The Society of U.S. Naval Flight Surgeons Newsletter

Volume XXIII, Number 4 **http://www.aerospacemed.org** **October 1999**

President's Column

I hope many of you are logging on to our web page www.aerospacemed.org. LT Wells and colleagues have been doing a great job updating it. Soon we hope to have the Bulletin Board feature to invite discussion and debates about a number of issues of interest to us all. I have not as yet had much response to my call for input about the Society's direction in the last newsletter. Perhaps that indicates that the membership is pretty satisfied about what the Society is providing. A member did respond to some of the ideological comments in my last column. I am hoping we may be able to print that response in this or a future SUSNFS newsletter. While we have different interpretations of the present evolution of Medicine and even Navy Medicine, the response may kindle some further discussion–and intelligent discussion of important ideas is critical to the growth and viability of our vocation. If we doctors do not ***lead*** in the inevitable change that is all around us, we are of course obliged to follow those who do.

By the way, looming not too far in the future is a boogey man we must not forget. Recall that a little over a year ago, there was much worry and contemplation about "only residency-trained docs in the fleet." The time-honored "post-internship" Flight Surgeon was going to disappear. We breathed a collective sigh of relief when it appeared that the change was discarded. Presently we still have quite a few Student Naval Flight Surgeons coming to NAMI right out of internship. But this issue will return, and will have to be confronted–effectively–in the future. Several states now require two or more years of postgraduate medical education for licensure. Most people (I among them) expect that ***more*** states will begin to require several years of GME for licensure soon. The Department of Defense requires that doctors in the Fleet be licensed. Ergo, pretty soon, we will have to let many, maybe even all, doctors get two years of GME ***before*** they start aviation medicine. If we have to wait a minimum of two years, since many GME programs are only three years for completion, will we have to let them ***complete the full*** residency before coming to NAMI? If so, then if most already finish a "conventional" residency first, how many will apply to be Flight Surgeons? Will we require young doctors to take a hiatus from residency after two years to become

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IN THIS ISSUE

THE SOCIETY OF U.S. NAVAL FLIGHT SURGEONS
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The Society of U.S. Naval Flight Surgeons is a non-profit organization. Its purpose is to advance the science, art, and practice of aerospace medicine and the mission of the U. S. Navy and the U. S. Marine Corps; to foster professional development of its members; and to enhance the practice of aerospace medicine within the Navy and the Marine Corps.

Membership is open to all flight surgeon graduates of the Naval Operational Medicine Institute. Associate memberships are available. Dues are $15.00 per year, or $225.00 for a lifetime. Contact the Treasurer at the address above for more information or membership application form.

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Flight Surgeons and serve a tour with the Fleet before completing GME? If that happens will they have trouble later with the various accrediting bodies in medical specialties?

There are a lot of questions, a lot of "what ifs," and a host of possible solutions (for example one that I have thought about and discussed a lot is to merge flight surgeon training WITHIN a clinical residency such as family medicine or internal medicine). I am convinced, though, that the Society of U.S. Naval Flight Surgeons should pay attention to this issue. This Society must help the Navy deal with it effectively and keep the health of the Fleet always in mind. The issue will be back soon. We should be mindful of it and provide BUMED and PERS our best and most reasoned advice.

Please, keep those cards and letters coming – and "Keep 'Em Flying"!

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From the Secretary

Well here it is, the last SUSNFS issue prior to the year 2000. I will, however, refrain from making comments about it being the "last of the millennium" or "last of the 20th century" – it's not. As some of you may know, the first year of the Anno Domini (A.D.) calendar was year one, not year zero. The concept of zero had not been discovered by the Gregorian monks at the time the calendar was created. Therefore, at the start of year two we had completed one year, not two. Likewise, at the start of the year 2000 we will have completed 1,999 years, not 2,000. The 21st century, or the new millennium, won't start until January 1, 2001. That fact, however, hasn't prevented a lot of excitement about the year 2000, and I hope for it to be an exciting year for SUSNFS as well.

NOMI Clinic Annex (Building 1954A)

I have completely redesigned the membership database and added additional fields that will help us better serve the membership. I have found, however, that there are a lot of incomplete entries. Please completely fill in the new membership/order form when renewing or even just ordering merchandise. I review all of these and update the database accordingly. Sometimes we only receive a check with no other information! I have gone a long way towards correcting inaccurate addresses, please keep those address corrections coming. Forwarding costs the Society money. If you e-mail me corrections, please use the bottom of the membership/order form as a guide to what information we need.

I would also like to take this opportunity to review the criteria for voting membership in the Society. "*Members must be designated Flight Surgeons, Aerospace Medical Examiners, or Aviation Medical Officers*: who are currently on active duty with the U. S. Navy or U. S. Coast Guard; or who have served at least two years of active duty with the U. S. Navy or U.S. Coast Guard and were separated under honorable conditions; or who are members of the U. S. Navy Reserve in a selected or inactive status; or individuals who have graduated from the School of Aviation Medicine/Naval Aerospace Medical Institute, Pensacola, Florida, while on active duty in the U. S. Armed Forces or the service of an allied nation. *Members of the Society shall also be members of the Aerospace Medical Association*." Other dues-paying individuals are considered subscribers. **This is why it is important for us to know whether you are a designated Flight Surgeon and a member of AsMA**. Otherwise, we do not have an accurate picture of how many active voting members we have.

LT Brian Wells has taken the lead in totally redesigning the SUSNFS web site at www.aerospacemed.org, and I hope to continue to add improvements to it. Please take a look. We welcome any comments or suggestions as to what you would like to see on the site. An interactive bulletin board is in the works, and I also hope to add a page where you can enter address changes online.

The new NOMI Clinic Annex (1954A) is almost complete, and the clinical departments will be moving over soon. The residency offices and Code 42 will also be moving out of Building 664 so that it can be renovated. I imagine there will be some delays as the move takes place (duh!) so please be patient if you are trying to contact us.

Also in this issue, I hope that you will enjoy the fruits of my photography with the residency's new digital camera. I will once again encourage contributions to your newsletter in the form of articles or letters to the editor. I welcome your e-mails on any Society issues. Happy Holidays and Happy New Year 2000!

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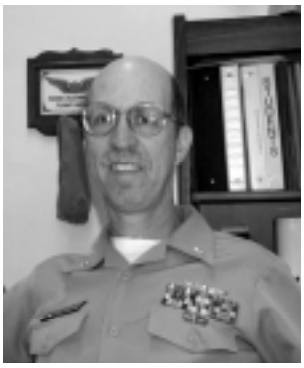
From the Treasurer



Thanks to all those who responded to the last column in the newsletter. We had a record number of new life memberships this past quarter. "Keep those cards and letters coming folks!" There were a lot of expired dues on the roll this past quarter. Please try to remember the Society when it comes time to sit down and face the old checkbook. To keep things simple, all dues expire in May, regardless of when they were paid. I would like to encourage everyone, however, to send in his or her dues at the end of February beginning in the New Year. This will give the members of the board time to review the membership and the treasurer the experience to face the influx of mail. We have also noted that there were a significant number of newsletters returned after the last mailing and hope that anyone who didn't get their newsletter will send us an e-mail, letter or give us a call and let us know their correct address. High mobility seems to be the biggest problem with the administration of the membership of our Society. We hope all of you who have made a move in the past year will please let us know so that we can continue to give you the best service.

If anyone has any ideas as to how we can better serve you the membership, please drop a line and let us know. The Society is alive and well and we want it to stay that way. Don't forget Christmas is coming soon. We have a large supply of "scrunchies," which I am sure the ladies will love to get in their Christmas stocking. Those of you with orders as gifts should be sure to get them in as soon as possible so as not to miss the holiday deadline.

We are thinking of creating a belt buckle with the Flight Surgeon wings mounted on it. If anyone has any thoughts on this idea, please let us know so that we know how the membership would respond to such an item. That's about all for now. Remember, fly safely...

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Specialty Leader
(MED-23)

The "winds are a' changin" in Washington - and recently they changed quite abruptly at BUMED. RADM (select) Don Arthur became Chief of the Medical Corps (00MC), and by the time you read this newsletter, CAPT Jim DeVoll will have moved to 00MC as head of Career Planning, replacing CAPT Bill Wurzel. CAPT DeVoll has served our community well over the last three years, and as its leader over the last 12 months, leaves the community in great shape. Despite the trauma associated with Flight Surgery re-engineering from 1995-1997, our community is much stronger as a result of CAPT DeVoll's and his predecessor, CAPT Dave Hiland's re-engineering efforts. Because of their work over the last several years, our community has progressed from training 4-5 Aerospace Medicine Residents per year to over eight. We now train several straight-through interns. Because of CAPT DeVoll's outstanding recruiting efforts last year with the interns, we had over 84 Flight Surgeon Program applications for 75 positions. There were over 25 applications for only 12 residency slots. Aerospace Medicine Residency training has gone from a program primarily designed to train Senior Medical Officers (SMOs) for carrier medical departments to a program that emphasizes the full breadth of Preventive Medicine. The program not only trains our future carrier SMOs, but also our Officers-in-Charge of preventive medicine units, our future clinical epidemiologists, and other positions requiring the full breadth and depth of Preventive and Occupational Medicine. As a result of these efforts, our credibility as human factors experts and preventive medicine specialists is growing daily with larger Navy Medicine and with the fleet. To a large degree this would not have been so had it not been for the tireless, dedicated, and thorough leadership of CAPT DeVoll. Thanks Jim. I have big shoes to fill!

Because this is my first SUSNFS Newsletter article as the Aerospace Medicine specialty leader, I'd like to lay some groundwork for future articles from MED-23. First, I will try to keep future articles shorter than this one! Second, since the Aerospace Medicine community includes not only aerospace medicine trained specialists and flight surgeons, but also aviation physiologists, aviation experimental psychologists, aviation optometrists, and enlisted aerospace medicine technicians, I will try to

summarize information and key issues from each community that may be of interest to all. Finally, I will attempt to summarize milestones in a bulletized format and keep the information succinct. Keep me honest!

Issues and milestones of note at this time:

- Flight Surgery Manning. Current Flight Surgery manning is strong at over 95%. We trained a total of 74 Flight Surgeons in Fiscal Year 1999. The only Flight Surgeon billets reported not filled are in Claimancy 18 Medical Treatment Facilities.

- Combat Stress Control (CSC) Program. Department of Defense Directive 6490.5 of 23 Feb 99 announced this program. The title gives the appearance of being narrowly focused, but the scope of the program includes not just treatment but a wide variety of preventive measures. The Navy and Marine Corps already comply with the spirit and intent of the directive, but more work will have to be done. Both programs focus on the unit level where primary intervention should take place. Anticipate being asked for input in the near future. More to follow. Point of Contact (POC): CAPT Jim DeVoll, (202) 762-3451, jrdevoll@us.med.navy.mil

- GMO Conversion. Congress has mandated conversion of all General Medical Officers (GMOs) to specialists. In response to this and to Department of Defense direction, the Surgeon General has formed a task force to validate fleet requirements for GMOs, as well as for Flight Surgeons and Undersea Medical Officers. The task force will determine which billets would best be served by conversion to a combined specialty and which ones should remain unchanged. There has been a lot of input and participation from fleet medical leadership. A report with recommendations will go to the Surgeon General soon. POC: CAPT Jim DeVoll

- Corneal Refractive Surgery. As of this writing, the Surgeon General has signed off on a comprehensive corneal refractive surgery physical standards and waiver policy message that will be released in a few days. (Editor's Note – the message appears on page 20 of this issue). All forms of corneal surgery are waiverable for new accessions to general Naval duty. Refractive keratotomy (RK) is strongly discouraged. Photorefractive keratectomy (PRK) is the only procedure at this time waiverable for service in our warfare communities. The diving/special warfare (SEALs) community is the only warfare community in which PRK is not considered disqualifying. PRK is waiverable in all other warfare communities, including aviation, as long as the individual meets all requirements specified by that community. The message details those requirements. (Editor's Note – currently, waivers for PRK only (i.e. no other forms of refractive surgery) in aircrew will be considered only if the service member is part of a Navy sponsored clinical study). For more information go to http://navymedicine.med.navy.mil. POC: CAPT Charlie Barker, (202) 762-3456, cobarker@us.med.navy.mil

- Warfighters PRK Program. A Tri-service photorefractive keratectomy (PRK) surgery program is being implemented for active duty warfighters only. We are completing final details of the Navy's program and the CNO/CMC hopefully will have released an implementation message within the next several weeks. Upon message release, Navy program details and warfare community points of contact can be found at http://navymedicine.med.navy.mil. Tri-service POCs - Navy POC: CAPT Charlie Barker; Air Force POC: COL Kim Slawinski; Army POC: COL Tony Carter

- Performance Maintenance in Continuous Flight Operations - A Guide for Flight Surgeons. This manual was developed by CDR Dave Brown in conjunction with Naval Strike Warfare Center to define the standard of care for use of stimulants and sedatives in continuous, sustained flight operations where prevention of fatigue is critical to mission success. The guide contains background information, standards of care, and briefing materials for flight surgeons. The Aeromedical Advisory Council, CO NOMI, and MED-02 have approved the guide. The Surgeon General is currently reviewing it. POC: CAPT Charlie Barker

- Manual of the Medical Department - Chapter 15-65 (Aviation Standards). The long awaited aerospace revision (a work in progress for over two years!) is

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almost complete and includes revisions of the original revision! By the time you read this, the final document should be available for use by going to http://navymedicine.med.navy.mil/instructions/external/external.htm or http://www.vnh.org. As an aside, the revision refers to NOMI/NAMI/BUMED-23 approved Aeromedical Reference and Waiver Guide, which is considered an official BUMED-23 NOTAL in message traffic. POC: CAPT Charlie Barker

- From MED-231/02T (Aviation Physiology) – POC: CAPT Robert Matthews, (202) 762-3452, ramatthews@us.med.navy.mil:
  - MILCONS (Military Constructions) for new Aviation Water Survival Training Facilities. Patuxent River, Norfolk, Cherry Point, Pensacola and Whidbey Island are at 75% of design. Planned Fiscal Year 2000 groundbreaking with a Fiscal Year 2001 opening.
  - Additional Qualification Designator for Aeromedical Safety Officer established. "Adding" the AQD to Aeromedical Safety Officer (AMSO) billets AND assigning the AQD to officers that have completed the required training. This will ensure officers assigned to AMSO duties will complete Aeromedical Safety Officer training prior to reporting.
  - 20 Aerospace Physiology Subject Matter Experts (SMEs) have been designated and are included as resources on the Aerospace Physiology Program webpage (http://navymedicine.med.navy.mil/med23/AeroMed231.htm).
  - Over Land Parasail Training has replaced over water parasail training for initial aviation survival training in order to meet JOINT (USN/USAF) undergraduate flight training requirements. NOMI DET Central will conduct first classes starting FY00.
- Enlisted Aeromedical Programs Manager (MED-233) has been focusing on recruitment of HM-8409 and HM-8401. HM-8409 (Aerospace Physiology Technician) is currently manned at only 86.3%. HM1 (FMF) Schaeffer is soliciting support from the fleet to lookout for motivated Fleet experienced Hospital Corpsmen looking for a challenging and rewarding NEC. HM-8409 is open to paygrades E4-E7. For more information on requirements, contact your Career Counselor or the Enlisted Technical Leader, HMC (AW/FMF) Roach at DSN 267-6185, or HM1 (FMF) Schaefer at DSN 762-3450 or email tsschaefer@us.med.navy.mil. For HM-8401 (Search and Rescue Medical Technician) training, designation and assignment contact the SAR M Enlisted Technical Leader, HM1 (FMF/NAC) Brown at DSN 582-6389/5247/4066 or e-mail brownr6@cherrypt.usmc.mil. This NEC is open to E-3 through E-5. Designated HM-8401s qualify for a selective re-enlistment bonus and hazardous duty incentive pay, and get to wear the Naval Aircrew breast insignia.

One final word - on LEADERSHIP. We currently have many fine leaders throughout the community and many in training who have great leadership potential. The type of leaders in our community's future will obviously depend on whom we recruit, how we train them, and how we do the business of Aerospace Medicine. These efforts are critical, but just as important is the leadership philosophy we hold for our community and how the "work of leadership" is done. Our vision, mission, structure, and business processes should logically follow from this philosophy. MED-02 will be conducting a High Performance Organization (HPO) seminar for its top leadership at the end of October. This is just the first step in a process to train everyone in the operational organization on "true leadership" and how to "make things so." Yeah, I know what you're thinking - "Not another TQL evolution!" I thought the same. But, after reading about the concept and how it works with the example of Charleston Navy Yard's success, I am really excited about what it can mean for the Navy Aerospace Medicine community. More later…

Godspeed!

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Physical Qualifications Code 42
(MED-236)

From the Director Code 04

Good Morning Navy!! Things just don't slow down at Code 42. Since the last message, we have gained LCDR Troy Anderson and now have three flight surgeons total on staff. We are still crawling out of the backlog of waivers that occurred with the computer "update" and database conversion. The good news is that we can review a package and turn it out in about two months. In this issue I want to talk about: Aeromedical Reference and Waiver Guide updates, TriMEP, the Code 42 move, and waiver delays and hang ups that we see.

Some interesting changes will shortly hit the streets. Please remember that all the new updates to the U.S. Navy Aeromedical Reference and Waiver Guide are posted on the NOMI Website (http://www.nomi.navy.mil/code04/toc97nf.htm). There will soon be new guidelines on peptic ulcer disease, gastroesophageal reflux disease, bone marrow donation, and Raynaud's phenomenon. Again remember that the evaluation for renal stones and the waiver criteria did change last year. CDR Steve Schallhorn (aviator, and corneal surgeon) in San Diego, along with BUMED-23 proposed a new photorefractive keratectomy (PRK) policy that all the services are currently jointly staffing (did I say JOINT?). There will be some changes, but exactly what they will be is under discussion. For now, radial keratotomy (RK) and laser assisted in situ keratomileusis (LASIK) surgery are still not allowed in aviators. PRK is allowed if the aviator is in one of the study groups. There will be more news later.

We are ready to launch (via the Naval Medical Information Management Center (NMIMC)) the TriMEP (Windows based) SF88/93 program. Whiting Field and the Branch Medical Clinic in Pensacola will start the electronic transmission testing this week. If all goes well, we will ask NMIMC to release it to the Fleet. Remember: Micro 88 should not be used AFTER 1 Dec 99. Code 42 is also field testing an "electronic letter" to send to CMC, BUPERS, etc. with our recommendation on a waiver request. We will also be able to send this to the local flight surgeon as a "heads up." Unfortunately the high speed scanning system and Microfiche conversion to digital format is currently on hold.

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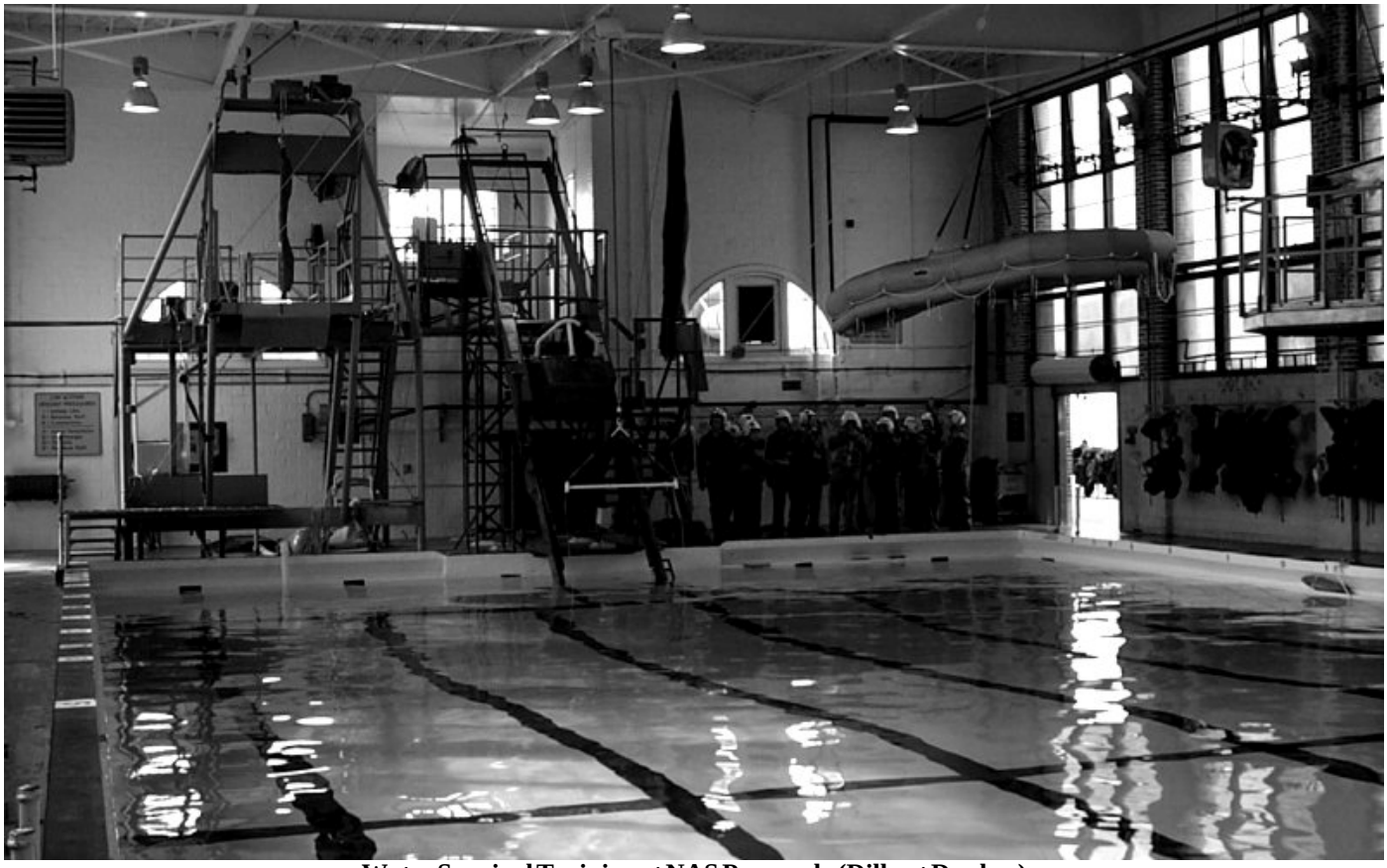

Water Survival Training at NAS Pensacola (Dilbert Dunker)

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Code 42 got the word yesterday that we will move across the street to Building 1954 in November. Please expect some delays in waiver processing associated with this painful process. We expect that we may have a few weeks of "down time" with this relocation, but are discussing some options now that will hopefully decrease the time off line.

Finally, we can always use your help with the waiver packages. Please update your addresses, phone numbers (big problem with new phone numbers this year), and e-mail addresses. E-mail is still the best way to contact us and will hopefully keep us connected to you during our relocation activities! My staff told me that around 60% of our waiver packages are incomplete! We are starting to seriously track packages to validate this. I do know that we currently have 400 packages that are waiting for more information. Please review your packages and have your AVTs also help. If you have a question about something, please call us before you send the waiver package. It is sometimes very difficult to track down the member or the flight surgeon to ask for more information. Hopefully the Aeromedical Reference and Waiver Guide can give you some information. Beware of the danger of doing a Local Board of Flight Surgeons and issuing an UP chit on a disease or injury that is not mentioned in the Aeromedical Reference and Waiver Guide. Your best bet is to call us (and our fine staff of aeromedical consultants) to get the NAMI view.

As always, keep 'em flying safely!

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From Code 42

First, let me change my hat! The shrink hat is off and the one I'm wearing for this article is as Chair of NOMI ECOMS (aren't acronyms great?!). For most of you who haven't had to get caught up in medical staff stuff yet, it stands for the **E**xecutive **C**ommittee **o**f the **M**edical **S**taff. We address all credentialing/privileging, clinical risk management, and any other issues related to the provision of quality care to our beneficiaries. As clinical consultants to all of you, the care we give extends way beyond the folks that we actually see here at NOMI. We all do a lot of consults by phone and e-mail – and thus the following issue. It is a concern about accountability/ decision-making, and I hope you will bear with me, as this is a bit convoluted.

Code 42 at NOMI receives all of the annual physical examinations, grounding physicals, and waiver packages you send to NOMI. And, as you all remember from your rotation through Code 42, Code 42 is also designated as a BUMED department (MED-236) – the shop where all the recommendations for or against waivers regarding aviation duty come from. Now to the meat of this…

In order to improve our communication process within NOMI, any e-mail or phone conversation you have with one of the medical consultants on staff here is sent to Code 42 for inclusion in the member's microfilm record. This ensures that your concerns regarding the member, and the input of the medical staff here, are considered when a waiver or grounding package is submitted at a later date. The folks at Code 42 have noticed some instances in which one of the NOMI medical staff advised the flight surgeon to ground a member, but a grounding package was not later submitted to MED-236. Per NATOPS, when aircrew personnel are unable to meet required physical standards for periods exceeding 60 days, an aviation physical examination shall be completed and forwarded to NOMI (Code 42), for review and recommendation to BUPERS or CMC as appropriate.

We all know that we, as your consultants, "recommend" a course of action to you as the flight surgeon, which you then "recommend" to your CO. If we**,** as your consultants, have very strong feelings that someone needs to be grounded for safety reasons, we generally assume that if we clearly communicated our reasons, you would not risk flying someone who may be unsafe, and that you will take our recommendation.

The interesting twist is that Code 42, wearing the MED-236 hat, is higher in the food chain and can override the local flight surgeon (you all!). For example, if you do a Local Board of Flight Surgeons on an "iffy" case and "up" someone, BUMED-236 may not recommend a waiver for that person. In almost every

case where this is done, BUPERS/CMC then denies the member a waiver. Of course, we all (MED-236 included) only make recommendations to the line.

The reason for our concern comes from the fact that Code 42 knows one of the NOMI consultants has recommended grounding for a member, but then does not receive a package from the local flight surgeon officially grounding the member. Code 42 has voiced a feeling that, in cases where safety of flight is an issue, they have a responsibility to ensure the local flight surgeons in fact ground the member and submit a grounding physical.

After a good discussion by the members of ECOMS, we decided on the following course:

1. We trust the flight surgeon to "do the right thing" (which includes either taking the consultant's advice, or, in the hopefully rare case you don't, both telling your CO what the consultant recommended and documenting in the member's health record why you are deviating from the consultant's guidance – just as you would if deviating from an established specialty guideline).

2. There is no current data to substantiate the concern raised (not receiving grounding physicals on aviation personnel when the consultant has made a grounding recommendation). It is more of a generalized concern that there may be a problem with this out in the fleet. Therefore, Code 42 will begin to track and monitor the date a consultant recommends grounding and when the grounding physical is received. They will report on this issue to ECOMS in six months and we will revisit it then.

In the meantime, please ***DO THE RIGHT THING*** (even if unpopular with the member or your CO)! And keep giving us a call on any and all cases where there is a question. Thanks!

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Naval Safety Center

Bravo Zulu!

From the Naval Safety Center Surgeon's perspective, several flight surgeons have recently done some exemplary work. I would like to recognize their individual accomplishments as well as recognize the collective accomplishments of all flight surgeons in the Fleet.

Over the past four decades, numerous technical initiatives and standardization programs have contributed significantly to reduce the Naval flight mishap rate. Our Naval Aviation Safety Program chronicles these successful engineering interventions. However, the Naval Aviation mishap rate has now stabilized between 2-2.5 Class A mishaps/100,000 flight hours for the last several years. Despite the fact that the mishap rate has been drastically reduced compared with just a decade ago, accepting the status quo is operationally unacceptable in terms of the continuing loss of invaluable human and material resources. Today, ***human error*** is the common denominator occurring in ***about 80% of our mishaps***. What makes matters worse is that ***human error is by definition preventable***. In order to further reduce the current mishap rate, Naval Aviation must address these human factors that are causal to the great majority of the mishaps we continue to experience. Our flight surgeons are the human factors experts at the tip of the spear. Because Naval Aviation is now aware of the critical importance of human factors, flight surgeons have become indispensable.

The Fleet needs more flight surgeons. This is an objective fact based on a review of our Safety Center surveys. The Naval Safety Center is required to do a safety survey for every Fleet squadron in the Navy and Marine Corps on a regular basis. A review of these surveys reveals that one of the most frequent problems cited is the lack of services provided by a flight surgeon. Unfortunately, not all squadrons have flight surgeons, or a flight surgeon's time in the squadron spaces may be limited by their other commitments, e.g. the CVW Flight Surgeon that must cover four or five squadrons.

A flight surgeon's presence is mandated by OPNAV instruction in all mishap investigations, pre-mishap planning, Human Factors Councils (HFCs), Human

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NAS Pensacola Officers Club

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Factors Boards (HFBs) and Field Naval Aviator Evaluation Boards (FNAEBs). Regrettably there are not enough flight surgeons in the Fleet to provide these services for every squadron. At the Naval Safety Center, we have recently closed out several mishap investigative reports (MIRs) in which improper HFCs that were done without a flight surgeon were found to be causal to the mishap, i.e. contributed to the death of a Naval Aviator.

At the Naval Safety Center we close out every Class A mishap after it has made its way through the entire endorsement chain. A recent close out is worthy of note. LT Alisa Blitzseibert was the assigned Flight Surgeon for the aircraft mishap board (AMB) that investigated a mishap involving a squadron that had three Class A mishaps with the loss of two pilots and four jet aircraft in a span of just nine months. Her Aeromedical Analysis (AA) was probably the ***best*** that I have ever seen. Her human factors analysis was so compelling that it gave us the necessary human factors information we needed to add "poor command climate" as a causal factor to this mishap. Based on her AA, we are convinced that the bad command climate that existed in this squadron was responsible for the loss of two aviators and four aircraft. Most importantly, because of her exemplary work as the human factors expert on the scene, we have been able to take the appropriate actions to prevent the loss of additional members of this squadron in similar mishaps.

Another flight surgeon has recently made us proud with his exemplary work. LCDR Matt Carlberg was the assigned Flight Surgeon in a recent Harrier mishap. Because it was initially thought that the aviator in this mishap died as a result of a faulty ejection seat, all of the Marine Corps Harriers were grounded while the mishap was investigated. Thanks to the "around the clock" hard work, invaluable insight and great consultative services provided by AFIP, LCDR Carlberg was able to determine that the aviator died as a result of an unfortunate parachute landing. Because the ejection seat played no role in the death of the aviator, the Harriers were quickly put back in action. This mishap had the scrutiny of the highest levels of Naval Aviation and the flight surgeon performed admirably.

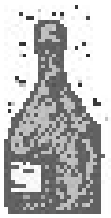
These are just two examples of how flight surgeons are saving lives and aircraft at the same time that they are enhancing operational readiness. There are many other flight surgeons out there that have done great work and are providing the Fleet with indispensable knowledge and expertise. In my role as the Naval Safety Center Surgeon, I have read hundreds of AAs and MIRs, so I can objectively state that over the last several years the average flight surgeon's demonstration of human factors expertise as reflected in the AA has markedly improved. Additionally, the flight surgeon's participation as an invaluable member of the AMB has clearly been reflected in the MIRs. Today's flight surgeons are making a real difference in terms of aviation safety and preserving the resources needed to accomplish our Naval Aviation mission. ***Bravo Zulu!***

Keep 'em flying – ***safely***.

CAPT James R. Fraser, MC, USN
Naval Safety Center Surgeon

Psychiatry Code 21

Some Tricks on a Good Alcohol Evaluation:



As in most issues of SUSNFS, here is a brief alcohol article. The correct evaluation and diagnosis of alcohol abuse/dependence is one of the most important and prevalent psychiatric issues you deal with on a day-to-day basis. It's also one of those that many of you do not have a lot of training, experience, nor comfort with. It's like learning to take a good sexual history in medical school – it can be very uncomfortable. The reasons are many – most prominent is lack of medical training in this area. We're great with treating the sequelae of alcohol misuse disorders – (*love* those Sengstaken-Blakemore tubes!) – but much weaker in the diagnosis and healthy discussion/early intervention realm. The following is not meant to be a strict go-by, just some points to ponder and perhaps incorporate into how you do your evaluations.

How many of you have seen this t-shirt slogan?:
****

I don't have an alcohol problem:
I drink, I get drunk, I fall down... No problem.
****

How many of you just laughed? I and my friends (fellow flight surgeon students and WestPac aviators in the 80's...) *used* to think that was funny. Unfortunately, the humor didn't go too far to make me a particularly effective doc in the early days.

Here Are Three Items To Consider:

1. BE COMFORTABLE WITH YOUR OWN INTAKE. What I mean by this is to be 100% honest with yourself about whether you are a light, moderate, or heavy drinker (and maybe even one of the 10% of folks who drink who are alcoholic). If you *don't* drink, be honest with yourself, why? Sorry to impose this request for some personal introspection on you, but this is the area that really gets in the way of many docs doing a good alcohol evaluation. Of course, if you drink heavily, the healthiest thing is to get some help, but if you are not going to get help, at least don't let your own denial/ rationalization/etc. get in the way of helping someone else. If you don't drink because a parent was an abusive alcoholic, good choice, but be aware of the fact that if you unconsciously look down on those who do drink, that attitude will get transmitted and the patient will shut down on you. Most of you are in the middle somewhere – but please give this some thought. Sometimes, we have the need to minimize other's intake to rationalize our own… if you already know all this, great! I just know from my own experience, and talking with many students and residents, that this is an area frequently not taught.

2. TAKE A GOOD HISTORY. Yes, this may seem obvious, but many overlook the first question in the history: *"How much do you drink?"* frequently begets the answer, "I'm a social drinker," or they will cite how many drinks they consume. ***Please*** go a little beyond this. The reasons are twofold: I've heard folks use the term "social drinker" to cover someone who drinks one drink once a month at a Hail and Farewell (appropriate use of term), to the person who drinks ten shots of mescal (and eats the worm!). It is much better to list an amount and timeframe. Next caveat here is ***amount***… when the person says they have one drink a night, find out what that means. I learned the hard way. One patient ***swore*** he only had one drink a night even though I *knew* there was more of a problem. It turned out that his "one drink" consisted of 10 ounces of scotch over ice. **A DUH…** The National Clearinghouse for Alcohol Use Disorders provides the following guidance. One drink equals 1½ ounces of 80 proof distilled spirits (*not* the stuff we got from the lab and mixed with Hawaiian Punch in college), five ounces of wine, or twelve ounces of beer. Beer drinkers are the easiest to assess as one can of beer = one drink, *usually*… again, I learned the hard way about the 30 ounce Kirin and Asahi cans! Also make sure the "mug" of draft isn't a "yard." And whoever saw a glass of wine served *anywhere* equaling only five ounces?!

The issue of "moderate" drinking needs to be based on an accepted definition rather than what the person tells you. A "moderate" drinker is a male who consumes no more than two drinks per day or a woman who drinks no more than one drink a day. A "social" drinker is someone who occasionally drinks alcohol. As most of you know, the lesser amount for women is not related to any sort of "wimp factor," but rather to biochemistry/physiology facts. Women have four times less the amount of gastric alcohol dehydrogenase and a smaller ratio of body water to body fat. Therefore, they have a higher concentration,

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or blood alcohol level (BAL), with less intake. Also, remember that women are much more likely to be underdiagnosed (or undiagnosed!) than men and have more serious sequelae earlier in the disease.

3. FOLLOW DSM-IV FOR YOUR DIAGNOSIS. Although many of us don't like the restriction of DSM-IV to a twelve-month period, we need to not over or under-diagnose, but base our diagnosis on the guidance found within. To quickly summarize from the DSM-IV:

> The diagnosis of **ALCOHOL ABUSE** requires a pattern of substance use leading to clinically significant impairment or distress with at least one of the following, occurring within a twelve-month period: 1) recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home; 2) recurrent alcohol use in situations in which it is physically hazardous; 3) recurrent alcohol-related legal problems; and/or 4) continued use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol.
>
> The diagnosis of **ALCOHOL DEPENDENCE** requires a maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three or more of the following, occurring at any time in the same twelve-month period: 1) tolerance; 2) withdrawal; 3) drinking more or over a longer period than was intended; 4) a persistent desire or unsuccessful efforts to cut down or control the amount of alcohol consumed; 5) a lot of time is spent in getting, using, or recovering from alcohol; 6) important activities are given up or reduced because of alcohol use; and/or 7) there is continued drinking despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol.

Note that although your data points are restricted to a twelve-month period, it can be *any* twelve-month period, not necessarily the most recent one.

We'll do more next time on some additional info and interviewing techniques for a successful alcohol assessment. As always, remember to review BUMEDINST 5300.8 with your aviation personnel diagnosed with ETOH abuse or dependence, and document that you have done so. (Editor's Note – BUMEDINST 5300.8 can be found at http://navymedicine.med.navy.mil/instructions/external/5300-8.pdf). Please remember to add BUMEDINST 5300.8 as a reference in your Local Board of Flight Surgeons also. Thanks! Keep up the good work!

Please call or e-mail if you have ANY questions! You can get to us from our homepage (http://www.nomi.navy.mil/code02/21page.htm) or to any of us at code211(or 210, or 216)@nomi.med.navy.mil. Please also let me know which articles you find helpful, worthless, etc.

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Ejection Seat Training at NAS Pensacola

RAM Corner

S-CAT: Use in Space Decompression Illness Diagnosis and Therapy

A Proposed Implementation Protocol

Introduction

The Spaceflight Cognitive Assessment Tool (S-CAT) is a computer-administered neuropsychological test battery comprised of tests selected from the Automated Neuropsychological Assessment Metrics (ANAM). It was developed in response to NASA's desire to have a short, easily administered instrument with which to detect cognitive brain dysfunction in astronauts on orbit. Because several potential hazards to the CNS are inherent to spaceflight, NASA plans to use S-CAT to monitor astronauts' cognitive function over time as well as after acute events.

S-CAT is comprised of two sections, a shorter section consisting of five tests that takes about 15 minutes, and a longer, 35-40 minute section of different tests to be used under specific circumstances. The test battery is administered via a laptop computer, is thus portable, and can be used in a variety of different settings.

It has been suggested that S-CAT might be useful in diagnosing cerebral manifestations of decompression illness (DCI) resulting from Extravehicular Activity (EVA). NASA is very concerned about DCI in space because of the large number of EVAs that will be conducted to construct the International Space Station (ISS) over the next 10-15 years. With nearly 500 EVAs already projected, the potential for a DCI event to cause mission compromise or termination, or a threat to the astronauts' safety, is great. The consequences in terms of cost, or injury or death of an astronaut, could be enormous. Therefore, tools that have potential in the medical assessment of an astronaut's condition following EVA are being scrutinized for their usefulness. This article outlines considerations for evaluating S-CAT for use in DCI assessment. It also proposes guidelines to follow for implementing S-CAT on orbit.

Cerebral Decompression Illness

Cerebral DCI is the term applied to describe cerebral dysfunction that occurs with DCI, presumably a result of bubbles in the brain. The actual incidence of DCI cases that involve the brain is unknown because cerebral DCI symptoms are often non-specific and subjective. These symptoms can mimic those that occur with activity that carries a risk of DCI, but are due to other insults, or merely fatigue. Additionally, cognitive dysfunction resulting from cerebral DCI may not reveal itself under conditions of low cognitive demand. Thus, cerebral DCI may not be detected if the victim is not cognitively challenged as part of the evaluation. A Mini Mental Status Exam (MMSE) may be useful in this regard. On orbit, however, designated Crew Medical Officers (CMOs), who are most frequently not professional clinicians, may not be sufficiently trained or experienced to administer and interpret the MMSE in the context of the rest of the medical exam.

If not properly diagnosed and treated, cerebral DCI victims are at risk for permanent neurological sequelae or even death. Problems inherent to spaceflight operations compound this risk. Even if cerebral DCI is correctly diagnosed, effective hyperbaric treatment will be difficult or impossible on orbit. The delay in definitive treatment that a deorbit would incur may be the difference between life, permanent injury or death. Furthermore, the operational and financial costs involved with aborting a mission drive a policy that allows for only the most severe DCI cases to return to earth prior to mission completion.

A thorough evaluation of the DCI victim, including neurocognitive function is, therefore, critical to good decision-making in space.

Background

In 1949, Rozsahegyi studied 100 cases of cerebral DCI in caisson workers over a period of 2-5 years after the date of their injury.[1] At two years follow-up, only 14 were free of residual neurological deficit. He found that subjective symptoms were present in many of these individuals, without signs or physical findings of neurological deficit, prior to the onset of pronounced, often permanent, deficits. In addition, he documented

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several cases of recurrence of symptoms, after initial recovery, in many of these patients.

Almost 20 years later, Peters' studies of divers led him to conclude that residual cognitive deficits following cerebral DCI were "more common than has been previously appreciated."[2] In 1989, Adkisson, et al., found cerebral perfusion deficits present in all cases of type II DCI and air embolism, from a population of 28 divers that he studied.[3] A recent study by Yamagawa, et al., scrutinized head MRIs obtained on a population of military divers and a non-diver control group.[4] The MRIs showed a significantly higher frequency and greater size of these infarcts in the military divers. A greater mean age and higher percentage of smokers among the divers were confounding variables.

Collectively, these studies demonstrate the association of cerebral insult with diving, suggest that it is more common than is usually recognized, and imply that DCI is the most likely etiology of these insults. Residual cognitive deficits often persist, and frequently, with little overt indication to alert the victim or medical officer, late onset of neurological deficit can occur. A tool to detect brain dysfunction, then, may be critical to the ability to detect cerebral DCI and implement a treatment decision. Neuropsychological (NP) testing provides a way to measure brain function but such tools have not been systematically studied in DCI scenarios, even in the diving community. Hence, it is not clear how to utilize these tools in space. Preliminary work has been done with neuropsychological testing in Navy diving, however, and we can borrow from this work to develop paradigms for its use in space.

Neuropsychological Testing in Navy Diving

In the 1980s the Navy undertook extensive diving trials in order to develop new decompression tables. Navy psychologists saw these trials as an opportunity to implement a neuropsychological test protocol to evaluate its usefulness in assessing divers for the effects of cerebral DCI. Neuropsychological testing was used in cases where divers had suspected cognitive involvement and the diver's acute condition allowed time to administer the tests. Follow-up testing was done 12-48 hours after completion of hyperbaric oxygen (HBO) treatment. In a paper published in 1988, Curley and colleagues described five cases of DCI in which NP testing was felt to be useful in diagnosing the condition and tracking the effectiveness of treatment.[5]

The NOMI Hypobaric (Altitude) Chamber

From their experiences during these diving trials, Curley and Amerson formulated recommendations for implementing NP testing in DCI settings. In 1995, they presented their framework to the Undersea Hyperbaric Medical Society at its annual conference.[6] Their guidelines for using NP testing in diving provide a framework for thinking about how to use these tools in space. These guidelines are paraphrased as follows:

1. A psychologist knowledgeable in both neuropsychological testing and DCI should evaluate the diver.
2. The psychometrician should be able to explain the rationale for the selection of tests used in the evaluation.
3. Picking and choosing psychometric tests and assembling them into a composite score without doing a validation study should be avoided.
4. NP testing should be incorporated as only one tool of many in diagnosing and treating DCI.
5. Psychometric testing should be used when cognitive involvement is suspected or demonstrated by the presence of psychomotor, cognitive and affective symptoms, but don't test for the sake of testing. Maximize the positive predictive value of the tests.
6. Neuropsychological testing is not a substitute for a trained, experienced clinician.
7. Strictly adhere to proper administration procedures.
8. NP instruments used should avoid cultural bias.
9. Computerized test versions must produce equal or better output than the traditional analog.
10. Recognize possible confounders.
11. Recognize the long differential diagnosis for Cerebral DCI symptoms.
12. Use normative data or a population-specific database for comparison purposes.
13. Repeat the testing if validity or reliability of the results are in question.
14. Distinguish the clinical relevance of test results from the statistical.

The implementation of NP testing in the space environment, i.e. S-CAT, should follow these guidelines to the extent possible, at least initially, and exceptions should be recognized before implementing.

If the guidelines outlined by Curley and Amersen define the standard for NP testing in DCI, then S-CAT represents a compromise. Its format and short administration time lend it to the spacecraft/space station/ spaceflight environment. It is derived from a larger test battery that is well validated.

Differential Diagnosis of Cognitive Compromise in Spaceflight
Decompression Illness
Fatigue
Space Motion Sickness
Toxicity
Hypoxia
Illness
Medication Effect
Air Gas Embolism (AGE)
Cerebrovascular Attack (Stroke)
Carbon Monoxide Poisoning
Head Trauma
Diurnal Variability (Circadian Rhythm)

Table 1: Differential Diagnosis

S-CAT falls short of the standard, however, in several areas. It is self-administered, therefore clinician-patient interaction is absent. It is not a well-validated instrument and neither normative data, nor population-specific norms exist for reference. Because of the long spaceflight, deciding what to do with S-CAT results that suggest cognitive dysfunction is problematic. S-CAT may measure brain function impairment, but it provides no information as to the cause.

NP testing is a means to measure cognitive function but the results should be interpreted by a trained clinician who can infer or rule out pathological brain injury based on those results. Likewise, even assuming a relatively certain finding of brain injury, NP testing cannot supply etiological information. The differential diagnosis for a finding of brain dysfunction in spaceflight is long, DCI being only one of many possible etiologies, even when the finding is associated with EVA (see table 1). Thus, like

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any laboratory test or physical exam finding, NP testing can provide only one piece of a diagnostic puzzle. Routine and contingent implementation of S-CAT on orbit must recognize its limitations as an assessment tool.

S-CAT

The S-CAT was developed in two parts. The first part, designated NASA-1, was designed to quickly measure several components of cognitive function in a short, approximately 15-minute, time span. The second part, NASA-2, is longer and consists of a different set of tasks, including a multi-tasking test. It will be taken only if the astronaut's cognition is thought to be impaired based on the results of NASA-1. Three performance criteria are measured by the computer during the administration of the battery: accuracy, response times for each challenge, and number of lapses during each test. Three output "scores" are generated: the percentage of correct answers, the mean response time for each test, and the number of lapses.

The elements of S-CAT were selected from the well-validated ANAM battery of NP tests, though the S-CAT as a single instrument has itself not been well validated. The cognitive functions measured are memory and recall, verbal working memory, visual working memory, and sustained concentration (see table 2).

This combination of tests challenges many of those cognitive functions that would be scrutinized by clinician administration of a Mini Mental Status Exam. Not tested are such functions as orientation, abstraction and judgment.

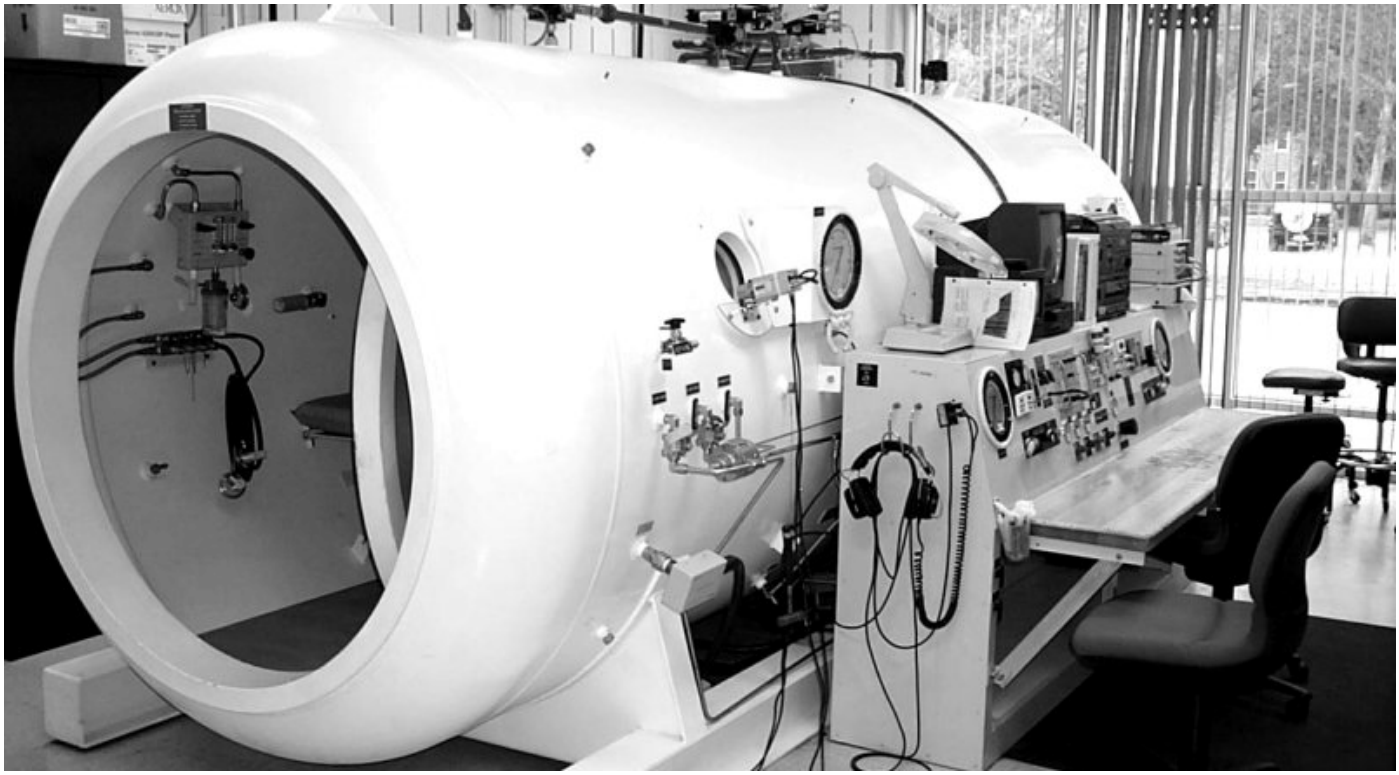
Another variable to be considered is that S-CAT is a computerized battery. As such, S-CAT does provide some advantages over traditional NP testing. Bias on the part of the examiner, either cultural, or a lack of training or experience, is avoided. Measurements are precise. Feedback is immediate with instantaneous storage and recall of pertinent data.

An additional advantage of computerized NP testing is the computer's ability to measure response time latencies extremely accurately. In a recent study by Beiberg, et al., of patients suffering from concussion because of sports injury, he found that response time differences of as little as 80 ms distinguished significantly between the study group and controls. Bleiberg suggested that because of the capacity to measure response times to this resolution and better, computer testing may represent superior sensitivity in detecting brain dysfunction over traditional NP testing.[7]

Results of S-CAT should be interpreted in light of the environment in which the crewmember took the tests. If the astronaut taking the test is fatigued and distracted by the noisy environment and cramped accommodations, performance is likely to be compromised. Normal degradation in performance on the tests used in the S-CAT battery usually is less than 15% below normal baseline performance. The designers of the test recommend that a score greater than 20% below baseline for a single test should be considered indicative of a cognitive deficit. Lapses of four or more for any single test or highly variable response times over multiple administrations may also indicate cognitive dysfunction.

S-CAT Test (NASA-1)	Cognitive Function Measured
Code Substitution	Memory and Immediate Recall
Mathematical Processing	Verbal Working Memory
Match to Sample	Visual Working Memory
Continuous Performance Task	Memory and Sustained Concentration

Table 2: Cognitive Functions Measured by the S-CAT, NASA-1



The NOMI Hyperbaric (Recompression) Chamber

In order to detect cognitive compromise in an astronaut, the astronaut's baseline performance, or at least population normative cognitive function, must be known in order to compare the results of a test administration. Whether a cognitive baseline score established on earth is an appropriate standard by which to measure performance in space is an important question, however. As noted above, the noise and crowded conditions aboard the shuttle or ISS would likely affect NP test performance even absent pathological insult to the brain. But beyond human-generated distractions, one might speculate that microgravity and fluid shifts, or some other "natural" feature of spaceflight might affect brain function. Preliminary studies by Benke[8] and Manzey[9,10] addressing cognitive baseline in space have thus far been inconclusive and suffer from methodological issues.

Current Plans for Using S-CAT

Current implementation plans for S-CAT include an adequate training protocol before flight and administrations to establish individual, baseline-performance measurements for mission astronauts. During extended operations on orbit, astronauts will undergo S-CAT testing as part of their monthly physical exam. From preliminary studies, baseline performance scores are not expected to vary as a result of this frequency of administration, absent pathologic insult to the brain. To provide an assuring baseline, however, it would be prudent to ensure that the astronauts take the battery two to three times at this 30-day interval prior to launch.

Sufficient data is lacking to show that "normal" baseline is the same in space as on earth. Thus, it would be prudent for the crewmembers to take the S-CAT within a few days after reaching orbit to demonstrate performance consistent with their baseline established on earth. Post-flight follow up testing within several days of landing is essential to look for any changes resulting from the flight.

S-CAT and Space DCI

As discussed above, an abnormally low S-CAT score only indicates cognitive dysfunction; it says nothing about the cause of the problem. Nevertheless, it is valuable to know if, and when, an astronaut suffers cognitive compromise for any reason. During EVA, or in the immediate post-EVA period, DCI might be reasonably inferred as the cause of cognitive dysfunction, especially if other symptoms consistent with bubble disease are present. For these reasons, S-CAT should

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be used on a contingency basis, when any symptoms, specific or non-specific, consistent with DCI are noted in temporal association with an EVA event. Because cerebral involvement has been demonstrated in the diving community in association with DCI, it should be assumed that similar association would exist in space DCI.

If and only if the acute status of the astronaut allows should the S-CAT be administered as an aid to diagnosing DCI. For instance, if Cuff I-type symptoms have raised suspicion of DCI during or following EVA, S-CAT, NASA-1 only, should be administered to check for cerebral involvement. However, treatment of known DCI should never be delayed awaiting the results of NP testing. Symptoms greater than Cuff I should be treated immediately. The consequences of delay of treatment could be severe and the additional information gained from the S-CAT test battery would not be valuable enough to support such a decision. However, as soon as is reasonable, after completion of recompression therapy, the S-CAT should be administered. An appropriate period of rest should be allowed, as fatigue is a potential confounding factor.

As discussed above, the diving medicine literature suggests frequent recurrence of cerebral sequelae in DCI following treatment. Even with a normal S-CAT score following hyperbaric treatment the S-CAT should be repeated every 24 hours to monitor the astronaut for recurrence of symptoms and the need for multiple hyperbaric treatments. The endpoint to testing should be determined in consultation with the flight surgeon on a case by case basis. If, on the other hand, the S-CAT results indicate cognitive dysfunction following treatment, the flight surgeon should be consulted immediately to determine what course of action to follow. This might be to rest and retake NASA-1, take NASA-2, or repress immediately in conjunction with other DCI therapies (O_2, pharmacological adjuncts, etc.). Only if symptoms are severe, refractive to treatment, and life threatening, is de-orbit likely to be considered.

Summary

S-CAT suffers from a lack of normative or population-specific reference data and still requires systematic validity studies. However, it should be a useful, practical, clinical tool in detecting or confirming the presence of neurocognitive dysfunction in space, especially in the absence of distinct, overt symptoms. While cognitive dysfunction has a long differential diagnosis in the spaceflight environment, when detected in a setting in which DCI is highly probable, e.g. EVA, it is reasonable to infer cerebral DCI, and treat accordingly. After the completion of therapy, S-CAT can be utilized to assess the DCI patient for complete recovery and to follow the patient over a period of time to either rule out or detect recurrence.

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From the Fleet

Contact Urticaria in the Aviation Workplace

I had recently reported to my new squadron in Puerto Rico, and was just getting a routine down when a young airman came to see me in my office. He sat down and proceeded to tell me his four-month history of having pruritic, burning hands with a diffuse urticarial rash that was resistant to treatment. The young airman had been seen by the base family practitioners on two different occasions. He initially had been prescribed antihistamines, told that it was something he had come into contact with, and that it would go away. On the second visit, he was told that the rash was due to something indigenous in the tropical environment and to "just be careful about what he came in contact with." The rash had not gotten any worse, nor was it improving, when the airman decided to pay his friendly neighborhood flight surgeon a visit.

After taking a thorough history, the patient admitted to a prior isolated episode during A school, which resolved spontaneously. The rash had returned after the airman had been working in corrosion for about two weeks. He admitted to wearing protective gloves occasionally but more often than not worked with his bare hands. The airman denied any new detergents, foods, drugs, illness, clothes or other common causes of urticaria.

The association of the urticaria with something in the airman's workspace was obvious, but the dilemma of tracking down the offending agent or agents was daunting until a wizened chief informed me of the existence of the Authorized Usage List (AUL) and the Materials Safety Data Sheet (MSDS). Every workspace in the squadron has an AUL which shows what materials that shop is authorized to use for its jobs, and an MSDS which provides the ingredients, physical/chemical characteristics, fire/explosion hazard data, reactivity, control measures and, most importantly, health hazard data for every item in the AUL.

The information contained in the AUL and MSDS is invaluable. According to the MSDS, almost every agent used in corrosion had the potential to cause some kind of mild dermatitis, but there was no specific mention of urticaria. I ran a Medline literature search on every agent that could cause dermatitis according to the MSDS, and what I found made the diagnosis.

In the middle of my search, an article appeared documenting contact urticaria from xylene (Weiss), which is found in the paint thinner used by corrosion. Reinterviewing the patient, I found that he had direct skin contact with paint thinner on a daily basis during his job. The article suggested using xylene-resistant gloves for patients with this allergy, but the gloves were not available on our little island. We thus had the airman refrain from using any products with xylene in them, as identified by the MSDS. In nine days, the rash resolved completely and did not return for the rest of his tour. The young airman PCS'd shortly thereafter and he was supposed to receive patch testing upon arrival at his next duty station.

The lessons I learned in this case have aided me in dozens of subsequent situations. I have used the information contained in the AUL and MSDS for many clinical and occupational problems confronted by my squadron and squadron mates. The publications are a valuable source of pertinent information for new GMO's, DMO's, Flight Surgeons and salty MO's alike. I would urge all operational medical officers to look through these manuals and make them a regular source of information in their squadron's medical reference library.

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Weiss R.R., Mowed C., *Contact Urticaria from Xylene*, American Journal of Contact Dermatitis, Vol. 9, No. 2 (June), 1998; pp. 125-127.

(Editor's Note – Another useful reference is the *Pocket Guide to Chemical Hazards* published by the U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, publication number 97-140. This and many other useful publications are available online at http://www.cdc.gov/niosh/pubs.html, and printed copies can be ordered.)

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Surgeon General's Corneal Surgery Policy Message
29 Sep 99

R **29**1330Z **SEP 99** ZYB

FM BUMED Washington DC//23//
TO AIG Seven Seven Eight Three
UNCLAS //N06110//
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SUBJ/**CORNEAL REFRACTIVE SURGERY PHYSICAL STANDARDS AND WAIVER POLICY IN THE NAVY/MARINE CORPS**//

REF/A/DOC/BUMED/NOTAL/P117//
REF/B/MEMO/BUMED/29MAY97/SER25//
REF/C/MSG/BUMED/151501ZMAY97//
REF/D/DOC/NOMI/011300ZJAN97//

NARR/REF A is the manual of the medical department (NAVMED P117)
REF B is the refractive surgery policy in the navy and marine corps for new accessions
REF C is the photorefractive keratectomy policy for diving programs including special operations
REF D is the 1997 Navy Aeromedical Reference And Waiver Guide//
POC/C.O. Barker/CPT/MED-23B/Washington DC/TEL:COM 202 762-3451 /TEL:DSN 762//

RMKS/1. This message has been coordinated with the Commandant of the Marine Corps (CMC). The Commandant has authorized transmission to Marine Corps activities.

2. Background. Corneal refractive surgery is a surgical treatment for abnormal visual acuity. There are presently four surgical procedures: radial keratotomy (RK), photorefractive keratectomy (PRK), laser in situ keratomileusis (LASIK), and intra-corneal ring implants (ICR). Civilian eye specialists are performing all procedures. RK has been assessed by Navy ophthalmologists and does not produce stable visual correction in operational environments. PRK involves no surgical incisions, but rather a series of fine laser ablations, re-sculpting the cornea. PRK has been extensively studied by the Navy and is currently the procedure of choice. Optimal results occur in a person who is at least 21 years old, has a stable refraction, mild to moderate nearsightedness or farsightedness, and mild to moderate astigmatism. LASIK and ICR and other future surgical procedures will require operational evaluation for their applicability to Naval warfare communities.

3. The purpose of this message is to promulgate current corneal refractive surgery physical standards and waiver policies for general accessions, for undersea/diving/special warfare, for surface warfare, and for air warfare communities.

4. General Accessions. Corneal refractive surgery is a disqualifying condition for general Naval and Marine Corps duty. References (A) and (B) establish physical standards and waiver process guidelines for individuals applying for appointment, enlistment, and induction into the U.S. Navy and U.S. Marine Corps. Corneal refractive surgery waiver requests are considered on a case by case basis. RK is strongly discouraged. Waiver requests for applicants to special duty communities (undersea/diving/special warfare, surface warfare, and aviation warfare) must be evaluated and recommended for approval by those communities.

5. Undersea/Diving/Special Warfare. Reference (C) is superseded by this message.
(A) For submarine duty: the following interim change to chapter 15, article 15-69, paragraph (2)(b), of reference (A) is effective immediately: (2)(b)(3) Radial keratotomy, laser in situ keratomileusis, excimer laser photorefractive keratectomy (PRK) and other forms of corneal surgery, are disqualifying. Waiver recommendations will normally be considered for PRK only. Candidates for entry into submarine duty must have a six-month waiting period following their most recent corneal surgery prior to their qualifying examination following corneal surgery, final waiver recommendations for personnel qualified in submarines or assigned permanent duty to submarines will be considered when recommended by an ophthalmologist or optometrist and an undersea medical officer. Personnel must receive authorization from their Commanding Officer prior to surgery. This provision does not pertain to new accessions to active duty, who must comply with reference (B).
(B) For diving/special warfare duty: the following interim change to chapter 15, article 15-66, paragraph (2)(c)(6) of reference (A) is effective immediately: (2)(c)(6) Excimer laser photorefractive keratectomy (PRK) is not disqualifying for diving/special warfare duty. All other forms of corneal refractive surgery, including radial keratotomy (RK) and laser in situ keratomileusis (LASIK), are disqualifying and waiver recommendations will normally not be considered. Candidates for entry into diving duty, including special operations and special warfare, must have a six-month waiting period following their most recent corneal surgery prior to their qualifying examination. An ophthalmologist or optometrist and an undersea medical officer will determine when designated diving and special warfare personnel may return to full duty following corneal surgery. Personnel electing PRK must receive authorization from their Commanding Officer prior to the surgery. This provision does not pertain to new accessions to active duty, who must comply with reference (B).

6. Surface Warfare. Radial keratotomy, laser in situ keratomileusis, excimer laser photorefractive keratectomy (PRK) and other forms of corneal surgery are disqualifying. Waiver recommendations will routinely be considered only for PRK. Applicants for entry into surface warfare duty must have a six-month waiting period following their most recent corneal surgery prior to their qualifying examination. Following corneal surgery, waiver recommendations will be considered for personnel qualified surface warfare or assigned permanent duty to ships when cleared by an ophthalmologist or optometrist and the ship's medical officer. Personnel must receive authorization from their Commanding Officer prior to surgery. This provision does not pertain to new accessions to active duty who must comply with reference (B).

7. Air Warfare. All forms of corneal surgery are disqualifying. PRK is the only procedure that will be considered for waiver.
(A) Air warfare new accession applicants having had PRK (civilians, NROTC, and Naval Academy, and enlisted accessions) may be waivered for aviation duty if they meet all the following criteria:
A. Accepted into a Navy approved PRK study protocol for longterm follow-up.
B. Pre-PRK refractive error was less than or equal to plus or minus 5.50 (total) diopters in any meridian with less than or equal to plus or minus 3.00 diopters of cylinder and anisometropia less than or equal to 3.50 diopters.
C. Civilian applicants must provide detailed pre-operative, operative, and post-operative PRK follow-up records prior to acceptance into a Navy approved PRK study.
D. At least twelve months have elapsed since surgery or re-treatment and evidence of stable refractive error is demonstrated by two separate examinations performed at least three months apart.
E. Meet all other applicant entrance criteria as delineated in references (A) and (D) and as specified by approved aviation PRK study protocols.
(B) Designated Naval aviation personnel (flying class one, flying class two, and class three designated enlisted aircrew and flight deck personnel), upon approval by their Commanding Officers, may seek acceptance into a Navy PRK aviation study protocol involving actual PRK surgery. A waiver to return to flight duties will be recommended if they meet all study requirements and all other physical standards as delineated in references (A) and (D). Personnel electing the surgery must receive authorization from their Commanding Officer prior to the procedure.

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8. For more information concerning corneal refractive surgery and PRK in the Navy/Marine Corps, go to http://navymedicine.med.navy.mil/.

9. POCs are:
A. For general accessions: L. Grubb/CDR/MED-25 /TEL:COM 202 762-3482 /TEL: DSN 762
B. For undersea/diving/special warfare: J. Murray/CPT/MED-21 /TEL: COM 202 762-3449/TEL: DSN 762
C. For surface warfare: J. Montgomery/CPT/MED-22 /TEL: COM 202 762-3466/TEL: DSN 762
D. For air warfare: C. Barker/CAPT/BUMED 23B/TEL: COM 202 762-3451 /TEL: DSN 762

10. Retain copy of this message until applicable changes are made in reference (A) or are superseded by future changes.

11. Emails are:
A. lkgrubb@us.med.navy.mil
B. jwmurray@us.med.navy.mil
C. jrmontgomery@us.med.navy.mil
D. cobarker@us.med.navy.mil

12. VADM R.A. Nelson, Navy Surgeon General sends.//

BT

The Multi-place Egress Trainer (Helo Dunker) at NAS Pensacola

Letters To The Editor

Announcing the establishment of an editorial column that will permit readers to comment on newsletter content or other topics of general interest to the Navy flight surgeon community.

Your comments are welcomed. Letters should be succinct and of reasonable length, signed, with position and duty station information, telephone number, and e-mail address. Letters will be verified before publication. We reserve the right to edit and condense all letters submitted. Letters should not address private disputes and should not contain comments denigrating or impugning the character or reputation of individuals or organizations.

It's Not About Science

(In response to the July 1999 President's Column)

Captain Riley laments the replacement of *patients* by *customer* or *client* as well as the somewhat indiscriminant and ubiquitous *health care provider* term for *doctors*. Implicit is his concern that these nomenclature changes represent erosive forces tearing away the scientific foundation of medicine. I think otherwise and fear that intransigence, or its appearance, will only reaffirm the growing accusations that physicians are arrogant, greedy, and not to be trusted.

The practice of medicine is at a major crossroads. General disenchantment with traditional medicine is driving a thriving *consumer*-oriented market of *alternative health*. Educated, young, middle and upper class members of society, many of whom are professionals, are voting with their pocket books by choosing homeopathy, nutritional supplements, massage therapy, Learned Native American Healers, herbalists, acupuncture, chiropractics, etc., over or in addition to conventional medical care.

The roles of physicians and patients are changing. Our patients are becoming "wired" via the Internet, where they find the psychosocial support and the information that we as physicians are failing to provide. A more, but not necessarily better, educated patient population is shopping the marketplace, sometimes with unrealistic expectations, seeking to establish a partnership rather than a submissive role in their health care. They are searching for that personalized touch that appeals to them as individuals.

Technology and scientific advancements have caused us to lose touch with the art of medicine. This is the basis for the popularity of alternative medicine and the holistic approach, contrasting an analytical, reductionistic and dehumanizing practice with that of a synthetic, comprehensive, and personalized way of providing care. As a resident I learned to refer to our patients as men and women, not male or female, as a reminder that we were dealing with people, not lab animals. Which of us has not been guilty of referring to one of our patients as a pathologic entity rather than as a fellow human? The authoritarian role of the physician has no place in the current practice of medicine. We must rekindle the meaning of the word "physician" as that of teacher and privileged caretaker for those who place their trust in our hands. I fear that as we become more calculatingly scientific we unwittingly become less trustworthy as caring humans. The alacrity with which we reach for technological aids can have a chilling effect on the doctor-patient relationship.

I am not suggesting that we do away with the science of medicine; however, we must be wary of the erosive effects that laboratory medicine can have on the less tangible but perhaps more important parts of the practice. For me, bedside medicine and actual bedside attending rounds have always been more satisfying and educational than were morning reports. The latter, I submit, were the early examples of "distance learning." The more we distance ourselves from our patients, the less we learn and the less personally concerned we appear to be of their welfare.

As scientists, we must open our minds and be willing to embrace, with proper evidence-based scrutiny, the burgeoning field of complementary/alternative medicine. To discard this arena as scientifically unfounded and without understandable healing value is to overlook an opportunity to better understand the essence of our art. Additionally, to ignore non-orthodox medicine is further example of our hubris and succeeds in further distancing us from our patients.

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Although it has been our preference to apply "hard science" to the understanding of disease and treatment outcomes, we have up until recently been avoiding the more difficult to characterize facets that the individual patient contributes to the process. It is upon this interactive "mind-body" canvas that our art is truly displayed. The unquantifiable roles that the hypothalamic-pituitary-adrenal axis and the limbic system have to play in disease and treatment outcomes are undeniably significant and gaining more attention in publications: "…it is not so much the nature of the treatment or offer that determines whether the medicine is orthodox or alternative but the quality of evidence adduced in its favor"[1], and "…it is not simply mind over matter, but it is clear that mind matters."[2] Much of this is intuitive and supported by our own anecdotal experiences. Yet, our scientific teachings have cautioned us to avoid such as "soft" science. Our challenge is to become more rigorous in evaluating and comprehending the mind-body connections without, at the same time, undermining the artistry that is so essential to the preservation of our craft.

I find it more than a coincidence that the covers of JAMA have traditionally been graced by works of art and look forward each week to doctor Southgate's art lessons. In the April 7, 1999 issue, she concluded: "it is not only the What of something that is important, but, even more so, the How of something. In this, perhaps, lies precisely the mystery that we call art, and it applies not only to the art of painting, but to the art of everything, including, not the least, the art of medicine."

Science, like some of the words we use, is a tool of our trade, dynamic and subject to change. Art, however, is constant. Understanding and learning how to cultivate the desire and spirit within each of our patients and us is crucial to refining our art.

References

[1]Psychosocial intervention and the natural history of cancer (editorial). *Lancet*. 1989; 2:901.

[2]Healing Words. Emotional expression and disease outcome (editorial). *JAMA*. 1999; 281:1328-1329.

CAPT "Hoppy" Hopkins, MC, USN
Senior Medical Officer, USS John F. Kennedy (CV-67)

Army RAMs to Move to Pensacola

In the June 1999 issue of the Society of U.S. Army Flight Surgeons Newsletter, COL James S. McGhee announced plans for the training of Army Aerospace Medicine Residents to be moved from the Air Force School of Aerospace Medicine in San Antonio, Texas to the Navy's program in Pensacola, Florida. This change was decided on after "a detailed comparison of the Navy and Air Force programs was conducted." Some of the factors driving this decision included: the anticipated increase in more junior, less experienced Army residents; the need for strong clinical training and experience with the ability to "function in remote and austere environments" after leaving the residency; and the need for "the flexibility to incorporate as many Army experiences as possible" during training.

COL McGhee also cited the Navy program's inclusion of a flight line medicine clinic rotation, hyperbaric chamber watches for treatment of decompression sickness, clinical competency requirements, lectures to student flight surgeons, and familiarization flights in both helicopters and fixed wing aircraft in all flight modes. The Navy's election to not seek accreditation for its optional final (PGY-4) year was felt to allow more flexibility in tailoring the training to the individual resident. "Army RAMs will be able to perform Army electives." The option for additional clinical training of Army residents at Ft. Rucker (a two-hour drive from Pensacola) is being established under an Interinstutional Agreement with the U.S. Army Aeromedical Center.

COL McGhee closed by stating that he is led "to believe that the Navy program currently comes closest to meeting the needs of the Army of the future" and that he "will continue to monitor both programs for changes to insure that the Army is obtaining the best training available." The first Army RAM has already been selected to come to Pensacola.

LCDR Dave Gibson, MC, USNR
SUSNFS Secretary and Associate Editor

Selected SUSNFS Merchandise Items Catalog

T-Shirt: SUSNFS "FS - Yesterday and Today"

T-Shirt: FS Wings

Tank Top Shirt: SUSNFS "Leonardo"

Running Shorts

Sweat Shirt: SUSNFS "Leonardo"

Sweat Shirt: FS Wings

Selected SUSNFS Merchandise Items Catalog

Sweat Pants: SUSNFS Logo, NAOMI Logo, FS Wings

Polo Shirt: FS Wings

FS Wings 'Skrunchie', Bow Tie, Tie; SUSNFS Patch

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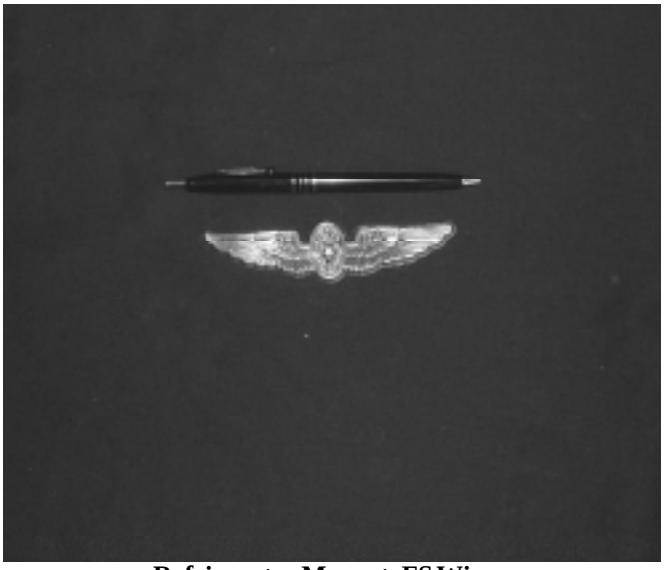
Full Size 14K Gold Flight Surgeon Wings



Refrigerator Magnet: FS Wings

The Society of U.S. Naval Flight Surgeons

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Address Change, Subscription/Membership Renewal, Price List, and Order Form (Sept 1999)

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COAP 2000
The Second Annual Combined Operational and Aeromedical Problems Course

The Naval Aerospace Medical Institute and the U.S. Army School of Aviation Medicine will jointly sponsor the 2nd Annual COAP, which will be held in conjunction with the Navy Environmental Health Center 2000 Workshop on 31 January - 04 February 2000 in Norfolk, Virginia.

COAP 2000 will include programs for Army, Navy, Air Force and Coast Guard Flight Surgeons, Aviation Medicine Technicians, Flight Medics and Aerospace Physiology Technicians. There are NO course or registration fees.

The Workshop will be held at four workshop hotels (Waterside Marriott Convention Center, Sheraton Waterside, James Madison Hotel, and Clarion Hotel-Downtown). A housing bureau is being established to assist with lodging arrangements at the workshop and overflow hotels. Funding may be available for officer and enlisted personnel assigned to operational units whose commands cannot fund their attendance. Check our web site at http://www.nomi.navy.mil/coap2000.htm often for updates and guidance for submitting funding requests.

Agenda, registration and transportation information will also soon be available at that site as well as at the Naval Environmental Health Center home page. This year's Problems Course promises to be bigger, better and more informative than ever. Please plan to attend.

CDR Terry Puckett, MC, USN
Head, Medical Corps Training Programs, NOMI
nami_mcdh@nomi.med.navy.mil
DSN 922-2457

Remember to get your
SUSNFS Gedunk!

SUSNFS EDITORIAL POLICY

The views expressed are those of the individual authors and are not necessarily those of the Society of U.S. Naval Flight Surgeons, the Department of the Navy, or the Department of Defense.

This Newsletter is published quarterly by the Society on the first of January, April, July and October of each year. Material for publication is solicited from the membership and should be submitted via computer file on floppy disk or e-mail attachment in Rich Text Format or MS Word ©.

Submissions should clearly indicate the author's return address and phone number. All submissions should reach the Editor one month prior to the scheduled date of publication. Correspondence should be sent to:

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