

President's Page

Here I am, flying back to Oklahoma City after attending the 1-day Summer Executive Committee (ExComm) Meeting at AsMA Headquarters in Alexandria, VA. I just heard the announcement from the flight deck that due to security regulations, for the next 30 minutes of flight all passengers cannot leave our seats. I will remember it this time, because during my previous flight departing Washington, DC, I forgot the warning and left my seat in a hurry to go to the lavatory 28 minutes after take off. Next thing that I remember is attempting to sit down on the toilet and hearing loud banging on the door and somebody yelling at me to open the door and get back to my seat immediately. I pulled up my pants in record time, opened the door, and while apologizing to the flight attendant for my transgression I noticed the many passengers who were looking at me in disbelief (at least it was not a Federal Air Marshall waiting for me outside the lavatory). Two minutes later the flight attendant came back to my seat to tell me that I could now use the lavatory. However, I did not feel the need to go to the lavatory for remaining duration of the flight. This experience makes me wonder what triggers a Federal Air Marshall's involvement in an in-flight incident considering the broad spectrum of possible passenger behaviors that range from well behaved passengers → distracted passengers who accidentally break the rules → disruptive passengers → terrorists. By the way, did you know that U.S. Senator Kennedy has been stopped several times by airport security personnel because his name was placed in the TSA list of potential terrorism suspects? If this happens to a well known person like him, what can be expected to happen to ordinary citizens like me who have a foreign name? I do not know the answer, but this is a sign of the times we live in today; the threat of terrorism has led to the implementation of very conservative and inflexible security rules that must be obeyed by all!

I am very pleased to inform you that our Summer ExComm meeting was very productive. The leadership of our Association continues to be highly energetic, motivated, and dedicated to improving the quality of all programs and services that fulfill the needs of our membership and that support the advocacy and advancement of our professional disciplines. Some of the most significant issues addressed during this meeting involved:

1. Implementation of the AsMA Strategic Plan:

Performance targets have been identified under each strategic goal and objective to enable the implementation of the plan. Our intention is to complete the revision of these performance targets and present the final implementation plan to AsMA Council in November 2004. Some of the highlights of the plan discussed during our ExComm meeting include:



Melchor J. Antuñano, M.D., M.S.

a. AsMA Vice-Presidents' Roles and Responsibilities: David Schroeder, Ph.D. (AsMA Past-President) submitted a proposal defining the specific roles and responsibilities for the Vice-Presidents and identifying guidelines for their selection. This proposal will be revised by the ExComm and the final draft will be presented to AsMA Council.

b. AsMA Membership Initiatives: Gen. George Peach Taylor (Vice-President for Member Services) and Andy Bellenkes, Ph.D. (Vice-President for International Activities) presented several initiatives developed in conjunction with the Membership Committee and the International Activities Committee to promote the growth of our membership. The proposed initiatives target the retention of active members, the re-activation of former members, and the recruitment of new members. The ExComm approved a proposal to continue providing a free copy of the "Clinical Aviation Medicine" book as an incentive to become a new AsMA member.

c. AsMA Formal Mentorship Program: Richard Jennings, M.D. (Vice-President for Education and Research) is leading the development and implementation of a formal mentorship program in conjunction with the AsMA Fellows Group, the Aerospace Medicine Student Resident Organization (AMSRO), and the Education and Training Committee. A revised draft of the proposed program was discussed and with some modifications will be presented to AsMA Council.

d. AsMA Student/Resident Scholarship: Dr. Jennings is leading an ExComm initiative in conjunction with AMSRO to develop the nomination and evaluation criteria for AsMA/AMSRO Scholarship applicants. This includes standardizing the nomination forms.

e. AsMA Sponsorship and Co-Sponsorship of External Scientific Events: Dr. Jennings is leading another ExComm initiative to develop guidelines for fu
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ture sponsorship and co-sponsorship of scientific events in aerospace medicine and related disciplines conducted by non-AsMA organizations.

f. AsMA Website: User-Centered Design, Inc. provided an update on the current status of the re-design of the AsMA Website. ExComm emphasized the importance of having a fully functional prototype of our new website ready for demonstration during the AsMA Council meeting in November, 2004.

g. AsMA Financial Policies and Procedures Guidelines: President-Elect Mike Bagshaw, M.D., and AsMA Executive Director Russell Rayman, M.D., are leading an ExComm initiative with the support of the Finance Committee to improve/optimize AsMA's financial management through the development and implementation of financial policies and procedures guidelines. Our Association needs these guidelines to assist ExComm and Council in making decisions about AsMA investments and expenditures. These guidelines will help us develop an investment plan with clear and objective financial goals (near-term, mid-term and long-term) that support the current and future needs of our non-profit organization.

2. 2009 AsMA Meeting Site Selection: Individual membership fees and the annual scientific meetings represent the most important sources of income for our Association, and they have a significant impact on our present and future financial health. Therefore, in order to promote the highest attendance at our annual meetings it is very important to select meeting sites that are easily accessible (via air transportation) by all attendees (national and international), offer reasonably priced hotel accommodations for our members and their families, and offer attractive and convenient opportunities for extra-curricular activities and tourism. Based on all of these considerations, several potential sites were discussed during the ExComm meeting and a decision was made to select the City of Los Angeles, California, for our 2009 scientific meeting. However, we must not forget that it is equally important to put together a high quality scientific program that offers original presentations covering a broad scope of topics, which reflect the professional diversity and interests of our membership.

3. AsMA Re-certification by the Accreditation Council for Continuing Medical Education (ACCME): Russell Rayman, M.D. (AsMA Executive Director) and a member of the Education and Training Committee will meet with an ACCME team to discuss AsMA's application for re-certification to continue providing continuing medical education credits. Our current ACCME certification expires this year unless it is renewed.

4. Annual reports by AsMA Committees, Constituent and Affiliate Organizations: ExComm

approved a proposal to post in the AsMA website all annual reports submitted by AsMA committees as well as constituent and affiliate organizations. This action will allow all AsMA members to have easy access to the information contained in these documents.

5. Associate Fellows Nominees: ExComm reviewed and approved the list of 40 candidates for AsMA Associate Fellowship Status.

6. Implementation of the Marie Marvingt Award: ExComm approved a revised description of the nomination criteria for the Marie Marvingt Award.

I take this opportunity to share with you the great news that our colleague and AsMA Fellow William E. Collins, Ph.D., has been selected for induction into the Oklahoma Aviation Hall of Fame at their annual dinner and awards ceremony on September 25, 2004. I am extremely happy that such a prestigious recognition will be granted to a highly deserving and humble individual such as Dr. Collins. I consider myself very lucky for having had the opportunity to work for him. I am particularly grateful for his personal interest in mentoring me to become a better professional, team member, colleague, and a leader. His personal style and teachings never cease to surprise me; this time he has decided that I should be the official presenter at his induction ceremony. This is a very distinct honor for me, considering that he could have selected anybody that he wished to be the presenter from a long list of VIPs. Actions such as this tell you the type of person that he is, and I hope that I will be able to continue learning from him for many years to come.

In other news, following the record-setting suborbital flight by civilian astronaut Mike Melvill onboard SpaceShipOne (the first private reusable launch vehicle), Burt Rutan announced their plans to launch again in September in an attempt to win the 10 million dollar Anzari X Prize. Meanwhile, another contender for the X Prize experienced a catastrophic failure during the flight testing of their prototype vehicle. Armadillo Aerospace's unpiloted vehicle ran out of fuel at an altitude of 600 ft and crashed. The U.S. Senate is expected to vote this month (September) on the Commercial Space Launch Amendments Act of 2004 (H.R. 3752) that lays out the definition of a suborbital space passenger vehicle, solidifies the process for licensing such vehicles, and allows paying passengers to fly into space at their own risk. The intent of this Act is to promote the implementation of a viable commercial space tourism industry in the U.S. For those of us who have had the fortune to be involved (directly or indirectly) in the early development of this industry, the challenges and opportunities have been very rewarding. We will continue to follow with great interest the achievements of these commercial space pioneers.

Medical News

Arthur is First Flight Surgeon to Become Surgeon General of the Navy

by Pamela Day

I was privileged and honored to be present at the Change of Officer ceremony August 3, 2004, where RADM (now Vice Admiral) Donald C. Arthur assumed the office of Surgeon General of the Navy. Arthur, an AsMA Past President, is the first flight surgeon/aerospace medicine specialist to achieve this honored post.

As the Guest Speaker, Admiral Vern Clark, USN, Chief of Naval Operations, quoted, "Ceremony reminds us of who we are as a people." This ceremony reminded me of how proud I am to be an American and part of the aerospace community.

VADM Donald C. Arthur, MC, USN
(biography courtesy of Dept. of Navy)

VADM Donald C. Arthur, MC, USN, most recently served as Commander (Chief Executive Officer) of the National Naval Medical Center in Bethesda, MD, and Chief of the Navy Medical Corps. He was promoted to Vice Admiral on August 23, 2004.

VADM Arthur, a native of Northampton, MA, entered naval service in 1974 and holds a Doctor of Medicine degree, a Ph.D. in Health Care Management, and a degree in law (J.D.). After a surgical internship he completed Navy operational curricula in Flight Surgery and Undersea Medicine. His additional operational qualifications include Surface Warfare Medical Department Officer, Saturation Diving Medical Officer, Hyperbaric (Recompression) Facility Operator, Radiation Health Officer, Navy-Marine Corps Parachutist and Jumpmaster, and he is qualified in submarines.

VADM Arthur's naval service includes re-

search in mixed gas saturation diving and cold weather medicine. He served 2 years in the Philippines as both a Flight Surgeon and Diving Medical Officer, followed by duty as Senior Medical officer on the *USS Kitty Hawk*. He completed his residency in emergency medicine and served as Head of Emergency Medicine at Naval Hospital San Diego. At the Naval Aerospace Medical Institute, he was Head of the Special Products Division. Following deployment to Southwest Asia with the Marine Corps Second Medical Battalion during Desert Shield/Storm, he served as Director of Medical Programs for the U.S. Marine Corps at Marine Corps Headquarters, Washington, DC.

He then served as Deputy Commander (Chief Operating Officer) of Naval Medical Center, San Diego, and subsequently, as Commanding Officer (Chief Executive Officer) of Naval Hospital Camp Lejeune, NC. In 1998, VADM Arthur returned to Washington, DC, to serve as Assistant Chief for Health Care Operations, Navy Bureau of Medicine and Surgery. Prior to assuming command of the National Naval Medical Center, he held the positions of Deputy Surgeon General, Vice Chief of the Navy's Bureau of Medicine and Surgery, and Chief of the Navy Medical Corps.

VADM Arthur is board certified in Emergency and Preventive Medicine (Aerospace) and is a Certified Healthcare Executive. He is a Fellow in the American College of Healthcare Executives and received their 2002 Federal Excellence in Healthcare Leadership Award; a Fellow and Past President of the AsMA; and member of the Alpha Omega Alpha Honor Medical Society. He also received the AMSUS Outstanding Federal Healthcare Executive Award in 2002.

He has been awarded four Legions of Merit, three Meritorious Service Medals, three Navy Commendation Medals, and a Navy Achievement Medal, in addition to unit, service, and campaign awards.

There have been 18 U.S. Air Force Surgeons General since 1949. All were flight surgeons and all have been members of AsMA, but not necessarily while they were Surgeon General. Now we can proudly claim to have two forces represented at once. Lt. Gen. Peach Taylor is currently Air Force Surgeon General and an AsMA Vice President.

Executive Director's Column



Rayman

KANSAS CITY 2005

The AsMA team has just returned from our site visit to Kansas City in order to begin the planning for our 76th Annual Scientific Meeting scheduled for May 8 - 12, 2005. We were extremely pleased and excited by what we saw. The hotel personnel with whom we met were extremely responsive and enthusiastic and very much look forward to our meeting next May.

The meeting will be co-headquartered in two hotels: The Westin and Hyatt, both of which are approximately ¾ of a mile from the downtown area. Both hotels are modern and spacious with very large open lobbies, making it very easy to congregate. Their meeting rooms and the exhibit area will easily accommodate our requirements. The two hotels are connected by a covered walkway called "the link." This link not only connects the two hotels, but also a three-level shopping center and Union Station. I was surprised to learn that this Station, which has been refurbished and is open to tourists, is the second largest in the world, just behind New York City's Grand Central Station. Next door to the two hotels is a very impressive monument and museum dedicated to World War I. It is my understanding that this is the only World War I commemorative monument in the country. The tower that dominates the monument reminded me very much of the one at Verdun.

In the immediate area there is an abundance of shops as well as a number of excellent restaurants. A 5-minute cab ride will take you to another Kansas City attraction, the Plaza, which affords visitors more shops, restaurants, and outdoor cafes. Kansas City is well known for its steaks and barbeque, claiming to have the number 1 best quality in the U.S. And, of course, Kansas City is the home of American jazz so, if that is your kind of music, you will have no problem finding it in various entertainment establishments. There are also many theaters with an excellent selection of shows onstage. And don't forget those Kansas City Royals baseball team.

There are a number of extremely interesting museums in Kansas City including the Airline History Museum, Arabia Steamboat Museum (this received accolades on the History Channel), Negro Leagues Baseball Museum, art museums, and museums regarding the American West. Also nearby is the famous Truman Museum and Library.

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NAVY SURGON GENERAL---VADM Donald C. Arthur accepts the post as Surgeon General of the Navy. The "muddy boots" in the foreground are a symbol of the Navy commitment to Force Health Protection.

Remember!

Council Meetings are open to all members of the AsMA. Your input and attendance are always welcome. Our next meeting will be on November 17, 2004 in Alexandria, VA.

For most of us on the team, this was our first trip to Kansas City and we were pleasantly surprised by how much there is to do and see there. This, in combination with outstanding hotel facilities, ensures another very successful meeting.

As is our custom, information regarding the Scientific Program, including more tourist information, is available on our web site (www.asma.org) and you will receive a brochure and letter from me in January with further particulars. I look forward to seeing everyone next year in Middle America--Kansas City, Missouri.

Sport Pilot Rule

On July 21, 2004, the FAA posted a final Rule on Certification of Aircraft and Airmen for the Operation of Light Sport Aircraft. The new Rule states that "persons may not use a current and valid U.S. Driver's License as evidence of medical qualification if his/her most recent application for an airman medical certification has been denied based on being found not eligible for the issuance of at least a 3rd Class Airman Certificate, his or her most recently issued airman medical certificate has been suspended or revoked, or his or her recent authorization has been withdrawn. Further, that person must not know or have reason to know of any medical condition that would make him or her unable to operate a light sport aircraft in a safe manner." The Rule does allow a recreational pilot who does not have an Airman Medical Certificate to exercise sport pilot privileges with a valid driver's license.

As a reminder, sport flying includes the following categories: a) airplane, single engine only; b) glider; c) lighter than air balloon and airship; d) rotor craft; e) power parachute; f) weight-shift control (trikes).

When the Notice of Proposed Rulemaking (NPRM) was published in 2002, AsMA responded with a recommendation that sport pilots in single engine aircraft hold a valid FAA Medical Class 3 Certificate and that a valid driver's license be accepted for the other categories for sport flying. We supported this by reminding the FAA that general aviation claims the vast majority of aircraft accidents and incidents. Nevertheless, the new Rule was published as above based upon comments received from a multitude of organizations and groups in response to the NPRM.

This Month in Aerospace Medicine History--October 2004

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

Fifty Years Ago

Hearing loss in radio pilots (Brazilian Air Force Medical Corps): "The author presents a work concerning audiometric observations made of a group of radio operators with more than five years of service and more than 5,000 hours of flight time, and another group with less than five years of service and less than 5,000 hours of flight time... [He also compares] another group of candidates for radio operators and a group of commercial pilots... As a result of his

observations and considerations the author concludes that radio noise causes occupational deafness, and also that the noise of the airplane is an important factor, which may increase the deafness of flight radio operators" (6).

Man and the flight environment (U. S. Naval School of Aviation Medicine, Naval Air Station, Pensacola, FL): "Factors which either limit flight today or are likely to limit it tomorrow should be given the highest priority in our research program. Man has relatively little margin for physiological adaptation to certain stresses encountered in flight. Hope lies in man's ingenuity and in his ability to master highly complex tasks... The question must now be asked, who will monitor a program centering on this reciprocal fitness between pilot and environment? The requirement here is severe and necessitates constant evaluation in terms of the ultimate goal - 'success in flight.' Anything less inclusive will fail to embrace all those persons with different disciplinary backgrounds so necessary for the accomplishment of the work to be done. Is the integrative force back [sic] of our concept of aviation in keeping with this responsibility? Success in a task is not a goal which is in line with the loftiest medical tradition. The flight surgeon's responsibility for the health of the individual is taken for granted, but, important as it is, it leaves out some of the most important relations between man and aviation" (2).

Importance of clinical aviation medicine (Office of the Surgeon General, USAF): "The initial, or critical, indication of the presence of disease may be a failure of performance of aeronautical duty. Such a patient may not have presented himself to the Flight Surgeon at all, and indeed may have no symptoms or may be unaware of them.

It is not the intention of this paper to deal with the neurotic and psychosomatic patients whose inadequacies are usually manifested by poor performance. These men are complainers, but are rarely aircrew personnel. It is the uncompensating sick aviator who compromises flying safety. The clue to this man's illness is often to be found on the flightline or in the air... Such experiences as those demonstrate clearly that aviation medicine cannot be practiced in an office. Of recent years, in the military services, so much routine examination had been imposed on the practitioners of aviation medicine that the proper practice of the specialty has been impaired... Now that we have all been stimulated by the establishment of a Board of Aviation Medicine, we must make an effort to close the gap between research and patient. Our journals and conventions have been replete with reports of research and new understanding but deficient in clinical reports of the Flight Surgeon's experience with his patients... [T]he practice of aviation medicine cannot be conducted entirely in an office but it must be conducted in operations, in the training facilities, on the flightline and in the air" (4).

Twenty-five Years Ago

Comparison of glidepath indicator systems (Civil Aeromedical Institute, Oklahoma City, OK): "Two simulator experiments were conducted to quantify the effectiveness, in terms of pilot performance, of four different visual glidepath indicator systems (the 2-bar VASI, 3-bar VASI, T-VASIS, and PAPI) in the severely reduced nighttime visual environment often referred to as the 'black hole.' Performance in Experiment I was best with the T-VASIS and decreased with

the 3-bar VASI, PAPI, and 2-bar VASI, in that order; but differences between the T-VASIS, 3-bar VASI, and PAPI were not statistically significant. Approaches flown without the ground-based glidepath indicators tended to be low and extremely variable. Observing behavior was compared in approaches with the T-VASIS and 2-bar VASI. Observing response frequency increased as distance from runway threshold decreased and was significantly higher with the T-VASIS. Differences in performance with different indicators were attributed to the rate of information change provided by a given system and to the rate of observing the indicator during approaches" (1).

Comparison of aircrew exposure garments (Aeronautical Research Laboratories, Fishermens Bend and Institute of Aviation Medicine, Royal Australian Air Force): "Laboratory and sea trials were used to compare the effectiveness of three aircrew exposure garments - the British Mark 10, the United States CWU 21/P, and the Canadian U.VIC. Thermofloat jacket. The first two are waterproof coveralls, whereas the third is a neoprene-lined jacket designed on the basis of the 'wet suit' concept. Rectal and skin temperatures, electrocardiograms and other variables were measured while subjects, wearing the suits, were immersed in water at temperatures of 70°C and 10.5°C. The three garments were found to be similar in the degree of thermal protection provided, but the Thermofloat jacket appeared superior in other ways and has the greater potential for development. A previously unreported observation was a marked reduction in core cooling rate after the expected linear fall in core temperature. This has possible implications in the conduct of research in this field" (3).

Ear and sinus pathology and the chamber (Naval Aerospace Medical Institute and University of Texas School of Public Health): "Forty aviators with otorhinolaryngologic pathology, previously considered physically disqualified for flight status, were tested in the hypobaric chamber to evaluate tolerance to rapid barometric pressure changes. Testing consisted of three sequential trials in the low-pressure chamber (LPC) at rates of 1,524 m/min ascent and descent. The first trial was to 1,524 m, the second to 3,048 m, and the third to 5,486 m. Failure consisted of any symptoms (pain) or physical findings of barotraumas (aerosinusitis or aero-otitis media). Results revealed a 22.5% failure rate. The findings indicate this type of 'Medical Barofunction Test' is a practical adjunct to the clinical evaluation of the aviator. The profile is safe and free from serious dysbaric episodes experienced above 7,620 m. Follow-up studies revealed the incidence of false negatives to be only 8% by the LPC test. The findings are not significantly different from the medical disqualification rate of a normal student aviator comparison group" (5).

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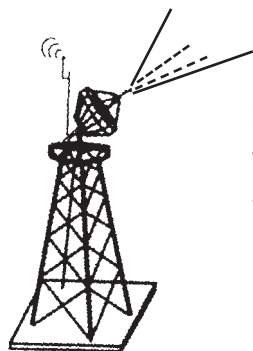
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Science & Technology Watch

The Resurgence of Tactile Display Technologies

Bob Cheung, Ph.D., DRDC Toronto, Canada

Based on the electrophysiological, histological, and behavioral evidence available from birds, opossums, rats, deer mice, rabbits, cats, and humans, Gottlieb (10) concluded that the ontogenetic sequence in which sensory systems develop is tactile-vestibular-auditory-visual. Available behavioral evidence has suggested that human fetus tactile sensitivity is evident around the seventh week after fertilization. The skin is the human body's largest organ; it covers an area of 1.8 m² when spread out in an average adult. There are several cutaneous end organs in the skin that are responsible for transducing tactile stimuli into neural signals. Merkel's disc, Ruffini's endings, and Meissner's corpuscles (named after their respective discoverers) found in the upper regions of the dermis have all been implicated in the senses of touch. Individual nerve fibers forming a single nerve trunk at each vertebral level before entering the spinal cord carry all the information from the skin. The skin has about 1.1 million axons terminating in the central nervous system, providing continuous feedback to the brain. A systematic topographic projection from the skin of different regions of the body has been mapped. The pattern of representation is commonly known as the homunculus, a figure in which areas of the body that are highly innervated (lips, tongue, finger tips, feet, and genitals) are represented by a larger cortical area; while body areas that are less sensitive have poorer innervation and, therefore, are poorly represented. It is not surprising that the senses of touch have been used extensively in the training of visually- and hearing-impaired persons in the last two centuries to compensate for their respective sensory deficits.

Historically, Charles Barbier de la Serre, a French Army captain, invented the basic technique of using raised dots for tactile reading and writing (3). The original objective was to allow soldiers to compose and read messages/command orders at night without illumination. The raised dots represented words according to how they were sounded rather

than how they were spelled; and it was known as sonography. In the early 1800s, Louis Braille further developed the method of touch reading and writing based upon normal spelling into the Braille system as we know it today. The general concept and specific benefits of the Braille system remain relatively unchanged and unchallenged, but have been complemented by the increase of speed and automation through available electronics and computing power. For example, a tactile vision-substitution system (1) was designed to present optical patterns to the skin of the back. An optical to tactile converter called Optacon was developed to present patterns obtained from text registered by a camera directly to the fingertip (2). It serves as a reading machine that provides vibrotactile spatial temporal patterns of alphabet letter shapes.

Similarly, numerous forms of prosthetic devices using the skin as an alternative sensing system have also been developed for the deaf. In 1927, Gault (9) developed a teletactor, a device that presented patterns to the fingers of the deaf. Single and multipoint tactile aids designed to present analogues of the acoustic waveform in a one-dimensional array to the volar forearm were developed (4, 8). Both the linear electrocutaneous belt (16) and the two-dimensional multipoint electrotactile speech aid (18) displayed similar electrocutaneous patterns to the abdomen. Craig and Sherrick (7) developed dynamic arrays for tactile pattern presentation. Deaf students also learned to feel the vibrations of the pulsations of a balloon or face and throat which led to the development of vibrotactile aids (tactaid 7) that employ a linear array of tactors presenting vibration on the chest and the nape of the neck (14,19).

There have also been many attempts to improve navigational ability when vision is unavailable. The oldest and most successful device is the long cane used by the blind. In this case, tactile cueing can provide a natural correlation between the distal environment event and the proximal cue that is felt. In 1989, Rupert et al. suggested that a tactile interface could be used as a "more natural" approach to convey position and motion perception during flight. Since the tactile orientation cues have a well-defined midbrain architecture, fast robust responses, and minimal demand on cognition, the touch sensation is an ideal candidate to provide continuous, intuitive veridical (truthful) orientation information. The tactile situation awareness system (TSAS) has been used successfully to present flight information in fixed and rotary winged aircraft (12,13,15). The system reads data from current aircraft systems, processes them, and relays designated information using miniature tactile stimulators called tactors embedded in a vest. More recent studies also demonstrated that the TSAS can convey meaningful information within specific situations such as maintaining high hover and simulated ship borne landing (5,11,17). It also has the potential to provide non-cockpit crewmembers with aircraft position during land/water rescue, threat, and the tracking of obstacles. Similarly, it has the potential to assist special tactical forces during ground navigation, silent communication, and to keep track of comrades in the dark during combat operations. Communications among soldiers on the ground presents many challenges, especially when vision is unavailable, as anticipated by Barbier de la Serre over 200 years ago. Soldiers must clearly understand infor-

mation about threats and commands because miscommunication can leave them vulnerable to attack and a wrong response can be deadly. For example, in covert or urban operations warfare, soldiers may inadvertently reveal their positions if communication based on hand signals becomes ambiguous in reduced light or environments with high visual clutter. Other proposed applications have been extended to maintaining orientation for vestibular patients or the elderly, for astronauts during extravehicular activities, or for divers during undersea explorations. It can be also of benefit during critical phases in acquiring flight information with future UAV (unmanned aerial vehicle) systems.

Most of the previous tactile-actuator research employed simple pager motors consisting of an eccentric weight attached to a small electric motor. There remains much to explore in terms of other suitable tactor schemes. A number of emerging technologies in the field of functional materials have spurred the development of miniaturized high output actuators for aerospace applications. These actuators feature low weight, small volume, and large force or displacement output with digital control characteristics. While the concept of using functional materials in a tactile micro-actuator appears straightforward, research is required to develop the design tools that will optimize the relationship between the actuator material and the deformed surface to obtain a micro-tactor that can effectively stimulate the human sensory system. In addition, the types of tactile stimuli studied have been generally limited to brief pressure pulses or "touches" perpendicular to the skin surface. Research on the effectiveness of longitudinal touches parallel to the skin surface that can provide intensity and direction simultaneously is lacking. In conjunction with tactor development, the type of coded message that can readily be perceived through the sensation of touch and whose meanings are intuitive or at least intelligible within their context need to be investigated. Although substantial advances have been made in recent years, not enough is known about the psychophysiological characteristics of skin. In order to design an efficient device for tactile communication, quantitative estimates of information transfer such as the rate of transfer available via the skin must be determined.

Compared with the volume of research on the visual, auditory and vestibular systems, research on cutaneous mechanoreception has been relatively limited. The majority of the work done with touch found that localization of the sensory cue appeared to be better when the stimulus touched the skin close to joints such as the wrist or elbow (6). However, operational communities require mobile limbs and free hands for normal activities, making fingers and arms poor candidate sites. Emphasis was thus placed on the abdomen. This is an important body site with regard to self-location; the trunk midline constitutes the physical anchor for calculation of the internal egocentric coordinate frame for representing body position with respect to external objects. However, mission requirements demand the flexibility of adopting different postures other than walking or standing upright. Alternate sites for tactile application must be sought.

The use of tactile cues is often misconstrued as a total replacement of vision, but the original objective is to supplement vision

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when vision is limited or unavailable. Nevertheless, the interactions of the touch sensation with other sensory systems should be investigated. In addition, the masking of one sensation when the two stimuli are presented in close temporal or spatial proximity remains to be explored. Cognitive factors such as attention, motivation, learning or task demands also have to be taken into account. In summary, it appears that the skin can provide a rich alternative input channel for those whose visual and auditory sensory channels are unavailable, disabled, or overloaded in multi-environment applications.

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The AsMA Science and Technology Committee provides this Science and Technology Watch Column as a forum to introduce and discuss a variety of topics involving all aspects of civil and military aerospace medicine. The Watch can accommodate up to three columns of text, which may include a figure or picture to illustrate your concept. Please send your submissions via e-mail to: Len.Goodman@drdc-rddc.gc.ca.

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Aerospace Medicine Residency and Internal Medicine/Aerospace Medicine Openings - Applications are now being accepted for the UTMB/NASA-JSC Aerospace Medicine Residency for July, 2005. The two-year program trains physicians in operational and research aspects of space medicine, manned space flight and comprehensive aerospace medicine topics. Residents participate in mission-oriented medical operations at JSC, receive clinical training in space medicine and complete a research project. Upon completion of the program, residents earn a Master of Public Health in Preventive Medicine degree. The program is accredited by the Accreditation Council for Graduate Medical Education and is one of three Preventive Medicine residency programs offered at the University of Texas Medical Branch. The MPH program is also accredited by the Council on Education for Public Health. Qualified applicants must have completed at least a PGY-1 clinical year in an ACGME-accredited residency with six months of direct patient care. Applications are also being accepted for the combined Internal Medicine/Aerospace Medicine Residency. A PGY-1 clinical year is not required for this residency. Deadline for applications: October 31, 2004. Visit our web site at www.utmb.edu/pmr or Contact: Yvette Schulz, Office of Preventive Medicine Residencies, UTMB, 301 University Boulevard, Galveston, Texas, 77555-1150. Phone: (409)772-5845. Fax: (409)747-6129 for detailed information. The University of Texas Medical Branch is an equal opportunity/affirmative action employer. M/F/D/V.

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AEROSPACE PHYSIOLOGY REPORT

Five Earn 2004 Aerospace Physiology Certification

The certification examination in aerospace physiology was administered on Sunday, May 2, 2004, in Anchorage, AK. Five of the seven candidates successfully completed the 8-hour test session. Following approval of the Aerospace Medical Association Council, **LT Anthony Artino, USN; Maj. Rainer Kowoll, GAF; LT Darian Rice, USN; LCDR G. Merrill Rice, USN; and LT Barry Shaddix, USN**, were granted certification in Aerospace Physiology. The five scientists' achievements were recognized during the Aerospace Physiology Society's luncheon and business meeting held on Wednesday, May 5. Each received a certificate signed by the president of AsMA and the Chair of the Certification Board, and a gold "pO2" pin signifying their accomplishment. The five scientists, along with the previously certified scientists, are also authorized to make use of the recently approved trademark, "CASP", for certified Aerospace Physiologists.

Individuals interested in meeting the challenge of board certification in aerospace physiology may read more about the application process in the November issue of *Aviation, Space and Environmental Medicine*.

LT Anthony Artino, MSC, USN

LT Anthony R. Artino, Jr., is a native of Niantic, CT. He attended Rensselaer



Polytechnic Institute on a NROTC scholarship and earned a B.S. in biomedical engineering in 1995. Following his undergraduate education, LT Artino took a leave of absence from the Navy and received his M.S. in cardiopulmonary and high altitude physiology from

Colorado State University. He was commissioned in December of 1996.

Prior to his commissioning, LT Artino worked as a lab technician for Pfizer Pharmaceutical Inc., where he assisted in methods development and analytical analysis of new pharmaceuticals to ensure drug potency and stability. During his graduate training in physiology, he conducted his thesis research at the NASA-Ames Research Center, investigating an exercise device designed for use aboard the International Space Station. Following graduate school, LT Artino taught undergraduate and graduate courses in flight physiology and human factors in aviation safety for Embry-Riddle Aeronautical University, and served as an academic and faculty advisor.

Following initial aerospace physiology training in Pensacola, FL, LT Artino's first assignment was at the Aviation Survival Training Center aboard MCAS Miramar. He served as both the Administrative and Training Division Officer. In this capacity, he provided high risk, aviation survival training

to more than 7,500 students; supervised the daily operation of a U.S. Navy altitude chamber; and designed, developed, and implemented an administrative database which greatly enhanced the department's ability to schedule and track over 5,000 students annually.

He next served as the Aeromedical Safety Officer for Commander, Airborne Early Warning Wing, U.S. Pacific Fleet aboard NAS Point Mugu. He was also the operational advisor for the Naval Health Research Center's E-2/C-2 Human Vibration Study.

LT Artino currently serves as the Director of Human Performance and Training Technology at the Naval Survival Training Institute aboard NAS Pensacola. In this capacity, LT Artino is responsible for updating curriculum for the Naval Aviation Survival Training Program (NASTP) and developing all advanced training technologies. Some of his projects include implementation of a fleet-wide simulator physiology curriculum, design and development of numerous database systems to improve information management throughout the NASTP, and creation of a reduced oxygen breathing device curriculum to supplement the current low pressure chamber hypoxia training. Additionally, LT Artino is responsible for test and evaluation of new and/or modified aviation life support equipment, training devices, and egress, survival and rescue procedures for the NASTP, Naval Air Systems Command, and other programs throughout the Department of Defense.

LT Artino received two Navy and Marine Corps Achievement Medals, the Wiley Post Award for Excellence in Operational Physiology, Aerospace Physiology Society President's Award, and the Medical Service Corps Director's Award. He is also a member of numerous honorary and professional societies, including the Aerospace Medical Association (AsMA), Aerospace Physiology Society (AsPS), Society of U.S. Naval Aerospace Physiologists (SUSNAP), Association of Medical Service Corps Officers of the Navy, Tau Beta Pi Engineering Society, Sigma Xi Scientific Research Society, and Phi Kappa Phi Honor Society. LT Artino is a plank owner, Historian, and Editorial Team Member for SUSNAP, is a member AsMA's Communications Committee, and is the Webmaster for AsPS.

Maj. Rainer Kowoll, GAF, MC

Maj. Dr. med. Rainer Kowoll, GAF, MC, entered the Medical Corps of the German Air Force in 1988. With a scholarship of the Bundeswehr (German Federal Armed Forces) he studied at the Medical School of the University of the Saarland in Homburg. He finished his studies by successfully passing the state examination in 1996. After completing his thesis in ophthalmology he was promoted and obtained a Ph.D. ("Dr. med.") from this institution.

At the same time, he was able to complete a 4-year study course in sports sciences and



physical education and obtained a master's degree ("Diplom-Sportlehrer") from the Institute of Sports Sciences of the University of the Saarland in Saarbruecken.

In 1996 he started as a Junior House Officer (and later, Senior House Officer) in the Department of Internal Medicine at the Hospital of the Bundeswehr Berlin.

He began training as a flight surgeon in 1998 and served for 4 years at the Division of Aviation Physiology of the German Air Force Institute of Aviation Medicine (GAFIAM) in Koenigsbrueck. During that time he was involved in the selection process of pilot candidates, as well as in teaching and training courses for military pilots and parachutists. Besides giving lectures on aviation physiology, he focused his work mainly on research in altitude exposure with a hypobaric chamber, acceleration forces in a human centrifuge, and nutritional aspects of flying personnel. Several scientific studies were conducted under his guidance when he initiated investigations on aspects of balance training and spatial disorientation, modified altitude training ("living high - training low"), and the occurrence of G-LOC during acceleration training on a human centrifuge.

Following a 1-year assignment at the Medical Office of the Bundeswehr in Munich he started post-doc specialist training in applied physiology at the Center for Space Medicine Berlin in the Department of Physiology at the Campus Benjamin Franklin of the Charité - Universitaetsmedizin Berlin in autumn 2003. He is currently working on studies in the field of altitude physiology, effects of water immersion on the human body, and military fitness issues.

LT Darian Rice, MC, USN

LT Darian Rice received his Bachelor of Science degree in biology (cum laude) in 1994 from Virginia Commonwealth University in Richmond, VA. The following year he completed paramedic training at Tidewater Community College and was certified as a Nationally Registered Paramedic. He was then accepted into the combined



M.D./Ph.D. program at Eastern Virginia Medical School in Norfolk, VA. Upon acceptance
See AsPS CERTIFICATION, p. 928.

AsPS CERTIFICATION, from p. 927.

tance, he received his commission as an Ensign in the Medical Corps, U.S. Naval Reserve in 1995, and entered service under the Health Professions Scholarship Program. He completed Officer Indoctrination School in Newport, RI, in 1995, graduating with Honors, and then began medical school in August 1995. Following the first year of medical school, LT Rice spent 3 months on active duty with SEAL Team 4, Naval Amphibious Base, Norfolk, VA, where he instructed Combat Life Support, completed training in Wilderness Trauma Life Support and High-Angle Rescue for Special Operations, and earned Expert Rifle and Pistol qualifications. Later, during his 4th year of medical school, LT Rice completed a 1-month rotation at the Casualty Care Research Center, Uniformed Services University of the Health Sciences, Bethesda, MD, where he developed medical threat assessments in support of a Presidential Protection Detail, and in preparation of an FBI-Hostage Response Team mission. He also completed the Counter Narcotics Tactical Operations Medical Support (C.O.N.T.O.M.S.) course and published a review article entitled, "Terrorist Bombings: Ballistics, Patterns of Blast Injury and Tactical Emergency Care." LT Rice received his M.D. in 1999, and subsequently completed his Ph.D. in biomedical sciences. LT Rice pursued the track of systems biology and biophysics and emphasized training in cardiovascular physiology. His dissertation involved the characterization of the molecular pathway by which vascular smooth muscle cells detect and respond to the pressure of their environment, and then direct coordinated functional and structural arterial remodeling. Because arterial remodeling occurs during prolonged spaceflight, LT Rice was invited to present his findings at the NASA Center for Advanced Space Studies. He was awarded a NIH Predoctoral Fellowship to complete this research.

Upon graduation in 2002, LT Rice completed a transitional internship at the Naval Medical Center, Portsmouth, VA. During his internship, he was the winner of the NMCP 18th Annual Research Competition for a poster presentation entitled "Pressure Mechanotransduction in Isolated Resistance Arteries." Following internship, he served as an Associate Investigator at the Naval Aerospace Medical Research Laboratory, Pensacola, FL, where he has been active in developing protocols to evaluate human cognitive performance under hypoxic conditions. Using the Reduced Oxygen Breathing Device (ROBD), NAMRL has been able to reproduce altitude-related hypoxia in the lab and test subjects without the inherent risk of the hypobaric environment. LT Rice expanded this capability by developing procedures to incorporate flight simulators in hypoxia research. He was thus able to implement a ground-based means of detecting decrements in flight performance and/or cognitive function that may occur at altitude. In the near future, such technology will be transitioned to the fleet as a means to refamiliarize aircrew with the sensation of hypoxia, permit preconditioning for operations at altitude, and improve overall safety in the cockpit. In addition to this study, LT Rice has been a primary investigator in a study to evaluate a new PC-based flight simulator syllabus as an adjunct to compliment the current primary flight curriculum.

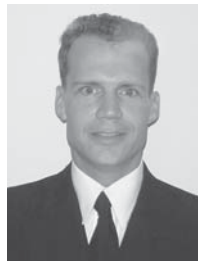
LT Rice recently completed the Naval

Flight Surgery program in addition to his research at NAMRL, and is currently serving as a Wing (CVW-17) Flight Surgeon aboard the *USS J.F. Kennedy* supporting Operation Iraqi Freedom in the Gulf. Upon his return, he will hold a staff position at the Naval Aerospace Medical Institute, Pensacola, FL.

LT Rice's personal awards include the Navy and Marine Corps Achievement Medal for research performed while serving at the Naval Aerospace Medical Research Laboratory.

LCDR G. Merrill Rice III, MC, USN

LCDR G. Merrill Rice III is a board certified aerospace and preventive medicine physician. He received his Bachelor of Science from



Purdue University in 1990, and a Doctorate in Osteopathic Medicine from Ohio University in 1996. He later earned a Masters of Public Health from Johns Hopkins University. He holds Naval designations in flight surgery and undersea medicine.

He is currently a principal investigator at the Naval Aerospace Medical Research Laboratory, Pensacola, FL, where he has received over one half million dollars in research funding over the last 3 years.

LT Barry Shaddix, MSC, USN

LT Barry Shaddix was born in Monterey, CA, and moved around the country growing up as a military brat. After settling down and



completing high school in Keystone Heights, FL, he moved down the road to Gainesville to attend the University of Florida where he completed a B.S. in Engineering Science. He then attended graduate school at Louisiana Tech University where he earned his M.S. in

Biomedical Engineering. LT Shaddix was commissioned in September of 1997 and began his naval career at Officer Indoctrination School in 1998 in Newport, RI.

In February of 1999, LT Shaddix was designated Naval Aerospace Physiologist number 234 aboard Naval Air Station (NAS) Pensacola, FL. As a newly winged Aerospace Physiologist, LT Shaddix was sent to NAS Jacksonville, FL, for his internship at the Aviation Survival Training Center (ASTC). Upon completion of his internship, he served as interim department head for the ASTC from May to August of 2000.

LT Shaddix left Florida in August of 2000 for Yuma, AZ, where he worked as the Aeromedical Safety Officer for Marine Aircraft Group Thirteen (MAG-13). In October of 2002, LT Shaddix completed an MBA from Webster University through the satellite campus aboard Marine Corps Air Station (MCAS) Yuma. In January of 2003, he deployed with the MAG to the North Arabian Gulf aboard the *USS Bonhomme Richard* in support of Operations Enduring Freedom and Iraqi

Freedom.

As the initial hostilities subsided in May of 2003, LT Shaddix was reassigned to NAS Pensacola, FL. LT Shaddix is currently Department Head, Parasail Training Department at ASTC Pensacola.

LT Shaddix' awards include the Navy Achievement Medal, Global War on Terrorism Expeditionary Medal, and Presidential Unit Citation. He is a member of numerous professional and honorary societies including the Aerospace Medical Association, Aerospace Physiology Society, Society of U.S. Naval Aviation Physiologists, Theta Tau Professional Engineering Fraternity, and the Biomedical Engineering Society.

2004-05 MEETINGS CALENDAR

October 27-30, 2004, Port of Acapulco, Guerrero, Mexico. XXI International Meeting of Aerospace Medicine. Theme: Human Factors and Aerospace Medicine. Sponsor: Aviation Medicine Association of Mexico. Info: Claudia Palomeque ó Azucena Laguna, Tel.: 5575-1860, 5575-7295 y 1994-3691; cpalomeque@grupodestinos.com.mx; alaguna@grupodestinos.com.mx.

January 26-29, 2005, Long Beach, CA. The 13th Annual Medicine Meets Virtual Reality Conference, organized by Aligned Management Associates, Inc. Info: www.nextmed.com/mmvr_virtual_reality.html; mmvr13@nextmed.com.

July 22-27, 2005, Las Vegas, NV. 11th International Conference on Human-Computer Interaction. Further info: HCI International 2005, School of Industrial Engineering, Purdue University, Grissom Hall, 315 N. Grant St., West Lafayette, IN 47907; hcii2005.engr.wisc.edu

September 15-18, 2005, Gold Coast, Queensland, Australia. Conjoint Meeting of the Australasian Society of Aerospace Medicine (ASAM) and the Asia Pacific Federation of Aerospace Medical Associations (APFAMA). This meeting represents the Annual Scientific Meeting of ASAM, together with the 5th Asia Pacific Congress of Aerospace Medicine (AP-CASM). Contact: Anne Fleming, ASAM Secretariat, +61 3 98991686. fleminga@bigpond.net.au; www.asam.org.au.

"The First International Congress on Space Medicine Issues in the 21st Century" sponsored by AsMA and its Corporate and Sustaining Affiliate group, will be held in Bellagio, Italy from 18-21 October, 2004.

Limited space is available for additional participants. Anyone interested in attending or wanting further information, please contact Dr. Marian B. Sides at: mbsides3@myexcel.com.

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SPACE MEDICINE BRANCH REPORT

A Message from the President

Dear friends and colleagues, I hope everyone had a most successful and safe summer and you have now settled in for the cooler times of the fall season. My family was very fortunate this summer to visit many historic sites in the Eastern U.S., including museums in Gettysburg, PA; Petersburg, VA; Charleston, SC; and Savannah, GA. Many adventures were had and meaningful lessons learned, especially from those resolute and brave folks of the 1860s. I am humbled by the hardships in uniting a nation divided by polarities of purpose and am grateful that our membership has such a fine and steadfast group of diverse interests.

My present duty is to inform you of the overall condition of the Space Medicine Branch (SMB), report on the activities of our Executive Committee, and discuss our goals for 2005. I'm very happy to report that the SMB is in a state of excellent health. This is largely due to the hard work our past presidents and most recently, Annette Sobel and her team of officers, committee members, and the many volunteers who helped make the 2003-04 term and Convention truly outstanding.

I would like to thank Dwight Holland for his outstanding "Renaissance man" approach to our organization as Sec-treasurer for the past 2 years. The SMB is now almost 200 members strong and the work of the Sec-treasurer has grown exponentially. For this reason, the SMB successfully amended the Constitution and By-Laws to form two posi-

tions. Phil Scarpa and Robin Dodge were instrumental in this action and for the first time the SMB has a newly elected Secretary, Alan Moore and Treasurer, Genie Bopp. Dwight Holland is our Vice President and our newly elected members-at-large are Judith Hayes and Jeff Jones. This kind of team makes my job much easier and fun.

The SMB has many active committees that truly make a difference and one of my priorities is to expand their roles and strengthen their membership. This is especially true for our International Committee. Our organization is truly multi-cultural, which is most evident in the work of our 16 International Partners for the International Space Station program. It was also emphasized by Dr. Melchor Antuñano, on his President's Page in July, where he points out that AsMA membership consists of more than 3,000 individuals from more than 80 countries around the world. You'll be hearing much more about our committees and activities in subsequent SMB articles. I would also encourage any members who would like to become more involved to please get in touch with our Secretary, Alan Moore, or me.

We will be conducting a meeting of the SMB Executive Committee on Friday, November 19th, following the next AsMA Scientific Program Meeting in Alexandria, VA. We are hoping to have as many of our committee representatives as possible including the following: Nominating, Awards, Program, Policy, Education, International, Membership, History, and Corporate.

Speaking of Committees, I would like to recognize the stellar work of Jeff Myers for his continued contributions to the Awards Committee and his recent SMB article. This article is illustrative of our organization's continued leadership in education, research, and the clinical practice of Space Medicine.

Another major goal the SMB will be undertaking is the development of a position paper on the critical path countermeasures, medical care needs, and capabilities development for the incremental establishment of a permanent four- to six-person presence on the International Space Station, the Moon, and Mars. The hope is to accomplish this over the next 2 years working with Society of NASA Flight Surgeons, whose President Dr. Joseph Kerwin, and a former SkyLab Astronaut, might have a few thoughts on the subject!

In closing, I would simply like to say thank you to all who have endeavored to make a difference as aerospace pioneers, especially in these difficult times of our Human Space Program in returning to flight for the Space Shuttle program, sustaining the International Space Station, and tackling the ultimate questions to decide where and how we go from here. And thank you to all those serving in military and civilian agencies trying to keep our planet safe.

We have tremendous opportunities and challenges before us and I look forward to working with you all. Hope to see you in Alexandria in November and in Kansas City in May 2005. My very best, and be safe -

Smith

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www.aerospacenursingsociety.org

AEROSPACE NURSING SOCIETY NEWS

I hope all of you are having an enjoyable year. Don't miss the deadline for abstract submissions: October 28. The AsMA Scientific Program Committee will be meeting in Alexandria November 18 -19 to review those abstracts and panel submissions. If any of you would be interested in joining the ANS scientific program committee in the peer review of air transport/nursing abstracts we welcome you. There are usually several nurses there who can mentor you in the process. We need to get more of you ANS members involved. Feel free to contact Colleen Morsiette, ANS President, for more information. Her contact information is on the ANS website: www.aerospacenursingsociety.org; her new e-mail is colleenmorsiette@hotmail.com.

Keep Your ANS Membership Current

Please send dues payment (\$10 for nurses, \$5.00 for allied health members) to the ANS Treasurer: Diane Fletcher, PSC 2, Box 10849, APO AE 09012. Please email any change of address to Diane at: [\[stein.af.mil\]\(mailto:stein.af.mil\). Remember, to be eligible for ANS awards you must be a member in good standing. Also, the Marshall Scholarship is available annually to members of ANS.](mailto:Diane.fletcher@ram-</p></div><div data-bbox=)

ANS Awards

It is never too early to submit awards nominations to the ANS Awards chair, the deadline is 15 March, but why not start now and get them in early. Information on the various awards is listed on the ANS web site. These include junior nurse, non-flight nurse award, and technician/allied health professional, as well as for the best scientific paper presented by an ANS member at the annual AsMA meeting. You may need to advise your peers and supervisors about these awards for which you, as a member, are eligible.

We Need Your Stories

This is our page and I would like to hear from our members and showcase the various assignment settings in which you are involved. This will be a way of promoting the unique field of aerospace nursing that includes so much more than the transport of patients.

For example, some members are also working with maintaining the health and wellness of those working in aerospace and aviation. You may also submit your aviation nursing experiences to Pat Ravella, editor of the *Reflections of Flight Nursing* feature. Information on *Reflections* is on the ANS web site. It has been a while since she has received any submissions. I'm sure each of you has had a special patient or mission that required special considerations for a positive outcome, required decision-making involving the nursing process, or you have learned lessons that could benefit others. If you need help, contact Pat, she makes getting your reflections into print easy. What we do every day in aerospace nursing takes special skills. We need to share them, so others can learn to be patient advocates as well. Our global society has become very mobile, and air travel is commonplace. We as trained flight nurses should be advocates to help educate the traveling public about their need to make adaptations when they travel if they have certain medical conditions. Send any comments for this page to Eileen.Hadbavny@hadbavny@usit.net.

WING NEWS & NOTES

Send information for publication on this page to:
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Wing Travels and Tours are Always Surprising

By Harriet Hodgson

Wing membership has taken me to unique places. In Anchorage I visited the Alaska Native Heritage Center. The center's slogan is "Explore the past, experience the people." I saw tribal dances, examples of native homes, artwork and crafts, and toured the museum.

For me, the most memorable part of the museum was the Inupiaq code of ethics. The ethics were printed on a poster next to a display case. A native guide saw me studying the list. "May I help you?" he asked.

"Thanks, I don't need any help," I replied. "I'm fascinated by this code of ethics - they apply to everyone." Ethics are passed down from one generation to the next, the guide explained. We chatted briefly and I moved on to other exhibits. But the code of ethics lured me back, and I wrote them down.

Inupiaq, St. Lawrence Island Code of Ethics

- 1 Knowledge of language
- 2 Sharing
- 3 Respect for others
- 4 Cooperation
- 5 Respect for elders
- 5 Love of children
- 7 Hard work
- 8 Knowledge of family tree
- 9 Avoid conflict
- 10 Respect for nature
- 11 Spirituality
- 12 Humor
- 13 Family role
- 14 Hunter success
- 15 Domestic skills
- 16 Humility
- 17 Responsibility to tribe

When the guide saw me with pencil and paper in hand, he approached me again. "I had to come back and write down these ethics," I said. "Do you mind?"

"No, you're welcome to copy them," he answered.

"I wish more teens understood number five and respected their elders," I joked. "Guess I sound like a grandma."

"Number nine is my favorite," he replied. "In our climate and in close quarters, we need to do all we can to avoid conflict."

Before I left the museum I visited with another guide. I told her how moved I was by the Inupiaq code of ethics. "Some ethics are harder to learn than others," she said. "Learning my role in the family was hard for me." Then she told me a story.

One summer, when she was five years old, her grandmother asked her granddaughter to help her pick berries. The girl refused, so her grandmother picked berries by herself. Come winter, however, when the family ate the sweet berries, the girl received none. "I learned my lesson. It was a hard lesson

and I've never forgotten it," she said. "The next summer I picked berries with my grandmother."

If I didn't belong to the Wing I wouldn't have learned about the Inupiaq Code of Ethics or talked with native guides. Every Wing meeting has its own surprises, and Kansas City will, too. Watch for the registration form in the journal and register right away. Good food, good tours, and good friends await you.

Dayton and Aviation Hall of Fame Awards

By Lois H. Moser

On July 15th, 2004, Royce and I flew to Dayton, OH, to attend the 2004 National Aviation Hall of Fame Awards. What an experience! It was a joy and a privilege to be among so many aviation heroes, veterans, and aerospace celebrities. Everyone was so very interesting, friendly, and humble.

On Friday evening, July 16th, we joined 600 guests (22 of us who represented AsMA) in the Air Force Museum at Wright Patterson AFB for the presentation of the Milton Caniff "Spirit of Flight" Award to the Aerospace Medical Association. It was with great pride



WING BOARD 2004-2005

that we heard Neil Armstrong recognize the history and significant contributions to the field of aviation that have been made by AsMA. He then presented the award to Russell Rayman and Melchor Antuñano. Russell accepted the award with eloquent and heartfelt words. Melchor spoke of the pride the members of AsMA felt in receiving this award.

Among the others attending were Ludy Rayman, Sandy Antuñano, Stan and Ursula Mohler, Dave and Nevonna Schroeder, the Northrups, Mary Foley, Royce Moser and myself.

The following evening, eight of us, representing AsMA, were among the 800 guests who attended the black tie 43rd Annual Enshrinement Dinner and Ceremony held at the Convention Center. Mary Foley was there with the 99ers. There was a presentation of Colors by the Wright-Patterson AFB Honor Guard, and we were welcomed by Maj. Gen. Clyde Autio, USAF(ret.), National Aviation Hall of Fame President. They then showed a video of the previous evening's presentation of the "Spirit of Flight" Award to AsMA by Neil Armstrong, and the acceptance speeches. Master of Ceremonies, Dennis Quaid, then introduced the presenters of the inductees to the National Aviation Hall of Fame. Introduced in turn, the honorees were Harriet Quimby, William Anders, Jack Ridley, and Patty Wagstaff.

Those of us who attended were very impressed with the National Aviation Hall of Fame, the guests and the honorees, and the Aviation Museum at Wright Patterson AFB. Several of us returned there during the day on Sunday to absorb more of this newly enlarged facility.

P.S. Check out the photo gallery on the AsMA website! On the "What's New" page there's a link to the photo gallery in the article on the Aviation Hall of Fame.

2004-2005 Wing Officers & Committee Chairs, Kansas City Meeting

President	Harriet Hodgson	Registration	Jackie Jordan
First Vice President	Trish Trifilo	Registration Co-Chair	
Second Vice President	Conoly Barker	Advance Registration	Trish Trifilo
Immediate Past President	Lady Mary Baird	Publicity	Dale Orford
Secretary	Suzanna Bellenkes	Honorary Membership	Joan Marinelli
Treasurer	Jenifer Faulkner	Resolutions	Jan Davidson
		Arrangements	Harriet Hodgson
			Mariette Jones?
Board Members at Large		Nominating Committee	Marilyn Brath
International	Suzanna Bellenkes		
Civilian	Judy Kowolsky	Arrangements Subcommittees	
Air Force	Josephine (Jo) Ivan	Hospitality	Ludy Rayman
Army	Jennifer Crowley	Hospitality Co-Chair	
Navy	Emerita (Emmy) Ramos	Luncheon	Yvonne Silberman
		Luncheon Co-Chair	Harriet Hodgson
Appointed Officers		Reception	Paula Landry
Parliamentarian	Helen Lestage (final year)	Tours	Harriet Hodgson
		Favors	Susi Collins-Howgill?
Standing Committee Chairs		Special	
Membership	Judy Waring	Honorary President	Sandi Antunano
Newsletter	Mitzi Hansrote		
Wing Web Site	Shannon Laughrey		

ETC Applies for Japanese Patent on New Generation GYROLAB

Environmental Tectonics Corporation (ETC) has applied for a Japanese patent on the GYROLAB technology. This patent application covers the enabling technologies, including motion and motion control, for this device to deliver high-quality Spatial Disorientation training to high performance jet pilots and for entertainment applications.

The GYROLAB combines the latest available flight simulation technology, including simultaneous ± 360 degree motion in pitch, roll, and yaw; planetary, real-world out-the-window visual; realistic engine and flight sounds; detailed cockpit with closed loop flight controls; and high-fidelity flight models. Force feedback control loading is included to provide the pilot with the most realistic flight experience short of actually flying the aircraft. The GYROLAB's ± 360 -degree motion capability and its planetary motion, which gives it the capability to generate up to 3.0 Gs, make it the most realistic and effective flight trainer available today. Since all axes of motion can be used simultaneously, the GYROLAB can accurately reproduce the motion cues that cause pilots to mistake their aircraft position and motion with respect to the Earth's surface. This error is called spatial disorientation (SD), and it costs many pilot lives and accounts for approximately 1/3 of all military aircraft accidents worldwide.

The GYROLAB includes more than 20 fixed-wing training profiles and eight helicopter profiles that are flight-realistic and fully automated. These training profiles provide pilots with the means to recognize and avoid - or successfully recover from - spatial disorientation. ETC's proprietary Interactive Profile Editor allows pilot instructors to create their own training profiles, thereby making the GYROLAB a trainer that can keep pace with changing training requirements throughout its life cycle. Converting the GYROLAB from its fixed-wing configuration to a helicopter configuration can be achieved in less than 5 minutes.

ETC's exclusive technology is proven and recognized around the world as the only product that is able to accurately and repeatedly reproduce actual flight motion cues. ETC's unique knowledge of human physiological responses to motion and visual stimulations, combined with our motion control and design expertise, has resulted in ETC becoming a world leader in aeromedical simulation and training.

William F. Mitchell, ETC's President and Chairman, noted that, "ETC expects that the Japanese market for GYROLAB will expand in the near future as the economy of Japan rebounds. In order to serve this market and to provide immediate after-sales service of fielded products, we have opened a North Asia Sales office near Tokyo."

ETC designs, develops, installs and maintains aircrew training systems, public enter-

tainment systems, process simulation systems, (sterilization and environmental), clinical hyperbaric systems, environmental testing and simulation systems, and related products for domestic and international customers.

For further information visit
www.etcusa.com.

GSK Submits Biologics License Application for FDA Approval of Boostrix™

GlaxoSmithKline (GSK) has submitted a Biologics License Application (BLA) for Boostrix™ [Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine, Adsorbed (Tdap)], to the United States (U.S.) Food and Drug Administration (FDA). GlaxoSmithKline is seeking U.S. marketing approval for the booster vaccine candidate, a similar formulation of which is available in Australia and a number of countries in Europe, South America, and Asia, as a vaccination against the diseases diphtheria, tetanus, and pertussis. Currently, pertussis vaccination in the U.S. is available only to children below the age of seven. Boostrix was developed to offer extended protection against pertussis to adolescents between the ages of 10 and 18 by combining a pertussis vaccine with the routine tetanus/diphtheria booster.

Cases of pertussis have increased since the mid-1970s. In fact, pertussis is the only disease

for which children are routinely vaccinated that is currently on the rise in the U.S., with approximately 10,000 cases in 2003 -- the highest number of cases reported to the Centers for Disease Control and Prevention (CDC) in more than 35 yr. According to the CDC, from 1997 to 2000, about one-third of all reported pertussis cases occurred in adolescents 10 yr of age or older. Adolescents, in whom classic signs and symptoms of pertussis are often absent, may go undiagnosed and be the source of infection for susceptible infants and other family members.

"We are delighted that our efforts to develop a Tdap vaccine have resulted in filing a BLA with the FDA. GlaxoSmithKline is seeking approval for this new booster vaccine which would help address a large unmet need and offer important protection against pertussis where the disease is growing the most -- the adolescent population," said Barbara Howe, M.D., vice president, Clinical Research and Development and Medical Affairs, Vaccines North America, GlaxoSmithKline.

GlaxoSmithKline, with U.S. operations in Philadelphia, PA, and Research Triangle Park, N.C., is one of the world's leading research-based pharmaceutical and healthcare companies and is committed to improving the quality of human life by enabling people to do more, feel better and live longer.

NASA/KSC Unveils Personal Cabin Pressure Monitor

The NASA Kennedy Space Center (KSC) has announced a new innovation: The Personal Cabin Pressure Monitor. It is a pager-like device that independently warns the user that the cabin pressurization of their aircraft or space vehicle has been compromised. This allows the user to take corrective action immediately to avert a dangerous situation.

Hypoxia is a state of oxygen deficiency in the blood, tissues, and cells which is sufficient to impair the functions of the brain and other organs and is a concern to pilots who fly above 10,000 ft. The Personal Cabin Pressure Monitor was developed in response to the Mir/Progress collision in 1997 and the Payne Stewart aircraft accident in 1999. It warns the user of the danger of impending hypoxia through audio, vibratory, and visual alarms. Additionally, a lighted digital screen displays a text message of the warning and the condition causing the alarm.

NASA/KSC had this technology available for licensing within 10 months of the initial development, and successfully negotiated and signed a license agreement the following year with Kelly Manufacturing, who had a commercial product on the market within a year of signing the agreement. This technology is capable of being expanded beyond aviation and aerospace to include scuba diving, sky-diving, mountain climbing, meteorology, space-borne and planetary habitats, hyperbaric pressure chambers, altitude chambers, and positive/negative pressure vessels.

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FDA Approves Pfizer's Lipitor® to Lower Risk of Heart Attacks

Also Approved to Reduce Risk of Chest Pain and Revascularization Procedures

The U.S. Food and Drug Administration (FDA) has approved Pfizer's cholesterol-lowering therapy LIPITOR® (atorvastatin calcium) for the prevention of cardiovascular disease by reducing heart attack risk in people with normal to mildly elevated levels of cholesterol but with other risk factors for heart disease.

The FDA's decision was based on the findings of a landmark clinical trial, known as the Anglo-Scandinavian Cardiac Outcomes Trial: Lipid-Lowering Arm (ASCOT-LLA), which found that LIPITOR, at its lowest dose of 10 mg, reduced the relative risk of heart attack by 36 percent compared to placebo. Because of the significant benefits seen with LIPITOR early in the trial, ASCOT-LLA was halted approximately 2 years ahead of schedule. The safety profile of the group treated with LIPITOR was comparable to that of the group treated with placebo. The trial involved more than 10,300 people with normal or borderline cholesterol and no prior history of heart disease, but with high blood pressure and at least three other known risk factors for heart disease, such as family history, age over 55, smoking, diabetes, and obesity.

"Despite fairly normal cholesterol levels, patients with multiple risk factors face a greater threat of heart attack," said David Waters, M.D., F.A.C.C., Chief of Cardiology at

San Francisco General Hospital, CA. "Adding LIPITOR to their treatment regimen, as the data demonstrate, reduces that threat dramatically. It's becoming increasingly clear that LIPITOR provides cardiovascular benefits that go well beyond lowering cholesterol."

Updated guidelines recently issued by the National Cholesterol Education Program confirm the added benefit of prescribing cholesterol-lowering medication like LIPITOR, along with diet and exercise, to patients at risk for cardiovascular disease.

The FDA also approved LIPITOR to reduce the risk of angina (chest pain) and to reduce revascularization procedures, such as balloon angioplasty, that help open blocked arteries.

"Today's [sic] FDA approval of LIPITOR's additional uses further supports the growing body of evidence showing that LIPITOR provides significant cardiovascular benefits in a broad range of patients beyond its excellent efficacy in lowering cholesterol," said Gary Palmer, M.D., Vice President of Pfizer Cardiovascular's Medical Group.

For more information, please visit www.lipitor.com; or call 1-888-LIPITOR.

AMST Receives German Air Force Contract for AIRFOX

The German Air Force, Institute of Aviation Medicine have awarded a contract to AMST for the AIRFOX-DISO Spatial Disorientation (SD) Trainer. Spatial disorientation and situational awareness training will

be conducted at FMI-Konigsbruck from 2004 onwards. Besides theory lessons (including instruction in the limitations of the human orientation system in flight and in how to recognize and correct spatial disorientation), practical demonstrations of the SD phenomena and training in situational awareness will be the primary focus of the GAF program. The AIRFOX-DISO will be an essential part of this training, providing practical experience of many of the illusion that can result in SD.

A critical factor in the selection process was the ability to realistically demonstrate the SD illusions that can occur in pilots of helicopters, fighters, and transport aircraft. A key aim was that successful training results must be achieved for both experienced and novice pilots alike. The AMST AIRFOX-DISO met all of these key requirements.

For further information: www.amst.co.at.

"The First International Congress on Space Medicine Issues in the 21st Century" sponsored by AsMA and its Corporate and Sustaining Affiliate group, will be held in Bellagio, Italy from 18-21 October, 2004.

Limited space is available for additional participants. Anyone interested in attending or wanting further information, please contact Dr. Marian B. Sides at: mbsides3@myexcel.com.



Wellington School of Medicine, University of Otago, PO Box 7343, Wellington, New Zealand. Fax: +64-4-3895427



AVIATION MEDICINE COURSES AT OTAGO UNIVERSITY, NEW ZEALAND

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The Programme Manager Maureen Gordon on +64-4-3855590 or email via deptmed@wnmeds.ac.nz

The Academic Programme Coordinator, Dr Robin Griffiths, on +64-21-620148 or email via

rgriffiths@wnmeds.ac.nz or rgriff@attglobal.net

NEWS OF MEMBERS

Send information for publication on this page to: **News of Members**
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Alexandria, VA 22314-3579
pday@asma.org

ERRATUM

Lt.Col. Richard W. Sumrall was mistakenly reported as having been promoted to Colonel. It was actually **Col. (Dr.) Robert Michaelson** who was promoted. Formerly the Chief of Clinical and Aerospace Medicine for the Air Force Special Operations Command (AFSOC), he has now accepted the assignment of Chief of Medical Modernization and Requirements for AFSOC.

Christopher R. Armstrong, M.D., M.P.H., of Washington, DC, once the Director for



Outpatient Care and Chief Medical Officer at the Naval Hospital in Cherry Point, NC, is now an Assistant Professor at the Department of Military and Emergency Medicine, Uniformed Services University of the Health Sciences in Bethesda, MD. He recently received a Meritorious Service Medal (with Gold Star in lieu of third award).

Lt.Col. Thomas C. Hankins, USAF, MC, SFS, of Grass Valley, CA, formerly the Chief of Aerospace Medicine at Beale AFB, CA, was recently promoted to Colonel and Chief Flight Surgeon and is now the Commander of the 9th Physiologic Support Squadron at Beale AFB.

Mario E. Fajardo, M.D., of Concord, CA, originally the Staff Officer at the Safety and Health Division of USCG Headquarters, transferred to the position of Chief of Operational Medicine at USCG Maintenance and Logistics Command Pacific in Oakland, CA. He was recently awarded the USCG Commendation Medal.

Lt.Col. William Beninati, USAF, MC, of Honolulu, HI, formerly Director of the AF Expeditionary Medical Skills Institute at the University of Maryland Shock Trauma Center in Baltimore, MD, has transferred to the position of Commander of the 15th Aeromedical Dental Squadron at Hickam

AFB, HI. Before leaving for Hawaii, he earned a Critical Care Teaching Award from R. Adams Cowley Shock-Trauma Center in Baltimore.

Maj. Norman S. West, USAF, BSC, who formerly served as Commander of the Aircrew Equipment Integration Group at RAF Henlow, UK, through a personnel exchange program, is now an Aerospace Physiology Flight Commander at the 92nd Aeromedical Dental Squadron at Fairchild AFB, WA. He was recently awarded the Meritorious Service Medal.

CAPT Charles O. Barker, MC, USN, formerly Executive Officer, Naval Hospital Roosevelt Roads, Puerto Rico, received the Legion of Merit Medal for his accomplishments in closing the hospital. He has been reassigned as Commanding officer, Naval Medical Clinic, Pearl Harbor, HI.

Focus on Members: Christopher Daniel

CAPT J. Christopher Daniel, MC, USN, a native of Elkins Park, PA, was recently promoted to Commanding Officer of the Naval Submarine Medical Research Laboratory at the submarine base in New London, CT. He transferred there from the position of Executive Officer at the U.S. Navy Infectious Disease Research Laboratory in Jakarta, Indonesia. He graduated from Princeton University in 1980 and was commissioned as an Ensign in 1981 while attending Jefferson Medical College in Philadelphia. He obtained his M.D. from Jefferson in 1984. He has served in a variety of positions, and while completing a fellowship in Adolescent Medicine at Naval Medical Center San Diego, he achieved national recognition as an educator in preventive medicine services for adolescents and as a researcher in the assessment of concussions sustained by adolescent athletes. He is a Fellow of the American Academy of Family Physicians and is board-certified in both Family Medicine and Adolescent Medicine by the American Board of Family Practice. Awards include the Meritorious Service Medal, Navy Commendations Medal (four awards), Army

Achievement Medal, and various service medals and unit awards.

New Members

Anderson, Geoffrey A., Atlanta, GA
Bagchi, Sam R., M.D., Quincy, MA
Caruso, James L., CDR, USN, MC
Faulkner, James W., B.A., Wooster, OH
Fuller, Douglas C., Col., USAF, MC, FS
Jackson, Marvin W., M.D., Centerville, OH
Lorich, Michael F., CPT, USA, MC
Marshall, Michael J., 1LT, USA, MC
McGinn, Christine N., LT, USNR, MC
Ross, Valerie H., Maj., USAF, MC
Stepenosky, James E., LCDR, USN, MC, FS
Trevino, Loretta, Houston, TX

International New Members

Cloer, Vescia Alves, M.D., Porto Alegre, Brazil
Dambier, Michael, Ph.D., Waghhaeusel, Germany
Hampson, Gregory V., WG CDR, RAAF, MC, Henlow, Bedfordshire, UK
Lennerz, Jochen Klaus Maira, Erlangen, Bavaria, Germany
Mann, June M., Sanctuary Cove, Australia
Quinteros, Enrique, M.D., Santiago, Chile

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POSITIONS AVAILABLE

AEROSPACE MEDICINE PHYSICIAN--The Department of PM&CH at UTMB in Galveston, Texas, is seeking a physician for the Aviation Medicine Center and UTMB/NASA-JSC Aerospace Medicine Residency Program. UTMB is a major academic & medical center with 13,000 employees and 785 hospital beds.

Successful candidate should have the following: Board certification in Aerospace Medicine; Current unrestricted Texas medical license; Aviation Medical Examiner (AME); Clinical experience in Aerospace Medicine; Clinical Aviation Medicine experience.

Preferred, not required: Hyperbaric / Hypobaric experience; Pilot training; Second area of clinical competence; MEDEVAC experience/expertise; Operational Space Medicine; Travel medicine experience.

Activities of this position include: Teaching - MPH/ UTMB/NASA-JSC; Aerospace Medicine Residency program; Deputy Director, Aerospace Medicine Residency program; Participate / Coordinate Educational Conferences in aerospace medicine; Pilot Aviation Medical Examinations; Fitness-to-Fly Evaluations; Air crew disability assessments; Interact with Wyle/UTMB physicians supporting space program; Research; Support for UTMB Occupational Health programs.

Interested individuals should send detailed curriculum vitae, and 3 references to: Sharon Walters, The University of Texas Medical Branch, Preventive Medicine & Community Health, 301 University Boulevard, Mail Route 1110, Galveston, TX 77555-1110.

Apply online at <http://www.UTMB.edu>. UTMB is an equal opportunity, affirmative action institution which proudly values diversity. Candidates of all background are encouraged to apply.

AsMA Future Meetings

May 8-12, 2005
Kansas City, MO
Hyatt Regency Crown Center

May 14-18, 2006
Caribe Royale Hotel
Orlando, FL

May 13-17, 2007
Sheraton and Marriott Hotels
New Orleans

May 11-15, 2008
Sheraton and Hilton Hotels
Boston, MA

PHYSICIAN-ENGINEER: Physicians with a degree in engineering are being sought by a growing consulting practice. Physician-Engineer will be integrally involved in analyzing and determining the causal relationship between an accident event and an individual's injuries and identifying the reasons or mechanisms responsible for the injuries. Physician-Engineer will utilize both medical and engineering skills in an analytical problem-solving environment. No patient care involved, consequently there are no on-call responsibilities or malpractice insurance requirements. Company offers a professional work environment, competitive starting salary and excellent benefits including paid vacation and sick leave, 401(k) retirement/profit sharing plan, performance bonus and major medical, dental and disability insurance. For additional information, please send curriculum vitae to or contact: Biodynamic Research Corporation, Attn: Human Resource Manager, 5711 University Heights Blvd., Ste. 100, San Antonio, TX 78249, or fax 210.691.8823 or email staffing@BRConline.com. Equal opportunity employer.

Book Notice:

"Flight Surgeon Support to United States Air Force Flier in Combat"

By David R. Jones, M.D., M.P.H., and
Royden W. Marsh, M.D.

From the abstract:

"The everyday practice and operational applications of U.S. Air Force flight medicine by its flight surgeons at the end of the 20th century comprise a system of medical care and support that is unique in human history...Herein lies an in-depth review and analysis of the role of the flight surgeon in combat operations from and academic and historical point of view...Acknowledging the significant and notable contributions to flight medicine made by our aeromedical colleagues in the Navy and in the post-1949 Army, this report focuses on Army flight medicine prior to 1949 and Air Force flight medicine subsequent to 1949."

This report (SAM-FE-BR-TR-2003-0001) is available through the Defense Technology and Information Center (DTIC)
<http://stinet.dtic.mil>.

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Military Medical Ethics

The Borden Institute, Office of the Surgeon General, Walter Reed Medical Center, Washington, DC, announces the publication of *Military Medical Ethics*, a two book set that confronts the ethical issues surrounding the role of military medicine in caring for the wounded. Edited by **Thomas E. Beam, M.D.**, Col., Medical Corps, U.S. Army (Ret.); and **Linette R. Sparacino, M.A.**, the book is available at www.bordeninstitute.army.mil or by phone: toll free, 1-866-512-1800 or local, 202-512-1800. The set is 868 pages and is also available in CD.

The hardcover set contains two volumes. Volume 1 contains Sections I-III and Volume 2 contains Section IV. Section I is on *Medical Ethics* and is edited by **Edmund D. Pellegrino, M.D.** It covers such topics as: The Moral Foundation of the Patient-Physician Relationship; The Essence of Medical Ethics; Theories of Medical Ethics: The Philosophical Structure; and Clinical Ethics: The Art of Medicine.

Section II, edited by **Anthony E. Hartle, Ph.D.**, covers *Military Ethics* such as: The Profession of Arms and the Officer Corps; Honor, Combat Ethics, and Military Culture; Just War Doctrine and the International Law of War; and The Soldier and Autonomy.

Section III, edited by **Edmund G. Howe, M.D., J.D.**, covers *The Synthesis of Medicine and the Military*, with the topics: Physician-Soldier: A Moral Profession; Physician-Soldier: A Moral Dilemma; and Mixed Agency in Military Medicine: Ethical Roles in Conflict.

Section IV, edited by **Thomas E. Beam, M.D.**, is on *Medical Ethics in the Military*, including: Medical Ethics on the Battlefield: The Crucible of Military Medical Ethics; Medical Ethics in Military Biomedical Research; The Human Volunteer in Military Biomedical Research; Nursing Ethics and the Military; Religious and Cultural Considerations in Military Healthcare; Military Medicine in War: The Geneva Conventions Today; Military Humanitarian Assistance: The Pitfalls and Promise of Good Intentions; A Look toward the Future; and A Proposed Military Ethic for Military Medicine.

For further information contact the Editor in Chief Dave Ed. Lounsbury, M.D., FACP, Col., Medical Corps, U.S. Army, Director, Borden Institute, 202-782-6099; or the Military Medical Editor, Ronald F. Bellamy, M.D., FACS, Col., Medical Corps, U.S. Army (Ret.), 202-782-7572.



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