/HForder.pdf>

This activity supports the Administrator's Flight Plan Goal for Organizational Excellence, Objective 1: Make the organization more effective with stronger leadership, increased commitment of individual workers to fulfill organization-wide goals, and a better prepared, better trained, safer, diverse workforce.

Point of Contact: G. Hewitt, ATO-P R&D

Flight Crew Fatigue: On August 11-12, 2005, Drs. Tom Nesthus, Ray King, Dave Schroeder (AAM-500), Dr. Eduard Ricuarte (AAM-600 contractor), and Dr. Robert Schlegel (Oklahoma University professor) met with Dr. Consuelo del Pilar Gonzalez Guzman and Capt. Hugo Esteban Blanco Barragan of Avianca Airlines. The meeting focused on aircrew/flight attendant stress and fatigue issues. Discussions, demonstrations, and consultations were provided on clinical and computer-based assessment metrics and recommendations for development of a research protocol to evaluate stress and fatigue among airline personnel. The potential for future research collaboration was also discussed. *This research activity supports the Administrator's Flight Plan Goal for Increased Safety, Objective 1: Reduce the commercial fatal accident rate.* (D. Schroeder, CAMI)

Technical Notes: Several new publications are available on the Human Factors Website.

- “*The Visual Acuity-Based, Night Vision Goggle Cockpit Lighting Compatibility Field Evaluation Test Kit: A Low-Cost Alternative*”. Alan R. Pinkus, Wright-Patterson AFB, OH; Harry L. Task, Task Consulting; Martha A. Hausmann, Maryann H. Barbato, General Dynamics, Co. <http://www.hf.faa.gov/vfcomplete.htm>
- “*Vision Standards and Testing Requirements for Non-Destructive Inspection (NDI) and Testing (NDT) Personnel and Visual Inspectors*”. Gregory W. Good, Ohio State University, Columbus, OH. http://www.hf.faa.gov/docs/508/docs/Vision_of_NDI_and_Visual_Inspectors-Final_Report_Good.pdf

This research activity supports the Administrator’s Flight Plan Goal for Increased Safety, Objective 1 and 2: Reduce the commercial fatal accident rate; Reduce the number of fatal accidents in general aviation.

Point of Contact: W. Krebs, ATO-P R&D

Research Grant: The FAA (ATO-P R&D Human Factors) is awarding a grant to the University of Nevada-Reno entitled “Helicopter Pilot Performance: VFR into IMC.” The purpose of this project is to explore performance limits for helicopter pilots who inadvertently fly into Instrument Meteorological Conditions (IMC) conditions. The problem of inadvertent Visual Flight Rules (VFR) flight into IMC has been well documented as a major cause of general aviation accidents. The performance limits of fixed-wing pilots under these circumstances have also been investigated with alarming results. However, this problem has not yet been studied sufficiently in civilian helicopter pilots. In general, helicopter operations are more complex than those of fixed-wing aircraft for several reasons including increased control difficulty and the ability to operate in a variety of flight regimes such as slow flight, hover, low level, and high speeds. Each of the different helicopter flight regimes has different operational and control demands. The present study is aimed at quantifying helicopter pilot performance after inadvertent VFR into IMC at different speeds and altitudes of operation. *This research activity supports the Administrator’s Flight Plan Goal for Increased Safety, Objective 2: Reduce the number of fatal accidents in general aviation.* (W. Krebs, ATO-P R&D)

Unmanned Aircraft: Kevin Williams attended a meeting of the SAE-G10 Committee Unmanned Aircraft (UA) Working Group held in Washington, DC on August 9-11, 2005. The working group is focused on development of training and qualification standards for UA pilots. During the meeting, a preliminary task analysis for a UA pilot was completed using a pre-existing analysis developed by the US Air Force and supplemented with information taken from manned pilot practical test standards and elsewhere. In addition, discussions were held regarding pilot medical qualifications, fatigue, and duty cycle recommendations. These will be incorporated into a report document, with a first draft to be completed by January 2006. *This research activity supports the Administrator’s Flight Plan Goal for Increased Safety, Objective 2: Reduce the number of fatal accidents in general aviation.* (K. Williams, CAMI)

Traffic Management: Research psychologists from the William J. Hughes Technical Center's NAS Human Factors Group will participate in a meeting of the Traffic Management User Team to identify common operational scenarios that describe a "day-in-the-life" of Traffic Management Specialists at various types of facilities. They will also identify less common scenarios that present traffic flow complications due to weather or congestion. The researchers will use these scenarios in a baseline study of the Traffic Situation Display (TSD), a primary tool for Traffic Flow Management. In the future, the TSD will be replaced by a modernized system. The baseline data will be used to evaluate the modernized system and ensure that it supports the users' operational tasks without increasing workload. *This research activity supports the Administrator's Flight Plan Goal for Greater Capacity, Objective 3: Increase on-time performance of scheduled carriers.* (T. Yuditsky, A. Clark, WJHTC)

Technical Information - Human Factors Reports Database: The Human Factors Reports Database has over 1400 articles from 29 different sources, including the William J. Hughes Technical Center, CAMI, NASA and EUROCONTROL. There are also articles from research conducted at several universities. To access the reports, point to: www.hf.faa.gov/Workbench/search.aspx. The database is updated regularly, and we will keep you informed about the latest articles. Each month we will list articles that have been added to the database. Here is a list of recent additions:

Ahlstrom, U. (2005). *Advanced Weather Displays for TRACON Controllers*. NAS Human Factors Lab. <http://www.hf.faa.gov/Workbench/techrptdetails.aspx?id=1648>.

Nadler, E. (2005). *Human Factors Integration Challenges in the Traffic Flow Management (TFM) Environment*. (Report No. DOT/FAA/AR-05/40) Cambridge, MA: DOT. <http://www.hf.faa.gov/Workbench/techrptdetails.aspx?id=1644>

Stein, E. (2005). *The Role of Institutional Review Boards in Aviation Research: It's the Law and It Makes Sense*. ISAP 2005. Atlantic City, NJ: FAA. <http://www.hf.faa.gov/Workbench/techrptdetails.aspx?id=1647>.

Truitt, T.R. (2003). *Implementing Electronic Flight Data in the Airport Traffic Control Tower*. ISAP 2003. Atlantic City, NJ: FAA. <http://www.hf.faa.gov/Workbench/techrptdetails.aspx?id=1645>

This research activity supports the Administrator's Flight Plan Goal for Organizational Excellence, Objective 3: Make decisions based on reliable data to improve our overall performance and customer satisfaction.

Point of Contact : D. Piccione, ATO-P R&D

R&D Review: The summer issue of R&D Review is now on-line at <http://research.faa.gov/newsletters.asp>. This issue is packed with information on R&D programs from throughout the FAA. *This research activity supports the Administrator's Flight Plan Goal for Organizational Excellence, Objective 3: Make decisions based on reliable data to improve our overall performance and customer satisfaction.* (T. Kraus, ATO-P R&D)

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

Paul Krois
FAA (ATO-P R&D Human Factors)



August 22-26, 2005 – SAE G-10 (Behavioral Engineering Technology Committee Meeting, Washington, DC http://forums.sae.org/access/dispatch.cgi/TEAG10_pf)

August 29 – September 1, 2005 – ATO Leadership Summit, Washington, DC

August 30 - September 2, 2005 - Measuring Behavior 2005, 5th International Conference on Methods and Techniques in Behavioral Research, Wageningen, The Netherlands
www.noldus.com/mb2005

September 5-9, 2005 – HCI 2005, Edinburgh, UK <http://www.bcs-hci.org.uk/hci2005/>

September 11-15, 2005 – International Conference on Fatigue Management in Transportation Operations, Seattle, WA <http://scitech.dot.gov/research/human/>

September 12-16, 2005 – Interact 2005, Tenth IFIP TC13 International Conference on Human-Computer Interaction, Rome, Italy <http://www.interact2005.org/>

September 13-14, 2005 – Third ICAO-IATA LOSA TEM Conference, Kuala Lumpur, Malaysia
DMaurino@icao.int

September 15-18, 2005 - Conjoint Meeting of the Australasian Society of Aerospace Medicine and the Asia Pacific Federation of Aerospace Medical Association, Gold Coast, Queensland, Australia. www.asam.org.au.

September 18-22, 2005 - XVIIth World Congress on Safety and Health at Work, Orlando, FL <http://www.cdc.gov/niosh/exhibits.html>

September 19-23, 2005 – ANA 2005 Aviation Conference and Exhibition, Connecticut Convention Center, Hartford, CN <http://www.aerospace-na.com/ace2005.asp>

September 20-21, 2005 - R,E&D Advisory Committee Meeting (joint meeting with NASA's Aerospace Research Advisory Committee), Bessie Coleman Auditorium, FAA Headquarters, Wash., DC Gloria.dunderman@faa.gov

September 20-22, 2005 – Second Safety Across High-Consequence Industries Conference, Saint Louis University, St. Louis, MO http://parks.slu.edu/msasm_conference/index.html.

September 20-24, 2005 - 1st Congress of the International Society for Cultural and Activity Research (ISCAR), Seville, Spain iscar2005@iscar.org

September 21-23, 2005 - Cargo Facts 2005- 11th Annual Aircraft Symposium, Sheraton Hotel & Towers, Seattle, Washington ashoemaker@cargofacts.com

September 25-28, 2005 - 11th Ka and Broadband Communications Conference and 23rd AIAA International Communications Satellite Systems Conference 2005 (organized by IIC), Aurelia Convention Center, Rome, Italy <http://www.aiaa.org/>

September 26-28, 2005 - AIAA 5th Aviation, Technology, Integration, and Operations Forum (ATIO), Hyatt Regency Crystal City, Arlington, VA <http://www.aiaa.org/>

September 26-28, 2005 - AIAA 2nd Intelligent Systems Conference (IS), Hyatt Regency Crystal City, Arlington, VA <http://www.aiaa.org/>

September 26-29, 2005 - Infotech@Aerospace, Hyatt Regency Crystal City, Arlington, VA <http://www.aiaa.org/content.cfm?pageid=1>

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

September 27-30, 2005 - Analyzing Risk: Science, Assessment, and Management, Harvard School of Public Health, Boston, MA <http://www.cdc.gov/niosh/exhibits.html>

October 3-6, 2005 – SAE 2005 AeroTech Congress and Exhibition, Gaylord Texan Resort and Convention Center, Dallas/Fort Worth Airport Area, Texas <http://www.sae.org/events/conferences/aerospace/>

October 6-9, 2005 – Aviation North Expo Conference, Fairbanks Princess Riverside Lodge, Fairbanks, AK www.AviationNorth.org

October 9-11, 2005 – Aviation Maintenance Star Symposium, Ritz-Carlton, Phoenix, AZ www.STARSymposium.com

October 17-21, 2005 - American Association for Aerosol Research 2005 Annual Conference, Hilton Austin, Austin, TX <http://www.cdc.gov/niosh/exhibits.html>

October 20-21, 2005 – 2nd Annual FAA International Safety Forum, Westfields Marriott, Chantilly, VA <http://www.faa.gov/news/conferences/safetyforum/index.cfm?topic=6>.

October 22-26, 2005 – American Medical Informatics Association Annual Symposium, Hilton Washington, Wash, DC <http://www.amia.org/meetings/annual/current/>

October 23-26, 2005 - UIST 2005, Eighteenth Annual ACM Symposium on User Interface Software and Technology, Seattle, WA <http://www.acm.org/uist/index.html>

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

October 24-26, 2005 – 43rd SAFE Symposium, Grand America Hotel, Salt Lake City, UT <http://www.safeassociation.org/symposium.htm>

October 25-26, 2005 - 2005 International Symposium: Beyond Regulatory Compliance, Making Safety Second Nature, Reed Arena, Texas A&M University, College Station, TX <http://www.cdc.gov/niosh/exhibits.html>

October 26-28, 2005 – Air Cargo Americas, Radisson Centre, Miami, FL www.aircargoamericas.com

October 27-28, 2005 - Second International Conference on Knowledge Management ICKM2005, Westin Charlotte, Charlotte, NC <http://www.asis.org/ICKMcall.htm>

October 30-November 7, 2005 – ATCA 50th Annual Conference and Exposition, Dallas, TX http://www.atca.org/event_items.asp.

October 30—November 3, 2005 – 24th Digital Avionics Systems Conference, Hyatt Regency Crystal City, Wash., DC <http://www.dasconline.org>

November, 2005 – DoD TAG (Human Factors Engineering Technical Advisory Group) Meeting, Baltimore, MD <http://hfetag.dtic.mil/meetschl.html>

November 3-5, 2005 - AOPA Expo, Tampa, Florida www.aopa.org

November 3-5, 2005 - Conference on Designing for User Experience, Fort Mason, San Francisco, CA <http://www.dux2005.org/>

November 6-9, 2005 - ACI World / Pacific Conference and Exhibition, Auckland, New Zealand. www.auckland-airport.co.nz

November 7-9, 2005 – DoD TAG, Baltimore, MD <http://hfetag.dtic.mil/meetschl.html>

November 7-10, 2005 – Flight Safety Foundation 58th Annual International Air Safety Seminar, Moscow, Russia http://www.flightsafety.org/iass05_cfp.html

November 7-10, 2005 - Ergonomics and Human Factors: Applications in Occupational Safety and Health, Harvard School of Public Health, Cambridge, MA
<http://www.hsph.harvard.edu/ccpe/programs/EHF.shtml>

November 8-10, 2005 – Aerospace Testing Expo, North America: Scientific Conference and Technology Forum, Long Beach Convention Center, Long Beach, CA
<http://www.aerospacetesting-expo.com/northamerica/conf+forum.html>

November 8-10, 2005 – Maintenance, Repair & Overhaul Exhibition Asia, Suntec Convention Center, Singapore <http://www.aviationnow.com/conferences/masmain.htm>

November 10, 2005 - 34th Annual Meeting of the Society for Computers in Psychology, Toronto, Ontario, Canada <http://www.scip.ws>

November 10 - 13, 2005 - 46th Psychonomic Society Annual Meeting, Toronto, Ontario, Canada <http://www.psychonomic.org/meet.htm>

November 15-17, 2005 - National Business Aviation Association's 58th Annual Meeting & Convention, New Orleans, LA www.nbaa.org

November 16-17, 2005 – IEE Human Factors Engineering Professional Network/MoD Human Factors Integration Defense Technology Center “People and Systems Symposium: Who Are We Designing For?”, Grange City Hotel London, UK <http://conferences.iee.org/pas2005>

January 9-12, 2006 - 44th AIAA Aerospace Sciences Meeting and Exhibit, Reno Hilton, Reno, NV <http://www.aiaa.org/>

January 22-26, 2006 – TRB 85th Annual Meeting, Washington, DC <http://trb.org/calendar/>

*February 9-10, 2006 - Swinburne University Symposium on Safety Management and Human Factors Symposium, Melbourne, Australia janca@groupwise.swin.edu.au
<http://www.swin.edu.au/aviation/forms/2006SwinburneSymposiumCallforPapers.pdf>*

*February 21-26, 2006 – Asian Aerospace 2006, Changi Exhibition Centre, Singapore
www.asianaerospace.com*

March 13-15, 2006 – Flight Safety Foundation 18th Annual European Aviation Safety Seminar, Athens, Greece <http://www.flightsafety.org/seminars.html#eass>

March 20-23, 2006 – 16th Annual AAMI/FDA International Conference on Medical Device Standards and Regulation, Hyatt Regency, Reston, VA
<http://www.aami.org/meetings/isc/index.html>

March 22 - 25, 2006 - Society for Behavioral Medicine Annual Meeting and Scientific Sessions, San Francisco, CA www.sbm.org/annualmeeting/index.html

March 23-25, 2006 - 17th Annual International Women in Aviation Conference, Opryland Hotel Nashville, TN <http://www.wai.org/>

March 23-27, 2005 – IA Summit 2006, Hyatt Regency, Vancouver, BC, Canada <http://www.iasummit.org/>

April 4-10, 2006 – Sun ‘n Fun, Lakeland, FL <http://www.sun-n-fun.org/content/>

April 6-7, 2006 – National Human Capital Summit, Chicago Marriott Downtown, Chicago, IL http://www.humancapitalinstitute.net/conference_national.html

April 22-27, 2006 – CHI 2006, Montreal, Quebec, Canada <http://www.chi2006.org/call/hcioverviews.php>

April 25-27, 2006 – Maintenance, Repair & Overhaul (MRO) Conference & Exhibition, Phoenix Civic Plaza, Phoenix, AZ <http://www.aviationnow.com/conferences/mromain.htm>

May 1-4, 2006 - 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference; 14th AIAA/ASME/AHS Adaptive Structures Conference; 7th AIAA Gossamer Spacecraft Forum; 2nd AIAA Multidisciplinary Design Optimization Specialist Conference; 1st AIAA Non-Deterministic Approaches Conference, Hyatt Regency Newport, Newport, RI <http://www.aiaa.org/>

May 9-11, 2006 – Flight Safety Foundation 51st Annual Corporate Aviation Safety Seminar, Phoenix, AZ <http://www.flightsafety.org/seminars.html#eass>

May 14-18, 2006 - 77th Annual Scientific Meeting of the Aerospace Medical Association, Caribe Royale Hotel, Orlando, FL <http://www.asma.org/>

May 22-24, 2006 - 9th IFAC Symposium on Automated Systems Based on Human Skill And Knowledge, Nancy, France <http://www.cdc.gov/niosh/exhibits.html>

May 25-28, 2006 – American Psychological Society 18th Annual Convention, New York Marriott Marquis, New York City, NY <http://www.psychologicalscience.org/convention/>

June 11-14, 2006 – The American Society of Safety Engineers Safety 2006 Conference, Washington State Convention and Trade Center, Seattle, WA <http://www.asse.org/2006pdcallforpapers.pdf>

June 24-26, 2006 – AAMI Conference & Exposition, Wash, DC <http://www.aami.org/proposals/index.html>

July, 2006 - 26th International Congress of Applied Psychology, Athens, Greece dgeorgas@dp.uoa.gr ,

http://www.erasmus.gr/dynamic/conventions.asp?conv_id=21r/dynamic/conventions.asp?conv_id=21

July 24-30, 2006 – EAA AirVenture, Oshkosh, WI <http://www.airventure.org/>

August 10-13, 2006 – American Psychological Association Annual Meeting, New Orleans, LA
<http://www.apa.org/convention05/future.html>

August 21-24, 2006 - AIAA Modeling and Simulation Technologies Conference and Exhibit.
Keystone Resort and Conference Center, Keystone, CO
<http://www.aiaa.org/content.cfm?pageid=1>

August 21-24, 2006 - AIAA Guidance, Navigation, and Control Conference and Exhibit,
Keystone Resort and Conference Center, Keystone, CO
<http://www.aiaa.org/content.cfm?pageid=1>

September 6-8, 2006 - 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization
Conference, Renaissance Portsmouth, Portsmouth, VA,
<http://www.aiaa.org/content.cfm?pageid=1>

September 10-14, 2006 - 54th International Congress of Aviation and Space Medicine,
Bangalore, India. A preliminary registration form may be found at <http://www.isam-india.org/conference44/newreg.php>.

September 25-27, 2006 - 6th AIAA Aviation Technology, Integration and Operations Forum,
Hyatt Regency Wichita, Wichita, KS <http://www.aiaa.org/content.cfm?pageid=1>

October 23-25, 2006 – 44th Annual SAFE Symposium, Reno Hilton Hotel, Reno, NV
<http://www.safeassociation.org/symposium.htm>

January 8-11, 2007 - 45th AIAA Aerospace Sciences Meeting and Exhibit, Reno Hilton, Reno,
NV <http://www.aiaa.org/content.cfm?pageid=1>

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
or via e-mail at bill.ctr.berger@faa.gov

