



AAR-100

Human Factors Newsletter # 04-12

June 12, 2004 – June 25, 2004

Technical Information: Human factors researchers (Evanoff, Krebs, McCord, and Ahumada, Jr.) were awarded a patent by the United States Patent Office. The patent (#6,717,525) entitled “Tactical Vectoring Equipment” includes a plurality of lights mounted on the stern of the aircraft carrier for assisting shipboard conning officers when maneuvering in a battle group formation. The Tactical Vectoring Equipment (TVE) preferably comprises six red and green lights mounted on the stern of an aircraft carrier (figure 1). The lights are preferably arranged in a linear array with the lights being spaced approximately six to nine feet apart. The lights are clearly visible to a conning officer on an escort ship while being invisible to the carrier pilots during flight operations such as landing or approaching the flight deck. The lights are arranged such that the number of red and green lights seen from an escort ship that is astern the aircraft carrier depends on the angular orientation of the vector between the escort ship and the aircraft carrier. The red and green light configuration of the tactical vectoring equipment enables the conning officer to easily discriminate range and bearing of the stern of the aircraft carrier in relation to the escort ship, thereby providing increased situational awareness for conning officers during battle group formations (figure 2). (K. Krebs, ATOP-R&D)

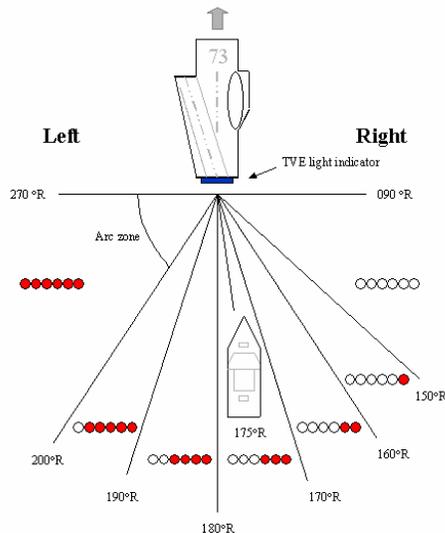


Figure 1. Overview of the TVE lighting scheme for a ship on plane-guard duty. Each bi-colour light changes based on ships' relative positions. As the combatant's position changes relative to the aircraft carrier's stern, the light display changes colour, indicating approximate degrees off station. For example, if the combatant were 200° right relative to the aircraft carrier, the conning officer would perceive one white and five red lights from the carrier's stern.



Figure 2. On April 20th, 2001 the TVE was mounted on the stern of the USS John F. Kennedy (CV-67) while conning officers on the USS The Sullivans (DDG-68) maintained plane guard position astern of the CV-67 by viewing the TVE. DDG-68 conning officers reported that the TVE provided an improved capability of estimating range and angular position of the escort ship relative to the aircraft carrier and was significantly better than the normal lighting display.

En Route Workstation: The William J. Hughes Technical Center's human factors group conducted a small scale user involvement activity with the current prototype of the future en route workstation. This exercise is to evaluate the technical operation of the displays and controls as well as to assess local controller reaction to the form and functions of the proposed workstation concept. (E. Stein, WJHTC)

ATC Displays:

- On Jun 9-10, CAMI Drs. Xing, King, and Schroeder visited the Potomac TRACON, Washington Reagan Tower, and Philadelphia Tower/TRACON to assess the use of color in advanced air traffic displays. This activity is part of an ongoing research task to determine the adequacy of existing color vision requirements for future controllers. (D. Schroeder, CAMI)
- Human factors researchers at the William J. Hughes Technical Center are completing development of a set of universal guidelines for information display systems in all ATC domains (Flight Service Station/Automated Flight Service Station Integrated Information Display System- FSS/AFSS IIDS Phase 2). In May, controllers and supervisors from towers, TRACONs, and ARTCCs visited the Technical Center for prototyping and a guideline development activity. Analysis of data and write-up of the results will be completed in June. (E. Stein, WJHTC)

ERAM: Research psychologists from the William J. Hughes Technical Center's NAS Human Factors Group are participating in dry-run activities for the En Route Automation Modernization (ERAM) Early User Involvement Event (EUIE). During this EUIE, participants from the field will have the opportunity to interact with the monitor and control interface as they complete scripted operational scenarios. The dry-run activities will be used to review the procedures for the EUIE and obtain some feedback from field representatives on the operational validity of the scenarios. (T. Yuditsky, ACB-220)

Laboratory Tour: On June 23rd, personnel from the William J. Hughes Technical Center's NAS Human Factors Group conducted a tour of laboratories for visitors from Scott Air Force Base, Illinois. Air Force participants included the Director of the Technology Directorate, Air Force Communications Agency, and his Scientific/Technical Advisor. (E. Stein, WJHTC)

Web Site Update: MITRE Corp. has created a quirky but informative site on their research into cognition and mental models.

<http://mentalmodels.mitre.org/>

A useful page on this web site is a summary of cognitive engineering methods:

http://mentalmodels.mitre.org/cog_eng/

JANUS: JANUS is a technique for analyzing the causal factors of human error in operations. In concert with ATO-S, a candidate set of Air Traffic Control Towers (ATCTS) has been identified for inclusion in the JANUS "go-to" program (a CAMI researcher visits the facility and facilitates the JANUS operational error analysis). The in-briefs for these ATCTS are planned to start in July. A team representing FAA management, NATCA, and CAMI will visit the facilities to

provide information and answer questions about the program. Candidate facilities will then determine whether they will volunteer to participate in this effort. (D. Schroeder, CAMI)

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)



June 29-July 1, 2004 - Second Annual Workshop on Cognitive Systems: Human Cognitive Models in System Design, Sandia National Laboratories and the University of New Mexico, Santa Fe, NM

http://www.sandia.gov/cog.systems/cognitive_workshop/index.htm

July 8, 2004 - Human Factors Tool Symposium, Orlando, Florida

<http://hftag.dtic.mil/docs/NASA-Tools-Workshop.doc>

June 12-16, 2004 – National Cargo Security Council 2004 Annual Conference and Exhibition, Riviera Hotel & Casino, Las Vegas, NV <http://www.cargosecurity.com>

June 18, 2004 – Human Modeling Technology & Standards Committee Meeting, Troy, MI

lemon@sae.org

July 15, 2004 – Deadline for papers - 13th Annual Symposium on Aviation Psychology (ISAP), Civil Aerospace Medical Institute (CAMI), Oklahoma City, OK, April 18-21, 2005..

<http://www.cami.jccbi.gov/>

July 19-25, 2004 – Farnborough International 2004, Farnborough Aerodrome, England

<http://www.farnborough.com/>

July 22-August 2, 2004 – 52nd Annual EAA AirVenture Fly-In, Wittman Field, Oshkosh, WI

[EAA AirVenture Oshkosh 2004](#)

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>

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

August 8-12, 2004 – 31st International Conference on Computer Graphics and Interactive Techniques, Los Angeles Convention Center, Los Angeles, CA
<http://www.vr.clemson.edu/eyetracking/etra/2004/>

August 16-19, 2004 - 6th Workshop on Risk Analysis and Safety Performance Measurements in Aviation, Crystal City, VA. <http://aar400.tc.faa.gov/AAR424/Workshop2004/>.

August 23-27, 2004 - SAE G-10 Human Behavioral Performance Committee Semiannual Meeting, Seattle, WA <http://www.sae.org/standardsdev/aerospace/g10tag.htm>

August 23-27, 2004 – Aircraft Instruments Meeting, Bellvue, WA elizd@sae.org

September 1-3, 2004 – ICAO Aviation Language Symposium, Montreal, Canada
<http://www.icao.int/icao/en/anb/meetings/IALS/index.html>

September 8-9, 2004 – Civil Aviation Safety Symposium 2004, Westin Hotel Galleria, Dallas, TX <http://www.asdnet.org/cass/default.htm>

September 14-17, 2004 – 22nd International Air Cargo Forum and Exposition, Basque Country, Spain <http://www.tiaca.org>

September 14-17, 2004 – National Cargo Security Council 2004 Conference & Exhibition, Riviera Hotel & Casino, Las Vegas, NV <http://www.cargosecurity.com>

September 16, 2004 – Aircraft Lighting Meeting, Nashville, TN elizd@sae.org

September 19-20, 2004 – Association for the Advancement of Medical Instrumentation AAMI/HE Human Factors Engineering Committee Meeting, New Orleans, LA
ntongson@aami.org

September 20, 2004 – Nondestructive Methods and Processes Committee Meeting, Albuquerque, NM kerrir@sae.org

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

September 27-29, 2004 – SAFE Association 42nd Annual Symposium, Grand America Hotel, Salt Lake City, UT <http://www.safeassociation.com/symposium.htm>

September 28 – October 8, 2004 – ICAO Assembly 35th Session, Montreal, Canada
<http://www.icao.int/icao/en/assembl/a35/index.html>

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 – 18th 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

October 5-7, 2004 – Aircraft Seat Committee Meeting, Albuquerque, NM
mlemank@sae.org

October 10-16, 2004 – ACM Multi-Media 2004, New York, NY <http://www.mm2004.org/>

October 12-14, 2004 – Shared Vision of Aviation Safety Conference, San Diego, CA
<http://www.aviationsafetyconference.com/index2.html>

October 12-14, 2004 – 57th Annual Business Aviation Association Meeting and Convention, Las Vegas County Convention Center, Las Vegas, NV <http://web.nbaa.org/public/cs/amc/>

October 13-15, 2004 – Sixth International Conference on Multimodal Interfaces, Penn State University, State College, PA <http://www.icmiplace.org/>

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

October 18-22, 2004 – AC-9 Aircraft Environmental Systems Meeting, Wichita, KS
mlemank@sae.org

October 19-20, 2004 – Aerospace Council Meeting, Toulouse, France
mlemank@sae.org

October 21-23, 2004 – Aircraft Owners and Pilots Association Expo 2004, Long Beach Convention and Entertainment Center, Long Beach, CA <http://www.aopa.org/expo/2003/virtual/>

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

October 24-27, 2004 – UIST 2004, 17th Annual ACM Symposium on User Interface Software and Technology, Santa Fe, NM <http://www.acm.org/uist/>

October 25-28, 2004 – SAE S-9 Cabin Safety Technical Committee Meeting, San Diego, CA
mlemank@sae.org

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

October 26-28, 2004 – ICAO Security Seminar, Merida, Mexico <http://www.icao.org>

October 27-29, 2004 – Human Factors and Ergonomics Society Europe Chapter Annual Meeting, Delft University, the Netherlands
http://utopia.ision.nl/users/hfsec/meeting/ec_meet.htm

October 27-29, 2004 – S-9 Cabin Safety Technical Committee Meeting,, San Diego, CA
mlemank@sae.org

October 31, 2004 – ATCA Annual Conference and Exposition, Marriott Wardman Park Hotel, Wash., DC http://www.atca.org/event_items.asp#

November 1-4, 2004 – DOD Human Factors Engineering Technical Advisory Group Meeting, Holiday Inn Select, Alexandria, VA <http://hfetag.dtic.mil/meetschl.html>

November 2-4, 2004 – World Aviation Conference, Hilton Hotel, Reno, NV
<http://www.sae.org/events/wac/>

November 4-5, 2004 – Royal Aeronautical Society Seminar - Human Factors Training in Aviation Maintenance, RAF Bentley Priory, Stanmore, near Watford, North London
<http://www.raes-hfg.com/xmhfttraining.htm>

November 8-9, 2004 – European Aviation Training Symposium, Vienna, [Austria](#)
<http://www.at-events.com/eats/conference.asp>

November 15-18, 2004 – 57th Annual International Air Safety Seminar (“Sharing Knowledge to Improve Safety”), Pudong Shangri-La Hotel, Shanghai, China
<http://www.flightsafety.org/seminars.html>

January 9-13, 2005 – TRB 84th Annual Meeting, Washington, DC <http://trb.org/calendar/>

January 25-27, 2005 – AE-2 Aerospace Lighting Committee Meeting, New Orleans, LA
elizd@sae.org

January 28, 2005 – Deadline for papers - 6th USA/Europe ATM Seminar, Baltimore, MD, June 2005 <http://atmseminar.eurocontrol.fr/>

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

April 17-22, 2005 – International Federation of Air Traffic Controller’s Associations, Melbourne, Australia http://www.ifatca.org/conferences/annual_conference.htm

April 18-21, 2005 – 13th International Symposium on Aviation Psychology (ISAP), Civil Aerospace Medical Institute (CAMI), Oklahoma City, OK (note: call for papers deadline is August 16, 2004). <http://www.cami.jccbi.gov/>, <http://www.wright.edu/isap/>

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

June 2005 – 6th USA/Europe ATM Seminar, Baltimore, MD (note: call for papers deadline is January 28, 2005) <http://atmseminar.eurocontrol.fr/>

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

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

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>

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

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

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

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