



AAR-100

Human Factors Newsletter # 03-10

June 6, 2003 – June 20, 2003

Recent Publications/Project Reports:

Effectiveness of Personal Computers to Meet Recency of Experience Requirements. Taylor, H.L., Talleur, D.A., Bradshaw, G.L., Eanuel, T.W. Jr., Rantanen, E, Hulin C.L., and Lendrum, L. Civil Aerospace Medical Institute.

The purpose of the current study was to investigate the effectiveness of Personal Computer Aviation Training Devices (PCATDs) and Flight Training Devices (FTDs) to meet FAA recency of experience requirements for instrument flight. Two types of training devices were tested: 1) an FAA approved PCATD, and 2) a Frasca 141 FTD. An Instrument Proficiency Check (IPC) was given to all subjects in the airplane to establish a performance baseline (IPC #1). After completion of IPC #1 in the airplane, the subjects were randomly assigned to one of four groups: the PCATD, the FTD, the aircraft, or the control group, with a balancing constraint so that the subjects successfully completing IPC #1 were equally distributed among the four groups. During a six-month period, each subject received two recency of experience flights of about 1.8 hours each in either the PCATD, the FTD or the aircraft. The control group received no recency training. These recency of experience flights included three instrument approaches, holding procedures, and intercepting and tracking navigation radials and courses. After the six-month period, performance on an IPC in the airplane (IPC #2) compared pilots who received recency of experience in the training devices to a control group. The subjects in the PCATD and FTD group were also compared to the aircraft group who received recency of experience in the airplane. A comparison of the three training groups with the control group performance on the final instrument proficiency check indicated that the training groups performed significantly better than the control group. The study also indicated that PCATDs are effective in maintaining recency of experience for instrument rated pilots over a period of six months. The two recency of experience practice sessions resulted in significantly better performance for the PCATD group on an IPC compared to the control group. Practice in either the PCATD or the FTD resulted in higher pass rates compared to the control group, and practice in the PCATD and the FTD was found to be at least as effective as practice in the airplane. Finally, the performance of the

PCATD group was statistically indistinguishable from the FTD group. These findings present compelling evidence that the FAA should permit the use of PCATDs to maintain recency of experience for instrument pilots. For a full text version, see:

http://www.cami.jccbi.gov/AAM-400A/Abstracts/Tech_Rep.htm

Recognition: Dr. Tanya Yuditsky, ACB-220, received a letter of commendation from the Traffic Flow and Enterprise Management Integrated Product Team leader, Daniel Gutwein, AUA-700. The letter commends her support and participation in user team meetings related to development of the National Traffic Management Log, and for her efforts relative to Operational Test and Evaluation on the Enhanced Traffic Management System. Dr. Yuditsky continues to impress the user team with her dedication and professionalism. Congratulations! (E. Stein, WJHTC)

Aerospace Medical Association: David Schroeder, Ph.D. is the newly elected president of the Aerospace Medical Association. He is only the second non-physician in the 75-year history of the association to serve in this capacity. The association is a multi-disciplinary organization involved in the application of professional and scientific knowledge, training, and research to promote and maintain the health, well-being safety, and performance of those involved in aerospace activities. Dave is the manager of the FAA's Aerospace Human Factors Research Division at CAMI. Congratulations! (M. Antuñano, CAMI)

SCREEN Working Group. CAMI researcher Raymond King participated in the first SCREEN working group, held in Tyson's Corner, VA. The workshop brought together scientists from the FAA, National Science Foundation, Stanford University, US Navy, US Olympic Committee, and operational leaders to address issues (both select-out and select-in) of psychological assistance in personnel selection and assignment to duties in safety sensitive positions and extreme environments. A consensus was reached that psychology has much to offer in the area of selection, but the full benefit is not currently being exploited in all venues. (R. King, CAMI)

Electronic Flight Bag (EFB): On May 28th, Volpe Center researchers presented work on developing Electronic Flight Bag (EFB) evaluation tools and procedures to United Air Lines (UAL) and the FAA Safe Flight 21 Integrated Product Team in Denver, CO. They described the methods and tools used in tests conducted earlier this year at the Volpe Center. The goal of this initiative with UAL is to develop a tool that the FAA's Aircraft Certification Office can use in evaluating EFBs from a human factors perspective. UAL is developing an EFB under funding from Safe Flight 21, and Volpe will be using the device in tests to improve EFB evaluation tools and procedures. Feedback from the evaluation will be provided to UAL to help them improve their EFB. United Air Lines hosted the meeting, whose main purpose was to update the team on the EFB development effort. Volpe evaluation of the UAL EFB is scheduled for August this year. (J. Bürki-Cohen)

URET, TMA, CPDLC: During the week of June 9th, the NAS Human Factors Air Traffic Operational Concepts Human Factors Research Group (ACB-220) completed data collection on the study entitled "Collocation of User Request Evaluation Tool (URET), Traffic Management Advisor (TMA), and Controller Pilot Data Link Communications (CPDLC). This work investigated human factors issues of collocating three independently developed tools at a single

sector. The study was sponsored by the Free Flight Office (AOZ-40) and funded by AAR-100. Twelve controllers from various ARTCCs completed the experimental protocol in groups of four participants between April 28th and June 12th. Visitors from AOZ-40 observed the final days of data collection. In attendance were Brenda Boone and C-Anne Cook, Human Solutions, Inc., Rob Williams, Program Manager Center/TRACON Automation Systems (CTAS, AOZ-500), Jada Wells (AOZ-500), John Mann, NATCA Liaison to the CPDLC Program, and Jim Karlovich, NATCA Liaison to the CTAS Program. In addition, Terry Barcus and Fred James, CTAS program contract support representatives, were in attendance. (E. Stein, WJHTC)

R&D Review: The current issue of the FAA's R&D Review is now on-line at:
<http://research.faa.gov/newsletters.asp>.

*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)



July 7-10, 2003 – SAE 33rd International Conference on Environmental Systems, The Westin Bayshore Resort and Marina, Vancouver, Canada <http://www.sae.org/calendar/aeromtgs.htm>

July 14-17, 2003 – AIAA/ICAS International Air & Space Symposium and Exposition, Dayton Convention Center, Dayton, OH <http://www.flight100.org/>

July 20-24, 2003 - 2003 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS '03)
<http://www.scs.org/confernc/coninfo.html#spect2003>

July 21 – 23, 2003 - 4th Australian Pacific Vertiflite Conference on Helicopter Technology, Melbourne, Victoria, Australia. Contacts: [Dr. Arvind K. Sinha](#) and [Mr. Raden Kusumo](#)

July 29-August 4, 2003 – 51st Annual AirVenture, Oshkosh, WI <http://airventure.org/>

August 4-8, 2003 – SAE G-10 Behavioral Engineering Technology Committee Meeting, Seattle, WA http://forums.sae.org/access/dispatch.cgi/TEAG10_pf/folderFrame/100142/0/def/5f53

August 7, 2003 – Human Factors Acquisition Working Group Meeting, FOB 10A, Washington, DC <mailto:glen.hewitt@faa.gov>

August 7-10, 2003 – 111th Convention of the American Psychological Association, Toronto, Ontario, Canada <http://www.apa.org/convention>

September 3-10, 2003 – EUROCONTROL 11th Air Navigation Conference and Exhibition, Montreal, Canada <http://www.eurocontrol.be/newsroom/events/index.html>

September 8-12, 2003 – EUROCONTROL 9th Global TRAINAIR Conference and Training Symposium, <http://www.eurocontrol.be/newsroom/events/index.html>

September 8-12, 2003 – SAE Aerospace Congress and Exhibition, Palais des Congrès, Montreal, Quebec, Canada <http://www.sae.org/calendar/aeromtgs.htm>

September 9-10, 2003 – Annual Workshop on Meeting Real World Challenges with System Engineering and Information Systems Security, Boardwalk Holiday Inn, Atlantic City, NJ <http://se-iss.tc.faa.gov/>

September 15-17, 2003 – FAA/TCA/CAA Safety Management in Aviation Maintenance Symposium, Toronto, Canada

September 16 – 18, 2003 - 29th European Rotorcraft Forum, Friedrichshafen, Germany. Contact B. Gmelin at bernd.gmelin@dir.de

September 16-18, 2003 – MRO Europe, Cardiff International Arena, Cardiff, Wales <http://www.awgnet.com/conferences/meumain.htm>

September 16-19, 2003 – Investigation and Reporting of Incidents and Accidents (IRIA), Williamsburg, VA <http://shemesh.larc.nasa.gov/iria03/>

September 17-18, 2003 – FAA Research, Engineering and Development Advisory Committee (REDAC) Meeting, Washington, DC <mailto:gloria.dunderman@faa.gov>

September 17-19, 2003 – 3rd Air Cargo Economics Conference, Sheraton Amsterdam Airport Hotel & Conference Center, Netherlands <http://www.euroavia.com/conf/default.html>

September 17-21, 2003 - Institute of Electrical and Electronics Engineers (IEEE) 25th Annual Engineering in Medical and Biology Society International Conference, Cancun, Mexico <http://itzamna.uam.mx/cancun/>

September 18-19, 2003 – National Academy of Engineering 2003 Frontiers of Engineering Symposium, Irvine, CA [*Welcome to the National Academy of Engineering \(NAE\)*](#)

September 22-24, 2003 - 41st Annual SAFE Symposium, Jacksonville, FL <http://www.safeassociation.org/2003symposium1.htm>

September 22 – October 3, 2003 – ICAO 11th Air Navigation Conference, Montreal, Canada
<http://www.icao.int/icao/en/anb/meetings/anconf11/index.html>

September 24-25, 2003 –IATA/ICAO/Flight Safety Foundation ICARUS Committee/University of Texas LOSA Meeting, Montreal, Canada <mailto:helmreich@mail.utexas.edu>

September 24-26, 2003 - Institute of Electrical and Electronics Engineers (IEEE) International Symposium on Technology and Society, Amsterdam, The Netherlands
<http://radburn.rutgers.edu/andrews/projects/ssit/istas03.pdf>

October 5-8, 2003 - Institute of Electrical and Electronics Engineers (IEEE) International Conference on Intelligent Control, Houston, TX <http://vlab.ee.nus.edu.sg/~isic2003/>

October 5-8, 2003 - 2003 IEEE International Conference on Systems, Man, and Cybernetics, Washington, DC http://becat.engr.uconn.edu/IEEE_CSMC_2003/

October 6 – 9, 2003 - NATO Research and Technology Agency, Applied Vehicle Technology Panel (AVT) will present "The Vehicle Propulsion Integration Symposium" in Poland. For more information contact cheynes@rta.nato.int

October 7 – 9, 2003 - National Business Aviation Association Annual Meeting & Convention, Orlando, Florida. Contact: www.nbaa.org

October 13-17, 2003 – Human Factors and Ergonomics Society 47th Annual Meeting, Adams Mark Denver Hotel, Denver, CO <http://www.hfes.org/>

October 17-19, 2003 – EUROCONTROL IFATCA European Regional Meeting, Porto
<http://www.eurocontrol.be/newsroom/events/index.html>

October 26-30, 2003 – ATCA 48th Annual International Technical Program and Exhibits, Marriott Wardman Park Hotel, Wash, DC http://www.atca.org/static2_item.asp?item_ID=19

October 27-28, 2003 – National Academies Institute of Medicine Annual Meeting, National Academy of Sciences, Washington, DC <http://wwwsearch.nationalacademies.org/>

October 27-30, 2003 – SAE DoD Maintenance Symposium and Exposition, Valley Forge Convention Center, King of Prussia, PA <http://www.sae.org/calendar/aeromtgs.htm>

November, 2003(tentative) – DOD TAG-50, Fall 2003, Phoenix, AZ
<http://hfetag.dtic.mil/meetschl.html>

November 5-6, 2003 – Royal Aeronautical Society Flight Simulation Group Conference on “Simulation of the Environment”, London, UK <http://www.raes.org.uk/homepage.asp>

November 5-7, 2003 – FAA Centers of Excellence 3rd Joint Annual Meeting, Daytona Beach Hilton Oceanside Resort, Daytona Beach, FL
http://www.embryriddle.edu/research/FAA_COE_Meeting/index.html

November 17-20, 2003 – 56th 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>

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

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

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

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>

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

May 3-6, 2004 – 75th 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

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

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

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

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

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

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?
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