



ATO-P R&D

Human Factors Research and Engineering Division

Human Factors Newsletter # 06-07

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Technical Note: Wochinger, K., and Boehm-Davis, D. A. (2005) Pilots' Perspectives on the Pilot-Monitored Approach: Findings from a Web Survey. *International Journal of Applied Aviation Studies*, 5 (2), 321-334.

Abstract: The pilot-monitored approach, which is a type of instrumented approach, may have safety advantages over standard instrumented approaches, but there are insufficient data to determine the extent of its value. Likewise, there are no federal standards or guidelines in regards to the training or procedures for the pilot-monitored approach, nor is information readily available on its practice. This paper presents the findings of an Internet survey that was conducted to obtain information directly from professional pilots concerning their experiences with and knowledge of the pilot-monitored approach, as well as their assessments of its safety and utility. The analysis of the survey data used responses from 205 pilots who held either a commercial or airline transport certificate. Results suggest that many pilots view the pilot-

monitored approach as a safe and valuable means of executing instrumented approaches. However, the findings also show that there is much uncertainty about very basic aspects of the pilot-monitored approach, including its definition, role in aircraft with auto-land capability, and the existence of federal policy toward it. The results suggest that further investigation is required to determine whether there is a need to standardize training and/or procedures for the pilot-monitored approach.

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

Joint Planning and Development Office (JPDO): In 2003, the President and Congress established a mandate for the multi-government agency Next Generation Air Transport System (NGATS or Next Generation System) and formally created the JPDO to manage work associated with the program. The overarching vision is for a system that addresses critical safety and economic issues in civil aviation, such as increased capacity, while fully integrating environmental impact, national defense and homeland security improvements – and in a cost effective manner. This vision involves the Departments of Transportation, Homeland Security, Defense, and Commerce, the FAA, NASA, and the White House Office of Science and Technology Policy. To access the JPDO 2005 Progress Report, point to http://www.jpdo.aero/site_content/pdf/ngats-np_progress-report-2005.pdf
To access the JPDO web site, point to <http://www.jpdo.aero/>

P. Krois, ATO-P R&D

Traffic Situation Display (TSD): Throughout March 2006, engineering research psychologists from the William J. Hughes Technical Center's Human Factors Group conducted telephone interviews with subject matter experts to learn how the TSD is currently used and whether facilities have implemented any workarounds to address perceived gaps in existing system functionality. The TSD is used by Traffic Managers to monitor and evaluate air traffic demand on airspace and airports. The TSD is one of the primary Traffic Flow Management (TFM) tools used at Air Route Traffic Control Centers, larger Terminal Radar Approach Control facilities, and the Air Traffic Control System Command Center. The information obtained from these interviews will be summarized in a report to the TFM Modernization Program to help guide the design of the updated system. A summary of the findings obtained from the interviews will be presented in a briefing to the TFM User Team on March 30, 2006. *This research activity supports the Administrator's Flight Plan Goal for Greater Capacity, Objective 3: Increase on-time performance of scheduled carriers.* (T. Yuditsky, WJHTC)

ATC Flight Progress Strips: On March 21-23, CAMI researchers Drs. Carol Manning and Jerry Crutchfield visited the Daytona Beach (DAB) tower. Included in the visit were Dr. Frank Durso from Texas Tech University, and Ricky Dilbeck from the Evansville Tower. The purpose of the visit was to interview several DAB tower cab controllers about flight progress strip and note pad marking behaviors. These interviews are part of ongoing research to record the functionality of flight progress strips in the tower environment for the purpose of informing any

future endeavors that might move away from the use of paper flight progress strips. *This research activity supports the Administrator's Flight Plan Goal for Increased Safety, Objective 5: Enhance the safety of FAA's air traffic systems.* (C. Manning, J. Crutchfield, CAMI)

Aviation Maintenance: Dr. Carla Hackworth attended the 17th International Women in Aviation Conference in Nashville, Tennessee. During the conference, she attended the FAA Maintenance Recurrent Training Session sponsored by the Association for Women in Aviation Maintenance. In addition to covering specific topics within aviation maintenance, the session included a description of the FAA Safety Program (www.FAASafety.gov). *This research activity supports the Administrator's Flight Plan Goal for Increased Safety, Objectives 1 and 2: Reduce the commercial fatal accident rate; Reduce the number of fatal accidents in general aviation.* (C. Hackworth, CAMI)

Awards: Dr. Dave Schroeder will travel to Washington, DC on April 16-20, 2006 to participate in the AAM Research Committee Meeting as well as the Federal Air Surgeon's Management Team Meeting. The Aerospace Medicine Awards for Excellence & Achievement Ceremony, which is held as part of the latter meeting, will provide recognition for the following individuals from AAM-500: Carol Manning, Ph.D. – Outstanding Manager; Dennis R. Rester – Outstanding Innovator; Dana Broach, Ph.D. – William E. Collins Publication Award (Researcher); and Alfretia Scarborough – William E. Collins Publication Award (Technician). *This research 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.* (T. McCloy, ATO-P R&D)

Technical Center Lunchtime Presentation: On April 5, 2006, personnel from the William J. Hughes Technical Center's Human Factors Group along with the local chapter of the Human Factors and Ergonomics Society sponsored a lunchtime colloquium led by Professor Frank Durso of Texas Tech University. The title of Dr. Durso's talk was "What can your physician learn from your air traffic controller? Comparing safety in two industries." This was the second in a series of lunchtime presentations. Earlier this year, Dr. Qiping Zhang, Assistant Professor at Drexel University, gave a talk on "Trust in Global Virtual Communities". *This research 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.* (E. Stein, WJHTC)

Traffic Situation Display (TSD): On April 10, 2006, personnel from the William J. Hughes Technical Center's Human Factors Group completed a field study of current use and issues associated with the TSD system.

Summary: The TSD is one of the primary Traffic Flow Management (TFM) tools used at Air Route Traffic Control Centers (ARTCCs), larger Terminal Radar Approach Control (TRACON) facilities, and the Air Traffic Control System Command Center (ATCSCC). The TFM Modernization Program will be replacing the TSD with a new system that is designed to support all of today's TSD capabilities and provide room for future growth and enhancement. As part of

the modernization effort, the Human Factors Group conducted interviews with TSD subject matter experts to learn how the TSD is currently used and whether facilities have implemented any work-arounds to address perceived gaps in existing system functionality. The information obtained from these interviews will help guide design of the updated system. Facility personnel are using the TSD regularly and are generally satisfied with its current functionality. Many users are working with multiple TSDs simultaneously. This allows them to quickly access views of different traffic streams and other data without having to reconfigure a single display multiple times. Using multiple TSDs also reduces display clutter. Researchers found that training could facilitate broader use. The TSD may already contain much of the required functionality, but users may need additional training to help them better understand the system's current capabilities and how to access features most efficiently. A detailed report has been sent to the project sponsor in accordance with the current program directive.

This research activity supports the Administrator's Flight Plan Goal for Greater Capacity, Objective 3: Increase on-time performance of scheduled carriers.

Point of Contact: T. Yuditsky, WJHTC

Flight Symbolology: On March 28-29, 2006, Divya Chandra of the Volpe Center's Operator Performance and Safety Analysis Division attended a meeting of the Society of Automotive Engineering (G-10 Committee for Aerospace Behavioral Engineering Technology, Aeronautical Charting Committee) in Montreal, Quebec. She presented preliminary results from a recent study that will help the group develop industry recommendations for electronic aeronautical chart symbology. The study addressed recognition of symbols, the utility of labeling information, the relationships between symbols, and line style conventions. The committee found the work to be thought-provoking and of significant relevance to their work. Approximately 10 members of the committee attended the meeting. *This research activity supports the Administrator's Flight Plan Goal for Increased Safety, Objective 1: Reduce the commercial fatal accident rate.*
(D. Chandra, VNTSC)

Electronic Flight Bags (EFB): On March 29, 2006, Michelle Yeh of the Volpe Center's Operator Performance and Safety Analysis Division attended a one-day industry forum on EFBs in military aircraft hosted by Astronautics Corporation, St. Louis, MO. She gave a brief presentation on the human factors portion of the draft EFB Job Aid. Approximately 60 people from the military, Homeland Security, and industry attended the meeting which reviewed ongoing military and civil EFB and related programs. The meeting also included demonstrations of the latest EFB applications. *This research activity supports the Administrator's Flight Plan Goal for Increased Safety, Objective 1: Reduce the commercial fatal accident rate.*
(M. Yeh, VNTSC)

***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)



April 17-19, 2006 – NBAA Maintenance Management Conference, Dallas, TX
<http://web.nbaa.org/public/cs/mmc/200604/>

April 18-20, 2006 – FAA Aviation Safety Programs Conference, Grand Hyatt Hotel, Denver, CO
<http://www.aviationsafetyconference.com>

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

April 23-28, 2006 - Avionics Systems Division Meeting, New Orleans, LA (TBD)
lemon@sae.org

April 24-25, 2006 – AIAA Inside Aerospace...An International Perspective, Renaissance, Washington, Wash, DC
<http://www.aiaa.org/content.cfm?pageid=230&lumeetingid=1388>

April 24-25, 2006 – 3rd Annual Military Aviation Repair & Maintenance Symposium, Thistle Marble Arch, London, UK
www.defenceiq.com/2649a

April 24-26, 2005 – ATCA/FAA/NASA Annual Technical Symposium, Atlantic City, NJ
http://www.atca.org/activities/event_items.asp?month=4&year=2006&item_id=3557

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 3-5, 2006 - 6th Annual European Business Aviation Convention & Exhibition (EBACE2006), Geneva, Switzerland
<http://web.nbaa.org/public/cs/amc/>

May 6-7, 2006 - Alaska State Aviation Trade Show & Conference, Anchorage International Airport, AK
aviation@gwu.edu

May 8-18, 2006 - Aviation Safety & Security Certificate Program, Dulles Airport, VA

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 15-16, 2006 – DoD TAG, Las Vegas, NV <http://hfetag.dtic.mil/meetschl.html>

May 15-16, 2006 – ASTM F38 Unmanned Aircraft Systems Committee Workshop, Sheraton Centre Toronto; Toronto, ON CAN <http://www.astm.org/>

May 16-21, 2006 – Berlin Air Show, Berlin, Germany http://www.ila-berlin.com/ila2006/konferenze...erez2006_e.cfm?id_nr=31&tmp=1

May 17-19, 2006 – 17th International Conference on Heating and Ventilation, Prague, Czech Republic <http://www.acv2006.cz>

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 22-25, 2006 – RAA Annual Convention, Dallas, TX <http://www.raa.org/2006conference/>

May 23-25, 2006 – Defense Standardization Program Conference, Westin Arlington Gateway, Arlington, VA <http://www.sae.org/events/dsp/>

May 23-25, 2006 – 2006 International Air Cargo Conference, Brown Convention Center, Houston, TX <mailto:terryiacc@bellsouth.net>

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

June 6-8, 2006 – IEE System Safety Conference, Savoy Place, London, UK <http://www.iee.org/events/event/CE202BA5-A0D3-8FE7-2F35A59A02C8B3F3>

June 8-10, 2006 – NTSB Bar Association Annual CLE Conference, NTSB Conference Center, L'Enfant Plaza, Wash, DC <http://www.ntsbbbar.org/>

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 12-16, 2006 – UPA 2006 – 15th Annual Conference, Broomfield, CO http://www.usabilityprofessionals.org/conferences_and_events/upa_conference/2006/

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

June 24-28, 2006 – ASHRAE Annual Conference, Quebec, Canada <http://www.ashrae.org/>

June 26-29, 2006 - [General Aviation Technology Conference](#) , Hyatt Hotel, Wichita, Kansas,

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 5-9, 2006 - International Organization of Women Pilots 2006 Convention, Washington Marriott, Wash, DC <http://www.ninety-nines.org/>

July 10-14, 2006 – IEA 2006, 16th World Congress on Ergonomics, Maastricht, The Netherlands
<http://www.iea2006.org/>

July 17-23, 2006 – Farnborough International Air Show, London, UK
<http://www.farnborough.com/>

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

July 26-29, 2006 – CogSci 2006, Sheraton Vancouver Wall Centre, Vancouver, BC, Canada
<http://www.cogsci.rpi.edu/~rsun/cogsci2006/>

August 1, 2006 - The International Journal of Aviation Psychology, Special Issue on Air Traffic Control Human Factors, CALL FOR PAPERS. Please contact Jim Hitt at hitt_james@bah.com <mailto:hitt_james@bah.com> or Mike McAnulty at mike.mcanulty@faa.gov <<mailto:mike.mcanulty@faa.gov>> with any queries, or to submit papers.

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>

August 29-31, 2006 – General Aviation Technology Conference & Exhibition, Wichita Hyatt, Wichita, KS <http://www.sae.org/events/gat/>

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 6-7, 2006 - FAA-ATA 18th Annual International Symposium for Human Factors in Maintenance and Ramp Safety, Orlando, FL. www.airlines.org

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 12-14, 2006 – 23rd International Air Cargo Forum and Exposition, Calgary, Ontario, Canada <http://www.tiaca.org>

September 20-22, 2006 – HCI-Aero 2006, Seattle, WA <http://www.eurisco.org/hci-aero2006>

Note: Submission Deadlines:

15th March 2006 - Full Research Papers

15 April 2006 - Industry Papers

15 April 2006 - Early Stage Research Papers

15 April 2006 - Panels, Workshops

15 April 2006 - Posters and Demos

September 26-27, 2006 – AIAA Aviation Technology, Integration and Operations Conference, Hyatt Regency, Wichita, KS <http://www.aiaa.org/content.cfm?pageid=1>

October 8-11, 2006 - IEEE International Conference on Systems, Man, and Cybernetics, The Grand Hotel, Taipei, Taiwan <http://ins.cn.nctu.edu.tw/smc2006/>
March 1, 2006: Deadline for submission of papers (full papers only)

October 15-19, 2006 – Digital Avionics Systems Conference, 25th DASC Network Centric Environment: The Impact on Avionics and Systems, Hilton Portland and Executive Tower, Portland, OR www.dasconline.org
February 19, 2006 – Deadline for submitting abstracts of 1000 words

October 15-20, 2006 – 2nd Annual Augmented Cognition International Conference, Hilton San Francisco, San Francisco, CA www.augmentedcognition.org

October 16-20, 2006 – Human Factors and Ergonomics Society Annual Meeting, San Francisco Hilton, San Francisco, CA <http://www.hfes.org/web/HFESMeetings/meetings.html>

Key Dates:

March 1, 2006 - Proposals (all presentation types)

April 18, 2006 - Accept/reject letters sent

May 8, 2006 - Workshop preliminary handouts due

May 16, 2006 - Proceedings paper prep instructions available

May 22, 2006 - Workshop final acceptances sent

June 5, 2006 - Online preliminary program available

June 26, 2006 - Proceedings papers due

September 8, 2006 - Early registration deadline

October 17-19, 2006 – NBAA 59th Annual Meeting and Convention, Orlando, FL
<http://web.nbaa.org/public/cs/amc/futuresites.php>

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

October 23-26, 2006 - DoD Maintenance Symposium & Exhibition, Reno Hilton, Reno, Nevada
<http://www.sae.org/events/conferences/aerospace/>

October 29 - November 1, 2006 – ATCA Convention and Exposition, Marriott Wardman Park, Wash, DC

November 9-11, 2006 – AOPA Expo 2006, Palm Springs, CA
<http://www.aopa.org/expo/2005/virtual/>

November 13-14, 2006 ASTM F38 Unmanned Aircraft Systems Committee Workshop, Hyatt Regency, Atlanta, GA <http://www.astm.org/>

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

January 27-31, 2007 - ASHRAE Winter Meeting, Dallas, TX jyoung@ashrae.org, or www.ashrae.org.

February 13-15, 2007 – US Air Force T&E Days, Hilton San Destin Beach, Destin, FL
<http://www.aiaa.org/content.cfm?pageid=230&lumeetingid=1474&viewcon=submit>

March 3-10, 2007 – IEEE Aerospace Conference, Big Sky, Montana
<http://www.aiaa.org/content.cfm?pageid=1&show=All>

March 7-8, 2007 – Avionics 07 Expo XXI, *Amsterdam* http://www.avionics-event.com/avionics06/why_exhibit.html

April 17-23, 2007 – Sun ‘n Fun, Lakeland, FL <http://www.sun-n-fun.org/content/>

May 21-22, 2007 - ASTM F38 Unmanned Aircraft Systems Committee Workshop, Waterside Convention Center, Norfolk, VA <http://www.astm.org/>

June 23-27, 2007 – ASHRAE Annual Meeting, Long Beach, CA jyoung@ashrae.org, www.ashrae.org

July 22-27, 2007 – 12th HCI International, Beijing, China <http://www.hcii2007.org/>

September 25-27, 2007 - NBAA 60th Annual Meeting and Convention, Atlanta, GA
<http://web.nbaa.org/public/cs/amc/futuresites.php>

October 1-5, 2007 – Human Factors and Ergonomics Society Annual Meeting, Baltimore
Waterfront Marriott Hotel, Baltimore, MD
<http://www.hfes.org/web/HFESMeetings/meetings.html>

November 13-16, 2007 – DoD Maintenance Symposium and Exhibition, Rosen Shingle Creek,
Orlando, FL <http://www.sae.org/events/conferences/aerospace/>

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