

**Department of Defense
Human Factors Engineering
Technical Advisory Group
Meeting 66**



24-27 October 2011

**Host:
U.S. Navy
Vienna, VA**

Meeting Theme

Outfitting for the Mission: HFE and HSI in Training and Interface Design

Before embarking on a mission, warfighters must have the right tools to accomplish that mission. These tools consist both of the warfighters' physical tools (e.g., decision support tools, display technologies, weaponry, etc.) and their cognitive tools (e.g., knowledge, skills, and abilities). Human Factor Engineers (HFE) and Human Systems Integration (HSI) practitioners have an essential role in outfitting the warfighter with both toolsets. By emphasizing human considerations in equipment design – specifically, at the human system interface – these practitioners ensure that warfighters can easily and effectively interact with their physical tools. By developing more effective training technologies, practitioners ensure that warfighters will be able to successfully employ their equipment during mission execution. In recognition of the critical role that interfaces and training play in enabling mission success, the Department of Defense Human Systems Community of Interest (HS Col) recently selected Training and Interfaces as the top two priority areas for future Science and Technology investments. By selecting these two areas, the HS Col highlighted the need for HFE and HSI practitioners to provide innovative solutions in these domains in order to enable our forces to capitalize on rapidly evolving technologies and revolutionary changes in our understanding of the science of training and to stay ahead of evolving threats. The purpose of this TAG is to provide a venue in which practitioners can discuss ways to improve interfaces and training systems, thereby guaranteeing that warfighters are properly outfitted, physically, cognitively and technically, to meet future challenges.

PROGRAM SUMMARY

Department of Defense
Human Factors Engineering Technical Advisory Group
Meeting 66: 24-27 October 2011 Vienna, VA

Monday, 24 October

- 0830 - 1000 Executive Committee Meeting
- 1000 - 1100 New Member Orientation
- 1100 - 1300 Luncheon Break
- 1300 - 1700 Plenary Session
- 1800 - 2000 Mixer
- 1800 - 2000 Poster Session

Tuesday, 25 October

- 0730 - 0830 HSIS Continental Breakfast*
- 0830 - 0845 HSIS Welcome*
- 0845 - 0945 HSIS Keynote Speaker*
- 0945 - 1000 HSIS Break & Exhibit Hall Opening*
- 1015 - 1115 Unmanned Systems Interest Group I
- 1115 - 1230 Luncheon Break
- 1230 - 1430 Human Performance Measurement
- 1230 - 1430 Design: Tools and Techniques
- 1430 - 1500 Networking, Coffee
- 1500 - 1700 Controls and Displays
- 1500 - 1700 Human Factors in Training
- 1500 - 1700 Unmanned Systems Interest Group II
- 1715 - 1830 Service Caucuses

Wednesday, 26 October

- 0830 - 1100 User-Computer Interaction
- 0830 - 1100 Modeling and Simulation I/Cognitive Readiness
- 0930 - 1000 Networking, Coffee
- 1100 - 1230 Luncheon Break
- 1230 - 1430 HFE/HSI: Management and Applications I
- 1230 - 1600 Modeling and Simulation II/III
- 1430 - 1500 Networking, Coffee
- 1500 - 1700 Human Factors Standardization
- 1500 - 1700 HFE/HSI: Management and Applications II
- 1800 - 2100 Social

Thursday, 27 October

- 0830 - 0930 Human Factors in Extreme Environments I
- 0830 - 0930 System Safety/Health Hazards/Survivability I
- 0830 - 0930 Personnel Selection and Classification I
- 0930 - 1000 Networking, Coffee
- 1000 - 1115 HSIS Closing Keynote*
- 1130 - 1230 System Safety/Health Hazards/Survivability II
- 1130 - 1230 Personnel Selection and Classification II
- 1230 - 1400 Luncheon Break
- 1400 - 1600 Operating Board
- 1600 Adjourn

***ALL** TAG attendees are welcome to attend the HSIS events identified on the TAG schedule

** The Test & Evaluation subTAG will not meet at TAG-66.

SESSIONS

MONDAY, 24 OCTOBER *(meeting rooms are subject to change)*

Registration for TAG members who are not part of the Executive Committee or new members will begin at noon on the Conference Level.

Executive Committee – 0830 – 1000 – Conference Room 6

Executive Committee members ONLY. Others by invitation of the Chair, CAPT Dylan Schmorrow

New Member Orientation – 1000 – 1100 – Conference Room 6

Luncheon Break – 1100 – 1300

Plenary Session – 1300 – 1700 – Conference Theater

TAG Welcome

- CAPT Dylan Schmorrow
TAG Chair
Deputy Director, Human Performance, Training, and BioSystems Research Directorate, Office of the Assistant Secretary of Defense (R&E)

HS Priority Council: Focus on the Future of Training and Interface S&T

- CDR Joseph Cohn and Dr. Jeff Morrison
Office of Naval Research

Air Force HSI Challenges

- LtCol Valerie Martindale
Chief Scientist, Human Performance Integration Directorate
711th Human Performance Wing, Wright-Patterson Air Force Base

Interfaces for the Dismounted Mission

- Dr. Elizabeth (Beth) Redden
Chief, ARL-HRED
US Army Infantry Center Field Element, Fort Benning

Potomac Chapter HFES Briefing

- Chris Parker
Potomac Chapter HFES President Elect,
BMT Designers and Planners, Inc.

OSD HSI Perspective

- Dr. Patrick Mason
Director, Human Performance, Training, and BioSystems Research Directorate
Office of the Assistant Secretary of Defense (R&E)

Networking, Coffee – 1500 – 1530 *(subject to change based on break in presentations)*

TAG Mixer and Poster Session – 1800 – 2000 – Capital Club (Mezzanine Level)

TUESDAY, 25 OCTOBER *(meeting rooms are subject to change)*

*** ALL TAG attendees are welcome to attend the HSIS events identified on the TAG schedule. Please check in at TAG registration on the Mezzanine Level.**

HSIS Continental Breakfast* – 0730 – 0830 – Lobby Level Pre-function Area

The DoD HFE TAG Registration will be on the Mezzanine Level, but HSIS will be held on the Lobby Level. You MUST be registered and have your TAG badge visible to be allowed to attend the pre-identified HSIS activities. Please plan to check in and register for TAG before attending HSIS.

HSIS Welcome* – 0830 – 0845 – Grand Ballroom B

- Ronald K. Kiss
President, ASNE

HSIS Keynote Speaker* – 0845 – 0945 – Grand Ballroom B

- Trish Hamburger
NAVSEA Director
Integrated Warfare Systems and PEO IWS Technical Authority

HSIS Break & Exhibit Hall Opening* – 0945 – 1000 – Grand Ballroom A

ALL TAG attendees are welcome to visit the HSIS exhibit hall at any time.

Unmanned Systems Interest Group, Part I – 1015 – 1115 – Mezzanine 3

Setup and Welcome

- AJ Muralidhar
Session Chair

Human Systems Integration Deficiencies: The MQ-1B Predator Unmanned Aerial System

- Col Randall Gibb
Air Force Institute of Technology

Designing for Unmanned Cargo Missions Planning and Execution

- Sylvain Bruni
APTIMA

Luncheon Break – 1115 – 1230

Human Performance Measurement – 1230 – 1430 – Mezzanine 2

Opening Remarks and Administrative Business

- LCDR Jefferson D. Grubb
Naval Air Warfare Center Training Systems Division

Optimizing Training, Interface Design, and Crew Performance in Air and Ground Operations

- Kelly R Johnson
Naval Air Systems Command, Human Systems Division

Tool for Real-time Intelligent Evaluation of Physiological and Operational Data (TRIEPOD)

- Michelle Harper
APRISE, LLC

Leveraging Human Body-Based Measures to Assess User Productivity in Human-Computer Interactions

- Gloria Washington
MITRE Corp.

Mind the Gap: Bridging Physiology and Psychology in Applied Neuroscience

- LCDR Jefferson D. Grubb
Naval Air Warfare Center Training Systems Division

Design: Tools and Techniques – 1230 – 1430 – Mezzanine 3

Telemedicine & Advanced Technology Research Center (TATRC)

- J. Harvey Magee
Technical Director, Simulation & Training Technology, TATRC

Using “Low Tech” Tools in Display/Control Design

- Mary E. Hornsby
Technical Fellow, The Boeing Company

C3TRACE (Command, Control, and Communication Techniques for Reliable Assessment of Concept Execution)

- Shanell Henry
Army Research Lab

Task Analysis for Human – Automation Interaction Referred to as the Task Specification Language

- Lance Sherry
George Mason University

Harnessing the Power of Mental Models for Effective User Interface Design: The Need for a Common, Consistent User Interface Framework in Military Systems

- Susan McDonald
Research Associate III, SA Technologies, Inc

Networking, Coffee – 1430 – 1500**Controls and Displays – 1500 – 1700 – Mezzanine 2**

Design of a User Interface to Mitigate Cognitive and Physiological Effects of Uncoupled Motion When Remotely Operating a Ground-Based Vehicle

- Jerry Ray
Human Systems Integration Division, Georgia Tech Research Institute

Utilizing Impenetrable Borders to Improve Helicopter Displays

- LT Brian R. Johnson
Naval Air Warfare Center Aircraft Division

Displays for Simulation Based Instruction and Assessment

- Bob Pokorny
Director, Education and Training Technology Intelligent Automation, Inc.

Command and Control Displays: How Many and What Type Contribute to a Better Understanding of the Battlespace?

- Lawrence G. Shattuck, Colonel, U.S. Army, Retired
Naval Post Graduate School

Human Factors in Training – 1500 – 1700 – Conference Room 6

Air Force HSI Training: Not just a HSI Domain

- Lisa Kaminski; Lt Col Valerie Martindale
Booz Allen Hamilton; AF 711th HPW/HP

Spatial Disorientation Through the Lens of Human Systems Integration

- Col Randy Gibb
AFIT

Investigating the Impact of Training on Performance

- Sue Archer
Alion Science and Technology

Performance Assessments During Simulator-Based Training: The Value of Gaze Tracking & Expert Policy Capture

- Aaron A. Pepe
Intelligent Automation, Inc.

Adaptive Training for Submarine Piloting and Navigation

- Wendy Van Buskirk
Naval Air Warfare Center, Training Systems Division

BEETLE II: An Intelligent Tutoring System

- Natalie Steinhauser
Naval Air Warfare Center Training Systems Division

Unmanned Systems Interest Group, Part II – 1500 – 1700 – Mezzanine 3

Setup and Welcome

- AJ Muralidhar
Session Chair

Human Systems Integrated Collaborative Approach for HFE and Training Systems - Challenges and Lessons Learned

- Dr. Marcie Langelier
NAVAIR

Integration of Manned and Unmanned Systems for Carrier Operations

- John Winters
BCI/NAVAIR

Requirements Analysis for VTUAV Operator Training: Approach, Tools, Results and Recommendations

- LT Lee Sciarini
NAVAIR

ISR Missions: A Multi-Tasking Problem and an Automation Solution

- Lauren Reinerman-Jones
University of Central Florida (UCF)

Closing Comments / TAG Business

- AJ Muralidhar
Session Chair

Session Wrap Up

TUESDAY, 25 OCTOBER *(continued)*

Technical Society/Industry –1715 – 1830 – Conference Room 8

Army Caucus – 1715 – 1830 – Conference Room 6

Air Force Caucus – 1715 – 1830 – Mezzanine 3

Navy Caucus – 1715 – 1830 – Mezzanine 2

DHS Caucus – 1715 – 1830 – Mezzanine 5

NASA – 1715 – 1830 – TBD

FAA – 1715 – 1830 – TBD

Modeling and Simulation I/Cognitive Readiness– 0830 – 1100 – Mezzanine 3

Business Meeting

- LT Gregory O. Gibson
Session Chair

Individual Measures of Cognitive Readiness: Where Do We Currently Stand?

- Cheryl A. Bolstad
SA Technologies

The Army Cognitive Readiness Assessment (ACRA) System – A Neuroergonomic Approach

- Robert D. O'Donnell, PhD, Col. USAF (Ret.)
NTI Inc

Team Cognitive Readiness: Theory at Work

- Kara Orvis, PhD; LT Gregory O. Gibson, PhD, MSC, USN
Aptima; Naval Research Laboratory

Human Behavioral Data for Modeling and Simulation of Human Behavior

- John Riedener; Gordon Cooke; Elizabeth Mezzacappa
U.S. Army Target Behavioral Response Laboratory

Virtual Locomotion and Avatar Control for Dismounted Infantry Simulation

- James N. Templeman
Naval Research Laboratory

User-Computer Interaction – 0830 – 1100 – Mezzanine 2

Creating a Human-Robot Language

- Lauren Reinerman-Jones
University of Central Florida (UCF), Institute for Simulation and Training (IST)

Decision Maker Perception of Information Quality: A Case Study of User-Computer Interaction in Military C2

- Grayson Morgan
MITRE Corporation

Display SA – Predictive Modeling of Situation Awareness in Interface Design

- Laura Strater
SA Technologies, Inc

A Research Based Approach to the Development of a Human Factors Based Interface for a Modeling & Simulation Tool to Support National Preparation Efforts

- Pamela McCauley Bush
Bush Enterprises

Networking, Coffee – 0930 – 1000

Luncheon Break – 1100 – 1230

HFE/HSI: Management and Applications, Part I – 1230 – 1430 – Mezzanine 2

The Army Health Hazard Assessment Program's Medical Cost Avoidance Model

- Timothy J. Kluchinsky
U.S. Army Public Health Command (APHC)

Approaches to Conducting Front End Analysis: Examining Similarities and Differences for Process Improvement

- Lee W. Sciarini
Naval Air Warfare Center Training Systems Division

Human Modeling and Simulation II/III – 1230 – 1700

Travel to the National Capital Area Medical Simulation Center

Tour of the National Capital Area Medical Simulation Center

- Two Presentations will be given as Part of the Tour

The National Capital Area Medical Simulation Center

- Gil Muniz, PhD

Virtual Reality Medical Simulators

- Alan Liu, PhD

Networking, Coffee – 1430 – 1500

Human Factors Standardization – 1500 – 1700 – Mezzanine 3

Introduction of Attendees

Status Reports

- MIL-STD-1472, Human Engineering
- MIL-STD-2525, Common Warfighting Symbology
- NASA-STD-3001, NASA Space Flight Human Systems Standard
- FAA Human Factors Design Standard
- Flight Symbology Working Group
- MIL-STD-1787, Aircraft Display Symbology
- Update of Data Item Descriptions
- Reinstating MIL-STD-46855
- MIL-STD-1474, Noise Limits
- Occupant-Centric Survivability
- HFES
- Air Force Human Systems Integration Document

Presentations

NIST Human Engineering Design Criteria Standard & Ambulance Standard

- Katherine Muse-Duma
DHS/S&T/HFD/Booz Allen Hamilton

U.S. Coast Guard Approach to Human Reliability

- Shannon Cole
U.S. Coast Guard

HFE/HSI: Management and Applications, Part II – 1500 – 1700 – Mezzanine 2

Human Systems Integration: Human Performance Technology for System Engineers

- Mark D. Rutherford
United States Coast Guard

HSI Execution in Air Force Programs

- Lisa Kaminski; Carol Blankenship
Booz Allen Hamilton; Air Force 711th Human Performance Wing

WEDNESDAY, 26 OCTOBER *(continued)*

Social – 1800 – 2200

Our social event will be aboard the Admiral Tilp vessel starting at 1800. We will cruise down the Potomac River and see the sights of Washington, D.C. at night. Food and beverages will be available during this wonderful event.

Please meet in the **lobby** of the Sheraton **no later than 1800** to board the charter bus. The cost is \$50.00/per person, and **cash only** is accepted on site. Please be sure to register on our website under the social tab if you are attending. Guests ARE welcome!

Dress is **casual** and be sure to **bring a jacket** just in case it gets chilly!



THURSDAY, 27 OCTOBER *(meeting rooms are subject to change)*

Human Factors in Extreme Environments – 0830 – 0930 – Mezzanine 2

Welcome and Overview

- Mihriban Whitmore
Co-Session Chair

Habitability Assessment: The Effect of Prolonged Waterborne Motion Exposure on Warfighter Performance

- Larry Shattuck
Naval Postgraduate School

Designing Training and Interfaces for Space Medicine Applications

- Kerry McGuire
NASA

Open Discussion/Challenge: Fidelity of Analogs for Extreme Environments

- Mihriban Whitmore
NASA – Johnson Space Center

Session Wrap Up

System Safety/Health Hazards/Survivability I – 0830 – 0930 – Mezzanine 3

Modeling Personnel Survivability Using the Operational Requirement-Based Casualty Assessment (ORCA) Model

- Latrice Hall; Tim Myers
Aberdeen Proving Ground, MD

Difficulty Matching MIL-STD 1472 Physical Exertion Guidance to Materiel Systems

- Don Goddard, Ergonomist
US Army Institute of Public Health Command, Aberdeen Proving Ground, MD

Personnel Selection and Classification I – 0830 – 0930 – Conference Room 6

The Relationship of ASTB Score to Probability of FFPB Appearance

- Jefferson D. Grubb; Henry L. Phillips
Naval Air Warfare Center, Training Systems Division

The Effects of Age at Accession on Training Attrition and Length of Aviation Service

- Antonio Anglero, Jefferson D. Grubb, and Henry L. Phillips
Naval Air Warfare Center, Training Systems Division

Networking, Coffee – 0930 – 1000

HSIS Closing Keynote* – 1015 – 1115 – Grand Ballroom B (Lobby Level)

- Awarding of HSI Lifetime Achievement Award Dr. Michael Drillings and Student Best Paper Award

System Safety/Health Hazards/Survivability II – 1130 – 1230 – Mezzanine 3

Reducing Noise Exposure in the Acquisition Process

- Lt Col Valerie Martindale, Chief Scientist
711 HPW/HP, Wright-Patterson AFB, Ohio

Personnel Selection and Classification II – 1130 – 1230 – Conference Room 6

Additional Presentation TBD

Luncheon Break – 1230 – 1400

Operating Board – 1400 – 1600 – Mezzanine 2

Adjourn – 1430

EXECUTIVE COMMITTEE

Chair (Navy)	CAPT Dylan Schmorow	(703) 588-7404 Dylan.schmorow@osd.mil
Vice Chair (Air Force)	Maj Eric Phillips	(937) 938-3831 Eric.phillips@wpafb.af.mil
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SUBTAG CHAIRS

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SUBTAG CHAIRS *(continued)*

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	Mr. John Rice	(757) 318-0671 Johnrice.ssih@noboxes.org
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	Ms. Rahel Rudd	(937) 255-1675 Rahel.rudd@wpafb.af.mil
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	Mr. John Plaga	(937) 938-3050, DSN 798-3050 John.plaga@wpafb.af.mil
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User-Computer Interaction	Mr. John Taylor	(850) 234-4515 John.k.taylor3@navy.mil
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Human Factors in Unmanned Systems Interest Group	Mr. Ajoy Muralidhar	(540) 284-0701 ajoy.muralidhar@navy.mil