President's Page

While traveling home from the August meeting of the AsMA Executive Committee, held at our headquarters in Alexandria, VA, I paused to reflect on the weekend effort. I would like to thank all the committee members who traveled to Alexandria: Phil Scarpa, Fanancy Anzalone, and Jeff Myers-Florida; Bob Weien, Glenn Merchant, President-Elect Andy Bellenkes-Colorado; Carol Manning-Oklahoma; Marian Sides-Illinois; Jarnail Singh-Singapore.

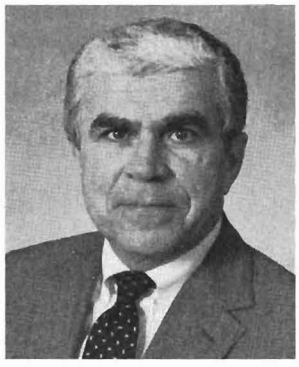
I personally witnessed the dedication and hard work of the committee members who volunteer their services on behalf of the Association and its members. It struck me that this same volunteer spirit exists in the AsMA Council, the committees, and in the leadership of constituent and affiliate organizations. All of these entities are populated by AsMA members who contribute to the Association's success. I thank all.

We began the Executive Committee meeting by learning about each other and then moved on to an ambitious morning-long orientation session. We discussed our goals and expectations and studied the principles of working as a group. We explored the boundaries of governance and management. The orientation session was very helpful in providing a working relationship that enhanced our ability to tackle Association issues.

The second segment of the meeting was spent on association finances. As you know, Glenn Merchant was elected Treasurer of AsMA at the New Orleans meeting. Glenn did yeoman work in examining the financial health of AsMA. His presentation ranged from investments to accounting to records and procedures. I am confident that Glenn's efforts will give association finances safe passage.

The third segment of the 1.5 day meeting was devoted to the traditional agenda, in itself a hefty project.

I mentioned previously that one of my goals for the year was to review the instruments by which AsMA communicates with the world of aerospace medicine and the processes giving rise to these instruments. These instruments include position papers, position statements, resolutions, letters, and appearances on behalf of the Association. The purpose of this review is to enhance AsMA participation in the current conversation in aerospace medicine through timely and responsible comment on important issues. We discussed ways and means of conducting this review.



John D. Hastings, M.D.

A second goal I chose was to emphasize the international nature of AsMA and to nurture its further development. One of the most rewarding aspects of my membership in the Association has been the depth and breadth of perspective for aerospace medicine given to me by my international colleagues. More importantly, the friends I have made and the relationships I have developed will be treasured forever.

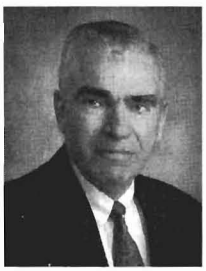
I am mindful of some shortcomings at the reception for international members at the New Orleans meeting, and I wish to acknowledge those shortcomings. At the 2008 meeting in Boston, I have decided to dedicate Tuesday, ordinarily a "free' night, to this reception. I urge all to attend. This event allows us to meet our international colleagues and friends, and I invite our U.S. members to participate.

Realizing that planned changes for the international member reception may play havoc with previous attendance records, we want to take careful steps to insure that arrangements are sufficient to accommodate the event. There are logistical limitations in adjusting to a large surge of on-site ticket requests, and we ask your indulgence in dealing with this issue. We are looking at measures such as requesting an early commitment for those wishing to attend.

I have mentioned only a few of the items covered in our Alexandria meeting. I am honored to work with such capable and dedicated colleagues. We will continue our efforts to justify the confidence you have shown in selecting us as crew for this leg of the Association's journey.

Medical News

Executive Director's Column



Rayman

The Bachmann Report

In February 2007, the NASA Administrator ordered a review of the medical and behavioral health services for NASA astronauts. Consequently, an external committee of experts was organized under the chairmanship of AsMA member Col. (Dr.) Richard E. Bachmann, Jr., Commander of the USAF School of Aerospace Medicine. After interviewing a number of astronauts, their families, and NASA staff including medical personnel, the Committee submitted its report to NASA in mid-July.

Although there were over 30 findings followed by a number of recommendations, the Report opened on a positive note by stating that "the medical evaluation for acceptance of astronauts is rigorous and appears to be in accordance with NASA standards." The following is not a comprehensive review of the Bachmann Report, but rather a synopsis.

One major issue of immediate concern was the alleged use of alcohol by several crew members just prior to flight. Because no further details were given, NASA will undoubtedly investigate this finding in detail. In any event, it was recommended that a policy be formulated with guidelines regarding the appropriate use of alcohol by astronauts, particularly during the pre-flight period.

The Report also noted that while there is intense psychological testing for selection of astronauts, none is done for retention (an exception is for long-duration missions). In other words, once the astronaut is selected, there is no routine behavioral health or psychological assessment. This led to the recommendation that behavioral health evaluations be integrated into the annual astronaut flight medical examination. Likewise, behavioral health providers should be available to train flight surgeons in this critical area. (The report does recognize that even with a system of periodic evaluation, some individuals might still slip through the net, resulting in inappropriate behavior.) In any event, NASA should determine what psychological testing should be performed with appropriate personnel available to administer this program.

Other important recommendations to NASA based on findings were as follows:

1. Inform astronauts as to the purpose of each medical test. Is the test for medical, safety, or research purposes?

2. Give serious consideration to medical opinions regarding astronaut fitness for duty.

3. Provide continuity of care for the astronauts with a single provider.

4. Establish good communication among flight medicine personnel, behavioral health personnel, and the Astronaut Office.

Undoubtedly NASA will carefully examine the findings and recommendations with an eye toward improving their current health services. Interestingly, the overall medical record of the astronauts since we have been flying in space has been excellent. This is borne out by the fact that there has not been a significant in-flight medical event in the U.S. Space Program that has harmed an astronaut or degraded or aborted a mission.

We look forward to the report of NASA's actions in the coming months.

Nominations for 2008 Awards

December 15 is the deadline for receiving nominations for awards to be presented at the 2008 Annual Scientific Meeting in Boston, MA. Nominations can be made by any member of AsMA. The award nomination form is available on the AsMA website. You may either submit the nomination directly from the website or you may download the nomination form into your computer for e-mailing as a Word document attachment. Nomination forms sent via e-mail should be addressed to the Awards Committee Chair, Dwight Holland at Dwightholl@aol.com; and Ms Gisselle Vargas at AsMA Headquarters (gvargas@asma.org). If e-mail is not available, you can send a hard copy of the form via normal mail to: Dwight Holland
4874 Glenbrooke Dr.
Roanoke, VA 24081
Phone: (540)761-1576
AsMA FAX: (703)739-9652.

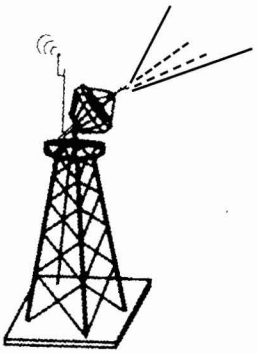
Any auxiliary biographical material in electronic or hard copy attachments **must be limited to 3 typed pages** and will be retained in Association files.

Nominations received by Dec. 15 will be considered for awards to be presented at the next annual meeting. Unsuccessful nominations will be retained in the active file through three award cycles.

To view a list of past recipients go to the AsMA website: www.asma.org/pdf/awrdwin.pdf

The Journal Has New a Look

You may have noticed that the printing of the "Front of the Book," *Aviation, Space, and Environmental Medicine*, has a new look. If you didn't notice--take a look! We have recently changed typesetters and have slightly revamped our style. We hope that the new look will make the content easier to read. Please let us know what you think. Contact Pam Day : pday@asma.org; (703) 739-2240, x 101.



Science & Technology Watch

Keeping You Informed Of The Latest Advances In Science And Technology

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So what do you mean when you talk about "performance?" Doing well on a test? Being able to move freely within a cockpit? This month's column discusses a novel mathematical approach to optimize human performance based on the concept of resource availability. These resources are determined by physical and physiologic parameters, tempered by experience and training.

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Human Performance Optimization

Valerie E. Martindale, Ph.D.
Bolling AFB, DC

"We've entered John Doe's tests and results into the computer, and his human performance score is 6. Based on that score, here are the available career options."

The idea of defining a human being by a number is inherently absurd, but the idea that a human being's capabilities could be defined by a large enough set of numbers is not unlikely. We already accept that premise when human capabilities are considered within a narrow context, for example athletes for whom a statistically significant set of performance measurements are available. With the ability to handle massive amounts of data, the maturation of bioinformatics, genomics and proteomics, and an ever increasing array of quantitative measurements such as functional MRI, we are approaching the point where much wider and potentially more valid conclusions about human capabilities can be inferred from input variables that are objective and quantifiable, either deterministically (e.g., DNA), or stochastically (e.g., response time). We have already reached the point where we can alter performance, albeit within narrow limits, by application of pharmaceuticals, nutriceuticals, human factors engineering, and performance enhancing technologies. So far, however, enhancement of performance tends to be one-dimensional, and without a quantified goal. We have not yet reached the point where we can enhance performance across an array of human capabilities systematically,

See SCIENCE & TECHNOLOGY, p. 1007.

SCIENCE & TECHNOLOGY, from p. 1006.

with the goal of optimizing total performance within the context of a mission or goal.

Optimization is a branch of mathematics devoted to determining the maxima and/or minima of a function. A two-dimensional example is shown in Fig. 1. This curve has a local minimum, but no absolute minimum, as both arms tend to negative infinity, and there are two maxima, both local, but one also qualifying as the absolute maximum because there is no higher point which satisfies the constraints of the equation. That point is the optimum.

Optimization is a well developed branch of mathematics. Therefore, in principle it should be possible to optimize human performance (even if only stochastically) with a mathematical approach. In order to do this, human performance must be represented as a function. There are many approaches with long histories, but I want to highlight an approach called General Systems Performance Theory (GSPT).

George Kondraske provides a concise description of GSPT, and its power for handling systems involving humans, in "The Elemental Resource Model for Human Performance" (2). Briefly, GSPT developed to address system performance, and can be applied to systems with or without human elements, or to humans as systems. A given system is considered as a "resource construct," that is, a collection of resources available to accomplish a task. Systems can be machines, humans, or combinations thereof.

Performance of a high level task requires utilization of a mix of system resources to varying degrees. Success depends upon the sufficiency of all resources. When resource availability exceeds demand, performance is successful. When any given resource availability falls short, it becomes performance limiting, but when it is present in abundance, performance does not necessarily improve. Instead, some other resource becomes the performance limiter. Optimum performance is reached when availability of all required resources exceeds demand by a comfortable margin. For human performance, the margin allows for the inherently stochastic nature of systems involving humans.

GSPT results in a model with non-linear behavior. The theory predicts that performance will not correlate linearly with any single resource availability (independent variable). For example, there is a minimum strength required to fly a high performance aircraft (threshold of performance), a margin above that in which increased strength results in improved performance (zone of correlation), and an upper value above which improved strength results in no improvement in performance (no correlation). The same is true of reaction time, working memory, and the other resources brought to the task by the pilot.

The task model therefore can be represented as a performance envelope in multidimensional space, each dimension corresponding to a resource required to perform the task. The lower bounds of the envelope are defined by the thresholds at which the availability of each resource becomes just sufficient to allow successful performance. The upper bounds of the envelope are defined by the thresholds at which increased resource availability no longer improves performance, i.e., all task demands are fully met.

Within this context, Dr. Kondraske proposes the Elemental Resource Model as an approach to classifying the resources comprising the human system. Human elemental resources come in four categories: life sustaining, environmental interface, central processing, and information. These resources are determined by physical and physiological systems, combined with training and experience. Together they form a large but finite set, from which an infinite number of higher order resources can be created. An example of this model in practice is described in Gettman et al., "Assessment of basic human performance resources predicts operative performance of laparoscopic surgery" (1). The authors used a set of resources predicted by a task analysis of laparoscopic surgery. Results generally validated the threshold model, but also included outliers where the threshold model predicted better performance than was actually achieved. The authors attribute this to the presence of limiting resources not accounted for in their task analysis, i.e., the model resource construct was not complete.

This approach has some interesting implications. For instance, learning represents progression toward optimal use of available resources, an optimization function. Consistent high performance is achieved by minimizing the total availability cost of the task, an optimization function. Individuals with different resource sets may perform the same task differently, and therefore must be approached differently with respect to optimization. Tools based on this model can be used to predict which resources are performance-limiting. Most promising for tackling the complex human system, this approach "provides the motivation and potential to consider coordinated, collaborative developments that allow rigorous and efficient solutions to complex problems by practitioners without extraordinary training" (2). In other words, to work the optimization problem the practitioner does not have to be an expert in every resource area.

Using GSPT to produce human performance envelopes with defined boundaries holds great promise for human performance optimization. A given task, from walking to air traffic control, can be represented as a demand envelope. The human resource construct can then be tweaked by application of human performance enhancement techniques, to achieve specific goals (the threshold values for resource availability) and with "finish lines" (the upper boundaries beyond which enhancement does not improve performance) to truly optimize the human for the task. (Conversely, the demand envelope of the task may be altered to accommodate the human.)

It is well known that motivation is a powerful predictor of performance. We are moving toward a world in which it is the primary predictor, as other variables increasingly come under our control. A systematic method of applying that control promises benefit both for mission accomplishment and for individuals pursuing their careers. "We've entered John Doe's tests and results into the computer, and his human performance profile has been determined. Based on that profile, here are the available career options for Mr. Doe as is, here are the available strategies to optimize his performance in those options, and here are the recommended courses leading to other possible career options for which Mr. Doe can be optimized."

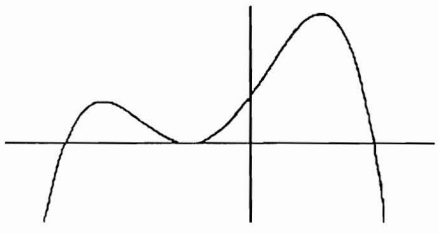

Fig. 1. Two-dimensional function with no absolute minimum.

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The AsMA Science and Technology Committee provides the Watch as a forum to introduce and discuss a variety of topics involving all aspects of civil and military aerospace medicine. Please send your submissions and comments via email to: barry.shender@navy.mil. Watch columns are available at www.asma.org in the AsMA News link under Publications.

AsMA Future Meetings

May 11-15, 2008
Sheraton Hotel
Boston, MA

May 3-7, 2009
Westin Bonaventure Hotel
Los Angeles, CA

May 9-13, 2010
Sheraton Hotel
Phoenix, AZ

This Month in Aerospace Medicine History-- October 2007

By Walter Dalitsch III, M.D., M.P.H.

Seventy-five Years Ago

Flight surgeons must fly (Cleveland, OH): "The responsibility of carrying passengers and the knowledge that the majority of airplane accidents on established air lines are due to errors in pilot judgment has prompted the air line operators to make every effort to keep their flying personnel in as efficient a state of mind and body as is possible. To this end the routine examination of the active pilot personnel, every month or six weeks, is an established practice on every air line of importance in the United States. That the operators of air lines are satisfied with the practical results of such medical supervision is evidenced by the number of them who have established and continued aviation medical services on their lines….

"The monthly medical examinations of the pilots themselves are usually much more brief than the original examinations. The more or less unchangeable factors, such as color vision accommodation, fields of vision, reflexes, etc., are omitted from the monthly examinations. At the six months intervals when the Dept. of Commerce examinations come due, the omitted tests are performed. Ordinarily, visual acuity, depth perception, ocular muscle balance, examination of the throat and ears, the Schneider test [of circulatory efficiency], and urinalysis, coupled with the history of the amount of exercise since the last examination the number of hours flown, accidents, injuries, or illnesses, give us a good picture of the condition of the pilot….

"In becoming familiar with the pilot's environmental conditions we must adjure the flight surgeon to ride on the line as frequently as possible. One might as well try to study medicine without the knowledge of anatomy, as to be a flight surgeon without the experience of frequent trips by air in varying weather conditions. It is only in this way that the real problems faced by these pilots are understood by his medical advisor. We may talk for hours on end of the nervous tension developed by frequent bad weather trips and irregular schedules, but to really know what it is all about one must get in a mail plane once in a while. After one has landed on account of thick weather, discussed the weather situation with the pilot, found out his reasons for the decisions he made, and perhaps gone on through the soupy stuff with him when even the wing tips weren't visible, then, and then only, do their problems begin to mean something, and the medical examiner graduates into a flight surgeon" (6).

Fifty Years Ago

The pathologist's role in aircraft investigation: "Aircraft accidents continue to be a problem within the United States Air Force. Concern regarding these accidents arises initially because of the humanitarian aspects involved, a feature which defies ultimate evaluation. The Air Force is also confronted with the practical military viewpoint of conserving its combat capability in both pilots and planes. The cost of a modern airplane is enormous, and the loss of a single pilot requires a great investment to achieve a replacement of equal training and ability….

"Any solution to this problem rests with the flight safety personnel and must of necessity center about two major features; first, to find the cause of an accident and, second, to propound its prevention. Aeronautical engineers have kept pace in their investigations concerning accident causation and prevention which is well exemplified by their past record. It now behooves the medical profession to offer further assistance in the field of flight safety. All aspects of 'the man' should be evaluated as to his possible role in major aircraft accidents, especially those classified as 'cause undetermined.' Although the efforts of many medical specialties are required for such an endeavor, the field of pathology is primarily concerned with the structural and functional changes in disease and, consequently, it is believed offers considerable prospect in the co-ordination of flight safety information. The well established subspecialty of forensic pathology has demonstrated this scientific discipline's usefulness in establishing cause of death and sequence of events leading to it" (3).

Prevalence and consequences of vertigo: "Vertigo is a phenomenon well known to both military and commercial pilots. Most of them are familiar with it from personal experience, and the remainder have heard it discussed on frequent occasions. For pilots, vertigo includes a wide variety of experiences, but generally speaking it involves confusions regarding their position in space. Many of the factors contributing to vertigo are well known, and a number of studies have been made of its characteristics in low performance, propeller-driven aircraft. However, no data are known to be available on its occurrence in high performance aircraft, although it might be predicted that the nature and occurrence of vertigo would be much the same in jets as it is in conventional aircraft. It was the purpose of this study to obtain information concerning the characteristics of vertigo during flight in jet aircraft….

"It was the purpose of this study to obtain information on the occurrence of vertigo in jet pilots. Individual interviews and a check list were used to determine the occurrence of vertigo in 137 naval and Marine Corps jet pilots. It was found that 96 per cent of these pilots had experienced vertigo in jets and that the nature of vertigo was essentially the same as that found in low performance aircraft. The most frequently reported experience involved confusion with regard to the attitude and motion of the aircraft, but visual vertigo and geographical disorientation were also reported. The causes and prevention of vertigo were also found to be essentially the same as for conventional aircraft, however the jet pilots believe that certain aspects of jet flight may, contribute to spatial disorientation. Thus it is obvious that vertigo continues to present a threat to flight safety in jet aircraft as it has in slower propeller driven aircraft" (1).

Twenty-five Years Ago

Flexibility in aviation medical examinations (Aviation Research Laboratory, University of Illinois at Urbana-Champaign): "Adapting aviation certification exams to each examinee's ability may reduce administration costs and increase the accuracy of certification decisions. Several means of adapting exams are based upon item response theory. Item response theory allows one to empirically describe a test item very precisely before it is administered. Use of each item's description and an examinee's response enables one to estimate the examinee's ability and select the next item to best refine this estimate. An exploratory application of this technique to one step of the certification of private pilots has raised several important questions….

"The increasing use of computers for the administration of tests opens new possibilities for improving the information available from tests and for decreasing the cost of giving them. One such possibility is the implementation of adaptive testing. This paper has described adaptive testing based on item response theory and has discussed several issues being considered during the application of this technique to private pilot certification. Despite unresolved problems, adapting aviation certification exams appears to be generally desirable and will probably be recommended for private pilot certification" (4).

Aeromedical aspects of a new malaria prophylactic drug (USAF School of Aerospace Medicine, Brooks Air Force Base, TX): "Mefloquine hydrochloride (WR 142, 490) is a new investigational drug which is indicated for the prevention and treatment of cloroquine-resistant falciparum malaria thought to be resistant to other drugs. Available information on mefloquine, particularly its potential for 'quinine-like' side effects, is of aeromedical importance. These side effects, if present, would be expected to alter performance and body physiology to a degree which would compromise flight safety. There is legitimate concern for mefloquine's safe use in aircrewmen. Mefloquine's potential for 'quinine-like' side effects should be evaluated before it is routinely used for suppressive prophylaxis in aircrewmen" (2).

Automated eye examinations (National Aerospace Medical Centre, Soesterberg, Netherlands): "Results of automated perimetry (Fieldmaster 200, Synemed) in 1,000 subjects are described. In 17 subjects (1.7%) a serious field defect was found. In 9 subjects (0.9%), aspecific defects were found. Computer aided perimetry was found to give reliable results compared with kinetic perimetry. Since the visual field is of the utmost importance in aviation, while mass conventional visual field screening is not possible, it is suggested that use should be made of automated perimetry testing" (5).

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Space Medicine at Wyle Laboratories

Vernon McDonald, Ph.D.

This is the first of a series of articles that will be submitted by members of the Space Medicine Association that will highlight various aspects of space medicine. The intent is to show the widely different ways which organizations and individuals are involved in this multi-specialty field.

Wyle Laboratories, a contractor for NASA since the Apollo program, has developed a comprehensive space medicine program for astronauts under NASA supervision. An overview of the Wyle services contracted by NASA gives insight into the program. Wyle is the prime contractor for two premier NASA Johnson Space Center contracts. Under the Occupational Medicine and Occupational Health contract, Wyle provides clinical and occupational health care for NASA personnel and the astronaut corps. Under the Bioastronautics Contract, Wyle provides ground and flight research, spaceflight hardware development and fabrication, science and mission integration for flight, habitability and environmental factors, and (the focus of this article), space medicine services in support of the Space Shuttle, International Space Station (ISS), Constellation and Human Research programs. Wyle's space medicine team is comprised of 10 core capabilities.

The **Medical Operations** section provides biomedical flight controllers who function as the direct link to the flight crew through their assignment in the Mission Control Center. Wyle personnel develop and prepare flight rules, conduct simulations, monitor crew health, prepare console references, and provide staffing for specific medical needs. In addition, Wyle employees provide 24-hour crew health monitoring, hazardous activities monitoring, and private medical and family conferences for both the Shuttle and ISS crews.

The **Contingency Support** team is responsible for preparing and maintaining contingency response plans and procedures for medical support at all launch and landing sites, including international abort sites. This team assisted during the Columbia disaster, deployed to Stennis and Michaud to assist following Hurricane Katrina, and regularly participates in training and simulation exercises with the Department of Defense Shuttle support team.

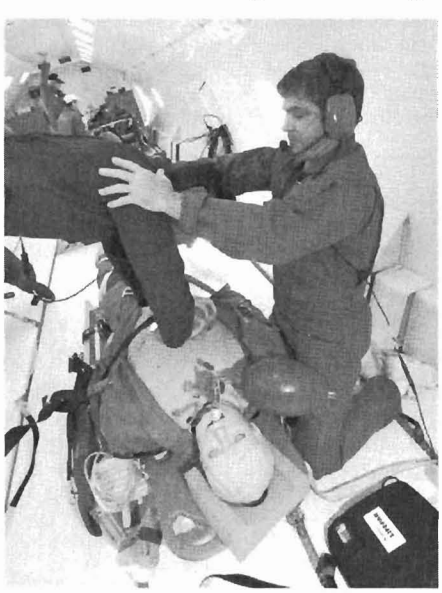
MEDICAL OPERATIONS---Howard Better and Jennifer Joiner, Wyle Biomedical Engineers, supporting the Medical Operations interests for a Shuttle mission.

Wyle's **Space Medicine Information Technology** section has the responsibility for the design, development and hosting of information management tools to enhance productivity, improve workflow and provide a means for capturing space medicine data. These tools manage the acquisition and integration of data from a wide range of sources including the ISS and Shuttle, as well as the clinical facilities at Johnson Space Center, and other medical testing facilities around the world.

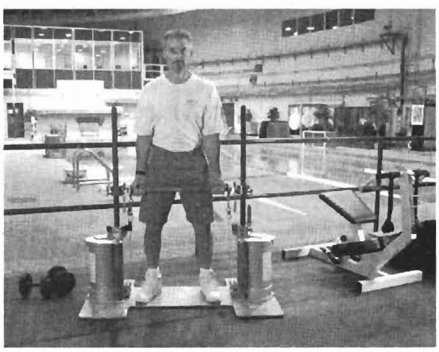
The **Advanced Projects** section is tasked with improving the standard of medical care available for each phase of human spaceflight. This includes the identification and development of clinical diagnostic and therapeutic procedures and the definition of the clinical skills necessary to provide medical care in space.

Wyle personnel work with experts from academia, private industry, the military, and other Federal agencies to evaluate and develop the necessary medical technologies and medical care systems for future space missions. They are developing the requisite clinical knowledge, techniques, and protocols for space medical care and defining the set of clinical skills required for certification as a space medical care provider.

The **Astronaut Strength Conditioning and Rehabilitation Specialists** or ASCRS provide physical training and rehabilitation services to the astronaut corps to prepare them for the rigorous preflight training schedule, the stress of spaceflight to human physiology, and to guide the post-landing rehabilitation from the effects of long-duration spaceflight. The ASCRS are responsible for both preflight and inflight physical training of the Shuttle and ISS crews as well as being consultants for the development of inflight exercise hardware.



ADVANCED PROJECTS---Terry Guess, Wyle Electrical/Mechanical Engineer, stabilizing the NASA Crew Medical Officer, Dr. Jeff Jones, who is performing an inverted CPR on the manikin. The manikin has already been intubated.



ASTRONAUT TRAINING---Mark Guilliams, Wyle ASCR, is preparing to exercise on the interim Resistive Exercise Device (iRED) at NASA JSC. iRED was used on ISS to mitigate physiological changes due to microgravity.

The **Behavioral Health & Performance** section identifies and mitigates psychiatric, psychological, psychosocial, and psychophysiological factors that could impact extended-duration space missions and develops countermeasures to facilitate adaptation to the space environment. This section is responsible for supporting the astronauts and their family members during all mission phases, and includes assisting the astronauts in monitoring and maintaining their behavioral health, well-being, and performance during the ISS missions. A sampling of typical tasks includes the development of crew care packages, recreational materials, and electronic photo albums. They also monitor crew health inflight and coordinate private psychological conferences and communication between the crew and their families.

The **Health Care Services** section fulfills several specific clinical functions. The Clinical Laboratories support NASA's medical operations by performing medical clinical analyses, including bio-chemistry, immunology, hematology, and urinalysis for the astronaut corps, for participants in the Longitudinal Study of Astronaut Health, and for test subjects. The Laboratory maintains an active database that includes all analyses since the human space program began, and maintains a repository of biological specimens from all astronauts.

The Epidemiology team conducts The Longitudinal Study of Astronaut Health to examine the mortality and morbidity rates of astronauts in comparison to the general population. It also determines the rate of illness and accidents that might require medical

See SPACE MEDICINE, p. 1010.

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President's Message

Greetings to the ANS. It was hard to realize that it was time for another article, but I so enjoy staying in touch with each of you.

My first priority in this message is to remind you that abstracts are due by the end of this month (October). You have probably heard this every year and wondered if you should submit something. I would like to encourage you that, if you have any ideas at all for a panel, paper, presentation, or poster and are unsure whether or not if you think your idea is worth pursuing, please, contact me. I can put you in touch with the appropriate education and scientific program ANS members who may help you develop your idea into an abstract.

For those of you not familiar with the scientific program's development, the annual scientific meeting is built around the members' contributions to panels and presentations through submitted abstracts. Most present a familiar topic associated with the work they perform. For example, at this past year's conference some nurses, who were involved in MEDEVAC, presented case scenarios that were most informative. Whatever it is, we look forward to your submissions.

Secondly, I wanted you to know me a little better. I am an Aerospace Flight Nurse with the Bionetics Corporation, which is contracted to NASA. We provide support to the astronaut flight crews, assist in biomedical research, and provide medical education to medical students and interns. I wear many hats in this position and work with many different types of professionals - doctors, physiologist, and engineers. Like most professions, there are administrative duties, but there are also "hands-on" duties, as well. The nursing care is only extensive when the flight crews are training, preparing for flight, or returning from flight. My clinical skills are kept up when I complete a shift every 3 to 4 weeks in a local community ED. Flight nursing can be very demanding, but after 13 years I really love what I do. I was most happy with the successful mission of STS-117 since it had been several months without a mission due to technical problems.

Finally, I hope all of you who are deployed are coping with your work loads. We appreciate your service to our country and the soldiers in need.

Remember you can e-mail me at any time with any concern regarding ANS and AsMA in general and I will do my best to get back with you.

Regards,
Cathy DiBiase, RN, BSN
ANS President 2007-2008

SPACE MEDICINE from p. 1009.

care and the use of medical equipment and supplies during space travel.

Wyle also operates a full service Pharmacy for Flight Medicine and Occupational Medicine patients. This group manages the medical kits that fly on board both the Shuttle and ISS, and the medical kits for a variety of terrestrial functions, including kits located across the facilities at Johnson Space Center.

Wyle's **Multilateral and Program Support** section provides support for international medical operations by coordinating various multilateral board and panels, and facilitating the exchange of information among the medical organizations of the five International Partner agencies. Wyle personnel assist with the development of common medical standards, certification criteria, medical care requirements, preventive medicine guidelines, operational countermeasures, and the definition of operations concepts for ISS missions. Through a subcontract to the University of Texas Medical Branch at Galveston, Wyle supplies flight surgeons who provide medical coverage to NASA and contractor personnel in Star City, Russia, and in both Mission Control Center-Houston and Mission Control Center-Moscow.

The **Training Section** defines, develops, and implements training requirements for a comprehensive health care program for spaceflight. Wyle personnel are responsible for training astronauts, flight surgeons, biomedical engineer flight controllers, and other flight control disciplines for operations in health maintenance, environmental health, and countermeasures systems. Wyle employees train crew medical officers for each spaceflight. This team also has provided the medical equipment for every Shuttle mission since STS-1. The Shuttle Orbiter Medical System contains the medical equipment and supplies needed to diagnose and treat in-flight medical problems.

NASA recently endorsed the development of commercial crew and cargo services to the ISS through the awarding of two funded Space Act Agreements to SpaceX and Rocketplace Kistler. Providing an experience to remember and safely returning space travelers to Earth in good health will be critical to the success of these ventures. Wyle recently formed the **Commercial Human Spaceflight** business unit to capitalize on its history of supporting NASA's mission success and plan to utilize that experience to become a part of commercial spaceflight mission success. With this previous experience in human spaceflight, Wyle is now already engaged in supporting the leading proponents of private space travel, including Virgin Galactic and Space Adventures.

STAR CITY, RUSSIA---Blake Chamberlain, M.D., Wyle/UTMB Flight Surgeon, supporting crew winter survival training near GCTC (Star City) at a place called Soyuz.

MEETINGS CALENDAR 2007

October 10-13, 2007, Marriott San Diego Mission Valley, San Diego, CA. Civil Aviation Medical Association Annual Scientific Meeting. This meeting is certified as an AME seminar by the FAA. For more information, please contact Jim Harris at jimlharris@aol.com or call 405-840-0199.

October 11-12, 2007, NTSB Training Center, Ashburn, VA. Accident Investigation Orientation for Aviation Professionals. For more information, please visit http://www.ntsb.gov/Academy/CourseInfo/AS301_2007.htm.

October 15-19, 2007, NTSB Training Center, Ashburn, VA. Survival Factors in Aviation Accidents. For more information, please visit http://www.ntsb.gov/Academy/CourseInfo/AS302_2007.htm.

NEW **October 21-23, 2007, Concorde Hotel, Owerri Imo State, Nigeria.** Mission to Mars: The African Perspective. Sponsors: Institute of Space Medicine and Terrestrial Sciences, International Institutes of Advanced Research & Training, Chidicon Medical Center.Theme: Brain Neuroplasticity. Info: http://www.chidicon.com/Space.html

October 29-31, 2007, Grand Sierra Resort & Casino Hotel, Reno, NV. SAFE Association 45th Annual Symposium. For more info, call (541) 895-3012, Fax (541) 895-3014, e-mail safe@peak.org; www.safeassociation.com; www.safeassociation.org.

November 1-2, 2007, Holiday Inn Regents Park, London, UK. Second Annual Aviation Health Conference. Details: www.quaynote.com. For sponsorship or speaking opportunities, contact lorna@quaynote.com or phone 44-20-8531-6464.

NEW **November 13-14, 2007, Holiday Inn, Kensington Forum, London, UK.** Crisis Management, Business Resilience and Business Continuity for the Aviation Industry Details: www.quaynote.com; Alison@quaynote.com; 44(0)20 7074 0241

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A Word from the President ... About Traditions

Every country, village, family, or single person has them: traditions. Sometimes, they are what makes our lives interesting, sometimes they become a burden.

Thinking back to a wonderful childhood, growing up on an estate as a member of an old Austrian family, I know a lot about traditions. As the widow of a Field Marshall of the former Austrian Empire, my grandmother ruled her large family, domestics, and farm workers with both love and a strong hand. Around the house and in the presence of older family members we children had to obey very strict rules. However, when we played with the village children around the farms we were free, in fact, much more so than most children nowadays. With my neighbors and school friends (one of them by the name of Arnold Schwarzenegger...perhaps you have heard of him) we spent days playing in nearby woods, skating on the ice of our lake, skiing the slopes behind our house, climbing trees, and hiding in barns.

Traditions gave our lives the frame in which we lived. We celebrated many religious holidays, of course, and they were filled with wonderful customs, some very ancient, that so enriched our culture. These traditions and rituals, celebrated each and every year, often gave the spark to our daily routine, dispelling boredom and giving us something very special to which we could look forward. Even today, we are still constantly creating and also abandoning traditions.

I like to compare traditions with a man standing with one foot in a bucket of hardened concrete. This foot is standing firmly on the ground, unable to move into any direction. It is heavily secured to the Earth. The other foot though, has no burden to carry; it wants to run, fly away to new lands. Which one would you choose? Traditions give us stability, a sense of belonging, knowing where we come from, and require a certain discipline to be performed over and over again. Sometimes they become overwhelming, outdated, often loosing their original value, and need to be changed or eliminated. Others remain steadfast and eternal, providing the reassuring warmth and beauty which our otherwise ever-busy souls crave.

Looking back to my young days, in those heady impatient years of childhood, I remember thinking that the practice of some of our traditions was, frankly, a bit annoying. For instance, after lunch or dinner at home, we children had to ask permission to get up from the so called "Katzentisch" (kitten's table) and then circle around the adult's dinner table, drop a curtsy or bow, kiss every lady's hand, and thank her for dinner. What a nuisance, we thought, loosing at least 10 minutes of valuable play time! Today, however, it makes me happy indeed to hear my children and husband thank me for a dinner that I had prepared with love (we eliminated the curtsey, kiss, and bow!)

What does my discourse on tradition have to do with the AsMA WING? Our organization is now more than half a century old. During these 50+ years, the members of this wonderful group have, on purpose or not, created many unique traditions. For instance, we have created a fixed time schedule to which we stick unchangingly throughout the entire Scientific Conference week. The Board meeting on Sunday, filled with official business...it could have become a very stodgy formal gathering. Happily, however, our traditions have not taken us in that direction; the Wing and their presidents have made our Sunday meeting a very pleasant reunion of dear friends! We serve light refreshments and then tackle the work at hand with ease.

Monday's reception is one of our finest traditions. We welcome old and new members with delicious munchable tidbits and gifts for all. The Registration hours are traditionally also a meeting time. We pay our dues, catch up on news, see who made it to the meeting, and who brought a friend. We admire those whose clothes from last year still fit, and envy others who bought new ones! We proudly show photos of babies, weddings, trips, pets, and the occasional new rose bush in our yard.

The tours are one of the most beloved of all our traditions. While waiting for the bus we find a companion for a good chat during the ride. Even my silly "yodluihi" on entering the tour bus has become a tradition. If I don't greet the crowd with my Tyrolean "yodelhuitiritio", the Wing knows something is wrong with Susi.

And look at our Wednesday Luncheon; isn't that just the best! Each year our Luncheon Chairs find a very special place for our feast, decorate it with artistic grandeur, print menus so pretty that they often find their ways into frames hanging in a special "Wing corner" in many homes. While indulging in local delicacies, we listen to reports of hard work of our arrangements and financial team, then finally hand over the gavel and cheer for the incoming Wing President...and then we do it all over again each and every year.

One of the Wing's very important traditions is that we care for and think of members unable to attend the meeting. Some of us went back to school and are amidst their final exams, or they are just too busy to attend. Others, sadly, are sick or are grieving in sorrow and pain. Yet, despite their being physically far from us, they remain in all of our hearts, thoughts and prayers; they know that they are always a part of our gathering... our family. The Membership Chair collects greetings and best wishes to send home to those members. Yet it does not end there. Upon our return home, those who could not be with us receive many a letter or e-mail with photos, so as to better help them feel included in the adventure.

Here are some of my favorite Wing traditions. Do you remember when the "Wives' Wing" met in elegant attire with hats and gloves? How lovely they all looked, and it was appropriate for the time. I do hope that the luncheon will always stay an elegant affair. Wearing our ribbons, I wish, will stay a tradition too. We have earned them through the many hours of work, and wear them with pride. New members may easily be recognized by their red ribbon, so we can welcome and make them feel comfortable and at ease amidst us.

As we look into the future, we shall see new and younger Wing members with good ideas to keep our meetings interesting and fun. Some of those ideas will turn into traditions. That is what keeps our group alive and vibrant!

With a happy "yodluitiritio"

Your President,
Susanna Bellenkes

THE WING OF AsMA EXECUTIVE BOARD, 2007-2008

ELECTED OFFICERS	
President	Susanna Bellenkes
1st VP	Peggy Trumbo
2ndVP	Dale Orford
Secretary	Nevonna Schroeder
Treasurer	Jenifer Faulkner
BOARD MEMBERS AT LARGE	
Air Force	Josephine (Jo) Ivan
Navy	Melinda Beane
Army	Jennifer Crowley
Civilian	Judy Kowalsky
International	Els Salisbury
APPOINTED OFFICERS	
Parliamentarian	Harriet Hodgson and Helen Lestage
Past President	Conoly Barker
Nominating	Trish Trifilo
Special Advisor to the President	Ludy Rayman
Honorary President	Fonda Hastings
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Resolutions	Judy Waring
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Co-Chairs	Yvonne Silberman and Jackie Jordan
Advance Registration	Debra Merchant
Arrangements	Susan Bassik
Hospitality	Els Salisbury
Luncheon	Phyllis Hain
Co-Chair	Jeanette Wells
Reception	Alison Gibson
Favors	Birgette Pongratz
Tours	Susan Bassik, Paula Landry and Jennie Bendrick
Special Boston Consult	Lois Moser
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320 S. Henry Street
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News of Corporate Members

Virtual Flight Surgeons AsMA's Newest Corporate

Virtual Flight Surgeons, Inc. (VFS), located in Aurora, CO, have become the newest corporate members of the Aerospace Medical Association (AsMA). This company provides assistance with FAA certification, aeromedical advocacy, confidential consultations, and expert witness testimony. VFS serves a wide range of clients, including individual pilots and aviation associations. They have a full-time team of board-certified aerospace medicine physicians who are experienced in commercial and military aviation medicine.

VFS was founded in 1997 to provide aeromedical assistance to pilots in the general and business aviation communities. It originally operated part-time, and then branched out into the air traffic controller community. VFS is now a full-time business that is nationally known for its aeromedical excellence. For more information, visit their website at www.aviationmedicine.com.

Become a Corporate Member of AsMA!
For information on becoming a Corporate Member, please call Gloria Carter at (703)739-2240, ext. 106, gcarter@asma.org; or Dr. Marian Sides at mbsides@sbcglobal.net

MedAire to Provide Medical Services to Spirit Airlines

MedAire Inc. recently announced that U.S.-based Spirit Airlines will add MedAire's 24/7 MedLink Global Response Services to its entire fleet. During in-flight medical situations, MedLink provides flight attendants and pilots with a one-call solution to board-certified physicians working in a level-one trauma center in Phoenix, AZ.

As part of the 3-year agreement, crewmembers onboard Spirit's fleet of 36 aircraft will have 24-hour access to MedLink from anywhere around the world, using the aircraft's existing communications system. MedLink physicians, who have extensive experience in the field of aviation-specific medicine, manage thousands of medical emergencies every year, including more than 17,000 in-flight situations in 2006. Since 2003, MedAire Inc. has also supplied and refurbished the airline's emergency medical kits and provided medical control for their prescription contents.

Baxter Awarded Contract from Dept. of Health

Baxter International Inc. announced recently that Baxter's European subsidiary in the United Kingdom has entered into an advanced supply agreement with the Department of Health that contains an option to purchase pandemic influenza vaccine in the event the World Health Organization (WHO) declares a pandemic. Baxter will manufacture its pandemic vaccine in a serum-free, vero cell-based system at one of the largest cell culture vaccine facilities in the world. The use of vero cell culture, rather than conventional egg-based technology, offers several advantages. Baxter's vero cell culture process can be initiated more rapidly due to its use of a "native" virus that does not need to be modified to allow growth in eggs, thus accelerating vaccine availability. Vaccines produced using this process can be released within approximately 12 weeks, significantly earlier than with traditional egg-based systems. In addition, all influenza strains with pandemic potential tested for growth in vero cells have produced replicable high yields, providing the company with the flexibility to quickly respond to emerging variant pandemic virus strains.

Baxter is also working with the U.S. National Institute of Allergy and Infectious Diseases, part of the National Institutes of Health, in partnership with Fisher BioServices Inc., and with the U.S. Department of Health and Human Services, in partnership with DVC LLC, a Computer Science Corporation Company, to further develop vero cell culture-based candidate pandemic and seasonal influenza vaccines in the United States.

Send information for publication on this page to: **News of Members**
Aerospace Medical Association
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pday@asma.org

News of Members

POSITION AVAILABLE

Exciting opportunity for medical director in occupational medicine practice in Washington State! The position is primarily administrative requiring strong leadership and political savvy skills. Previous government contracting experience with DOE, DOD a plus. MRO certification, experience in beryllium, toxicology, legacy health issues preferred. Current valid license to practice medicine in Washington state or ability to obtain. Three years minimum medical directorship experience required. Requires MD or DO degree with certification in either Occupational and Environmental Medicine (OEM), Aerospace Medicine (AM), or Public Health and Preventive Medicine (PM) by the appropriate Medical or Osteopathic Medical certifying board. Excellent compensation package.

Please contact Jason Zaccaria, Clinic Director, 1979 Snyder St., Ste 150, Richland, WA 99354

Email CV to Jason_Zaccaria@rl.gov
Fax (509) 376-2020, Phone (509) 376-4082

Col. Keith L. Hiatt, MC, USA, formerly a Consultant in Preventive Medicine in the Office of the Command Surgeon at Ft. McPherson, GA, is now the Medical Director at the U.S. Army Research Institute of Environmental Medicine in Natick, MA. He was promoted to Colonel in March.

William A. Pollan, D.O., M.P.H., originally the Deputy Commander and Squadron Commander at Nellis AFB, Las Vegas, NV, is now serving as Commander of the 355th MDC at Davis Monthan AFB, Tucson, AZ.

Donald E. Sprague, M.D., PA, previously at South Coast Hyperbarics in Webster, TX, is now a sole practitioner in Seabrook, TX.

New Members

Abhyankar, Sheetal A., M.B., B.S., Nadi, Fuji Islands
Anderson, Arthur M., M.D., Bellevue, WA
Anderson, Katherine, B.S., R.N., Bellevue, WA
Bastaki, Nadia Q., M.B.B.S., Dubai, UAE
Gibb, Randall W., Col., USAF, Ph.D., Monument, CO
Hayes, David W., LT, USN, MC
Kohli, Sandeep S. S., M.D., Oakville, ON, Canada
Krishnan, Ashok, M.D., Kuala Lumpur, Malaysia
Lamontagne, Jessica L., Capt., USAF, NC
Rodriguez, Edgar, Lt. Col., USAF, MC, San Antonio, TX
Waite, Bradley E., M.D., Olympia, WA

Members--Remember!
AsMA Council Meetings are open to all members of the AsMA. Your input and attendance are always welcome. Our next meeting will be on November 15, 2007, at the Holiday Inn Eisenhower Ave., Alexandria, VA.

INDEX TO ADVERTISERS