



# Aerospace Human Factors Association

A Constituent Organization of the Aerospace Medical Association

## Newsletter

Volume 10, Issue 1

January 2001

### OFFICERS

#### **President**

Pamela S. Della Rocco  
FAA William J. Hughes Technical Center  
ACT-530, NAS Human Factors Branch  
Atlantic City Airport, NJ 08405

#### **President Elect**

Scott A. Shappell  
FAA CAMI AAM-510  
P.O. Box 25082  
Oklahoma City, OK 73125

#### **Secretary-Treasurer**

Thomas E. Nesthus  
FAA CAMI AAM-510  
P.O. Box 25082  
Oklahoma City, OK 73125

#### **Representative to AsMA Council and Nominating Committee**

Henry Taylor  
1 Airport Road, Willard Airport  
Savoy, IL 61874

#### **Members-at-Large**

James Bagjan  
21537 Holmburg Drive  
Northville, MI 48167

Dwight A. Holland  
4874 Glenbrook Drive  
Roanoke, VA 24018

### **Dr. Dave Schroeder to Receive the 2001 Henry Taylor Founder's Award**

This year's Aerospace Human Factors Annual Luncheon and Business Meeting will be held from **Noon - 2:00 p.m. on Monday, May 15, 2001**, immediately following the first scientific session at 10:30 a.m. In addition to the Business Meeting, this year's luncheon speaker will be **Dr. Dave Schroeder, the winner of the 2001 Henry L. Taylor Founder's Award** for outstanding contributions in the field of Aerospace Human Factors.

Dave received his Ph.D. in experimental psychology from the University of Oklahoma in 1971. During his graduate education he worked as a part-time contractor for the Oklahoma Medical Research Foundation and later as a psychology technician at the Civil Aeromedical Institute (CAMI) in Oklahoma City. He completed an internship in clinical psychology and served as a clinical psychologist at the VA Medical Centers in Murphreesboro, TN. (1983-85) and Topeka, KS (75-80). In 1980 he returned to CAMI as a clinical research psychologist. For much of the next 10 years he served as Supervisor of the Clinical Psychology Research Section. In 1991 he was appointed as Manager of CAMI's Human Resources Research Division.

Dave has been active in several professional organizations. At the local level he served in a number of capacities within the Oklahoma Psychological Association, including chair of the awards committee, president of the Division of Academic and Research Psychologists, a member of the OPA board of directors (1988-1989), and OPA president (1992).

Within the American Psychological Association he served as President of the Continuing Professional Development section (Division of Clinical Psychology), a representative to the Division's Board of Directors, Director of the Division 12 Post Doctoral Institutes. He was Chair of the Applied Experimental and Engineering Psychology Program Committee and is currently Secretary/Treasurer for the division. He was elected as a fellow of APA in 1998.

Within the AsMA, he served as Chair of the Scientific Program Committee, on the Executive Council from 1992-95, as an AsMA vice president (1996-1997) and as vice president for Education and Research (1998 to 2001). He was elected as an AsMA Fellow in 1985 and received the Raymond Longacre Award for outstanding accomplishment in the psychological and psychiatric aspects of aerospace medicine in 1997. He has also been active in the Aerospace Human Factors Association since its inception in 1989, serving as President in 1994-95, and as a Charter Fellow in 1993.

Dr. Schroeder's earliest research included aspects of the spiral aftereffect, vestibular research to assess the effects of alcohol on performance, and vestibular responses to angular simulation and caloric irrigations. Work with Dr. Collins and other scientists involved the effects of drugs on vestibular responses and performance and determinations of (continued on Page 4)

### INSIDE THIS ISSUE

- 2** Presidential Nominations Sought
- 3** Notice of Annual Dues Increase
- 4** AsMA French-Language Panel
- 8** DoD HFE TAG Report
- 15** Standardized ORM Training

## FROM THE PRESIDENT'S DESK.....

Happy New Year...and new millennium, everyone!

The Executive Committee held its midyear meeting on November 14, 2000 in conjunction with the AsMA meetings. Dr. Russ Rayman graciously hosted the meeting in AsMA Headquarters.

Of particular importance to inform you about was the decision to raise AsHFA dues to \$15 from \$10 effective with the new dues year in January 2001. A form of this discussion has occurred at every meeting I have attended since the 1994. There was again much discussion about options for cutting expenditures and raising revenues. Our yearly expenditures have exceeded the income for the past few years. The organization's balance finally reached levels that the Executive Committee felt that fiscal responsibility required raising dues. The primary expenditures of this organization are for the directory and newsletter. I personally find these valuable and feel that the time and financial investment in this organization is well worth it.

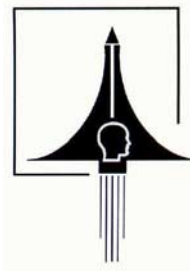
There are a couple of ways we could use your help in the coming months! First, we are looking for nominations for the two AsHFA awards: 1) the 2001 Stanley N. Roscoe Award for Best Doctoral Dissertation in Aerospace Human Factors and 2) the 2002 Henry L. Taylor Founder's Award for Outstanding Contributions in the Field of Aerospace Human Factors. Dr. Bob Kennedy is chairman of the Awards committee this year. So, please consider that deserving graduate student's dissertation and nominate them, as well as a colleague for the Taylor Award. Descriptions of each award are included in this newsletter. Submissions to Dr. Kennedy are needed by March 1, 2001. Second, we are always looking for substantive articles for the newsletter. Consider letting us know about your most recent research project. Third, remember Dr. Taylor has set up a fund with the University of Illinois Foundation to support the awards.

Finally, I wanted to mention Dr. Bill Collins retirement from the FAA's Civil Aeromedical Institute. He has certainly had a great influence on CAMI, AsMA, this organization, and my career. I wish him the best.

- Pamela S. Della Rocco

## Aerospace Human Factors Association

### Committee Chairs



#### Program Committee

Carol A. Manning, Ph.D.  
FAA CAMI AAM-510  
P.O. Box 25082  
Oklahoma City, OK 73125  
TEL: (405) 954-6849  
FAX: (405) 954-4852  
E-mail: carol\_manning@mmacmail.jccbi.gov

#### Membership Committee

Arnold A. Angelici, M.D.  
4140A Indian Runn Drive  
Dayton, OH 45415  
TEL: (330) 686-4200  
FAX: (330) 686-4220  
E-mail: aaangel@ibm.net

#### Publicity/Newsletter Committee

CDR Andrew H. Bellenkes, Ph.D., USN  
School of Aviation Safety (Code 10)  
Naval Postgraduate School  
1588 Cunningham Rd., Rm. 301  
Monterey, CA 93943-5202  
TEL: (831) 656-2581  
FAX: (831) 656-3262  
E-Mail: ahbellen@nps.navy.mil

#### Directory and Newsletter Publisher

Henry L. Taylor, Ph.D.  
Director, Institute of Aviation  
University of Illinois  
1 Airport Road, Williard Airport  
Savoy, IL 61874  
TEL: (217) 244-8601  
FAX: (217) 244-8761  
E-mail: h-taylor@uiuc.edu

**CALL FOR NOMINATIONS FOR ASHFA PRESIDENT** Nominations are currently being sought for the position of AsHFA President for the 2002-2003 term. If you know of a colleague (or perhaps you, yourself?) who you feel would best serve our organization in it's highest executive leadership position, please consider nominating that individual today. All nominations (and any questions about the position or nomination process) should be sent directly to AsHFA President-Elect, Scott Shappell, Ph.D. via e-mail at [sshappell@mmacmail.jccbi.gov](mailto:sshappell@mmacmail.jccbi.gov), phone at (405) 954-4082, fax at (405) 954-4852, or normal Post to 7711 Copper Oaks Drive, Edmond, OK 73003. The nomination period will close on January 31st.

## A NOTE TO PROSPECTIVE MEMBERS

Dear Colleague!

Allow me to briefly introduce you to the Aerospace Human Factors Association (AsHFA). AsHFA is a constituent society of the Aerospace Medical Association. The AsHFA is a rapidly growing, dynamic organization. Its membership boasts a large and varied range of professional interests and expertise in human factors; reflecting the notion that "Human Factors" is an umbrella for a plethora of engineering, aeromedical, physiological, and psychological approaches to the human-machine interaction.

AsHFA grew out of a request from AsMA to form a standing committee to formulate positions for AsMA on aerospace human factors issues and develop panels and exhibits to educate AsMA members about aerospace human factors. That committee, the Aerospace Human Factors committee (AsHFC) still exists, and its function remains the same. In the process of formulating the AsHFC, Dr. Henry Taylor saw a need to establish a constituent organization that would better meet the needs of the aerospace human factors community within AsMA; ergo the creation of AsHFA.

The goals of AsHFA are: 1) to encourage human factors considerations in the development of aerospace systems, 2) to apply our knowledge of human performance to system development, 3) to promote research on factors affecting human performance, and 4) to exchange information with other groups having similar interests. In this regard, AsHFA has established liaison with organizations such as APA Division 21 (Applied Experimental and Engineering Psychology), the Human Factors and Ergonomics Society, DoD HF Technical Group, SAE G10, SAFE, and others. Further, AsHFA sponsors a number of highly regarded scientific and technical sessions each year at the AsMA Scientific Meeting.

AsHFA members prepare and present point papers on timely and critical human factors-related issues, and have participated on a host of committees that continue to define international aerospace policy.

Our membership continues to grow. Or those of you who are not yet AsHFA members, we ask you to consider joining so many of your colleagues as active participants in this organization. The annual costs are minimal and the rewards great. To become a member of AsHFA, you must first be a current member in good standing of the Aerospace Medical Association. Members of AsMA who are interested in joining AsHFA will find an application here in the newsletter or at the AsHFA page link of the AsMA website. Further, if you have any questions about AsHFA, contact our Membership Chair, Arnold Angelici, M.D. His contact information can be found on Page 2 of this newsletter.

## ADDRESS CHANGES

CDR Andrew H. Bellenkes, USN School of Aviation Safety (Code 10) Naval Postgraduate School 1588 Cunningham Rd., Rm. 301 Monterey, CA 93943-5202 Voice: (831) 656-2581 Fax: (831) 656-3262 E-Mail: ahbellen@nps.navy.mil	Dr. James H. Erickson 5144 N. Bernard Street Chicago, IL 60625-4802
Dr. William R. Clarke 2506 Palomino Court Richland, WA 99352-9639	Dr. William M. Houk 307 Kenwood Court Walkersville, MD 21793-8188
Dr. Yvette DeBois 10275 Collins Avenue, Apt. 2285 Bal Harbour, FL 33154-1420	Dr. Albert W. Kirby 701 Windsor Terrace Enterprise, AL 36330-8606
Dr. Stanley Diamond 1515 Shasta Drive, Apt. 1211 Davis, CA 95616-6676	Col. Britton L. Marlowe PSC Box 0031 Beale AFB, CA 95903
Dr. Demetri Economos 40128 Quarters Quantico, VA 22134-2233	Colonel Michael R. Mork 111 Rainbow Drive, #1155 Livingston, TX 77399-1011
	Lt. Orlando J. Olmo P. O. Box 22025 Patuxent River, MD 20670

---

## INCREASE IN DUES APPROVED

The Executive Committee of the Aerospace Human Factors Association held its mid year meeting on November 14<sup>th</sup>, 2000 in the AsMA Headquarters conference room. One significant discussion concerned the fact that our yearly operational budget has exceeded our income over the last several years. Our balance was \$3,033.14 as of October 31, 2000. The Executive Committee discussed our fiscal responsibility to this organization and entertained numerous approaches in both cost cutting and revenue boosting. The approach with the most assured and significant outcome was to raise our yearly dues from \$10 to \$15. The call for vote to raise our dues was not without a lengthy discussion and it was not unanimous, though it carried with an effective date of January 1, 2001.

This newsletter notice serves as an announcement to the general membership and additional reminders will be posted on all renewal and new membership forms. I think we all agree on the important role that this constituent organization plays within the Aerospace Medical Association and agree that its mission should continue. Thank you for your support.

Thomas E. Nesthus, Ph.D.  
Secretary/Treasurer

**SPECIAL FRENCH LANGUAGE  
SCIENTIFIC PANEL TO BE HELD AT  
AsMA MEETING IN RENO**

You may recall that one of the highlights of last year's annual congress (in Houston) was the presentation of a hugely successful Spanish-language scientific panel. The 2001 annual congress will once again present a non-English panel; this time, in French. Dr. Jean-Pierre Crance has brought together a splendid group of speakers whose papers will review the latest in French pilot performance research. I am certain that, as with the Spanish language panel last year, the upcoming French language panel will generate a great amount of interest. I urge all of you to attend.

What follows is a list of abstracts submitted for the French language panel titled: Pilot Performance. They are, by order of presentation:

**ASSESSMENT OF 3D PERCEPTION IN A STEREO HELMET-MOUNTED DISPLAY (HMD)**  
C. Roumes, J. Plantier and A. Léger.

**EFFECT OF MODAFINIL ON CEREBRAL BLOOD FLOW. COMPARISON WITH AMPHETAMINE**  
G. Florence, R. Bonnier, D. Plagnes, A. Serra, X. Etienne, M. Peres, Ch. Pierard, P. Satabin, D. Lagarde and J. M. Clere

**CONTINUOUS OPERATION: INTEREST OF A COMBINED USE OF A HYPNOTIC AND A PSYCHOSTIMULANT IN MAINTAINING OPERATIONAL CAPABILITY**  
M. Beaumont<sup>1</sup>, O. Coste<sup>1</sup>, D. Batejat<sup>1</sup>, C. Pierard<sup>1</sup>, C. Turner<sup>2</sup>, B. Sicard<sup>3</sup>, B. Stone<sup>2</sup> and D. Lagarde<sup>4</sup>

**SYSTEMATIC FLIGHT ANALYSIS SYSTEM FOR HUMAN FACTORS EXPERIENCE FEEDBACK**  
J.Y. Grau<sup>1</sup>, P. Leblay<sup>2</sup>, and L. Chaudron<sup>3</sup>

**MEDICATIONS THAT INDUCE SLEEPINESS: USE BY AVIATION CREWMEMBERS**  
J.P. Taillemite, B. Sicard and J.-P. Crance

**CAUSES OF MEDICAL UNFITNESS OF AGED PRIVATE PILOTS**  
J.-P. Crance, R. Germa, P. Maruani and R. Auffret

**Abstracts from IMASSA for presentation in English in other sessions :**

The following abstract from C. ROUMES and J. PLANTIER is proposed for a normal **slide** session:

**PILOTS'ABILITY TO USE STEREOPSIS IN A SIMULATION ENVIRONMENT**  
C. Roumes and J. Plantier.

The following abstract from J.C. JOUANIN et al. is proposed for a **poster** session :

**NEUROMAGNETIC IMAGING OF SPATIO-TEMPORAL BRAIN ACTIVITY DURING VOLUNTARY FATIGUING CONTRACTIONS**

J-C. Jouanin<sup>1</sup>, M. Peres<sup>1</sup>, P. Satabin<sup>1</sup>, A. Ducorps<sup>2</sup>, D. Schwartz<sup>2</sup>, S. Lebozec<sup>3</sup>, Y. Cordoliani<sup>4</sup>, C. Pierard<sup>1</sup> and C.-Y. Guezennec<sup>1</sup>

Dave Schroeder (continued from Page 1)  
the effects of habituation on vestibular responses and the coriolis effects.

Upon his return to CAMI in 1980 he became involved in ATC-related research concerning the selection of air traffic controllers, controller job stress, personality factors, and job satisfaction. In response to the air traffic controller strike in 1981 there was a focus on improving management and the organizational culture within the FAA. As part of this effort, the Administrator requested that a questionnaire be developed (what is now called the FAA Employee Attitude Survey) and administered periodically to the FAA workforce. Dave was responsible for the development and administration of the first survey in 1984. The survey, with a few exceptions, has been administered to FAA employees every 2 years since that time.

In addition to his research, Dave has served on various high priority FAA work groups including a joint FAA/NTSB work group assessing runway incursions and air traffic control operational errors (1985); the System Safety and Efficiency Review that examined aspects of air traffic control services provided in the northeast corridor of the US (1989); a scientific task planning group involved in the development of the FAA's National Plan for Civil Aviation Human Factors (1990); an NTSB human performance team investigating the crash of two FAA aircraft and a Delta crash; a DOT steering committee for the Office of the Secretary for Transportation (OST) initiative on "Improving Transportation in a Maturing Society" (1996); and most recently on the Aviation Rulemaking Advisory Committee (ARAC) to address air carrier pilot pre-employment screening standards and criteria working group (1997-98).

Dr. Schroeder also coordinates a program of air traffic control and general aviation human factors research involving 30 scientists, technicians, and support personnel. Research is focused around shiftwork and fatigue in air traffic control, air traffic control operational errors, the transition from paper to electronic flight progress strips, the selection air traffic controller and airway facilities technicians, the use of color in advanced displays, and a newly developed emphasis on human factors in general aviation maintenance.

## **Minutes of the Aerospace Human Factors Association Executive Committee Meeting Houston, TX, Monday, May 15, 2000**

The annual outgoing meeting of the Aerospace Human Factors Association Executive Committee was held on May 15, 2000 in the Continental Room (Oaks). President Robert Kennedy called the meeting to order at 7:06 am. Others in attendance included: Arnold Angelici, James Bagian, Andrew Bellenkes, Pam Della Rocco, Dwight Holland, Thomas Nesthus, Carol Manning, Scott Shappell, and Henry L. Taylor.

The minutes of the Midyear Aerospace Human Factors Association Executive Committee meeting held on November 16, 1999 were circulated and reviewed as was the Treasurer's report covering the period of October 31, 1999 to April 30, 2000. The balance as of April 30, 2000 was \$3,907.35. Discussion of the low balance ensued along with ideas for raising the balance through increased membership, increased annual dues, or changing the dues renewals date from the end of the calendar year to the May, Annual Scientific Meeting time frame. No resolutions were established. The minutes and Treasurer's reports were hence approved as presented.

The president called for reports from the committees. The main items of committee activity discussed are summarized as follows.

### **Awards**

Henry Mertens, our immediate past President, presented this year's awards nominations and selections. The Awards Committee reviewed dissertations and selected Wesley Olson of the University of Illinois for the Roscoe Award for the best human factors-related dissertation. He will present information concerning his dissertation work during the Luncheon Business meeting today.

The first recipient of the Henry L. Taylor Founder's Award, Chris Wickens, Ph.D., Director of the Aviation Research Laboratory with the University of Illinois will provide a presentation at today's Luncheon Business meeting. Next year's Henry L. Taylor Founder's Award recipient is David J. Schroeder, Ph.D. with the FAA's Civil Aeromedical Institute. He will present a Lecture during next year's Luncheon Business meeting in Reno, NV.

### **Membership**

Pam Della Rocco presented this report. She announced that Carlos Comperatore has been overtaken by work activities and has resigned as Membership Chair. Arnold Angelici has volunteered to assume these responsibilities. A discussion on how new members should be managed ensued. Henry Taylor suggested following a procedure similar to that of the APA's Division 21. Andy Bellenkes suggested that one of the 3 members-at-large could be tasked to assist with membership if needed. Details of current membership status

will be compiled by Angelici and presented during the AsHFA meeting on Wednesday.

### **Program**

Dwight Holland submitted the Program Committee report listing 4 AsHFA sponsored/cosponsored panel sessions for this year's meeting. The panel sessions included: 1) Maintaining Human Performance During Long-Duration Spaceflight Co-chaired by D. Holland and P McGuinnis, 2) Visual Information Processing and Display Studies Co-chaired by R.M Wildzunas and D. Holland, 3) STS-90 Neurolab: Scientific Results and Crewmembers Perspectives Co-Chaired by C. Oman and J. Buckley, and 4) Refractive Surgery Issues: An Update Co-chaired by D. Holland and D.A. Hiland.

Scott Shappell mentioned the workshop titled "Human Factors Approach to Accident and Prevention Analysis" that he and Doug Weigmann held on Sunday and discussed the possibility for sponsoring organizations, such as AsHFA in this case, to receive some of the dollars charged by AsMA for these workshops.

Arnold Angelici presented this year's Luncheon Meeting Program. Costs were well below those of last year's due to a change in size and format as well as the type of paper used for printing. D. Holland discussed the request for a larger room for the Luncheon this year and was confident that our membership would fill the 125 seats. He then announced that Carol Manning has volunteered to chair the program committee for next year. H. Taylor moved to recognize Dwight for all of the hard work that he has done as Program Chair over the last 3 years.

### **Nominations & Elections**

Pam Della Rocco presented this report starting with a review of the process, dates, and returns. She mentioned that there were few nominations returned. The results of the election found Scott Shappell, President Elect (President 2001-2002); and Dwight Holland, Member-At-Large (3-yr term). H. Taylor congratulated the newly elected members and suggested that we somehow expand on our approach to gaining nominations, in particular with our international members. Some discussion of developing a list-serve or web site location for members to gain information about nominations and provide an easier/quicker method for communication about officers/executive committee activities/etc. Andy Bellenkes volunteered to compile a publicity email list. The report was approved as presented.

### **Directory**

Henry Taylor recommended that an updated membership directory be printed at the end of the summer. He suggested that we contact members who are 2 years (or more) in arrears and to drop those who are unresponsive to this renewal request, from the directory. Costs were estimated at \$1300. This action and report was approved as presented.

### **Publicity/Newsletter**

Andy Bellenkes presented a report describing his activities as the Newsletter Editor. One newsletter was published in November 1999 and another in March 2000. A newsletter is planned for late summer. Some discussion was made concerning the medium that the newsletter should be delivered in: Electronic vs. printed and mailed. Also discussed were plans to contact and solicit HF-related articles from our International members for inclusion in the newsletter. The report was approved as presented.

### **Students**

Dr. Gosh could not make this meeting so there was no report of activity for this group.

### **Fellows**

Carol Manning described the process she followed for the Fellows nominations and approvals. One candidate was submitted, reviewed, and unanimously approved. Dr. Hans Pongratz was elected as a 2000 AsHFA Fellow and will be duly recognized during the Luncheon Business Meeting today. The report was approved as written.

### **AsHFA Report to Council**

Henry Taylor, Representative to Council, presented a report that summarized the activities of the AsHFA for 1999-2000, including membership, financial status, newsletters, directory, and sponsored panel sessions for the 1999 Scientific Meeting. The reports were approved as written.

### **New Business**

Jim Bagian introduced a timely and hot topic, concerning the design and use of medical equipment. Suggestions for development of a panel session were made and Jim volunteered to organize this area for next year's scientific meeting.

The meeting was adjourned at 8:22 a.m.

---

## **Minutes of the Aerospace Human Factors Association Luncheon Business Meeting Houston, TX, Monday, May 15, 2000**

The annual Luncheon Business meeting of the Aerospace Human Factors Association was held on May 15, 2000 from 12:00-2:00 p.m. Approximately 100 attendees were seated with a beautiful view of Houston, for lunch. Robert Kennedy, President for 1999-2000 welcomed all attendees as lunch was served. During dessert Bob called the business meeting to order and asked the various AsHFA committee Chairs to present their reports. Copies of most reports previously approved during our morning Executive Committee meeting were available for review at each table.

### **Of particular note**

Dwight Holland presented the AsHFA sponsored and co-sponsored sessions that were developed for this year's

meeting and encouraged all of those present to attend the sessions. Then he bid farewell, thanked all members who had helped him over the last 3 years, and introduced Carol Manning as the next Program Committee Chair. Pam Della Rocco and Carol presented Dwight with a Certificate of Appreciation for the hard work that he had put into this position.

Tom Nesthus presented the minutes of the mid-year meeting as well as the Treasurer's Report and indicated that the balance is the lowest since he had become Secretary/Treasurer.

Henry Mertens presented the Awards report and announced that Dr. Dave Schroeder was selected for the Henry L. Taylor Founders Award for 2001. This year's Stanley Roscoe Award was presented to Major Wesley Olson who briefly discussed his dissertation research titled "Supporting Coordination in Widely Distributed Cognitive Systems: The Role of Conflict Type, Time Pressure, Display Design, and Trust."

Henry Taylor presented his report to Council and discussed the intentions to revise and distribute to our membership an updated AsHFA Directory.

Andy Bellenkes talked about intentions to complete the next newsletter by the end of the summer. He presented Carol Manning, the previous newsletter editor, and Nelda Milburn of CAMI with Plaques of Recognition for their efforts last year and for their developing a new newsletter format.

Carol Manning announced the results of the Fellows election with Dr. Hans Pongratz elected as the AsHFA Fellow for 2000.

Pam Della Rocco presented the results of the nominations and election process and announced that Scott Shappell was elected President Elect, and Dwight Holland as Member-at-Large for a 3 yr term.

Henry Taylor, next introduced Chris Wickens from the University of Illinois, as the first Henry L. Taylor Founder's Award recipient. Dr. Wickens provided a presentation on free flight research that he has been involved in recently.

Bob Kennedy passed the gavel over to Pam Della Rocco who briefly discussed 3 goals that she would like to pursue this year including: increased membership; increased participation from our membership; and increased participation of our international members. She announced that she would like to open a newsletter column for our international members to report information on research, laboratories, or biographies.

Ing Oei, of the Netherlands was introduced as a Ph.D. student member and will assume the role of AMSRO liaison.

Pam closed the meeting at approximately 2:00 pm.

**Minutes of the Aerospace Human Factors  
Association  
Executive Committee Meeting  
Houston, TX, Wednesday, May 17, 2000**

The annual incoming meeting of the Aerospace Human Factors Association Executive Committee was held on May 17, 2000 in the Imperial Suite (Galleria). President Pam Della Rocco called the meeting to order at 1:06 p.m. Others in attendance included: Arnold Angelici, Paul Antony, Andrew Bellenkes, Regina Buccello, James DeVoll, Ron Hoffman, Dwight Holland, Ephimia Morphew, Carol Manning, Thomas Nesthus, Ing Oei, Hans Pongratz, Michele Segal, Scott Shappell, and Henry L. Taylor.

Committee reports were requested and information provided as follows.

**Publicity/Newsletter**

Andy Bellenkes indicated that the beginnings of a new newsletter are in place and will be published in July/August time frame. An attempt at providing members with an electronic version of the newsletter will be made to save on printing/postage costs. A request was made for Pam to provide a letter for Andy to elicit interest and membership from HF College programs around the country.

Because Andy needed to leave early, he opened discussion of joint sponsorship of panel sessions and volunteered to help develop a panel with the Military Aviation Safety Subgroup of the Aviation Safety Committee on the topic of Operational Risk Management.

**Students**

The President introduced Ing Oei from the Netherlands as the new Student-organization Chair. An M.D., Ing is currently a Ph.D. student at Amsterdam University in Space Medicine. Her field of interest is space engineering and medicine.

**Membership**

Tom Nesthus presented the committee with a list of AsMA members who had signed up at our booth during this meeting and recommended that they be approved as AsHFA members. All were approved. Others new members will be approved by the executive committee via email.

**Program**

Carol Manning, the new Program Committee Chair discussed various topic areas for next year's meeting. The topics discussed, included: 1) Air Traffic Control Shiftwork and Fatigue, 2) Operational Risk Management, 3) Space Medicine, and 4) Errors in Medicine. Henry Taylor and Scott Shappell discussed the possibility for another workshop for next year, as well.

**AsHFA Report to Council**

Henry Taylor, Representative to Council, discussed the business meeting, including the new structure for operations.

It was mentioned that AsHFA should nominate a current member to the vacant Council-At-Large position thereby gaining a voice for Human Factors within the Council.

**Directory**

Henry Taylor recommended that the secretary/treasurer send the dues renewal information to him following the reminder letter that he will send to members in arrears after returning from the annual meeting. An updated membership directory will then be printed and mailed at the end of the summer.

**Fellows**

Carol Manning described the process and time-line for the Fellows nominations and approvals. A call for nominations should be included in the newsletter as a reminder with a form and contact name/address.

**Awards**

Our immediate past President, Bob Kennedy was not present but the Awards Committee will solicit and review HF-related dissertations for the Roscoe Award and nominations for the Henry L. Taylor Founder's Award for 2002. It was announced during the Luncheon meeting on Monday, that next year's Henry L. Taylor Founder's Award recipient, is David J. Schroeder, Ph.D. with the FAA's Civil Aeromedical Institute. He will present a Lecture during next year's Luncheon Business meeting in Reno, NV.

**Nominations & Elections**

Scott Shappell is looking forward to starting this process and will encourage membership participation with nominations and active volunteerism.

**Liaison Activities**

Tom Nesthus discussed a recent meeting of the DoD Human Factors Engineering Technical Advisory Group. Henry Taylor discussed activities of the APA Division 21 and Scott Shappell discussed Division 19. Arnie Angelici and Dwight Holland talked about the FAA Wings activities that they had recently been involved in.

**New Business**

Dave Schroeder discussed the 5 goals of the Education and Research. Goal 4 is written to promote international standardization of human factors training programs in accident investigation. He recommended that we (AsHFA) think of ways to help accomplish these goals and to provide that input to him. A motion was made to create another goal that might identify an "FAA-Wings"-type training workshop that would concentrate on HF issues important to GA pilots and establish a combined effort with the HF Committee in accomplishing the goal through development and sponsorship.

A discussion ensued, regarding the new AsMA Constitution and By-Laws Committee. Dwight Holland recommended that we nominate Frank Austin as AsHFA's representative on the newly formed committee.

The internet issue and AsMA's organizational restructuring was discussed. Michele Segal volunteered to look into space for constituent organizations and developing a new format for the AsHFA. Ron Hoffman also volunteered to assist with web page development.

The AsHFA stationary-logo will need to be updated and distributed with the latest Executive Committee members.

Pam Della Rocco presented the Executive Committee and other attendees with the award certificate that she received from Dr. Lorenzo Vargas. Dr. Vargas presented this certificate to AsHFA for the outstanding support given to Latin American Education for space age education.

---

## **Report**

### **Department of Defense**

### **Human Factors Engineering Technical**

### **Advisory Group**

### **(DOD HFE TAG) Meeting #45**

### **6-9 November 2000**

The 45<sup>th</sup> meeting of the DoD HFE TAG held in El Paso, TX. The meeting was chaired by Major Scott Smith, USAF, Brooks Air Force Base, San Antonio, TX. Approximately 75 people attended the meeting, representing the US Army, US Navy, US Air Force, OSD, DISA, NTSB, NASA, FAA, and several human factors-related technical societies and industry associations. Steve Merriman (Boeing) represented the SAFE Association, the Human Factors Association (HFA) of the Aerospace Medical Association (AsMA), and the Government Electronics and Information Technology Association (GEIA). He also served as Technical Society/Industry Subgroup chair. Notes are from sessions attended. Three items are attached: background of the DoD HFE TAG, attachment (1), TAG-45 meeting schedule, attachment (2), and pre-registered attendees, attachment (3).

#### **Sub-Group Meetings Attended at the 44<sup>th</sup> TAG:**

**Human Factors in Test and Evaluation & System Safety/Health Hazards/Survivability.** These two Sub Tags combined forces for this meeting. Dr. Uldi Shvern (US AEC) reported on human engineering test and evaluation of software in the Army. He reported that the Software Usability Measurement Inventory (SUMI) is an existing questionnaire tool (50 questions, 3-point scale, takes 5 minutes to administer). The scale measures five usability dimensions: efficiency, like/dislike, helpfulness, control (user in control, software in control), learnability. The SUMI scale is standardized against a mean score of 50 and a standard deviation of 10 points. SUMI was used to compare two Army systems. SUMI's credibility is high. Feedback to software developers is helpful. There is no preparation time required. It takes little time to score (a few minutes). Moreover, scores are referenced to a standard. SUMI will remain a software assessment tool for the US Army. It may

be supplemented with system-specific questions. SUMI costs approximately \$600.

The SUMI web address is  
<http://www.ucc.ie/hfrg/questionnaires/sumi/index.html>

The second speaker was US Army Captain Rob Willis, who spoke on "Cognitive Systems Engineering and AH-64 Night Vision & Targeting. He provided a "report card" on how well night vision and targeting had been added to the AH-64 (answer: "not too well!"). He focused on issues such as poor FLIR image quality, slow slew rates (60-100 degrees/sec), and poor location of added controls (select target button was moved to a poor center console location). In his words, this was an instance of introducing major technology upgrades while significantly worsening human machine integration.

The third speaker was Mr. Richard Touson (US Army Research Lab/HRED) who reported on the Life support for Transport & Trauma (LSTAT), a device that locks onto a standard NATO litter and provides a capability for full ICU patient monitoring. The technology chosen for LSTAT was unfortunately quite heavy and the system became 551 Lbs. overweight. In a recent evaluation, it was rated as "too heavy, with poor grips (unpadded and painful) and slippery."

The last speaker was Dr. Patricia S. Cowings of the Psychophysiological Research Lab, NASA Ames Research Center. She is developing training to help people overcome the symptoms of motion sickness in space flight or in land vehicles. She has developed "autogenic feedback training exercises" which provide significant help. She is currently providing training to Russian cosmonauts and hopes to be providing support soon to the US astronauts soon. She also briefly reported on some assistance she recently provided to the US Army in evaluating three versions of a land vehicle, each with a different seating arrangement. Her work seems very effective and worthwhile.

**Design: Tools and Techniques.** Mr. Lester Jee (Office of the PM, Crusader Project) chaired the meeting. The first speaker was Dr. Mark Brauer, who discussed the HFE benefits of using the human exposure metric, which he has proposed for inclusion into MIL-STD-882, the military's system safety standard. Ms. Faith Chandler commented that the new risk characterization (severity x likelihood x human exposure) needs to be clearly distinguished from the way risk used to be calculated using the old system.

The second speaker was Dr. Mike Fineberg, Human Systems Information Analysis Center (HSIAC) Chief Scientist. He reported on HSI Tools and Techniques Seminar recently held (25-26 September 2000) at which there were 80 participants. The point of contact for the Proceedings is Mr. Jeff Landis, Human Systems IAC. A CD is available with all of the papers on it for \$10. The seminar focused on the following areas:

- Experience in Applications
- Current Challenges

- Emerging Expectations
- Beyond Percentiles – What’s Better?
- Integration of Models-Linking of Human Models

Ms. Susan Archer (MicroAnalysis and Design, Inc.) made a short presentation on an old, established human engineering method – link analysis. Susan reported on collaboration between her company and the US Army Research Laboratory during which advanced computer-based techniques were combined with link analysis to demonstrate the continued contributions that can be made by “old” techniques.

**Human Factors Engineering/Human Systems Integration.** Mr. Richard Armstrong (Chief of the ARL Field Element at Ft. Rucker) chaired the meeting. The first speaker was Major Scott Smith of Brooks AFB. He presented the current USAF human engineering project schedule and status, shown in Table 1. [I requested Major Smith send me a copy of the current Defense systems Management College (DSMC) charts in need of updating. If you are interested in seeing them, please contact me.]

The second speaker was Mr. Al Poston, who discussed “Human Factors in FAA Acquisitions.” FAA Order number 9550.8, Human Factors Policy specifies how human factors is to support the FAA acquisition process. Human factors support was described as splintered. The various human factors factions are now coordinating every 4-6 weeks.

Mr. Richard Armstrong provided an update for attendees on HSI in the US Army. The latest General Officer’s Steering Committee (GOSC) confirmed MANPRINT but did not provide the required funding to support it. MANPRINT IPTs have been established at PM/TRADE and a MANPRINT assessment has been completed. There will be more to report at the next TAG meeting.

**Human Factors Standardization SubTAG (HFS)** Mr. Alan Poston (FAA) chaired the meeting. Following an introduction of the attendees, the SubTAG proceeded through its agenda.

- MIL-STD-1472 Pocket Edition:** Copies of the Pocket Edition were distributed at the meeting. [Extra copies were requested for TS/I members.]
- MIL-STD-1787:** Version ‘C’ has been coordinated with the DoD Flight Symbology Working Group (fixed wing). The Defense Standardization Program office now has it for administrative processing.
- MIL-STD-882D:** Dr. Brauer is continuing to work with Ben Gibson on an action plan to have his comments incorporated.
- Human Factors and Ergonomics Society (HFES)/ISO/TC159:** Mr. Dick Armstrong is the current “acting” HFES liaison.

- Joint Services Specification Guide: The 2010** version has been published on CD. It available on Distribution Statement D – “DoD and DoD Contractors only: contains critical technology.” [A CD was obtained.]
- HCI Guidelines.** The job may involve converting two existing style guides (Tri-Service Aviation HCI Style Guide and Checklist, and, Army Weapon System HCI Style Guide) to handbooks. Mr. Al Poston will check with Mr. Lee Gray (MICOM) on status.
- Data Item Descriptions (DIDs):** Dr. Jen Narkovicus (NAWC-AD/ARINC) circulated five DIDs for review. She will send them out again for final comments. The US Navy may adopt up to five of the DIDs. The DIDs would be applicable to Navy contracts. The GEIA may adopt the remaining DIDs as industry documents.

Mr. David Britton was elected as Chair Select for the Human Factors Standardization SubTAG. The meeting was concluded with a short presentation by Mr. Jerry Chaikin, who reported on the passing of Mr. Gene Ring, formerly the Air Force representative to the Human Factors Standardization Steering Committee (HFSSC). Gene had contributed to nearly every facet of human factors standardization for many years; he had retired from Federal service in 1983. Mr. Chaikin agreed to provide his written presentation to Ms Cosing for publication in the TAG-45 minutes.

**Technical Society/Industry Sub-Group.** The Technical Society/Industry (TS/I) SubTAG met twice during TAG #45 on 7 and 8 November 2000. Twenty-three participants attended the meetings. Steve Merriman ([scmerriman@home.com](mailto:scmerriman@home.com)) chaired the TS/I meetings. Attendees first introduced themselves and then reviewed and updated the TS/I membership lists.

**Theme for the TS/I Meeting:**

The special focus for the first TS/I meeting on human factors issues unique to command and control systems. The DoD, the US Army and US Air Force have expressed concern over human factors aspects of command and control systems – typically referred to as Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (or C<sup>4</sup>ISR). User interfaces for command and control systems are unique because:

- They are based on a different set of requirements (e.g., DISA Joint Technical Architecture, DII COE, MIL-STD-2525, TAFIM documents) than DoD human engineers are used to dealing with; i.e., “conventional” human engineering guidelines (e.g., MIL-STD-1472).
- While DISA specifies the attributes of compliant software, the procuring service specifies the user interface development process.

- Industry is left to develop the user interfaces in an environment where software functionality, schedule, and costs usually takes precedence over user interface effectiveness and consistency.

Because command and control stations usually present information and operate on the same general database, it is generally beneficial to present system operators with a common operating picture (or common tactical picture). This facilitates communication amongst operators and helps to maintain operator situational awareness.

Two speakers were invited to address the Technical Society/Industry SubTAG: Dr. Kathleen Fernandes of the Space and Naval Systems Center in San Diego, and, Dr. Mary Hornsby of the Boeing Phantom Works organization in Seattle.

- Dr. Fernandes was asked to present because she directed a tri-service effort to develop the “User Interface Specifications for the Defense Information Infrastructure” – a document that is ‘key’ to designing user interfaces for C<sup>4</sup>ISR systems. Dr. Fernandes brings a “requirements flow-down” perspective to the design of user interfaces.
- Dr. Mary Hornsby was invited to present because she is responsible for implementing a common set of user interface designs that can be applied and adapted to C<sup>4</sup>ISR user interfaces for multiple systems. Dr. Hornsby brings an industry perspective to the design of C<sup>4</sup>I user interfaces – one of using a user-centric development process to apply existing top level requirements to the development of a common user interface approach that can be readily adapted to meet the needs of many different customers.

**“The DII COE: User Interface Design in an Open Systems Environment”** was presented by Kathleen Fernandes, Ph.D. ([fernande@spawar.navy.mil](mailto:fernande@spawar.navy.mil)) Space and Naval Warfare Systems Center, San Diego, 53560 Hull Street, Code D4221, San Diego, CA 92152, 619-553-9224. The Defense Information Infrastructure Common Operating Environment (DII COE) provides an open system framework for the design and implementation in C4I and combat support systems in the Department of Defense. The DII COE provides a repository of reusable, interoperable software from which systems tailored to the specific needs of a user community can be built. It is critical to the overall usability of COE-based systems that the software in the DII repository provide a user interface with a common appearance and behavior so users can interact effectively with systems built from this software. Usability in the DII COE results from reusing common software for performing the same function across multiple systems. The responsibility for user interface design and configuration is distributed among multiple organizations, with decisions based on a standards-compliant implementation and an analysis of costs and benefits from

both system and user perspectives. While this approach is effective in delivering usable systems to the warfighter, it also presents a number of challenges for both application developers who design the user interface of individual software components and system integrators who select the appropriate mix of these components to satisfy the operational requirements for a system.

#### **“Common Human Machine Interface (HMI) for C<sup>4</sup>I”**

was presented by Dr. Mary E. Hornsby ([mary.e.hornsby@boeing.com](mailto:mary.e.hornsby@boeing.com)) Associate Technical Fellow, Boeing Phantom Works, Seattle, WA. Developing and implementing a common Human Machine Interface (HMI) across C<sup>4</sup>I platforms has numerous operational and developmental advantages. A well-designed HMI for C<sup>4</sup>I uses consistently applied “look and feel” rules and features that can increase situation awareness (SA), reduce the number of operator errors, reduce workload, present appropriate levels of information, and allow individual tailoring of display/control options. Applying a consistent HMI across C<sup>4</sup>I platforms and across ground and air operations can simplify training, facilitate joint and coalition operations, and reduce training time.

The Boeing Company has recently developed a significantly improved airborne command and control HMI for the NATO AWACS Midterm Upgrade program. The HMI design was requirement and operator driven, and benefited from significant operator involvement. Its features include multiple views of the tactical situation, tabular information integrated with the tactical view, and the capability to select object and context-sensitive information and actions by merely clicking on an item on the tactical situation display. A core group of AWACS operators worked with human factors and software designers over a two-year period to ensure functionality and a usable interface.

A “look and feel” style guide was developed to support development of HMI components for all functions and ensure consistency across the components. The NATO Midterm HMI is currently being adapted for the 737-based Airborne Early Warning and Control System (AEW&C). This is the proof of concept for the ability to use a common HMI approach across platforms. Boeing’s goal is to use the NATO HMI, with appropriate extensions and modifications, on other programs, including the US AWACS update (40/45). This approach allows a new or updated HMI to build on previous, tested HMIs and allows most of the work to be devoted to (new) platform/program specific requirements and constraints. It takes advantage of “lessons learned” with fielded systems and allows operators trained on one system to transition more easily to another system (e.g., ground-based operators to flight-based systems). It will also allow more rapid development and deployment of mature operator interfaces (lower cost, less obsolescence) and will significantly reduce training time and O&M costs.

## Old Business

**DoD TAG Hot Issues:** The TAG's Hot Issues document is being updated to version III from version II. It will be published in the Spring of 2001. The TS/I group critically reviewed the TS/I Hot Issues in version II and made the following recommendations.

**#1 Support artificial intelligence and expert systems development.** Recommendation: Update this issue to be more proactive and to emphasize decision support systems over the more vague "artificial intelligence" or "expert systems" terms.

**#2 Develop new crew accommodation approaches.** Recommendation: delete this issue. The original issue was focused on the International Space Station; human accommodation requirements were defined broadly enough to accommodate a sufficiently wide range of anthropometric cases.

**#3 Minimize the impact of new technologies on human performance.** Recommendation: Clarify this issue to emphasize that new integration approaches are required to prevent adverse impacts on warfighter performance.

**#4 Improve information presentation to crewmembers in time-compressed environments.** Recommendation: leave this issue as written; it is timely and important.

**#5 Develop techniques to optimize individual and group decision-making.** Recommendation: leave this issue as written; it is timely and important.

The Hot Issues were discussed briefly at the meeting. The following points were made:

- The Hot Issues should reflect current hot topics.
- They should be worded specifically with regard to application. They should be capable of being addressed and "retired."
- The benefits of addressing the issue should be clearly stated in the rationale.

Two potentially new hot issues for the TS/I group were suggested:

- Human engineering challenges resulting from the integration of Contractor and Government Off-the-Shelf (COTS/GOTS) into military systems. COTS/GOTS obsolescence, upgrade, changing user interface features, etc. make it difficult to maintain user interface consistency across the system. (Mary Hornsby)
- Lack of trained human factors engineering personnel emerging from institutions of higher education. Many of these graduates do not possess minimum competencies in basic human engineering skills. (Sue Archer)

## New Business:

**HFE DIDs, Adoption by Industry.** Mary Hornsby had reported at the Human Factors Standardization SubTAG that

the Electronic Industries Alliance (EIA) had volunteered to adopt selected Data Item Descriptions (DID) that were not picked up by a Service. Since the US Navy is still deliberating which DIDs to adopt, this issue will stay open until the next TAG meeting.

**Non-Government Standards Update.** Alan Poston indicated that the Index of Non-government standards (NGS) posted on the TAG's website is in need of updating. He estimates the effort at about two days' work.

**What a 501-C Will Do For Me.** Dr. Mark Brauer, Member Emeritus, addressed the TS/I group on an issue that would assist certain TAG attendees in securing financial assistance in attending meetings. As an educational, non-profit organization, the TAG (like the Quad Cities Engineering and Science Council), already qualifies for 501-C status. 501-C status would provide TAG members with the following benefits:

- Ability to obtain grants to attend these (or off-line) meetings
- Ability to obtain grants to develop end products (hardware/software) of benefit to the TAG and the larger HFE community
- An increase in the Grantor base once such tax-exempt status is achieved.

All TAG members may need class-1 or class-2 support at some time while in the military or while serving as an employee of a defense contractor. Applying for 501-C status would require a one-time application and a one-page maintenance report each year. It was decided to recommend applying for 501-C status to the TAG Operating Board.

**GEIA Emerging Technology Conference: Human Machine Interface.** Steve Merriman briefly described the activities conducted in support of the Government Electronics and Information Technology Association (GEIA) conference recently held (October 31-November 2, 2000) in Crystal City Virginia. Dr. Corinna Lathan delivered a conference presentation on user interfaces for the handicapped. Section 508 of the Rehabilitation Act requires that Federal agencies provide individuals with disabilities the same access to and use of information as those without disabilities. Approximately 30% of the US population are afflicted with one or more handicaps that would impede easy connection to the Infosphere via traditional user interface technologies. These disabilities include visual impairments, hearing loss, speech difficulty, developmental (retardation), learning impairment, information processing deficits and reduced mobility/strength. Ranging from mild to severe, these disabilities afflict many millions of people (and older people largely). Within the next five years (2000-2005), more than 50 million Americans will be over 65 years old, and many will have some measure of difficulty with vision, hearing, mental ability or dexterity. If HMI technologies with potential to help people with disabilities are successfully identified, developed, prototyped and marketed,

these people can be connected to the Infosphere and remain a viable force in the marketplace.

With the US on the verge of implementing Section 508 of the Rehabilitation Act, it is extremely important that development and application of user interface technologies with significant potential for use by the handicapped is accelerated. The DOD, industry, foreign governments and universities have invested considerable R&D into the following technologies with potential to aid people with disabilities. These technologies are being studied and further developed in universities and industry in hopes that they can significantly assist in responding in a positive and timely manner to Section 508. Many of these technologies have already demonstrated multiple applications.

**Extreme Environments SubTAG.** This meeting group was chaired by Mr. Cletis Booher (NASA Johnson Space Center, Houston, TX). The first speaker was Dr. Luis Contreras, Assistant Professor at Univ. of Texas at El Paso, [Lrcontreras@utep.edu](mailto:Lrcontreras@utep.edu). He spoke on “Continuous Hazard Tracking & Failure Prediction Methodology Applied to Extreme Environments.” The methodology applies to failure prediction, hazard tracking and risk assessment. Future work will concentrate on a human-based range of motion and velocity predictive model. Video equipment will be used to predict potential failures.

The second speaker was Ms. Faith Chandler, Boeing, Kennedy Space Center ([chandler@pgocm2.ksc.nasa.gov](mailto:chandler@pgocm2.ksc.nasa.gov)). She presented “HF Analysis Leads to Breakthrough Designs in Foreign Object Debris (FOD) Prevention.” Ms Chandler’s recent expertise is in human error analysis, human factors in accident investigation and human factors in design development. She participated as team lead in an effort to develop a means to drastically reduce or eliminate FOD in space shuttle processing. With human factors in the leadership role, this multi-disciplinary team prototyped and developed a tool which firmly grips a variety of fasteners during their insertion and attachment. A patent is pending on the tool, which has the potential for use in a variety of industries.

The last speaker was Dr. Steven M. Shope, Sandia Research Corporation. He spoke on “Extremes in Ballooning-High Altitude and Around-the-World Flight Attempts.” Some of the human factors issues associated with ballooning that he addressed were: cold, fatigue, extended oxygen use, recovery, competitive strategy, chase crew functions and situational awareness. Others included life support systems; solar management; communications and telemetry; emergency remote control; crew escape procedures; and, other emergencies. He described three types of balloons: hot air (< 10,000 Ft), scientific gas (<150,000 Ft.) and Rozier balloons (<50,000 Ft). He showed some videotape of recent around-the-world record attempts, which reinforce the magnitude of preparation, hundreds of people and funding required.

### **Human Factors In Training (Special Interest Group).**

Dee Andrews, Ph.D. (in Instructional Systems), Division Technical Advisor for the AFRL Warfighter Training Research Division, chaired the special interest group meeting in panel format.

As the first panelist, Dr. Andrews described the Air Force Research Lab role in Command and Control Training research. He described USAF training in command and control as relatively fragmented, with training for personnel varying considerably. His objective is to provide superior C<sup>2</sup> training methods and technologies, supported by a seamless information management system. He indicated that there is usually a “dangerous” time lag in setting up a C<sup>2</sup> cell and getting it to the point of being effective. The overall command and control structure consists of four levels, beginning at the top with the National Command Authority (NCA). Command and control passes downward through three additional levels: first the Air Operations Center (AOC), then the Wing Operations Center (WOC) and finally the Squadron Operations Center (SOC). The challenge, expressed by USAF leadership (General Jumper), is to reduce AOC manning from 600 currently to about 300. Dr. Andrews task will be to define performance measures (e.g., timeliness, workload, communication channel loading) for each level and analyze performance thresholds. John Lockett, representing the Army Research Institute, discussed US Army efforts on command and control modeling that might be of some use.

Dr. Dana Malonovich, NAWC-TSD Orlando, discussed Navy team research – past, present and future. Their overall objective is to train teams to effectively work together. Some of the knowledge that helps team performance are:

- Inter-positional knowledge
- Knowledge of signs of stress
- Knowledge about teamwork

Dr. Bob Nullmeyer, Air Force Research Laboratory, Command and Control Training Research, briefly discussed bridging the gap between cockpit/crew management and distributed mission training for fighter pilots. Dr. Steve Goldberg (Army Research Institute) briefly discussed virtual environments for dismounted soldier simulation, training and mission rehearsal.

### **DoD HFE TAG Operating Board Meeting.**

Ms Sheryl Cosing (TAG Coordinator) indicated that the on-line registration would be provided for the next meeting. Attendees will be able to pay online using credit cards. The Controls and Displays/Voice SubTAG has changed it’s name to “Controls and Displays.” Dr. Mark Brauer presented a request to file the TAG as an Educational/Non-Profit Organization (501C status). This will be investigated and accomplished if feasible. Dr. James Miller (AFRL/HEPM) requested that the TAG look into affiliating with the National Interagency Fire Center (NIFC) and invite NIFC representatives to attend future TAG meetings. The

TAG web page is being updated; suggested should be sent to Ms. Teresa Alley (MATRIS). The TAG brochure has been printed and is available (copies were obtained – please let Steve Merriman know if you want some). Individual web pages for the SubTAGs are also being considered. It was suggested that the executive committee consider changing the name of the TAG, possibly to the HSI TAG, to reflect the broader scope of interest (similar to the change from CSERIAC to HSIAC).

The Hot Issues document is going through its next revision cycle. The time schedule presented to and accepted by the Operating Board is as follows:

- Send Hot Issues III Draft to SubTAG Chairs  
As soon as possible
- Receive Updates from SubTAG Chairs  
January-February '01
- Prepare Updated Draft  
February '01
- Executive Committee Review draft  
February-March '01
- Brief Dr. Foster at DDR&E  
March '01
- “Publish” Hot Issues III on TAG Web site  
March/April '01

#### **Plenary Session Presentations.**

**Army Air & Missile Defense Modernization.** Mr. Fred Lugo provided the welcoming address for Brig. General Michael Vane, Commanding General, 32<sup>nd</sup> Army Air and Missile Defense Command, Ft. Bliss, TX. The Air Defense mission is to:

- Protect maneuvering forces
- Protect sustainment forces
- Protect geopolitical and theatre-strategic assets
- Homeland defense (provided by the space and missile defense command)

Threats include terrorists, UAVs, Theatre Ballistic Missiles (TBM), Inter-Continental Ballistic Missiles (ICBM), rogue nations, RMA (rockets, mortars & artillery), attack UAVs, rotary wing, fixed wing, and weapons of mass destruction. Trends are toward unmanned systems, high precision munitions and weapons of mass destruction. The availability of cheap, overhead imagery makes missile threats more accurate. Long-range rockets are cheap, mobile and provide high firepower.

Forty-three countries possess cruise missiles obtained from the US. A total of 72 countries possess cruise missiles and 19 countries export them to other countries. France's Apache cruise missile is the current weapon of choice in 2001. The US has sold Harpoon missiles to 12 countries. Short-notice targeting capability is now provided by CNN and satellite imagery. The US is trying to provide a leak-proof defense against Theatre Ballistic Missiles.

Some of the systems under development include the THAAD (theatre high altitude area defense) missile. This missile intercepts incoming targets at 80-100 km with a hit-to-kill technology in the endo/exo-atmosphere. A contract was let to Lockheed Martin in 2000. The first missile will be delivered in 2006. The MEADS (Medium Extended Air Defense System) is deployable using C-130 aircraft. It is targeted against cruise missiles, TBMs, helicopters, UAVs and aircraft. It will result in a 60% reduction in airlift requirements. It will enter the risk reduction phase in 2000 and should be ready for fielding in 2112.

The Lightweight Common Launcher is being built to launch both PAC2/3 and THAAD missiles with common electronics and systems. SHORAD (Short Range Air Defense) consist of Avenger, Linebacker, Marpads and Sentinel Radar and employ the Stinger missile (range of only 4 km). The HUMRAAM (HUM-V Mounted AMRAAM Missile) will take the weapon kill range out to 20 km; this will be fielded in 2005. JLENS (Joint Land Attack Cruise Missile Defense Elevated and Netted Sensor) is an unmanned system that will fly for 30 days at a time. It is a multi-service (Army/Navy), multi-role platform (air and ground tracking/communications relay), employing aerostat technology. The JLENS ORD is currently in development. The prime contractor will be Raytheon. The tracker is the top priority. Fielding is planned for 2012. (air and ground tracking/communications relay), employing aerostat technology. EAAD (Enhanced Area Air Defense) is a theatre high-energy laser (THEL) system that will replace the Stinger missile. It will provide a very low cost per kill. The JROC has approved the acquisition strategy for THEL.

The long term air defense strategy is to employ common components, be versatile and lethal, emphasizing lighter weight and increased maintainability, reducing the logistics tail and providing rapid deployment. Future concepts include “plug and fight” interoperable systems (shooters, sensors and common Battle Management C<sup>4</sup>I).

**Technology, Human Factors and Medicine: Naval Perspective.** LCDR Dylan Schmorow, Ph.D., USN, MSC (Naval Research Laboratory/Office of Naval Research) provided an overview of the Navy's human factors and medical R&D chain of command. The new CNO, ADM Clark, has indicated that manpower is his top priority. The new chief of Naval Research, RADM Jay Cohen, and the director of human systems science and technology, Dr. Harold Guard (ONR code 34) are responsible for carrying out the CNR's research objectives in human factors and medical areas. Areas being emphasized include:

- **Providing Capable Manpower:** Acquiring the right people at the right time, designing systems using human factors engineering methods and principles, and equipping sailors at an affordable cost.

- **Warfighter Protection:** Maximizing life-saving interventions, enhancing the situation awareness of warfighters; and, preserving health.

Significant investment will be made into Virtual Technologies and Environments (TIRTE). Under the “capable manpower” category, \$12m per year will be invested beginning in FY 2002. Goals include developing “leap-ahead” immersive virtual technology, supplementing live simulations with VR simulations, training warriors for increasing complexity and chaos, and reducing system costs. VIRTE applies new ideas by focusing on quality and cost reduction. One concept is the virtual gymnasium, a virtual training technology program providing access to the warfighter at any time.

**G-Induced Loss of Consciousness, 1990-1999.** Thomas M. Mitchell, Ph.D. (Chi Associates) reported on a program being funded by the Live Fire Test and Training Program (OT&E Live Fire Test, Office of the SECDEF). They performed an exhaustive keyword search (14 different word strings) of records at Navy and USAF Safety Centers. They reviewed all Mishap Summaries for applicable Class A, B and C mishaps (actual accident reports and medical officer’s reports are protected). Of the more than 400 summaries reviewed, there were 269 GLOC incidents and 248 Unknowns (physiological episodes) involving 21 Class A mishaps (9 USAF and 12 USN). GLOC events per 100K flight hours were 0.63 for the Navy and 2.06 for the USAF. Many of these GLOC incidents were attributable to the T-37 training of students. Future efforts will concentrate on the following aspects of the available data

- Operational versus Reserves
- Controlled Flight into Terrain (CFIT)
- Navy versus USAF differences
- Increased USAF GLOC rates since 1993
- Rate drop in 1991 and continued low GLOC rate for the Navy
- Extremely high GLOC rate for the T-37
- Poor Anti-G Straining Maneuver (AGSM) in 74% of GLOC incidents

**Common HMI for C4I.** Mary Hornsby, Ph.D., Phantom Works, the Boeing Company presented a short briefing on an on-going project involving the development of a common user interface approach for multiple command and control platforms. (Please see the synopsis under TS/I SubTAG meeting.)

**Infrared Duplex Audio Communications System for Coordinating Operating Room Suite Scheduling.** Dr. Colin McKenzie, Interim Director of the National Study Center for Trauma, Professor and Chief of Anesthesiology, University of Maryland Shock Trauma Center, described an experimental system evaluated at the U. of M. Shock Trauma Center. There have been few advances in human factors associated with medical environments (most work has been done with nuclear power plant control rooms and

flight decks). This paper described hands-free, line of sight communications systems, which was evaluated in hopes that it would minimize Operating Room non-prime time utilization and maximize the 0630-1830 timeframe for elective surgeries. Secondary objectives were to find people easier and faster, allow rapid adaptation to changing conditions, and improve the SA of operating room doctors. Following establishment of baseline communication measures, the system (13 channel plus on/off, page-all functions) was used and a 5-point Likert scale was used to record evaluations. The system was compared against other communications systems (e.g., walking, beeper, page, telephone, message board, etc.). There were many advantages of the IR system. However, it was found that there is no substitute for “face-to-face” communications. A disadvantage of the IR system its intrusiveness, the interruptions one had to endure to achieve better SA and communications. Future versions of the system will include data, video imagery.

**Warfighter Fatigue Countermeasures for Global Reach.** Dr. Jay Miller (Air Force Research Laboratory, Brooks AFB, TX) began his presentation with a few instructive statements, or truisms:

- Systems should be designed around the human
- The human is the most variable part of systems
- Fatigue and biological rhythms are responsible for much variability.

The Warfighter Countermeasures/Sustained Operations group was disestablished a few years ago but was recently re-vitalized. The group’s goals and objectives are to enable the warfighter to exploit system performance through applied research on fatigue induced cognitive and physiological limitations. Within the purview of the group are the exploration of cockpit napping and pharmacology to extend bomber and transport missions. Special focus is applied to improving sustained surge capabilities and night operations, better planning, improved vigilance and decision-making. Major customers include ACC, AFSOC, the USAF Surgeon General, AEF Kennedy Battlelab and Air Mobility Command/Sustained Ops. Some of the problems this group is wrestling with include:

- Crew duty periods that exceed 12 hours
- Pre and Post flight duties
- Flight time accumulation over 1 and 3 month periods
- Crew rest policy and the need for 8 hours of sleep every night
- Days-off policy after extended work periods
- Poor sleep hygiene training
- Crew Scheduling – no circadian rhythm knowledge
- Pharmacological assessment – use of go/no-go pills

They have been conducting studies of fatigue using modafinil, Dexedrine and melatonin/ambian. They have been studying three different submarine watch schedules (18 hr days, 6hrs on/12 off, USMC cycle), sudden awakening and sleep aiding.

The group has developed several tools to assist in scheduling work/rest cycles to avoid fatigue. FAST (Fatigue Avoidance Scheduling Tool) is a Windows-based prototype system. The Aircrew Fatigue Management System helps establish effective nap schedules for bomber crews. The Shift Work Scheduling Manual is a hypertext document with the objectives of reducing errors/fatigue, increasing productivity, providing schedule equity and predictability of schedules, and preventing multiple nights of work in a row.

**Crew Systems Modernization Planning.** Mr. Nathan Davis (Acting Chief of Crew Systems Technical Planning Integrated Product Team, Brooks AFB, TX) described the Technical Planning Integrated Product Team (pronounced "TIPPIT") process being used across most R&D fields. The Crew systems plan may be found on the web at: <http://xre604.brooks.af.mil/xr/>.

Next TAG Meetings: The next meetings are scheduled as follows:

- **TAG-46, Spring 2001**, Colorado Springs, CO, hosted by the US Air Force
- **TAG-47, Fall 2001**, San Diego, CA, hosted by the US Navy
- **TAG-48, Spring, 2002**, (location TBD), hosted by NASA

---

## A Call for the International Standardization of Operational Risk Management for Aeromedical Professionals.

In a recent issue of the AsHFA Newsletter, I briefly described how Operational Risk Management (hereafter ORM) is being used to minimize the possibilities of performance error. At the annual congress of the International Academy of Aviation and Space Medicine in Rio de Janeiro, I described the Navy's 'ORM for Aeromedical Personnel' program, and called upon the membership to work with me in creating an international standard for its practice. I am herein also asking our AsHFA membership to become a part of this timely and highly critical endeavor.

As you know, problems with the human link in the operational chain may present the greatest risk or set of risks to mission readiness. ORM has quickly become recognized throughout the U.S Department of Defense as one of the best means minimize these risks. Indeed, ORM is now an integral part of the U.S. warfighting doctrine; it's a way of doing business such that, in this time of limited manpower and

resources, we do everything we can to minimize losses. ORM is one very potent way of making this happen.

To date, the principles and processes of ORM have been applied mostly to aircrew and maintenance operations. Now, however, it becomes increasingly clear that aeromedical personnel require this training as well. Whether it be on the flightline, in the cockpit, or in the clinic, our Flight Surgeons, Aviation Physiologists, and Aerospace Experimental Psychologists are often faced with questions involving risk and readiness: Are personnel physically and emotionally fit to carry out their tasks/missions? Are certain medical procedures carried out in such a way as to incur unnecessary risk to our patients or ourselves? Does the use of certain pieces of protective gear decrease or increase the chance of an aircrew's survival? Is the design of a piece of cockpit instrument panel avionics facilitating or preventing a pilot from obtaining critical target information? All of these are potential life-and-death questions which are addressed daily by aeromedical personnel. In general, ORM forces one to ask a critical question, "Are we making decisions in such a manner so as to maximize readiness whilst minimizing unnecessary risk to our aircrews, our support personnel, our patients?" It also provides us with a means to answer that question. How?

First and foremost, ORM is a decision-making tool that can be used by personnel at all levels to increase operational effectiveness. The use of the ORM process increases the ability to make informed decisions by providing the best baseline of knowledge and experience available. ORM use also minimizes risks to acceptable levels by systematically applying controls to each risk that is not acceptable. The amount of risk we will take in war is much greater than that we should be willing to take in peace, but the same systematic process should be used to evaluate risks in both situations. To date, there have been many examples documenting the outstanding success of ORM. It is a proven quantity. Thus, it becomes even more paramount that all aeromedical and safety personnel become ORM specialists.

What are the primary elements of the standardized ORM process?

(1) Identify Hazards – Outline or chart the major steps in the operational environment; that is, perform an operational analysis unique to the missions of your unit or clinic/hospital. Next, conduct a Preliminary Hazard Analysis by listing all of the hazards associated with each step in the operational analysis along with possible causes for those hazards.

(2) Assess Hazards - For each hazard identified, determine the associated degree of risk in terms of probability and severity. This is accomplished by the use of one or more analytical 'tools' that the individual may (or not) elect to employ. Some of these tools will be discussed in detail in upcoming newsletters.

(3) Make Risk Decisions – Develop risk control options; that is, start with the most serious risk first and select ‘controls’ – actions or procedures - that will reduce the risk to a minimum consistent with mission accomplishment. With selected controls in place, decide if the benefit of the action, task, or operation outweighs the risk. If risk outweighs benefit or if assistance is required to implement controls, then communicate this concern with higher authority in the chain of command.

(4) Implement Controls - Implement a number of measures designed to eliminate hazards or reduce the degree of risk. These include: (a) *Engineering Controls* - Controls that use engineering methods to reduce risks by design, material selection or substitution when technically or economically feasible, (b) *Administrative Controls* - Controls that reduce risks through specific administrative actions, and (when appropriate) (c) The use of personal protective equipment - serves as a barrier between personnel and a hazard. It should be used when other controls do not reduce the hazard to an acceptable level. A good recent illustration of this type of control is seen in the full-coverage protective garments worn by surgeons and support personnel when operating on patients having highly infectious diseases.

(5) Supervise – Conduct follow-up evaluations of the controls to ensure they remain in place and have the desired effect. Monitor for changes that may require further Operational Risk Management. If these occur, you should be fully able to take corrective action when necessary.

Let me now solicit your help in creating an international standardization of the process described above. I am in the process of creating a Handbook on the Use of ORM by Aeromedical Professionals. To help me in this endeavor, I am soliciting possible case studies from our membership. I especially seek case studies from our non-U.S. members. Whether on the flightline, in the lab, during training, or in the clinic, there have been countless times that using the ORM process described above may have made the difference between a safe and unsafe outcome. Are you aware of a situation where a human factors error of any kind lead to a mishap or near mishap? If not, can you think of a case where this might occur (i.e., poor handwriting or miscommunication lead to incorrect drug dose, critical flight equipment not available or not in correct sizes, hardware, instruments, tools not appropriate or effective, aeromedical personnel inadequately trained to get job done, etc.). Again, these examples should be applicable specifically to the daily activities of Flight Surgeons, Human Factors Engineers, Aviation Physiologists, and Aviation Psychologists.

A team of editors will collect these case studies, and after reviewing them, select those most applicable for inclusion in this handbook. You can e-mail me your inputs at [ahbellen@nps.navy.mil](mailto:ahbellen@nps.navy.mil) or send them via Post or Fax. My contact information is provided at the end of this article.

Your aid in this effort will certainly prove critical in helping us reach our goal of maximizing safety by creating and implementing an international standard in the practice of Operational Risk Management.

CDR Andrew H. Bellenkes, Ph.D., USN  
School of Aviation Safety (Code 10)  
Naval Postgraduate School  
1588 Cunningham Rd., Rm. 301  
Monterey, CA 93943-5202  
Voice: (831) 656-2581 (DSN: 878-2581)  
Fax: (831) 656-3262 (DSN: 878-3262)

---

### CALL FOR AsHFA FELLOW NOMINATIONS

The Aerospace Human Factors Association (AsHFA) has many members who have inspiring records of accomplishment in applying human factors knowledge and methods to enhance safety, effectiveness, and efficiency in a wide variety of aerospace activities. The AsHFA calls for you to nominate your colleagues in AsHFA that meet the requirements for Fellow described below, and whom you would like to recommend.

Fellows of the AsHFA shall be persons who:

- (a) are also members of the Aerospace Medical Association,
- (b) have been AsHFA Members for at least five years,
- (c) have contributed significant service to AsHFA,
- (d) have had five years work experience related to aerospace human factors,
- (e) have been endorsed by at least three Fellows of the AsHFA,
- (f) have been selected by the Fellows Review Committee for unusual and outstanding contributions or performance in the field of Aerospace Human Factors
- (g) have been elected by a majority vote of the Fellows of the AsHFA.

Those submitting nominations should compile the nomination form (see next pages), supporting documentation, and three recommendations from Fellows and send them to the Chair of the Fellows: Carol Manning, FAA CAMI AAM-510, P.O. Box 25082, Oklahoma City, OK 73125, [carol\\_manning@mmacmail.jccbi.gov](mailto:carol_manning@mmacmail.jccbi.gov). The Fellows Review Committee will be sent copies of these materials. The nominator may submit paper or electronic copies of forms. Contact the Fellows Chair to receive copies.

**DEADLINE FOR RECEIPT OF  
NOMINATION MATERIALS IS  
FEBRUARY 19, 2001**

## CALL FOR ASHFA FELLOW NOMINATIONS

The Aerospace Human Factors Association (ASHFA) has many members who have inspiring records of accomplishment in applying human factors knowledge and methods to enhance safety, effectiveness, and efficiency in a wide variety of aerospace activities. The ASHFA calls for you to nominate your colleagues in ASHFA that meet the requirements for Fellow described below, and whom you would like to recommend.

Fellows of the ASHFA shall be persons who:

- (a) are also members of the Aerospace Medical Association,
- (b) have been ASHFA Members for at least five years,
- (c) have contributed significant service to ASHFA,
- (d) have had five years work experience related to aerospace human factors,
- (e) have been endorsed by at least three Fellows of the ASHFA,
- (f) have been selected by the Fellows Review Committee for unusual and outstanding contributions or performance in the field of Aerospace Human Factors
- (g) have been elected by a majority vote of the Fellows of the ASHFA.

Those submitting nominations should compile the nomination form (see next pages), supporting documentation, and three recommendations from Fellows and send them to the Chair of the Fellows: Carol Manning, FAA CAMI AAM-510, P.O. Box 25082, Oklahoma City, OK 73125, [carol\\_manning@mmacmail.jccbi.gov](mailto:carol_manning@mmacmail.jccbi.gov). The Fellows Review Committee will be sent copies of these materials. The nominator may submit paper or electronic copies of forms. Contact the Fellows Chair to receive copies.

### DEADLINE FOR RECEIPT OF NOMINATION MATERIALS IS FEBRUARY 19, 2001.

Reserve your seats early for the Annual ASHFA Business Luncheon Meeting. It is to be held on **Monday, May 15, 2001**. Dr. Dave Schroeder will present the Henry Taylor Founder's Award lecture and seats will be extremely limited.

## Current ASHFA Fellows

Albery, William	Hoffman, Ronald	Nesthus, Thomas
Alkov, Robert	Jones, David	Pongratz, Hans
Austin, Frank	Kakimoto, Yukiko	Schroeder, David
Billings, Charles	Kennedy, Robert	Singer, Timothy
Chelette, Tamara	Kimball, Kent	Taylor, Henry
Choisser, Donald	Lederer, Jerome	Voge, Victoria
Cohen, Malcolm	Lilienthal, Michael	White, Stanley
Collins, William	Manning, Carol	Wilson, Glenn
Cowings, Patrica	Mertens, Henry	
Della Rocco, Pamela	Montgomery, Robert Jr.	

## ASHFA Members Eligible for Selection as Fellows in 2001

Aarnell, Gorian	Foley, Mary	Merchant, P. Glenn
Alsten, Chris	Frazer, William	Merriman, Stephen
Anderson, George	Frazier, John	Miller, James C.
Antunano, Melchor	French, Arthur J	Miller, William
Augter, Gary	Garber, Mitchell	Morphew, M. Ephim
Baghdassarian, H. Jack	Gawron, Valerie	Moser, Royce
Bagian, James	Ginsburg, Arthur	Myer, K. Jeffrey
Baker, Susan	Gross, Leroy	Noonan, Raymond
Banta, Guy	Grost, Michael	O'Donnell, Robert
Barker, Charles	Hansen, Stephen	Oman, Charles
Barnes, Paul	Hardicsay, Gabor	Orlady, Harry
Baumgardner, F. Wesley	Hawkins, Michael	Perkins, Herbert
Bellenkes, Andrew	Hayes, Carolyn	Phelan, James (Jay)
Bjorn, Valerie	Heil, John	Phillips, Chandler
Bodegard, Magnus	Holland, Dwight	Rapmund, Garrison
Boyd, Jacqueline	Hopkins, Elwood	Ray, Marilyn
Brinkley, James	Hrebien, Leonid	Rayman, Russell
Cammarota, Joseph	Hyle, John R.	Reed, Ronald
Ciancio, Vincent	Jessup, J. Milburn	Rupert, Angus
Cima, Miguel	Johanson, David C.	Saboe, Gerald
Clark, Jonathan	Kajornboon, Sutuspun	Samel, Alexander
Comperatore, Carlos	Kanas, Nick	Shappell, Scott
Contiguglia, Joseph	Kato, Zojiro	Sharif, Omar
Damos, Diane	Kay, Gary	Snyder, Quay
DeHaan, Warren	King, Raymond	Stone, Shepard
DeVoll, James	Knox, Francis (Ted)	Storm, William
Diamond, Stanley	Koonce, Jefferson	Stuster, Jack
Diedrichs, Ronald	Krueger, Gerald	Tripp, Lloyd
Diesel, Donald	Laub, James	Trumbo, Richard
Dobie, Thomas	Lebegue, Breck	Ungs, Timothy
Dodd, Lloyd	Lee, Yong Ho	Vereen, H. Stacy
Dodwell, Peter	Lestage, Daniel	Veronneau, Stephen
Draeger, Jorg	Little, James	Villaire, Nathaniel
Duley, Jacqueline	LoFaro, Ronald	Webb, James T.
Ebenholtz, Sheldon	Mappes, Timo	Welch, Robert
Eckert, Thomas	McCarthy, Geoffrey	Wichman, Harvey
Elliott, Robert	McCormick, James	Wildzunas, Robert
Ercoline, William	McFadden, Kathleen	Young, Laurence
Erickson, James	McLean, Garnet	Zeller, Anchard
Feith, Steven	McNish, Thomas	Zellers, Robert "Joe"

# NOMINATION FORM FOR AsHFA FELLOWS CANDIDATE

DEADLINE FOR RECEIPT OF NOMINATION MATERIALS IS FEBRUARY 28, 2001

1. Name of candidate \_\_\_\_\_
2. Date of birth \_\_\_\_\_
3. Present Position \_\_\_\_\_
4. Organization \_\_\_\_\_
5. Business Address \_\_\_\_\_
6. Business telephone number \_\_\_\_\_
7. Home Address \_\_\_\_\_
8. Home Telephone Number \_\_\_\_\_

9. Education:		
Institution	Degree (year)	Major field
_____	_____	_____
_____	_____	_____
_____	_____	_____

10. Professional work history		
From start year to finish year	Organization, City	Position held & Responsibilities
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

11. Technical Publications with References (List three most significant reports first. Then list additional publications. Use additional Sheets if necessary.) Also, send one copy of each of the three most significant publications authored or co-authored by this candidate with nomination form.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12. Year nominee joined AsHFA \_\_\_\_\_ AsMA \_\_\_\_\_.

13. Continuous AsHFA member since \_\_\_\_\_.

14. AsHFA/AsMA society involvement. (For example, elected or appointed offices, committee service, evidence of annual meeting involvement, publication in Aviation, Space, & Environmental Medicine, paper presentations at annual meeting. Please give dates of service.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

15. Other significant human factors professional involvement, recognition, and leadership. (For example, pioneering work in education program development, service to national or international advisory boards such as ICAO, NATO, NSF, NAS-NRC, honors and awards related to our profession, exceptional service to related professional organizations.)

---

---

---

---

---

16. Special contributions of candidate. The most significant contribution that qualifies the candidate for Fellow is:

---

---

---

---

---

---

17. Other significant contributions are:

---

---

---

---

---

---

18. Names and addresses of three Fellows who will recommend the candidate: All must be AsHFA Members in good standing. The nominator is responsible for soliciting the three nominations. The recommendations should be prepared using the standard form "RECOMMENDATION FOR FELLOW" and submitted with this nomination form.

- a.
- b.
- c.

19. Candidate nominated by:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone number: \_\_\_\_\_

If publications are considered to be a major contribution of the nominee, then one copy of each of the three most significant publications authored or co-authored by the candidate should be furnished. Other evidential information that will attest to the achievements of the candidate should be furnished to aid the Fellows Selection Committee in their deliberations. Those submitting nominations should compile the nomination form, supporting documentation, and the three Fellows recommendations and send them to the address below.

No limitation is placed on the number of times a Member may be nominated for election to Fellow status.

Please return this form to:

Dr. Carol Manning  
FAA CAMI AAM-510  
P.O. Box 25082  
Oklahoma City, OK 73125  
[Carol\\_manning@mmacmail.jcabi.gov](mailto:Carol_manning@mmacmail.jcabi.gov)

# RECOMMENDATION FORM FOR CANDIDATE FOR FELLOW

(Confidential)

Candidate: \_\_\_\_\_

Name of Reference (Member) \_\_\_\_\_

Your name has been given as a reference to evaluate the above candidate for the status of Fellow in the Aerospace Human Factors Association (AsHFA). For your convenience, the AsHFA criteria of eligibility for Fellow status are listed on the other side of this page.

If you feel qualified to evaluate the candidate, please check here \_\_\_\_.

Was a copy of the completed nomination form included for your information? Yes \_\_\_ No \_\_\_  
If so, was the candidate's case adequately presented? Yes \_\_\_ No \_\_\_

Please furnish below (and on a separate sheet of paper, if necessary) any additional data that you feel will be helpful to the Fellows Review Committee. Particularly, what are the candidate's outstanding characteristics and significant contributions on which his or her recommendation is based?

Do you unequivocally recommend the candidate for Fellow status? Yes \_\_\_ No \_\_\_

Date \_\_\_\_\_ Your signature \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Please return this form to:  
Dr. Carol Manning  
FAA CAMI AAM-510  
P.O. Box 25082  
Oklahoma City, OK 73125

DEADLINE FOR RECEIPT OF NOMINATION MATERIALS IS FEBRUARY 28, 2000.

***Your humble Editor needs your assistance!*** I seek news of members for publication in this, *your* AsHFA Newsletter. If you know of someone (come on now...don't be modest...write about yourself!) whose professional accomplishments should be recognized and placed in print, then why not wax poetic and submit a few paragraphs about that individual. Describe their work, awards, and any other type of recognition they may have recently received. Review a conference, provide abstracts or book reviews, include a brief biography of that individual; all will be most acceptable. You need not possess the clarity of Dickens nor the erudition of Goethe; just jot a few jots and send them off to me. I will suitably embellish them with a flourish of laudatory adjectives worthy of your comments. You will shortly thereafter find your prose in print. If you wish to heed my call, then kindly forward all correspondence to my address listed at the front of this newsletter. Your help with this would be most appreciated! – CDR Andy Bellenkes, Editor

The University of Illinois Institute of Aviation has established an Aerospace Human Factors Association endowment to fund a new award, the **Henry L. Taylor Founder's Award**, for outstanding contributions in the field of aviation human factors. The Aerospace Human Factors Association will annually solicit nominations for the award. The criteria for evaluating the nominations are as follows: (1) research and publications; (2) special original contributions, e.g., equipment, techniques, and procedures; or (3) general leadership in the field, e.g., teacher, director of laboratory, officer scientific societies, etc. Recipients of the Paul T. Hansen Award will not be eligible for consideration for the Henry L. Taylor Founder's Award. The Institute of Aviation will annually provide a \$500 honorarium to the selected participant, whose name will be announced at the annual business meeting of the Aerospace Human Factors Association. The recipient of the award will present the Henry L. Taylor Founder's Lecture at the annual AsHFA business meeting in May 2001, and will then receive the honorarium and a plaque. AsHFA members who would like further information about the award should contact the AsHFA Awards Committee Chair noted below.

---

**Nomination Form**  
***Henry L. Taylor Founder's Award***  
**FOR Outstanding Contributions in the Field of Aerospace Human Factors**

I nominate:

Present Position:

Business Address:

Please support your nomination by attaching documentation indicating outstanding contributions your nominee has made in the field of Aerospace Human Factors. Outstanding contributions in the following areas will be evaluated by the Awards committee: (1) research and publications, (2) special original contributions, e.g., equipment, techniques and procedures, or (3) general leadership in the field, e.g., teacher, director of laboratory, officer scientific societies, etc. Please provide the necessary documentation of how your candidate is outstanding with respect to one or more of these criteria. Three letters of endorsement with supporting evidence are required. Further, ensure that your nominee has not previously been a recipient of the Paul T. Hansen Award; recipients of the Hansen Award will not be eligible for consideration for the Henry L. Taylor Founder's Award. The Henry L. Taylor Founder's Award will be presented at the annual business meeting luncheon of the Aerospace Human Factors Association and will include a plaque and an honorarium of \$500.

Recipients of this award will deliver a lecture at the Annual Business meeting of the Aerospace Human Factors Association to be held in May, 2001. The presentation will address a scientific or technical topic, provide an historical review of the recipient's area of expertise, or describe personal reflections on important events in the development of the field of aerospace human factors.

Date:

Signed:

Title:

Address:

Return this form by March 1, 2001 to:

Dr. Robert Kennedy, AsHFA Awards Chair  
RSK Assessments, Inc.  
1040 Woodcock Rd., Suite 227  
Orlando, Florida 32803 USA  
e-mail: [rkennedy@msis.dmsomil](mailto:rkennedy@msis.dmsomil)

The Aerospace Human Factors Association (hereafter AsHFA), a constituent organization of the Aerospace Medical Association, announces the availability of its **STANLEY N. ROSCOE AWARD** for the best doctoral Dissertation written in a research area related to Aerospace Human Factors.

AsHFA recognizes the need to foster and support our growing Graduate Student membership through a program of proactive mentorship. One critical facet of this effort is an annual formal recognition of scholarly achievement in human factors. This takes the form of AsHFA's annual presentation of the Stanley N. Roscoe Award for the best Doctoral Dissertation written in a research area related to Aerospace Human Factors. Named for the distinguished scientist and educator, the Stanley N. Roscoe award is administered through the University of Illinois Foundation. This year's award will be presented at the Aerospace Human Factors Association's annual business meeting and luncheon in May of 2001 in Reno, Nevada and will include a plaque and an honorarium of \$500.

It is essential that our finest young researchers be recognized for their outstanding efforts. We therefore invite you to help us in our efforts to sustain this highly prized award. Contributions to support the Stanley N. Roscoe Award can be made to the University of Illinois Foundation, Aerospace Human Factors Association account at the following address:

University of Illinois Foundation  
Attn: Stanley N. Roscoe Award  
Harker Hall, MC-386  
1305 West Green Street  
Urbana, Illinois 61801

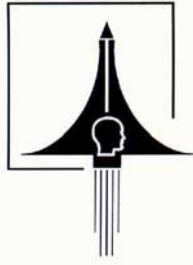
Criteria for judging the thesis/dissertations include

- (a) significance of the problem and innovativeness of the approach
- (b) review of related research
- (c) effectiveness of the research design and analysis
- (d) interpretation of results
- (e) theoretical and practical value of the work
- (f) clarity of writing.

To be eligible for this award, the dissertation must have been completed and accepted by the sponsoring department between October 1, 1999, and September 30, 2000. To have their dissertations considered for this award, please encourage your recent graduates to submit a cover letter, three copies of their dissertation, and a letter of recommendation from their faculty advisor. All material must be postmarked **no later than February 15, 2001**, and sent to the current chair of the Awards Committee of the Aerospace Human Factors Association.

If you have any other questions concerning this or any other AsHFA award, please contact the 2001-2002 Awards Chairman

Dr. Robert Kennedy  
RSK Assessments, Inc.  
1040 Woodcock Rd., Suite 227  
Orlando, Florida 32803 USA  
e-mail: [rkennedy@msis.dmsomil](mailto:rkennedy@msis.dmsomil)



## Application/Renewal of Membership in **Aerospace Human Factors Association**

- Membership Renewal: I wish to renew my membership in the Aerospace Human Factors Association. I am a current member of the Aerospace Medical Association. I am enclosing \$15.00 (U.S. funds) for annual dues with this application.
- Full-time Student

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Name of Highest Degree: \_\_\_\_\_ Year: \_\_\_\_\_

Preferred Address:      Home      Business      (circle one)

---

---

---

---

Preferred Phone:(    ) \_\_\_\_\_ Home      Business (circle one)

---

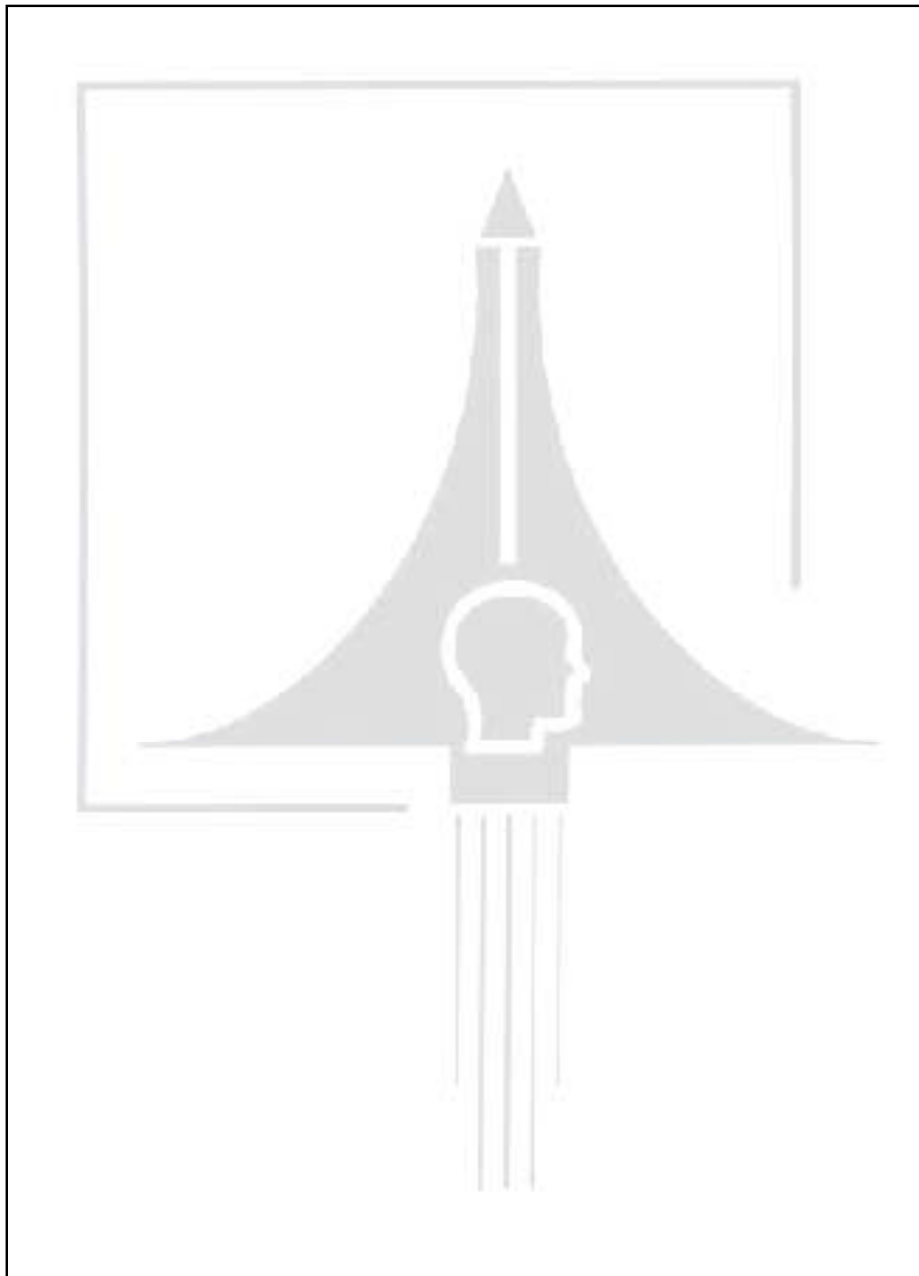
Fax Number: (    ) \_\_\_\_\_

E-mail address: \_\_\_\_\_

Please complete the printed form then mail it with a check for \$15 (payable to Aerospace Human Factors Association) to:

Dr. Thomas E. Nesthus  
FAA CAMI AAM-510  
P. O. Box 25082  
Oklahoma City, OK 73125

If you are applying for membership for the first time, please use the application form found at  
<http://www.asma.org/ashfa/memapp.htm>



**Aerospace Human Factors  
Association**  
A Constituent Organization of the Aerospace Medical Association  
**ASHFA Newsletter**

**ASHFA Newsletter**

Dr. Henry L. Taylor, Director  
Institute of Aviation  
U of I-Willard Airport  
1 Airport Road  
Savoy, IL 61874

ADDRESS CORRECTION REQUESTED

Mailing Address  
Street Number and Name  
City, State 98765-4321