

President's Page

This is a follow up to the February president's page and will also bring back some concepts elaborated on previously

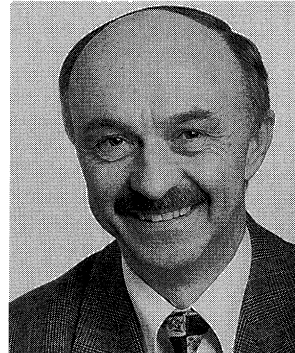
As you will remember (that is assuming you are reading this page regularly!), last month I talked about passenger health. No sooner was I finished writing that piece that I received the proceedings of the European Civil Aviation Conference (ECAC) meeting on "Selected Aspects of Passenger Health in Air Travel." This meeting took place this past October in Dubrovnik, Croatia. I had been invited to the meeting but I could not attend because of other commitments. Fortunately our vice-president for International Affairs, Dr. Michael Bagshaw, was able to attend and represent us.

The Dubrovnik meeting was dedicated entirely to passenger health and had been called by the group of Directors General of European Civil Aviation, which I believe is very important. Indeed, it means that the operators are now recognizing the fact that passenger health is important and can no longer be pushed aside just because it is not pure flight safety. In fact, parallel to this movement, 2 years ago another group of operators, the International Air Transport Association (IATA) also reestablished its Medical Advisory Group because of the increasing number of medical issues in aviation, particularly as it regards passengers. Since then, IATA has held two conferences on Cabin Health.

This trend is very important for Aerospace Medicine. The operators are seeking our opinion and we have a great opportunity to influence the outcome. However, as I have mentioned several times before, we must use this power judiciously in order to maintain our credibility and effectiveness. In the context of bad economic times in the aviation industry, we need to come up with a hierarchy of recommendations that meets the immediate needs and also takes into account all realities and limitations of the system.

This approach brings up another critical point: it calls for cooperation and pooling of resources. In that vein, let me quote three of the speakers at the ECAC meeting. First, Peter A. Smith of the Aviation Directorate, Department of Transport, United Kingdom said: "What is clear is that we need to work together internationally so that whatever standards or practices emerge will be implemented at a European or even global level, to reduce the effect on competition and deliver benefits to as many passengers as possible." Then, Annette Ruge, Medical Coordinator, Joint Aviation Authorities, followed with: "In future, there should be a combined effort of airlines, manufacturers and authorities to maintain high standards for passenger safety including passenger health." Finally, Robert Auffret, Président du Conseil Médical de la Direction Générale de l'Aviation Civile Française and chairman of the meeting concluded with: "With this in mind, the Symposium sees as a priority the sharing of results of comparable statistical data collection, and the undertaking of international multi-disciplinary research using a common methodology."

I agree with the opinions of these three knowledgeable colleagues. For example, if that approach had been used instead of a commercial competition approach, it is highly



Claude Thibeault, M.D.

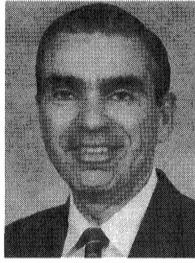
probable that automated external defibrillators (AEDs) would have appeared at a different level in the hierarchy of immediate needs for the benefit of the majority of passengers. This is indeed a very good example; while there is total agreement on the benefits of AEDs, one has to also agree that it does not come in first place on the list of priorities after considering the limited research on the subject, the weak evidence provided by the research, and the limited resources available.

If we do agree with the general philosophy proposed by our colleagues, it carries even further. Another speaker at the ECAC meeting, Marco Brusati, Principal Scientific Officer, Aeronautics Unit, Research Directorate-General, European Commission, mentioned the following while talking about a 20-year or more time scale of aeronautical R&D: "In this respect, ACARE (Advisory Council for Aeronautics Research in Europe) has received the mandate to develop a Strategic Research Agenda (SRA) for aeronautic research up to 2020, including human factors, such as health and comfort, and safety and security issues." Research is an area where a lot of effort and money can be spent inefficiently if it is not well coordinated to begin with. As an example, the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) and CABINAIR in Europe have both spent a lot of effort and money independently on Cabin Air Quality. In line with the overall proposed philosophy, I would suggest that the SRA should also be an international effort and not only a European or American one.

I fully realize that the different socio-political contexts do not always allow full harmonization; however, nothing should stop us from harmonizing as much as possible. In fact, one thing is clear in my mind: health issues should never be used in the commercial competition area. All involved bodies, i.e. National Aviation Authorities, ICAO, IATA, AsMA, WHO, etc. should cooperate when it comes to crew and passenger health. Furthermore, the current events tell me the timing is excellent. The Aerospace Medical Association has shown forward thinking on these issues and should continue with the same professional and cooperative approach for which it is becoming recognized.

Medical News

Executive Director's Column



Rayman

Go-Pills

Approximately 10 years ago there were two aircraft accidents in Europe involving USAF aircraft. A reporter subsequently learned that USAF pilots were sometimes given amphetamines and implied that this may have been a causal factor of the accidents. Although amphetamines had nothing to do with these accidents, the issue of their use became a cause celebre in the press. At that time, the USAF Surgeon General's Office defended the policy of amphetamine use, as a fatigue countermeasure, through newspaper and various television network reporters. Today the issue has arisen again and has been the subject of numerous newspaper articles, as well as television news segments. (Your AsMA Home Office has also received numerous calls.)

Is the USAF policy regarding the use of amphetamines ("go-pills") necessary, safe, and responsible? By way of background, USAF has been dispensing "go-pills" as a fatigue countermeasure when operational circumstances required it for over 60 years. At the present time, they have been dispensed mainly to fighter and bomber crews engaged in long over-water flights primarily, although they might also be dispensed in the event of a war demanding daily multiple sorties. They are not used for routine, peacetime training missions. Their use is determined by direct consultation between unit operational commanders and flight surgeons. If prescribed, pilots are given 5 or 10 mg amphetamine tablets in numbers consistent with mission duration--usually 3 to 6 tablets. They are given by the flight surgeon prior to the mission with unused tablets retrieved by the flight surgeon after the mission. Their use is completely voluntary--commanders cannot mandate their use and there is no penalty, punishment, loss of benefits or adverse action for aircrew who decline their use. To ensure that there would be no in-flight idiosyncratic reactions, all pilots must be ground-tested with amphetamines before they can be dispensed to any aircrew member.

Are they necessary? In this writer's Air Force experience, they are a necessary fatigue countermeasure under certain operational circumstances in order to reduce the risks of fatigue. It is known that fatigue can cause performance decrement and accidents, both most unwanted in any flight operations, but particularly so during combat missions.

Are they safe? Yes. There have been no re-

ported USAF accidents or incidents attributable to their use by USAF aircrew for over 60 years. Decades of use, study, and evaluation have corroborated this.

Are they dispensed responsibly? Yes. Consultation, ground testing, medical supervision, and medical monitoring argue for a responsible program. Certainly amphetamines have a reputation because of illicit usage, but by no means should this be extrapolated to legitimate and appropriate use of this medication. If the public were given all of the facts regarding their use by USAF, I am confident that most people would be supportive.

(AsMA sent a letter to USAF Chief of Staff, Gen. John Jumper, in support of go-pill use.)

AMA House of Delegates

The AMA House of Delegates met at its interim meeting December 7 - 11, 2002 in New Orleans. Although a number of issues were addressed, there was no question which ones had precedence: tort/liability reform, Medicare fees, and clinical skills assessment of medical students.

The AMA produced stark data underscoring the immediate and potentially disastrous threat of malpractice insurance on practicing physicians. Rates in many states are simply unaffordable resulting in many physicians either retiring from medicine or curtailing their respective practices. Many are moving from high premium states to low premium states. The result of all of this is turmoil and a serious reduction in access for patients. Horror stories abounded of obstetric services closing, as well as Nevada's only trauma center. The AMA is doing everything it can to reverse this trend by recommending noneconomic damage caps as well as capped fees for attorneys. This battle is being waged not only in Washington, DC, but also in state capitols. Leading the charge is President-Elect Donald Palmisano, M.D., a practicing surgeon and attorney from New Orleans.

Physicians are also dismayed at the drastic cuts in Medicare fees. There was a 2002 5.2% cut with another of 4.4% coming down the pike in early 2003. If not corrected, the current payment formula will lead to over 18% reduction within the next 3 years. This means in economical terms that physicians would be paid approximately what they were a decade ago for some services. The AMA is hard at work trying to convince the Senate, where a vote will be taken early in 2003, to rescind these cuts and restore Medicare fees to a more reasonable level. The military services were very concerned about these cuts because TriCare payment is linked to Medicare. Whatever happens to Medicare will devolve upon the military, dependents and its retirees. The impact on physician participation, thus access, could be devastating.

And finally, medical students are now faced with the requirement to undergo a clinical skills assessment whereby each student is graded on his/her ability to examine a patient

and prepare a diagnostic and treatment plan. There are only a handful of centers in the United States that provide this service, thereby placing a great economic burden on medical students (travel, hotel, meals). Although there is no argument that a clinical skills assessment is reasonable, it should be done at the medical school where the student is enrolled. In this way, there would be no added costs for students who already owe tens of thousands of dollars in loans. In addition, the AMA feels that the clinical skills assessment should not be linked in any way to medical licensure. There

See AMA, p. 293.

IN MEMORIAM

COLUMBIA

By now all of us have felt the full impact of the Columbia disaster. We salute the seven astronauts who gave their lives in the service of humankind. This tragedy is particularly close to home because two of the astronauts, Laurel Clark and David Brown, were members of the Aerospace Medical Association. And Laurel was the wife of AsMA member Dr. Jon Clark, a retired U.S. Navy flight surgeon/neurologist currently on the University of Texas Medical Branch staff. Our thoughts and condolences go out to the families, friends, and colleagues of the seven that perished. Although this tragedy will undoubtedly cause some delays in our exploration of space, it will not be the end of our continued efforts to complete the International Space Station, return to the moon, and explore Mars and beyond. We are very much aware of the dangers inherent in spaceflight and we accept these risks. Historically, the cost of exploration has been hardship, suffering, and often loss of life.

Norsemen lost entire boats in their attempts to cross the North Atlantic centuries ago; many 15th and 16th century explorers, including Christopher Columbus, paid a heavy price in their global explorations; many died attempting to climb Mt. Everest and many were lost in the jungles of Africa during the 19th Century; early balloonist lost their lives, as did many of our early aviators. And today we witness the same in spaceflight. But, no matter how heavy the price, humankind momentarily falters only to regain its footing. There is no doubt in my mind that the seven astronauts would say, "Learn the lessons, but go forward undaunted."

I would take this opportunity to thank so many of you for sending condolences to the Home Office.

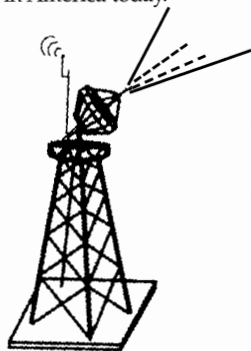
Russell B. Rayman, M.D.
Executive Director

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are more battles yet to be fought on this issue in the coming months.

From within, the AMA is exploring a reorganization plan whereby it will become an organization of organizations rather than organization of individuals. Since there are many complex factors to take into consideration if this transition is made, it is being given very close study by the state and specialty societies. There are many questions yet to be answered although it is possible that the matter will reach closure at the next AMA meeting scheduled for mid-June.

It is clear that the House of Delegates is focusing more and more on legislative affairs, particularly those that are adversely affecting quality care and accessibility for patients. These are very difficult times for American medicine with many believing it is in a state of crisis. In any event, the AMA will continue to expend its resources to resolve the many complex problems and challenges facing medicine in America today.



Science & Technology Watch

Keeping You Informed Of The Latest Advances In Science And Technology

Discussions about and preparations for combating bioterrorism are dominating the airwaves lately. Rapid detection and appropriate action are required to mitigate the effects of an attack. In this month's

column, Drs. Muhm and Karras discuss the challenges involved in obtaining, categorizing, and disseminating this information in order to mount an effective public health response.

Syndromic Surveillance

J. Michael Muhm, M.D., M.P.H.,
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University of Washington

Syndromic surveillance is a form of public health surveillance in which groups of symptoms (syndromes) rather than well-defined illnesses are the subject of surveillance (3). It offers the promise of rapid detection of disease outbreaks since it does not depend on the collection of information required for definitive diagnosis—typically laboratory data. Although not new, syndromic surveillance has assumed renewed importance because of the realization of the threat to ordinary citizens posed by bioterrorism (1). The initial indication of the dissemination of agents of biological warfare into the environment is likely to be an increase in the number of persons presenting to their health care providers with non-specific prodromal syndromes. Because the efficacy of prophylactic antibiotics, vaccination, quarantine, risk communication and other preventive measures is enhanced by early delivery, rapid detection of these syndromes may mitigate the mortality and morbidity of bioterrorist attacks. Successful syndromic surveillance requires the accurate use of standard descriptive terms or codes for common symptoms, systems to aggregate the experience of geographically dispersed health care providers into a common electronic site in a format compatible with analysis, and willingness of providers to use those systems. In this column we will briefly discuss some of the societal, technical and analytic challenges inherent in the development and use of syndromic surveillance systems as adjuncts in the rapid detection of illnesses

caused by the agents of bioterrorism, review progress toward surmounting these challenges, and list some of the syndromic surveillance systems that have been developed.

Societal Challenges

When persons infected by agents of bioterrorism become symptomatic, they will undoubtedly seek medical attention from the diverse sources of care they normally use—private physicians, emergency rooms, drop-in clinics, public health clinics, etc. In the United States, these are typically fiercely independent entities, unaccustomed to sharing medical information with one another and restricted from doing so by legislation that protects the privacy and confidentiality of their patients' medical records. Patients also may balk at sharing their confidential medical data with unnamed others in the interests of national security and public health. These barriers must be overcome before the required data can be reliably obtained and analyzed.

Technical Challenges: Data Standards

The prodromes of many of the diseases caused by agents of bioterrorism—smallpox, anthrax, plague, etc.—are non-specific syndromes similar to those of upper respiratory infections caused by influenza, rhino-, and adenoviruses. A prerequisite to early detection of these prodromal syndromes is the use of a standard language by care providers (1, 3). Coding schemes, such as the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) serve as a basis for this standard language. It has been incorporated into many health insurance payment mechanisms, so has the advantage of widespread use. However, it lacks internal consistency in its coding conventions, and is so expansive that it allows myriad coding options for common symptoms (3). Any successful coding system must achieve a balance between the historical language of the art of medicine and the more modern language of

See SCITECH WATCH, p. 294.

TABLE 1. SYNDROMIC SURVEILLANCE SYSTEMS.

System	Sponsoring Institution	Location	Sources of Data /Time to Analysis	Analytic Techniques
Electronic Surveillance System for the Early notification of Community-based Epidemics (ESSENCE)	Walter Reed Army Institute of Research	Washington, DC	Military outpatient clinics/ 1 – 3 days	Autoregression Geomapping Trend analysis
Electronic Surveillance System for the Early notification of Community-based Epidemics (ESSENCE II)	Department of Defense Global Emerging Infections System Johns Hopkins University Applied Physics Laboratory Defense Advanced Research Projects Agency	14 countries, 395 installations (307 in USA, 88 other)	Absenteeism OTC Sales Animal Health Family Physicians Laboratories Poison Center EMS Services Emergency Rooms	Temporal/spatial anomaly detection
Lightweight Epidemiology Advanced Detection and Emergency Response System (LEADERS)	Defense Advanced Research Projects Agency EYT Idaho Technologies Oracle ScenPro Compressus	2001 Super Bowl 2001 World Series U.S. Air Force	Hospitals Emergency Rooms Laboratories Pharmacies / Real-time	
Real-Time Outbreak and Disease Surveillance System (RODS)	University of Pittsburgh Carnegie Mellon University Public Health Departments in Pennsylvania and Utah Jewish Healthcare Foundation Siemens Medical Systems Environmental Services Research Institute, Inc. National Library of Medicine Agency for Healthcare Research and Quality Centers for Disease Control and Prevention	Pennsylvania Utah – 2002 Olympics	Emergency Room Acute Care Clinics/ Real-Time	WSARE v. 2.0 "What's Strange About Recent Events"
Syndromic Surveillance Information Collection (SSIC)	University of Washington Public Health—Seattle and King County	Washington State	Emergency Room Primary Care Clinics/ 1 day	CDC Early Aberration Reporting System Cumulative Sum

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to travel so that providers from geographically dispersed areas may be among the first to obtain diagnostic information from those exposed. As with illness surveillance, effective syndromic surveillance must allow the aggregation of reports from widespread providers into a common electronic site so that all instances of a syndrome can be available for analysis. Illness surveillance data collection systems, however, were developed with the expectation that there would be ample time available for aggregation and analysis of data. Many use weekly, monthly or annual incidence rates, time frames too coarse to be of use in mitigating the effects of a bioterrorist attack. A major challenge for syndromic surveillance systems is to interface seamlessly with the provision of medical care so that diagnostic impressions from geographically dispersed providers can reliably be obtained and incorporated into centralized databases for analysis on a near real-time basis (3).

The development of the internet has facilitated communication between previously incompatible data systems that use a variety of computer hardware, operating systems, and database applications. However, even with the internet, standard data formatting is required for accurate information transfer between sender and receiver. Existing syndromic surveillance systems address this need by using extensible markup language (XML), Health Level 7 (HL7), Open Database Connectivity (ODBC), and Hyper Text Transmission Protocol (HTTP) as data transmission standards (1, 4).

Analytic Challenges

The challenge inherent in syndromic surveillance data analysis is to distinguish true increases in the incidence of a syndrome from the underlying variation in the baseline incidence of that syndrome. Just as the total number of visits to health care providers has daily, weekly, and seasonal variations, so does the number of visits to those providers involved in a syndromic surveillance system. The relative magnitude of the day-to-day variation in the number of cases of any diagnostic category increases as the number of cases declines, making rare events particularly difficult to detect reliably. To be useful, syndromic surveillance systems must be sufficiently sensitive to enable the detection of true increases in incidence in a time period that enables the implementation of preventive measures during the relative brief period during which they are effective, yet sufficiently specific to prevent the expenditure of scarce public health resources on evaluation of an excessive number of false indications of an increase in incidence (4). Analytic methods currently in use include visual data review, confidence interval estimation, cumulative sum approach, Bayesian analysis, geospatial mapping and trend analysis, time series auto regression and auto correlation, and Poisson regression (3, 4). More than 40 syndromic surveillance systems are under development or in testing around the country (2). They differ in theoretical framework; employment sector of the development team, and types of data collected. **Table I** briefly describes five syndromic systems currently in operation in the United States.

Summary

The challenge for syndromic surveillance is

the rapid detection of "epidemics" of illness to enhance the efficacy of preventive measures. It relies on advances in information and communication technologies to enable near real-time data collection, interpretation, and reporting of the appearance of acute disease, regardless of cause. The systems developed for syndromic surveillance will have public health benefits in addition to the detection of bioterrorist events including the more typical public health activities such as detection of water- or food-borne illnesses, heat-related illness, and naturally emerging infectious diseases and other naturally occurring epidemics. In addition, the techniques developed for data aggregation and analysis could have use in occupational settings to detect areas of increasing injury rates, or conversely, evaluate the impact of efforts to reduce work-related illnesses and injuries.

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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: ShenderBS@navair.navy.mil

This Month in Aerospace Medicine History-- March 2003

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

Introduction

My great-grandfather said that the biggest change in his lifetime was refrigeration; the impact of that invention on our world in recent history is profound. No more icehouses, and no more icemen. "Icebox" is merely a colloquialism for the freezer portion of the refrigerator. Nobody but antique collectors and neurosurgeons know what ice tongs are any more. We have no need to use our back yards as cattle pastures. And fresh Maine lobster can be enjoyed in San Diego. Refrigeration has effectively reduced the size of our world. Flight has also reduced that relative size. It takes us less time to get from New York to London than it so recently used to take getting

from New York to Washington, D.C. Before long, mankind will likely arrive at another planet in the solar system. Without previous and continuing advances in our knowledge of physiology and the effects of altitude, these accomplishments could not possibly occur.

One Hundred Years Ago

• The Wright Brothers may not have been, as is commonly believed, the first to take to the air in powered flight. Although they are credited with being the first to accomplish sustained powered flight, there is evidence of several powered takeoffs prior to December of 1903. "[The] first acknowledged powered take-off flight was in New Zealand, and achieved on 31 March 1903, when Richard Pearse flew his homebuilt craft 150 yards. This was regarded as the sixth powered take-off in the world." Great controversy surrounds an incident 7 years earlier, when Mr. Bill Frost of Wales had flown for ten seconds in a powered aircraft that was "a cross between an airship and a glider." (2)

Fifty Years Ago

• In the growing world of aviation safety, 1953 saw the introduction of a new inertial reel restraint system: "A new shoulder-harness seat-belt and gravity reel combination has been developed at the Personal Aircraft Research Center in Texas... The seat-belt and shoulder-harness are combined so that both can be fastened quickly and easily, using the seat-belt buckle alone. At the rear, the shoulder straps slide over a tubular support and down to an inertia-locking reel mounted on the rear wall of the cockpit. This allows free movement of the whole upper body, so long as the plane does not experience a deceleration of 3 Gs or more, as it would in even a mild crash." (7)

• Worries of oxygen toxicity prompted researchers to delve for the mechanism of this problem. C. J. Lambertsen, who conducted extensive experiments on various combinations of respiratory gases at different pressures for several decades had this conclusion: "These experiments confirm the occurrence of a lowered alveolar pCO₂ when oxygen is inhaled under increased pressure, and indicate that this is due to an increase in pulmonary ventilation rather than to decreased CO₂ elimination. The production of an excessive as opposed to a deficient elimination of CO₂ argues against any concepts of severe CO₂ auto-intoxication as a major factor in oxygen poisoning." (3)

Twenty-five Years Ago

• A study by the Civil Aeromedical Institute in Oklahoma City looked at motion parallax in relation to night approaches: "Illusions due to reduced visual cues at night have long been cited as contributing to the dangerous tendency of pilots to fly too low during night landing approaches. The cue of motion parallax, a difference in rate of apparent movement of objects in the visual field, is frequently suggested as contributing to visual judgments of glide path but has not been systematically studied in relation to the night approach problem. Thus, the present experiment examined the effect of varying levels of motion parallax from both radial and vertical motion on perception of the orientation of a runway relative to the ground. Under simulated nighttime conditions (only runway and approach lighting were visible), 16 nonpilots adjusted

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the apparent slant of a model runway to make it appear horizontal as the model moved toward them along a 3° approach path from a simulated distance of 4.33 to 1.33 nautical miles. Simulated approach speeds of 62 and 125 kn were used. The rate at which the model rotated during slant adjustments varied between 5 and 30 / min. The adjusted slant of the runway model with respect to the approach path (generated approach angle) was the dependent variable. The average generated approach angle for 256 trials was 0.5°. This consistent and large deviation from 3°, which would represent accurate perception, indicates the presence of strong illusions, in agreement with the documented tendency of pilots to fly low approaches at night, and is explained in terms of the equidistance tendency and/or errors in perceiving the direction of the model in the visual field. The data also suggest that motion parallax in the runway image is neither a reliable nor an effective cue for the safe judgment of glide path at distances greater than 1.33 miles." (5)

• The concern of elderly passengers, the potential of in-flight medical emergencies, and the lack of a Good Samaritan law inspired the following letter: "Two recent experiences on an intercontinental international air carrier prompt me to write...that there is a need for far more careful medical clearance of older passengers traveling for six hours or more at a time. The present requirement is carried out casually and cursorily, and sometimes is ignored altogether... Perhaps the travel agent should have a medical questionnaire completed by all passengers over the age of 50 who plan to leave their own country..."

Nowadays physicians traveling on aircraft are advised not to identify themselves and generally refrain from doing so... Is it not a sad commentary on our times that fear of possible malpractice litigation prevents a doctor from being a Good Samaritan?" (1)

• We all know that good communication is paramount to crew resource management and flight safety. The Department of Communicative Disorders at California State University in Northridge compared the efficacy of aviation communication: "Word discrimination was measured on eight general aviation pilots listening alternately through each of three communication headsets and an aircraft loudspeaker in the presence of light aircraft noise. Each subject listened at the speech intensity designated by him as yielding optimal intelligibility. Performance varied directly with the degree of attenuation provided by the headset. Mean intelligibility scores ranged from 73% through the loudspeaker to 92% through two of the headsets, although retesting through the loudspeaker at a high signal level improved mean scores to 85%. Articulation functions obtained on four normally hearing listeners tested under the same conditions as the pilots revealed that, for situations when little or no attenuation was available (loudspeaker and one headset), greater signal-to-noise ratios were necessary to allow discrimination equivalent to that obtained under conditions of greater noise attenuation (two headsets). Although good intelligibility could be achieved through the loudspeaker given sufficient signal intensity (>100 dB SPL) some pilots preferred lower levels even though discrimination was reduced." (8)

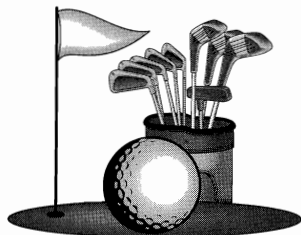
• The Environmental Sciences Group of the British Aircraft Corporation in Filton, Bristol,

revealed an interesting finding and conclusions regarding atmospheric ozone: "Ozone levels were rising during the period 1951 to 1972 and resulted in decreased levels of solar ultraviolet radiation reaching sea level. Analysis of the records of skin cancers for Bristol and Oxford in England showed that during the first decade of this period incidence and mortality for the skin carcinomas, basal cell and squamous cell, fell in line with theory; but both incidence and mortality for melanoma inexplicably rose. Figures for the second decade show that the data were dominated by trends other than those possibly attributable to ozone change." (4)

• Safety in the general aviation community was not neglected either: "The National Transportation Safety Board has again recommended that FAA require the seats of all general aviation planes have both seat belts and shoulder harnesses. While FAA is requiring that shoulder harnesses, in addition to the usual seat belts, be installed in the front seats of all aircraft manufactured after July 18, there is no requirement for shoulder harnesses in rear locations." (6)

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- 2 Fleet Air Arm Archive (of the British Royal



Sports Activities at the 74th Annual Meeting in San Antonio

Golf Tournament--

We will be having the golf tournament Sunday morning, May 4, at Brooks Golf course. Start time will be at 9 AM. Cost will be \$25 which will include green fee, cart rental, and entry, there will be an additional club rental fee which is about \$5. The prizes will be awarded at the course after the tournament and all will be completed in time to get everyone back to the reception that evening. Transportation will be provided from the downtown hotels and we will also give folks a chance to stop by the Hangar 9 site if they desire. To sign up send checks made out to: Chris Kleinsmith, ASMA Golf Tourney, 434 Chimney Tops, San Antonio, TX 78258; chris.kleinsmith@brooks.af.mil

Annual 5k Fun Run--

The Fun Run will be held on Monday at 7 a.m. on the Riverwalk. (No buses!) The course will be professionally marked. The \$10 fee includes a T-shirt!

Navy) web site.

www.fleetairarmarchive.net/History/Index.htm

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7 Save pilots in crashes. *Science News Letter* 1953, 63(13):206.

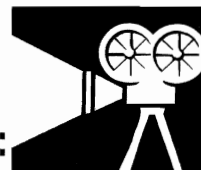
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Classic

Aviation

Films Series:

Lunch-Time Program



Monday, May 5--"The Sound Barrier" 1952. 111 min. Starring Ralph Richardson, Ann Todd. Based on a true story line about Geoffrey de Havilland. Attempt at being the first to break the sound barrier.

Tuesday, May 6--"Reach for the Sky" 1956. 136 min. Starring Kenneth Moore, Muriel Parlow. Story of Douglas Bader, who lost both legs in a pre-WWII aerobatic accident, went on to be a fighter pilot and a quadruple "Ace." Spent time in Germany as prisoner of war. Led 300 aircraft in 1945 victory fly-over of London, flying a lone Spitfire.

Wednesday, May 7 (Wed.)--"The Eagle and the Hawk." 1933. 73 min. Starring Cary Grant, Carol Lombard. WWI air combat pilot develops depression.

Thursday, May 8--"Things to Come" 1936. 120 min. Starring Raymond Massey, Margaretta Scott. Prophecies by H.G. Wells: 1936-2036. Predictions of War, Space Travel.

The History and Archives Committee is sponsoring this lunchtime film program. The program is made possible by the kind offer of films for showing by Dr. Richard Jennings.

SPACE MEDICINE BRANCH REPORT

Send information for publication on this page to: **Chiharu Sekiguchi, M.D., Head Med.Op, Space Environ. Util. System 2-1-1 Sengen, Tsukuba Ibaraki 305, JAPAN (81) 298-54-3950 sekiguchi.chiharu@nasda.go.jp**

Space Medicine Branch Sponsors Space Medicine History Panel

To coincide with the historical theme of this year's AsMA annual scientific meeting in San Antonio, the Space Medicine Branch is sponsoring a space medicine history panel, on Wednesday, May 7 at 4:00 p.m. The panel members will be re-presenting the original presentations from the first space medicine symposium ever held. The symposium took place at the Medical College of the University of Illinois on March 3, 1950. General H.G. Armstrong and Dr. Andrew C. Ivy, Vice-President of the Chicago Professional Colleges of the University of Illinois, were co-sponsors. The symposium was to illustrate the state-of-the-art and the current thinking concerning space medicine at that time. This event was of singular importance in the birth of the idea of the Space Medicine Branch.

Wednesday, May 7, 4:00 p.m.

Biological Aspects of Manned Space Flight: Space Medicine in 1950

Chair: Denise Baisden, Historian, SMB
Co-Chair: Chiharu Sekiguchi, President, SMB
Space Medicine in the USAF (original presenter Maj Gen Harry Armstrong) - Denise Baisden

Physiological Considerations on the Possibility of Life Under Extraterrestrial Conditions (original presenter Hubertus Strughold) - Philip Scarpa

Astronomy and Space Medicine (original presenter Heinz Haber) - Wyckliffe Hoffler
Orientation in Space (original presenter Paul Campbell) - Stanley White

Bioclimatology of Manned Rocket Flight (original presenter K. Buettner) - George Martin

In addition to the sponsored panel, other sessions of space medicine interest to be presented at this year's meeting include:

Monday, May 5, 2:30 p.m.

Exhibits Area
Space Medicine Posters Session
Chairs: Peter Lee, Don Doerr

Tuesday, May 6, 8:30 a.m.

Room 203

ISS Space Medicine I

Chairs: Jeff Jones, Desmond Lugg

Tuesday, May 6, 10:30 a.m.

Room 203

ISS Space Medicine II

Chairs: Chris Flynn, Terry Taddeo

Tuesday, May 6, 2:00 p.m.

Room 203

Space Medicine I

Chairs: Mary Anne Frey, Phil Scarpa

Tuesday, May 6, 4:00 p.m.

Room 203

Space Medicine II

Chairs: Victor Covertino, Alan Moore

Wednesday, May 7, 8:30 a.m.

Room 203

Ultrasound Application in Microgravity

Chairs: Jeffrey Sutton, Scott Dulchesky

Wednesday, May 7, 2:00 p.m.

Room 203

Space Medical Support

Chairs: James Logan, Claire Lathers

MEETINGS CALENDAR

March 20-22, 2003, Galveston, TX.

"Pushing the Envelope V—Medicine in Extreme Environments," sponsored by University of Texas Medical Branch, Department of Preventive Medicine Residency. Info: www.utmb.edu/pte

March 30 - April 3, 2003, Tel Aviv, Israel. Global Asthma Conference--

Interasma 2003.

POSTPONED Contact: Israel Glazer, M.D., P.O.Box 60008,

Tel Aviv 61500, Israel; asthma@kenes.com; www.kenes.com/interasma.

April 11 - 13, 2003, Telford, UK.

Association of Authorised Medical Examiners Annual Scientific Meeting. International Centre, Telford, West Midlands, UK. Info: enquiries@aame.co.uk

May 3-6, 2003, San Antonio, TX. Air national Guard Health Services Management Meeting, Convention Center. Info: anita.waugh@ang.af.mil

May 4-8, 2003, San Antonio, TX. 74th AsMA Annual Scientific Meeting, Convention Center. Info: 320 S. Henry St., Alexandria, VA 22314; phone: (703)739-2240; www.asma.org.

May 7-11, 2003, New York, NY.

International Society of Travel Medicine Conference. Info: Lisa Astorga, lastorga@talley.com; web site: www.istm.org.

June 14-15, 2003, Helsinki, Finland.

7th Nordic Aerospace Medical Association (NAMA) Scientific Meeting. Contact the Chair, Olavi Hämäläinen, MD, PhD.: Olavi.Hamalainen@finnair.com.

September 17-19, 2003, Catania, Italy.

2nd International Conference--The Impact of Environmental Factors on Health: Environmental Health Risk 2003. Organized by Wessex Institute of Technology, and University of Catania, Italy. Info: www.wessex.ac.uk

September 22-24, 2003, Jacksonville, FL.

41st Annual SAFE Symposium, Adam's Mark Hotel. Dedicated to ensuring personal safety and protection in land, sea, air and space environments. Info: www.safeassociation.com; e-mail safe@peak.org

October 5-9, 2003, Madrid, Spain.

51st International Congress of Aviation and Space Medicine. Organized by The Spanish Society of Aerospace Medicine under the auspices of the International Academy of Aviation and Space Medicine. Secretary of the Congress: Sandra Ruis, C/ Hermosilla no. 30, 6a Planta, 28001 Madrid, Spain; www.icas2003.org. of the International Academy of Aviat

October 23-25, 2003, Mexico City, Mexico.

XX International Meeting of Aerospace Medicine, sponsored by the Mexican Association of Aviation Medicine. Info: Claudia Palomeques, San borja 627 2do, 4to y 5to pisos, Col Del Valle C. P. 03100, México D. F.; (52-55) 55 - 75 - 18 - 60; cpalomeque@grupodestinos.com.mx.

Space Medicine Branch Young Investigator Award

The Space Medicine Branch's Young Investigator Award is presented to a young investigator who is the primary author of an outstanding presentation in the area of Aerospace Medicine presented at the current Annual Scientific Meeting of the Aerospace Medical Association. In addition to being the primary author, the work must be original and the young investigator must be presenting at the first time. The Award is intended to encourage young investigators new to the field of Aerospace Medicine.

The applicant must submit a draft manuscript if their presentation to the chair of the Young Investigator Award sub-Committee. To be considered for the 2003 award, manuscripts must be submitted by the end of March, 2003 to:

K. Jeffrey Myers, M.D.

Space Medicine Branch

Young Investigator Award Chair

P.O. Box 540305

Merritt Island, Florida 32954

Phone: (321) 867-2026

jeffrey.myers-1@kmail.ksc.nasa.gov

Send information for publication on this page to:
CDR Russ Lawry
Safety Division (SDM-3), HQMC
2 Navy Annex
Washington, DC 20380-1775
lawryrs@hqmc.usmc.mil

The Aerospace Physiology Society Sponsors Panel on Controlled Flight into Terrain (CFIT)

As part of their Education & Training Day activities, the Aerospace Physiology Society (AsPS) is sponsoring a panel entitled, *Controlled Flight into Terrain – Lessening the Impact*. The panel organizers are Mr. Richard H. Evans (Veridian, Brooks AFB) and USAF Lt Col Glenn R. Hover (USAF School of Aerospace Medicine). Capt. Jim Allen (USAF School of Aerospace Medicine) is AsPS coordinator. The CFIT panel is scheduled for Wednesday, 1000-1130 hrs, prior to the AsPS Luncheon, and is open to all interested AsMA attendees.

Controlled flight into terrain (CFIT) – the insidious, highly destructive phenomenon where a mechanically sound, normal functioning airplane is inadvertently flown into the ground, water, or an obstacle, principally due to the lack of outside visual reference and situational awareness – continues to plague both civil and military flying communities. In commercial aviation alone, over 30% of all fatal accidents worldwide are categorized as CFIT. Military operations have steadily shifted toward terrain-challenged environments, such as low-level, night and the dust of Central Asia, and have accentuated the CFIT threat to the armed forces. Consequently, during the past 4-5 years, CFIT has received explicit emphasis in the FAA Safer Skies program, and the US military services have instigated CFIT-specific countermeasures. Toward appreciating the success of those actions and focusing current and future efforts on operationally oriented means of further reducing CFIT mishaps, this panel addresses the questions of what's working, what still needs to be attended and what technologies offer promise of protecting the aircrew. Panel presenters will speak to these issues from their particular civil and military perspectives, with an emphasis of the latter being on the top threats to current combat operations. In addition, a status update will be provided on promising tools, such as physiologically based ground collision avoidance systems (GCAS), synthetic vision, pathway displays and the "smart" aircraft. Most importantly, discussion will be encouraged to highlight salient human factors concerns that can lead to additional, relevant research and training activities.

Specifically, panel presentations include: "Augmenting Aircrew Situation Awareness in the SOF Environment" (Dr. Guy French/AFRL, W-PAFB); "Top Ten CFIT Killers in DoD Wartime Flight Ops" (Lt Col Glenn Hover/USAFSAM, Brooks AFB); "Controlled Flight into Terrain (CFIT) and Ground Collision Avoidance Systems" (Dr. William Albery/AFRL, W-PAFB); "CFIT and the Cognitive Cockpit" (Col Lex Brown/US-

AFSAM, Brooks AFB); "Synthetic Vision Systems and CFIT Prevention" (Mr. Randall Bailey/NASA, Langley Research Center), "Attacking Controlled Flight into Terrain in North American Civil Aviation" (Dr. Stephen J. Veronneau/CAMI, Oklahoma City).

For more information, contact Capt Jim Allen, USAFSAM/ATTU, Brooks AFB, TX (210-536-3365 /; DSN 240).

AsPS WEBSITE

Visit us online at our website, www.aspsociety.org, where you can register for membership, update membership information, contact society officers and committee chairs, learn about certification in Aerospace Physiology, vote for society officers, read about society awards and more.

AsMA Future Meetings

May 4-9, 2003
 Convention Center
 San Antonio, TX
 May 2-7, 2004
 Egan Convention Center
 Anchorage, AK
 May 9-12, 2005
 Kansas City, MO
 Hyatt Regency Crown Center

Attention Affiliate Organizations of AsMA!!!

In the past few years it has become difficult to obtain contact information on our many affiliated organizations. Please take a moment to contact us with your current list of officers and their addresses, e-mails, and phone numbers. Please include your web address so we can link to your website from ours. Please check out your listing on our site at:
www.asma.org/Organization/affiliates.html
 Contact Gloria Carter at gcarter@asma.org; (703) 739-2240, ext. 106

Here is our most up-to-date list of Affiliate Organizations:
 Aerospace Medical Association of Korea
 Aerospace Medical Association of Taiwan
 Aerospace Medical Association of the Philippines
 Aerospace Medical Student & Resident Organization
 Alliance of Air National Guard Flight
 Association of Aviation Medical Examiners, United Kingdom

Aerospace Physiology Certification

The Aerospace Physiology Certification Board of the Aerospace Medical Association will administer the certification examination at the 74th Annual Scientific Meeting in San Antonio, TX on Sunday, May 4, 2003.

Individuals interested in certification should refer to the December 2002 issue (p. 1246) for more information.

Application must be made prior to March 1, 2003, to assure consideration for the 2003 examination. Applications received after that date cannot be guaranteed consideration for the 2003 exam. Any late applications not considered for 2003, will automatically be held in abeyance for consideration for the 2003 exam.

To obtain an application form and complete information about certification requirements, submit a short biography describing your relevant background in aerospace physiology, and request for information to the Chair of the Admissions Committee:

Mr. Brian D. Swan
 6464 Lake Charlene Ct.
 Pensacola, FL 32508
bswan@nomi.med.navy.mil

Aviation Medical Society of Australia and New Zealand
 Canadian Aerospace Medicine and Aeromedical Transport Association
 Civil Aviation Medical Association
 Corporate & Sustaining Members
 French Aerospace Medical Association
 German Society of Aviation and Space Medicine
 Greek Aerospace Medical Association
 Ibero-American Society of Aerospace Medicine
 Israeli Society of Aerospace Medicine
 Italian Aviation and Space Medical Association
 Japan Society of Aerospace and Environmental Medicine
 SAFE Association
 Slovenian Aerospace Medical Association
 Society of NASA Flight Surgeons
 South African Aerospace Medical Society
 Spanish Society of Aviation and Space Medicine
 Space Dermatology Foundation
 Swedish Aviation and Naval Medicine Association
 USAF Association of Reserve Flight Surgeons

Send information for publication on this page to: **Jillian Newlands, M.Ed.**
c/o Post Office Myponga,
South Australia 5202,
AUSTRALIA
Jillian.Newlands@unisa.edu.au

Message from the President

We live in very challenging times. Many of us have had recent deployments and interesting experiences upon which to reflect. I trust that there will be time to convert those Reflections to print so that we can all share in the wealth of knowledge gained from our professional duties.

It would appear that a number of flight nurses, myself included, had difficulty with abstract submission for this year's Scientific Meeting and subsequently missed the deadline. I encourage these folk to resubmit their abstracts for the 75th Scientific Meeting in Alaska. At least we will have all our material ready well in advance of the due date!

I trust that many of you will be able to attend the 74th Scientific Meeting in San Antonio. In the year celebrating 100 years of flight, it should be a great meeting. In

Australia, we can celebrate, conservatively, at least 70 years of flight nursing. It is at this time that I put forward to our members the concept of establishing an international standard of flight nurse practice to be used as a benchmark for military and civilian aeromedical organizations. The ANS committee is discussing this concept and I would be delighted to get the members comments/suggestions. I will inform you in the next journal issue of our progress on this matter. Until then, stay safe and happy flying.

Jill Newlands
2002-03 ANS President

Executive Board of ANS

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Jill Newlands (SQNLDR- RAAFSSR);
Jillian.Newlands @defence.gov.au or
Jillian.Newlands @unisa.edu.au

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Maj Joyce Rosenstrom; majrosey@comcast.net

Maj Dona Iverson; DMI123@aol.com

Lt Col Diane Fletcher

Aerospace Nurses Society Garrecht Award Information

The Brig. Gen. Claire Garrecht Award honors an ANS member for the best scientific paper presented during the Annual Scientific Meeting of the Aerospace Medical Association. This award, sponsored by Educational Enterprises, Inc., consists of a plaque and honorarium.

Criteria: Membership in the AsMA and ANS. Abstract must be accepted for presentation at the meeting.

Procedure: Five copies of the full paper following the prescribed format must be submitted to the by March 15 to:

Joyce Rosenstrom
316 Janice St
Goose Creek, SC 29445
MAJROSEY@comcast.net

Format for Content:

- Introduction--1) purpose; 2) problem statement; 3) research questions/objectives of study
- Review of literature--1) pertinent findings; 2) theoretical framework; 3) analysis of relevant studies
- Methodology--1) sample population; 2) procedure; 3) instruments; 4) data analysis
- Results--1) relevance to practice; 2) implications for future research
- Appendices--1) instruments, etc.; 2) informed consent forms
- References.

Limit to 5 pages, not including title page, abstract, references, appendices, and forms.

Reflections

We live in exciting times! This is a perfect opportunity for you to share some of your rewarding experiences with others. Join the wonderful group of forerunners who took the risk and submitted articles for the "Reflections" Section of the AsMA journal. The focus may be on lessons learned from significant flying experiences or by virtue of different jobs/positions held within the aeromedical evacuation arena. Be creative, yet professional! I invite you to take a few moments and write down your thoughts so that others can profit from your experiences. Please contact:

Pat Ravella
12221 Sleepy Horse Lane
Columbia, MD 21044
H: (410) 730-7868; W: (410)706-8602
Ravel711@aol.com

Join the Aerospace Nurses Society!

Dedicated to the advancement of aerospace nursing. Dues are just \$10. Membership is open to allied health professionals for \$5 a year. For further information, contact:

Nora Taylor
301 Radcliff
Belleville, IL 62221
noralsaka@yahoo.com
Nora.Taylor@hq.transcom.mil

Sunday Workshops to be Held in San Antonio--Sign up NOW!

Use the Registration Form in the front of this journal or go online at www.asma.org/meetinginfo.html

NOTE: LIMIT 50 PARTICIPANTS PER WORKSHOP. CASH ONLY AT THE DOOR

1. A Human Factors Approach to Accident Analysis and Prevention

(Sunday, May 4); Fee \$120; 5 hours Cat. 1CME

Scott Shappell, Ph.D., and Douglas Wiegman, Ph.D.

Civil Aerospace Medical Institute, Oklahoma City, OK, and University of Illinois at Urbana-Champaign

Human error is implicated in nearly all aviation accidents. This workshop will provide tools and information needed to conduct human error analysis of aviation accidents. Six hours of didactic lecture and classroom exercises. The morning session is devoted to introduction of the problem, and then presentation of the Human Factors Analysis and Classification System (HFACS), concluding with an hour of summaries as teaching tools to be classified. The afternoon will be devoted to "hands-on" analyses of NTSB accidents using HFACS.

2. Aircrew Fatigue: Causes, Consequences, and Countermeasures

(Sunday, May 4); Fee \$120; 5 hours Cat. 1CME

John A. Caldwell, Ph.D., and J. Lynn Caldwell, Ph.D.

U.S. Air Force Research Laboratory, Brooks AFB, TX

The workshop will outline the importance of addressing fatigue as a danger in aviation, the basic physiological mechanism underlying fatigue, and the most common causes of fatigue in air transport and

other settings. Ways to recognize fatigue in operational environments and information about the efficacy of various countermeasures, including specific information about countermeasure techniques such as proper work/rest schedules, adequate sleep, napping strategies, rest breaks, circadian entrainment, stimulants and others will be provided.

3. Medical Aspects of Aircraft Accident Investigation

(Sunday, May 4); Fee \$120; 5 hours Cat. 1CME

Alex Wolbrink, M.D.

Civil Aerospace Medical Institute, Oklahoma City, OK

The objectives of this workshop are to relay a basic understanding of medical aspects involved in conducting an aircraft accident investigation, including the role and significant components of autopsy and pathological examination, specimen handling and toxicological analysis. Investigating pilot medical incapacitation as a contributing factor, and the differences between civilian and military accident investigations and responsibilities in various countries will be discussed.

Sunday, May 4, 3 p.m. Journal Seminar: How to Write and Submit a Paper; Secrets of Peer Review

Journal Staff; Free; No CME provided, No limit to participants.

During the first hour, the journal staff will present practical information on writing a paper, formatting the text and references, and correct use of tables and figures. They will also explain the process of submission on line. The final 30 min will be devoted to peer review, how it works on line and what it can and can't do. The sessions are suitable for new authors and for experienced authors who wish further information on performing peer review.

Send information for publication on this page to:
Elina Takahashi
40 Wallford Way
Ottawa, Canada, K2E-6B6
elinatakahashi@sympatico.ca

WING NEWS & NOTES

There will be no Wing page this month. Instead we are offering a list of San Antonio attractions to help you plan your trip to the annual meeting this May 4-8. Remember to register in advance, especially for the tours. The forms are available in the front of the journal. And don't forget to bring favors with you to exchange at the Wing luncheon!

San Antonio Attractions

Here are some interesting things to do while in San Antonio for our 74th Annual Scientific Meeting. Further information on special events, etc. can be found at the website: www.sanantoniocvb.com.

Alamo

300 Alamo Plaza (78205) On the east side of Alamo Plaza is the most famous spot in Texas where 189 defenders fell on March 6, 1836, after repeated attacks by Mexican General Santa Anna's army. Mission San Antonio de Valero (The Alamo) was established in 1718 as the city's first mission. The chapel, one of the most photographed facades in the nation, and the Long Barracks are all that remain of the original fort. Long Barracks Museum and Library are near the chapel. The museum contains relics and mementos from the Republic of Texas and offers narration on the fall of the Alamo. The Alamo is located in the heart of the city, inside beautifully landscaped grounds. Hours: 9 a.m.-5:30 p.m., Monday-Saturday; 10 a.m.-5:30 p.m. Sunday. Closed December 24 and 25. Restricted hours March 6. For special events please call 210-225-1391 ext. 34. 210-225-1391 Fax: 210-229-1343 e-mail: thealamo@thealamo.org

Buckhorn Saloon & Museum

318 E. Houston (78205) For a taste of the Old West and wildlife exhibits from all over the world visit this classic 1881 saloon and museum. The museum is a short two blocks from the Alamo and 50 yards from the River Walk. Stroll through 33,000 square feet of artifacts from Texas history and world record wildlife exhibits with African, Asian, Alaskan, and North American themes - over 520 different species in all including fish from the Seven Seas. Visit the arcade and Buckhorn Curio Store. Cafe opens daily at 11 am. Weekday lunch specials for \$3.99. Open all year except Christmas and New Year's Day. Memorial Day to Labor Day (call for schedule). Labor Day to Memorial Day 10 a.m. - 5 p.m. Admission charged; Discounts for seniors and military with ID. 210-247-4000 Fax: 210-247-4020

Casa Navarro State Historical Park

228 S. Laredo St. (78207) The home site of Jose Antonio Navarro (1795-1871), a Texas legislator under Mexico, the Republic of Texas and the U.S. The site of Navarro's furnished house, first residence, and store. Navarro's life illustrates Texas' rich Mexican history and heritage. Conversational tours and exhibits are provided. Hours: 10 a.m.-4 p.m., Wednesday-Sunday. Admission: adults \$2; children (6-12) \$1; children under 6 free. Adult group rate \$1; school groups 50 cents per person. 210-226-4801

San Antonio IMAX Theatre At Rivercenter

849 E. Commerce, Rivercenter Mall, Street Level, Crockett Street Entrance (78205) "Alamo - The Price of Freedom," is a 45-minute docudrama about the 13-day siege and fall of the Alamo and the 189 defenders who fought and died. The IMAX screen is six stories tall, 10 times larger than a conventional movie screen. The huge screen and magnetic stereo sound system put viewers in the center of the action. Other IMAX features are also shown. IMAX recently opened a second 3-D screen. Admission: adults \$8.95; children (3-11) \$4.75; senior (65+) \$7.95; groups (15 or more) adults \$6.20; children (3-11) \$4.75. 210-247-4629 or 800-354-4629, Fax: 210-227-5432, www.imax-sa.com, E-mail: info@imax-sa.com

Japanese Tea Garden

3800 North St. Mary's St. (78212). (At the northwestern edge of Brackenridge Park) Winding pebble walkways, stone bridges, a waterfall and tranquil pools highlight this lush garden.. 210-821-3120

King William Historic Area

A 25-block area near downtown on the south bank of the San Antonio River. In the late 1800's the King William District was the most elegant residential area in the city. Prominent German merchants originally settled the area. It was zoned as the state's first historic district, and has once again become a fashionable neighborhood. The area includes the following attractions. Note - RESTRICTED ACCESS: Motorcoaches/ buses may obtain a Historic District Destination Point Permit to drop off and pick-up passengers (using the most direct route from the city designed arterial) for the Steves Homestead by contacting the City of San Antonio Transportation Dept. at 210-207-7378 or 210-207-7379.

Guenther House

205 E. Guenther (78204) Located on a bend of the river, one of the oldest historic districts in Texas. Carl Hilmar Guenther, founder of Pioneer Flour Mills, built this elegant home in 1860. The restored house includes a museum where mill memorabilia is displayed. Of interest to collectors are the Dresden china anniversary plates made in Germany until WWII. Museum and River Mill store hours: 9 a.m. - 5 p.m., Monday-Saturday; 8 a.m. - 2 p.m., Sunday. Restaurant hours: 7 a.m. - 3 p.m., Monday-Saturday; 8 a.m. - 2 p.m., Sunday. Free admission. 210-227-1061 or 800-235-8186 Fax: 210-351-6372

La Villita

418 Villita (78205) A unique arts and crafts community with shops, working artists, restaurants and a post office. The Old San Antonio Exhibit (located in Bolivar Hall) houses a collection of art objects, artifacts and symbols relevant to the history. This beautifully landscaped historic district offers leisurely shopping, dining and five rental venues for special events. Shops open daily 10 a.m.-6 p.m. Free admission. Closed Thanksgiving, Christmas and New Year's Day. 210-207-8610 Fax: 210-207-4390

Majestic Theater

224 E. Houston (78205) Named a State and National Historic Landmark. One of the few

remaining vintage, atmospheric vaudeville movie palaces. Home to the San Antonio Symphony and the AT&T Broadway Series. Individual concerts and events also show-cased. 210-226-5700 210-226-3333 (tickets) 210-223-4343 (tours)

Market Square - El Mercado

514 W. Commerce (78207) From early morning until late at night, Market Square is alive with activity. Visitors browse through the 32 shops at "El Mercado," an area patterned after an authentic Mexican market. In addition, there are 80 specialty shops in Farmers Market Plaza. Market Square is also the scene of many Hispanic festivals where food and beverage booths spring up alongside the Guadalupe lamps and the strains of mariachi music blend with the excitement of Mexican dances. Free admission. Hours: 10 a.m.-8 p.m., summer; 10 a.m.-6 p.m., winter. 210-207-8600 Fax: 210-207-4287

Mission Trails -

San Antonio Missions National Historical Park

Park Headquarters: 2202 Roosevelt Ave. (78210) www.nps.gov/saan The chain of missions established along the San Antonio River in the 18th century are reminders of one of Spain's most successful attempts to extend its New World dominion from Mexico. Representing both church and state, these missions were charged with converting the local Native Americans, collectively called Coahuiltecos, into devout Catholics and productive members of Spanish society. More than just churches on the Spanish Colonial frontier, the missions also served as vocational and educational centers, economic enterprises involved in agricultural and ranching endeavors and regional trade. They were the greatest concentration of Catholic missions in North America and formed the foundation for what is today the thriving city of San Antonio. The park contains the historically and architecturally significant structures of missions Concepción, San José, San Juan and Espada. Other important cultural resources included are the historic Espada Dam and Aqueduct, acequia (irrigation) systems and the Rancho de las Cabras. Hours: 9 a.m.-5 p.m. daily. Closed Thanksgiving, Christmas and New Year's. Free admission. The visitor center is located next to Mission San Jose and contains a theater showing a 20-minute depiction of early life at the mission, a museum and book shop. 210-534-8833 or 210-932-1001 Fax: 210-534-1106

Mission Concepción

807 Mission Rd. at Felisa St. (78210) This handsome church looks essentially as it did 200 years ago. From 1731, religious festivals were held as friars strove to replace traditional Native American ritual by the demonstration of Christian ideals. Remnants of wall and ceiling paintings in the surviving rooms of the mission's convento have been conserved. Wayside exhibits lead visitors around the grounds and through the various rooms. The site also features a visitor contact station and a sales area. 210-534-1540

Mission San José

6701 San Jose Dr. (78214) Founded in 1720 by

Fray Antonio Margil de Jesús, San José became the largest and best known of the Texas Missions and was viewed as the model among Texas missions. After early setbacks, 300 inhabitants were sustained by the vast fields and herds of livestock. A visitor in 1777 referred to the structure as the "Queen of the Missions." The carvings on the church are notable features. The famous "Rose Window" is considered one of the finest pieces of Spanish Colonial ornamentation in the country. Other features are the convento area and the stairway to the belfry and choir loft - each of the 25 risers was hand-hewn from a single live-oak log and constructed without nails or pegs. Also featured is a granary with flying butresses, a gristmill, restored defensive walls, and quarters. 210-932-1001

Mission San Juan

9101 Graf Rd. (78214) Established along the banks of the San Antonio River in 1731 after relocation from East Texas. With a rich farm and pasture lands it became a regional supplier of agricultural produce, which helped support the missions, local settlements and presidio garrisons. The chapel, with its open bell tower is still in use. A more elaborate church was never completed. The site includes a self-guided nature trail. 210-534-0749

Mission Espada

10040 Espada Rd. (78214) In 1731, after their retreat from East Texas, the founders of San Francisco de los Tejas moved the mission to the San Antonio River and renamed it San Francisco de la Espada. Espada appears as remote today as it did in the mid 1700s. It boasts the best preserved segments of the historic acequias (the irrigation system designed to provide water for crops) part of which includes the still working Espada dam and aqueduct. In 1995, the ranch that once supported Mission Espada, Rancho de las Cabras near Floresville, became part of the National Historical Park and is currently open on a limited basis. 210-627-2021

Plaza Wax Museum & Ripley's Believe It Or Not!

301 Alamo Plaza 78205. The Plaza Wax Museum features over 250 lifelike wax figures from Hollywood, Horror, History and Religion. Also, the children's Land of Make Believe and Freedom's Journey. Ripley's Believe It or Not! exhibits over 500 one of a kind oddities and artifacts collected by famous cartoonist Robert Ripley. Hours: Open daily at 9 a.m. (ticket office closes one hour prior to closing time). Extended summer hours, closed Christmas. Admission: Both attractions: adults \$14.45 + tax; children 4-12) \$7.95 + tax; Group rates available 210-224-9299 Fax: 210-224-1516

River Walk (Paseo Del Rio)

454 Soledad, River Ste. 2 (78205) The Paseo del Rio, in the heart of downtown, is the pride of the city. Lush green foliage lines the banks of this peaceful, historic river. Cobblestone walkways lead visitors to the river-level restaurants and shops. The river bubbles to the surface on the grounds of the University of the Incarnate Word and flows to downtown and beyond, threading its way through the city one level below the hustle and bustle of city streets. First called Yanaguana by the Payaya Indians, meaning "place of refreshing waters." Along the horse-shoe shaped riverbend, the river is shaded by towering cypresses, oaks and willows and bordered by gardens of flowering ornamental plants. River cruisers travel the River Walk's

three miles past unique retail shops, restaurants and nightclubs. See Yanaguana Cruises, listed alphabetically. 210-227-4262

San Antonio Botanical Garden,

Lucile Halsell Conservatory
555 Funston Pl. (78209) www.sabot.org This 33-acre garden represents in miniature, the diverse Texas landscape—from Hill Country wildflowers to the formal rose gardens of East Texas. A biblical and children's garden and a fragrance garden are featured. Enter through the Carriage House to visit the gift shop and have lunch in the tea room (kitchen closed on Monday). The Conservatory, a \$6.5 million complex with 90,000 sq. ft. of climatically controlled structures includes an exhibition hall, tropical house, desert house, palm house, fern room and an orangery. Visitors enter at ground level and follow a tunnel 16 ft. below the surface where architecture separates different environments within a series of tent-like pavilions surrounding a large inner courtyard and pond. Closed Christmas and New Year's Day. Hours: 9 a.m. – 5 p.m. daily Year Round. Admission (includes the conservatory): adults \$4; seniors \$2; children (3-13) \$1; children under three are free. Tour rates available. 210/207-3255 Fax: 210/207-3274

San Antonio Zoological Gardens And Aquarium

3903 N. St. Mary's st. (78212) (Brackenridge Park) Ranked as one of the top zoos in the nation exhibiting over 3,500 animals of 751 species. At the headwaters of the San Antonio River, the zoo encompasses 35 landscaped acres. Includes one of the largest bird collections in the world and the only American zoo to exhibit the endangered whooping crane. Seasonal shows and educational programs throughout the year. The zoo also offers boat rides. Open daily. Hours: 9 a.m.-5 p.m. (winter hours) from Labor Day to Memorial Day; 9 a.m.-6 p.m. (summer hours), Memorial Day to Labor Day. Admission: adults \$7; seniors (62+) and children (3-11) \$5; children 2 and under free. Group rates available. 210-734-7183 Fax: 210-734-7291

Southwest School Of Art & Craft

300 Augusta (78205) Visitors can see free contemporary art exhibitions and lectures by visiting artists and stroll the picturesque grounds of the historic Ursuline Campus, once a girls' school and convent. Guided tours (Monday-Friday, 10 a.m. – 3 p.m. by appointment), a sales gallery and a weekday lunch restaurant are available. Exhibition hours: Monday-Saturday, 9 a.m.-5 p.m. Closed Sunday. Free admission. 210-224-1848 Fax: 210-224-9337

Spanish Governor's Palace

105 Plaza De Armas (78205) Labeled "the most beautiful building in San Antonio" by the National Geographic Society and a national historic landmark. It once housed the officials of the Spanish Province of Texas. Over the entrance is the original keystone which contains the carved, double-headed eagle of the Hapsburg coat-of-arms and the inscription in Spanish, "finished in 1749." Distinguishing features include period furnishings and a cobblestone patio with fountain and foliage. Hours: 9 a.m.-5 p.m., Monday-Saturday; 10 a.m.-5 p.m., Sunday. Admission: adults \$1.50, children (7-13) 75 cents. 210-224-0601 Fax: 210-207-7946

Sunset Station

1174 E. Commerce (78205). Sunset Station is a destination for world-class entertainment, delicious food and night life all set in the historic backdrop of a turn-of-the-century train station. Originally constructed in 1902. Revitalized en-

tertainment destination, Sunset Station showcases San Antonio's rich cultural diversity which is reflected in the wide array of specialty restaurants and entertainment choices, ranging from traditional Mexican cuisine to Ruth's Chris sizzlin' steaks, to Texas toe-tapping country music and the latest in the Latin craze music scene. 210-222-9481 Fax: 210-223-6194 www.sunset-station.com

Texas Adventure - Alamo Special Effects Theater

307 Alamo Plaza (78205); An action-packed multi-media show portraying Texas Independence with the Alamo drama as its centerpiece. Utilizing an array of state-of-the-art special effects found only in a few theme parks, the "Encountarium F/X Theatre" format surrounds visitors with an environment that recreates the touch and feel of being present as history was made. This themed attraction offers a complete experience including the theatre, a retail store and a light food and beverage service both inside and outdoors in The Cactus Cantina. Two private reception rooms overlooking the Alamo are available for catered private parties. The 16,000-square-foot facility may be rented for larger groups and events. Open daily. Hours 8:30 a.m. – 8 p.m. Admission: adults \$7.50; children (3-11) \$4.50. Group rates available for 10 or more. 210-227-8224, Fax: 210-227-9855 www.texas-adventure.com, E-mail: info@texas-adventure.com

Tower Of The Americas

600 HemisFair Park (78205) The Tower, 750 ft. tall, offers a panoramic view of San Antonio and the surrounding area. Glass-walled elevators ascend over 500 feet to the restaurant and observation level. It was the theme structure for HemisFair in 1968 and symbolizes the progress made by the confluence of civilizations in the Western Hemisphere. Hours: Observation Deck, 9 a.m.-10 p.m. Sunday – Thursday; 9 a.m.-11 p.m., Friday – Saturday. Elevator fees: adults \$3; children (4-11) \$1; seniors (55+) \$2. children under four free. Fees subject to change. Visit the Tower of Americas restaurant serving lunch and dinner. 210-223-3101. Parking for restaurant is available off Bowie Street, east of the park. 210-207-8615 Fax: 210-207-4390

Vietnam War Memorial

Created by combat artist Austin Deuel, "Hill 811 S" depicts a marine holding a wounded comrade while looking skyward for an evacuation helicopter. Located at Veterans Memorial Plaza, and dedicated to all veterans.

Join the Wing!

The Wing of the Aerospace Medical Association was formed in 1952 "to support the specialty of aviation, aerospace, and environmental medicine by facilitating cooperation among its practitioners and by increasing public understanding and appreciation of its importance." A second purpose of the Wing is "to promote sociability among its members and their families." Each year at the scientific meeting, AsMA spouses meet new friends from every corner of the world, sharing in the many cultural experiences and educational opportunities of the host city. Dues are \$20 per year. For further information, contact: Judy Waring, 4127 Kenyon St., Seattle, WA 98136; (206) 933-0884; e-mail: judymikewaring@msn.com



Aerospace Medical Association

Corporate and Sustaining Members

The financial resources of individual members alone cannot sustain the Association's pursuit of its broad national goals and objectives. Its more than half-century history is documented by innumerable medical contributions toward flying health and safety that have become daily expectations by the world's entire flying population—commercial, military, and private aviation. However, support from private and industrial sources is essential. The following organizations, who share the Association's objectives or have benefitted from its past or current activities, have affirmed their support of the Association through Corporate Membership.

Aeromedic Innovations	Mayo Clinic
Air Canada	MedAire, Inc.
Air Line Pilots Association	MEDJet International, Inc.
Air Methods Corporation	Medtronic Physio-Control
AirSep Corporation	Monash University/Alfred Hospital
American Airlines, Inc.	
AMST Systemtechnik Ges m.b.H.	National Air Ambulance, Division of National Jets, Inc.
ASM--Austrian Society for Aerospace Medicine	Northrop Grumman Life Support
AstraZeneca Pharmaceuticals LP	
Autoflug Libelle GmbH	OSU-College of Osteopathic Medicine
Aventis Pharmaceuticals	
Aviation Medicine Center at UTMB	Pilot Medical Solutions, Inc.
Baxter Healthcare Corporation	Scandinavian Airlines System
The Boeing Company	Schering-Plough Corporation
	Science Applications International Corporation (SAIC)
David Clark Company, Inc.	17 Wing Medical Clinic
	Stereo Optical Company, Inc.
Education Enterprises, Inc.	
Environmental Tectonics Corporation	The First Call
Essilor of America/Varilux	
Gentex Corporation	United Airlines
GlaxoSmithKline	United States Aviation Underwriters
	Universities Space Research Association (USRA-DSLS)
International Federation of Air Line Pilots Associations	
	Harvey W. Watt & Company
Japan Airlines	World Aviation Systems, Inc.
	Wound Specialty Associates, P.A.
Latecoere International, Inc.	Wyle Laboratories, Inc.
Lockheed Martin Corporation	

Send information for publication on this page to: **News of Members**
Aerospace Medical Association
320 S. Henry Street
Alexandria, VA 22314-3579
pday@asma.org

NEWS OF MEMBERS

R. Wesley Farr, CDR, MC, USNR, has completed his residency in aerospace medicine at the Naval Aerospace Medical Institute, Pensacola, FL. He is now Senior Medical Officer, USS Harry S. Truman, based in Norfolk, VA, which was deployed in December for a 6-month tour. He recently received the Navy and Marine Corps Commendation Medal.

G. Richard Holt, M.D., M.S.E., M.P.H., formerly Executive Vice President of the American Academy of Otolaryngology-Head and Neck Surgery and Foundation (AAO-HNS/F) in Alexandria, VA, has returned to Texas as Professor, Department of Otolaryngology-Head and Neck Surgery at the University of Texas Health Science Center in San Antonio. He received the Presidential Citation from AAO-HNS/F. He is a former Editor of *Aviation, Space, and Environmental Medicine*.

Donato J. Borillo, M.D., J.D., M.S., Holland, OH, was formerly a Major with the USAF Special Operations, RAF Mindenhall, England. He has separated from the military and is currently Medical Director of Occupational Medicine, and of the Hyperbaric Medicine Department at The Toledo Hospital, ProMedica Health System, Toledo, OH. He is also a practicing attorney, member of the Toledo, the Ohio State, and the Lucas County Bar Associations. He has been designated a Senior AME and Independent Medical Sponsor.

Anthony Lynch, Ph.D., M.B., Ch.B., Calgary, Canada, has been appointed Occupational, Environmental and Aviation Medical Consultant, Columbia Rehabilitation Centre, Calgary. He has been awarded his certificate from the Canadian Board of Occupational Medicine and his Diploma in Aviation Medicine.

CAPT Elwood W. Hopkins, III, MC, USNR, Annapolis, MD, is Senior Medical Officer, US Naval Academy ("the best shore-based job in Navy Medicine"). He was formerly Neurology Division Head, Naval Medical Center, San Diego, CA.

James W. Brinkley, Director of the Human Effectiveness Directorate of the Air Force Research Laboratory, Brooks City-Base, TX, has been inducted into the Safety and Health Hall of Fame. The 33,000-member National Safety Council bestowed this honor for his leadership; service to safety, health, and environmental organizations; and his many technical contributions in research and development that have led to the prevention of major injuries and fatalities in both the military and public sectors. His leadership and personal research efforts have been instrumental in providing the scientific foundation for understanding the human response to a broad range of environmental hazards including ejection acceleration, vehicle impact, and prolonged

suspension in a harness after fall arrest. Mr. Brinkley's technical contributions include: development of empirically based mathematical models to estimate the likelihood of injury, development and evaluation of protective equipment, demonstration of the safety of the first automotive passenger air bag restraint, development of safety and equipment design standards, and publication of numerous reports, journal articles, and book chapters. A Fellow of AsMA, Mr. Brinkley has received its 1983 Eric Liljencrantz Award and 1995 John Paul Stapp Award.

New Members

Johnson, Travis A., B.S., Tempe, AZ
Menges, Pamela A., Ph.D., Cincinnati, OH
Moore, Jeffrey L. Jr., Pensacola, FL
Sundaram, Balasakumar, MBBS,
San Jose, CA
Wood, Scott J., Ph.D., Pensacola, FL

International New Members

Hovis, Jeff K., Ph.D., Waterloo, ON, Canada
Kapoor, Vimal Scotty, M.D., MPH, Hamilton,
ON, Canada
Markus, Yaacov Michael, Toronto, ON,
Canada
Vandenbergh, Hein C., M.B., B.S., Forestville,
NSW, Australia

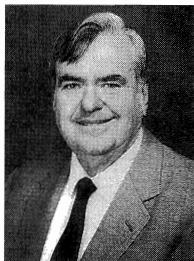
In Memoriam

John Patrick Meehan, Jr.

Dr. John Patrick Meehan, Jr.—or Pat, as he liked to be called—was born in San Francisco and grew up in San Marino, CA. He attended the California Institute of Technology, studying chemical engineering. He then attended the University of Southern California, earning his medical degree in 1947. He stayed on at USC, first as a researcher and then as a professor of physiology. He served as chairman of the physiology department from 1966 until his retirement in 1987.

Pat's time at USC was interrupted in 1951, when he was called to active duty with the United States Air Force at the beginning of the Korean War. He was stationed in Fairbanks, Alaska, where he was chief of the Physiological Branch of the Arctic Aeromedical Laboratory at Ladd Air Force Base. Pat also piloted evacuation flights for critically injured soldiers, taking them from Seoul to Fairbanks for further medical treatment.

Upon his return to USC in 1954, Pat resumed studies he had begun earlier, evaluating the effects of acceleration and high altitude on humans. In this research he used a blood-



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CERTIFICATE OF KNOWLEDGE IN

TRAVEL MEDICINE EXAMINATION—The International Society of Travel Medicine (ISTM) will offer a Certificate of Knowledge in Travel Medicine examination in May 2003, before the opening of the 8th ISTM Conference in New York City, May 7-11. For more information: www.istm.org.

pressure recording device of his own design. This device was later used by NASA to measure a chimpanzee's blood pressure while in Earth-orbit, in anticipation of the first space flights by human beings. Pat continued to be associated with NASA for many years, and his work benefited all those who engaged in space travel, including cosmonauts for the Soviet Union.

Pat's contributions to his field were recognized in 1987, when the American Institute of Aeronautics and Astronautics presented him with the prestigious Jeffries Aerospace Medicine and Life Sciences Research Award. In addition, he delivered the 1985 Harry G. Armstrong Lecture for the Aerospace Medical Association's annual scientific meeting.

In the years following his retirement from USC, Pat stayed active in his discipline, designing instructional software in cardiac physiology and interviewing applicants to the Keck School of Medicine.

Obituary Listing

We have just learned the **Col. Michael E. Hayek, MO-ANG, MC**, of St. Louis, MO, died suddenly last August at the age of 48.

RADM Richard D. Nauman, USN(ret), Pensacola, FL, died in September at the age of 82. He had been a member of AsMA since 1948.

Membership Directory is now ONLINE!!!

Go to the website at www.asma.org and click on MEMBERS ONLY!

The site is secure and requires a password. Contact Gloria Carter to receive your password or change your information in the Directory: gcarte@asma.org.

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