

**Department of Defense
Human Factors Engineering
Technical Advisory Group
Meeting 50**



3-6 November 2003

Host:

**Warfighter Training Research Division
Human Engineering Directorate
Air Force Research Laboratory**

**Tempe Mission Palms
Tempe, AZ**

Meeting Theme

HUMAN FACTORS ENGINEERING: PAST, PRESENT, AND FUTURE

2003 marks the “Centennial of Flight.” In the earliest days of aviation, ‘getting the bird off the ground’ was sufficient for success. World War II demonstrated the need to go beyond mere hardware design and consider the total system. Many point to this as the genesis of Human Factors Engineering as we know it. To commemorate the centennial and the 50th meeting of the Human Factors Engineering Technical Advisory Group, this meeting will focus on where we’ve been, where we are, and where we need to go.

Below are listed some topics of interest. :

- The Role of Human Factors in the History of Flight
- The History of HFE RDT&E in the DoD, FAA, and NASA
- Simulation: Past, Present, and Future
- The Influence of HFE on Training Systems
- HFE and the History and Future of Personnel Selection
- Control and Display Design over the Years
- Human Factors Contributions to Computer User Interface Design
- The Changing Face of Human Factors Engineering
- Interactions between the Disciplines of Medicine and Human Factors
- Human Factors Standard: Then and Now

PROGRAM SUMMARY

**Department of Defense
Human Factors Engineering Technical Advisory Group
Meeting 50: 3 – 6 November 2003, Tempe, AZ**

Monday, 3 November

0800 - 1000 Executive Committee meeting
1000 - 1100 New member orientation
1100 - 1300 Luncheon Break
1300 - 1700 Plenary Session
1700 - 1830 Human Factors in User Feedback Interest Group
1800 - 2000 Mixer

Tuesday, 4 November

0730 - 0830 Technical Society/Industry
0830 - 1700 Human Factors in Training Interest Group
0830 - 1100 Human Factors Standardization
0830 - 1100 User-Computer Interaction
0930 - 1000 Networking, coffee
1100 - 1230 Luncheon Break
1230 - 1430 Controls and Displays
1230 - 1430 Sustained Continuous Operations
1430 - 1500 Networking, coffee
1500 - 1700 System Safety/Health Hazards/Survivability
1700 - 1800 Service Caucuses and TS/I Meeting

Wednesday, 5 November

0830 - 1100 Human Factors in Extreme Environments
0830 - 1100 Human Factors Test and Evaluation
0930 - 1000 Networking, coffee
1100 - 1230 Luncheon Break
1230 - 1430 Human Factors Engineering/Human Systems Integration: Management
and Applications
1430 - 1500 Networking, coffee
1500 - 1700 Operating Board
1800 - 2200 Social

Thursday, 6 November

0900 - 1200 AFRL Tour
1130 - 1300 Luncheon Break

SESSIONS

MONDAY, 3 NOVEMBER

Executive Committee – 0800 – 1000

New Member Orientation – 1000 – 1100

Plenary – 1300 – 1700

- TAG Welcome - Colonel Papke, HEA Commander
- Keynote Address - Dr. Henk Ruck, Director, Human Effectiveness Directorate
- Colonel Lex Brown, Commander, Center for Operational Performance Enhancement, USAFSAM/FEP
- Break
- *History of Instrument Flight* - Mr. Bill Ercoline, Senior Researcher for Spatial Disorientation Countermeasures, General Dynamics, Brooks City Base,
- *Human Factors Considerations of the Early Wright Brothers' Aircraft* - Dr. Joe McDaniel, Industrial Engineer, Air Force Research Laboratory, Wright-Patterson Air Force Base
- *History of Fatigue Research in the US Air Force* - Dr. Jay Miller, Senior Research Physiologist, Air Force Research Laboratory, Brooks City Base
- Closing Remarks

Human Factors in User Feedback Interest Group - 1700-1830

- The chair plans to give a synopsis of the applications and methods he used to collect information from the User from 1972 through last month and the programs addressed in Light Rail (Transportation), OT&E (Army), Casualty Replacement (Army), Surface Combatant (Navy) and Submarine (Navy) applications.
- Military and former military users are particularly requested to attend this meeting to provide "user feedback" on implementing an integrated approach between the design and user communities
- An open discussion as to the direction(s) of the group for integrating the User into Design will be undertaken as well as the best name for the group will be addressed
- If anyone wishes to give a short paper on a current application please advise the Chair for current and future meetings

Fred Oberman, ObermanFR@nswccd.navy.mil, (301) 227-0033

TAG Mixer – 1800 – 2000

Tempe Mission Palms Courtyard

TUESDAY, 4 NOVEMBER

Technical Society/Industry – 0730 – 0830

- Status reports from technical society members

Human Factors in Training Interest Group – 0830 – 1700

Human Factors Standardization – 0830 – 1100

Introduction of Attendees

Status Reports

- MIL-STD-1472 (Human Engineering)
- MIL-STD-1787 (Aircraft Display Symbology)
- MIL-STD-882 (System Safety)
- Joint Service Specification Guide-2010
- NASA MSIS
- EIA HEB-1 (Human Engineering Principles and Practices)
- HFES & ISO TC 159
- Data Item Descriptions
- FAA Human Factors Design Standard
- Index of Government Standards

Gateway Issue on Human Factors Standardization

Review of Hot Topics and Watch Items

Election of Chair - Select

New Business

User- Computer Interaction – 0830 – 1100

- Admin – Election of new Chair
- Austen Lefevbre & Jeremy Nelson, US Air Force Academy
- Dr. John Warner, Army Research Laboratory/Ft. Huachuca
- Dr. Chris Forsythe, Sandia National Labs
- TBD Air Force Research Laboratory/Mesa

Controls and Displays – 1230– 1430

- Evaluating Speech Interface Concepts for Air Battle Managers: From Field Observations to Laboratory Simulations - 2Lt Annie B. McLaughlin, USAF, 2Lt Nicole M. Williams, USAF
- Human Systems/Information Systems Collaboration in User-System Interface Development - Stephen C. Merriman - The Boeing Company
- The Utility of 3D Audio and Speech-to-Text for Watchstanders - Rebecca Grier, Naval Surface Warfare Center, Dahlgren

Sustained/Continuous Operations – 1230 – 1430

- Warfighter Fatigue Countermeasures Program - 2Lt Christina Schroeder, Biodynamics & Protection Division, Human Effectiveness Directorate, U.S. Air Force Research Laboratory, Brooks City Base, San Antonio, TX
- *The Effect of Short-Duration Countermeasures on the Night Shift - Thomas Nesthus, Albert Boquet, Crystal Cruz, Kali Holcomb and Scott Shappell Civil Aerospace Medical Institute*
- Oklahoma City, OK
- HFE TAG Business
- Old Business
 1. New Business
 2. E-newsletter
- Hot Issues

System Safety/Health Hazards/Survivability – 1500– 1700

Technical Society/Industry - 1700 – 1800

Air Force Caucus - 1700 – 1800

Army Caucus - 1700 – 1800

Navy Caucus - 1700 – 1800

WEDNESDAY, 5 NOVEMBER

Human Factors in Extreme Environments – 0830 – 1100

- Multi-faceted Approach for Initial Volume Determination for Smaller Lightweight 2nd Generation Space Planes - Bill Lytle, Human Factors Research & Development, Lockheed Martin Space Systems Company; Denver, Colorado, USA

Human Factors Test and Evaluation – 0830 – 1100

- Objective Measures of Performance - Ms. Reta Reynolds, Amtec Corp,
- Usability Testing: Lessons Learned & Methodology - Ms. Helene Maliko-Abraham, BCI, Inc
- Human Performance Measures for Evaluating the Effect of Systems on Mission Task Performance (Capability) - Mr. John Rice, COMOPTEVFOR, Norfolk, VA

Human Factors Engineering/Human Systems Integration: Management and Applications - 1230 – 1430

Operating Board – 1500 – 1700

Social – 1800 – 2130

Reception and Dinner at Rustler's Rooste

THURSDAY, 6 NOVEMBER

Tour of AFRL – 0900 – 1200

EXECUTIVE COMMITTEE

Chair (Air Force)	Dr. James Miller	(210) 536-3596 DSN 240 jcmiller@brooks.af.mil
Vice Chair (Army)	Ms. Dawn Woods	(508) 233-5069 DSN 256 dawn.woods@natick.army.mil
Immediate Past Chair (Navy)	LCDR Sean Biggerstaff	(301) 757-8135 DSN 757 biggerstaffs@navair.navy.mil
Army Representative	Mr. Benjamin Gibson	(210) 221-1622/DSN 471 ben.gibson@amedd.army.mil
Navy Representative	LT Walter Carr	(619) 553-0479/DSN 553 carr@nhrc.navy.mil
Air Force Representative	Dr. Kristen Liggett	(937) 255-8251 DSN 785 kristen.liggett@wpafb.af.mil
NASA Representative	Ms. Faith Chandler	(202) 358-0411 fchandle@hq.nasa.gov
FAA Representative	Dr. Thomas McCloy	(202) 267-7167 tom.mccloy@faa.gov
TAG Coordinator	Ms. Sheryl Cosing	(703) 925-9791 scosing@comcast.net

SUBTAG CHAIRS

Controls and Displays	Dr. Henry Williams	(301) 342-9275 DSN 342 williamshp2@navair.navy.mil
Human Factors and Operational Medicine	LT William Carr	(619) 553-0479/DSN 553 carr@nhrc.navy.mil
	LCDR Sean Biggerstaff	(301) 757-8135 DSN 757 biggerstaffs@navair.navy.mil
Human Factors Engineering / Human Systems Integration: Management and Applications	Major Bob Lindberg	(210) 536-4457 DSN 240 Robert.lindberg@brooks.af.mil
	Mr. Adrian Salinas	(210) 536-4428 adrian.salinas@brooks.af.mil
Human Factors in Extreme Environments	Mr. Brad Collie	(850) 234-4744 colliebe@ncsc.navy.mil
Human Factors Standardization	Mr. Alan Poston	(202) 493-4519 alan.poston@faa.gov

Human Factors Test and Evaluation	Mr. Adrian Salinas	(210) 536-4428 adrian.salinas@brooks.af.mil
	Mr. Edward George	(661) 277-0800x2297 edward.george@edwards.af.mil
Human Modeling and Simulation	LT Joseph Cohn	(202) 253-1291 cohn@ait.nrl.navy.mil
Personnel Selection and Classification	LT Henry Phillips	(850) 452-2257x1091 hphillips@nomi.med.navy.mil
Sustained/Continuous Operations	Dr. Thomas Nesthus	(405) 954-6297 tom.nesthus@faa.gov
	LT Walter Carr	(619) 553-0479/DSN 553 carr@nhrc.navy.mil
System Safety/Health Hazards/Survivability	Mr. Benjamin Gibson	(210) 221-1622/DSN 471 ben.gibson@amedd.army.mil
	Mr. Stephen Merriman	(972) 344-7578 scmerriman@attbi.com
Technical Society/Industry	Mr. William Lytle	(303) 971-8972 william.b.lytle@lmco.com
User-Computer Interaction	LT Jim Patrey	(301) 342-9219 DSN 342 patreyje@navair.navy.mil
Workload and Stress	CDR Karl VanOrden	(619) 767-4556 DSN 524 vanordern@nhrc.navy.mil
Human Factors in Training Interest Group	Dr. Bob Nullmeyer	(480) 988-6561 x283 bob.nullmeyer@williams.af.mil
Human Factors in User Feedback Interest Group	Mr. Fred Oberman	(301) 227-0033 ObermanFR@nswccd.navy.mil

ABSTRACTS

If you are presenting at the plenary session, please bring your half page summary for inclusion in the Minutes or send it to the TAG Coordinator in advance. If you are presenting in a subTAG session, please send your summary to the subTAG chair of the session in which you are presenting.

GENERAL GUIDELINES

Font: 11 or 12 point type, Arial (san serif) font. Margins: 1.0 inch left, right, top and bottom.

Submission: Electronic format is preferred: PC-readable disk or e-mail in Word format. If that is not possible, submit hardcopy that meets all the format requirements.

Do not include classified, acquisition sensitive, or proprietary information.

You may wish to have your sponsor's approval before briefing at the TAG. The summaries will be included in Minutes published on the TAG website.

SESSION ABSTRACTS FORMAT

TITLE: Full presentation title.

PRESENTER: Name, title, organization, complete mailing address, phone number, DSN (if applicable), email (optional). Separate with commas on two or three lines to leave as much space for narrative as possible.

SYNOPSIS: Narrative. Briefing slides will not be published. Address all important points of your presentation in a succinct manner. Abstracts should be no longer than one-half page (4.25 inches in height or 25 lines maximum). Note general format above.

For presentations discussing results of research and applications:

Concentrate on completed research or interim results which have not been previously reported at the TAG. Include a general statement to orient the reader to the problem under study, the findings, and the recommendations.

For presentations discussing programs in progress:

Acquaint others with on-going work, so we may know what others are doing. Mention participating individuals, phone numbers, organizations, and the portion of work each is addressing so they may be contacted for more information. Mention joint-service participation and dual-use technologies. If the program is producing a product, mention what it will do; and identify the intended user community.

General Information

ATTENDANCE POLICIES

Attendance at the **DoD HFE TAG** is open to:

- US Military/Government employees
- Official technical society/industrial association representatives
- Employees of National Laboratories or Federally contracted research centers
- Specifically invited plenary presenters/guests
- Students majoring in human factors and related disciplines

All others must have a written invitation to attend. Contact the TAG Coordinator for additional information.

ACCOMMODATIONS

A block of rooms has been reserved for the TAG at the Tempe Mission Palms 60 East 5th Street, Tempe, Arizona 85281. The room rate for this meeting is \$90. The rate is exclusive of tax and can be extended on a pre or post meeting on a space-available basis.

The cut off date for the TAG rates is 30 days prior to arrival. Reservations made after that time will be on a space available basis. You may wish to book your reservation now and cancel if your plans change. Cancellation requires 48-hour notice prior to arrival to avoid penalty.

Cutoff date: 10 October 2003

TAG rates:	single	\$90
	double	\$90
	triple	\$100
	quad	\$110

The above rates are exclusive of tax. The current hotel tax rate is 12.07%.

Check-in: 1500 hours Check out: 1200 hours

Reservations: (480) 894-1400 or (800) 547-8705 - reference the Department of Defense.

After 10 October, rooms are available at the Quality Inn at ASU-Airport, 1375 E. University Dr., Tempe. Telephone number is (480) 774-2500. The Quality Inn is less than a mile from the Mission Palms. If enough TAG members stay at the Quality Inn, I can arrange a shuttle to and from the Mission Palms.

No BOQ arrangements in the Phoenix area have been made for the TAG.

TRANSPORTATION

Ground Transportation: The Tempe Mission Palms provides courtesy transportation for individual travelers to and from Sky Harbor International Airport every ½ hour from 6:00am – 11:00pm daily. Courtesy phones are located in the baggage claim area.

REGISTRATION

Registration can be done online at the TAG web site: <http://hfetag.dtic.mil/register.html> or by submitting the registration form in this packet.

Please remember that you must be badged before attending any SubTAG/Plenary session.

Registration Desk is open	Monday	1100 – 1430
	Tuesday	0800 – 1430
	Wednesday	0800 – 0830
	Thursday	0800 – 0830

PAYMENT

Credit card: *The TAG accepts payment for registration by credit card using PayPal only. The online registration form must be used in order to accept a credit card payment.*

Checks or money orders: Are accepted. Purchase orders are not accepted. Please do not mail cash. Enclose payment with the registration form, or send separately if registering online.

No registrations will be accepted after 24 October 2003. If you are unsure whether you will be able to attend the meeting and this deadline presents a problem, call the TAG Coordinator.

Fees:

Regular registration	\$85.00
Special student fee (applies to full-time students)	\$ 5.00
Social - per person (optional)	\$40.00

FUNCTIONS

Social: The TAG social on Wednesday, 5 November is a chance to and socialize with your fellow TAG members enjoying beef and brew with a view at the Rustler's Rooste. We'll mix and mingle on the patio overlooking the lights of Phoenix. Dinner is followed by a country western band. The cost per person for this event \$40.

Tour: The Warfighter Training Research Division will host a tour for interested parties on Thursday morning, 6 November 2003.

MISCELLANEOUS

Travel Orders: All technical meetings will be held at the Tempe Mission Palms. For networking purposes and for meeting changes/updates, it is desirable that you stay at the Tempe Mission Palms. Have your orders written to Phoenix, AZ.

Clearances: All briefings are unclassified: no clearances are necessary for U.S. citizens for any of the scheduled meetings.

Messages: Non-emergency messages will be kept at the TAG registration desk. Emergency messages will be delivered during the meeting. For incoming calls, use (480) 894-1400, referencing the TAG.

Military Dress: Check with your Service Representative.

Abstracts: Presenters at any of the sessions should provide a summary of their presentation to their subtag chair prior to the meeting for inclusion in the Minutes of the meeting. An electronic version is preferred. For format and detailed instructions, refer to the Abstracts section of this packet.

New Members: If you are new to the TAG, you should plan to attend the new member orientation session on Monday, 3 November 2003 from 1000-1100 hours. New attendees are also encouraged to participate in their specific caucus meetings.

Caucus Meetings: If you work for one of the military services (uniform or civilian), you should plan to attend your service caucus meeting. These meetings are intended to provide you with the opportunity to participate in TAG decisions and discussions concerning service-specific issues.

Materials Storage: The Tempe Mission Palms will accept small packages for storage at no cost. Label the items:

ATTN: DoD HFE TAG/S. COSING
TEMPE MISSION PALMS
60 EAST 5TH STREET
TEMPE, ARIZONA 85281

**DEPARTMENT OF DEFENSE
HUMAN FACTORS ENGINEERING
TECHNICAL ADVISORY GROUP (TAG)
Meeting 50: 3-6 November 2003**

REGISTRATION

Use this form or register online: <http://hfetag.dtic.mil/register.html>

1. Mailing Information (including military rank or title, ie., Dr., Ms., Mr.):
Name _____
Address _____

City/State/Zip _____
Telephone _____ DSN _____ FAX _____
Email _____

2. Badge Information:
Name _____
Organization _____

3. Status (See "Attendance Policies" for information)
() military/government () GOCO () other _____
() official (credentialed) TS/I member representing _____

4. If called the week prior to the TAG, do you have a 15-30 minute briefing you could present?
() plenary session or _____ SubTAG session

5. Social at Rustler's Rooste on Wednesday, 5 November:
__yes ___no _____guests

6. Tour of AFRL on Thursday, 6 November:
__yes ___no _____guests

7. Enclose check/money order made out to the **DoD HFE TAG** for the following:
Regular registration \$85.00 _____
Student registration \$ 5.00 _____
Rustler's Rooste \$40.00 _____

TOTAL _____

Return this form and payment by 10/24/03 to:

Sheryl Cosing
10822 Crippen Vale Ct.
Reston, VA 20194
Phone (703) 925-9791 FAX (703) 925-9694
scosing@comcast.net
TAG Web Site <http://hfetag.dtic.mil>