CONTACT

The Journal of the Society of United States Naval Flight Surgeons

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THE SOCIETY OF U.S. NAVAL FLIGHT SURGEONS
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www.aerospacemed.org

The Society of U.S. Naval Flight Surgeons is a nonprofit 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. Subscription memberships are available. Dues are $20.00 per year, or $300.00 for a lifetime. Contact the Secretary or Treasurer for more information or a membership application form.

Cover Photo

CAPT Washington I. Chambers

On 26 September 1910, having completed a Commanding Officer tour on the battleship USS Louisiana, CAPT Chambers was designated the Assistant to the Aid for Material, as the officer to whom all correspondence on aviation should be referred. The Navy Department received letters on a regular basis urging investigations of aviation. For the most part, this correspondence was looked upon as nuisance mail in a battleship navy and Chambers was tasked to answer the queries. It was a collateral duty of relatively little importance. Chambers, however, became genuinely interested in aviation and set about learning all he could about the aeroplane, how it worked and how it might be adapted to the naval warfare mission. CAPT Chambers collected the writings and scientific papers of leaders in the new field, pushed for a national aerodynamics laboratory, and encouraged naval constructors to work on aerodynamic problems.

CAPT Chambers arranged for a civilian exhibition pilot, Eugene Ely, to attempt a take-off from a ship. On 14 November 1910, he flew off the cruiser Birmingham. Then, on 18 January 1911, Ely landed on the cruiser Pennsylvania. The "Gun Club" in the Navy would not hear of building a permanent platform on a warship thus interfering with the guns, so naval aviation initially headed down the amphibian path. However, CAPT Chambers continued to promote research on shipboard take-off and recovery.

The official beginning of Naval Aviation is recorded as 8 May 1911 when CAPT Chambers issued requisitions for two Curtiss biplanes, one an amphibian and the other a land plane to use as a trainer. The cost was $25,000. On 8 October 1912, physical requirements for naval aviators were first defined in Bureau of Medicine and Surgery Circular Letter 125221. On 10 April 1913, performance standards for qualification as a Navy Air Pilot and issuance of a certificate was approved. CAPT Chambers described Navy Air Pilots of being different from those of the "land pilot" and more exacting in requirements. Having successfully established Naval Aviation, CAPT Chambers retired in 1913.

www.chinfo.navy.mil/navpalib/ships/carriers/cv-hist1
www.aviationnow.com/content/ncof/ncf_n17.htm

President's Column

I was running the other day, and as I've become accustomed to doing during many of my noontime runs, I peeled off the main road and turned down a lane that leads to an active fuel farm. The road goes about a quarter mile and then splits into two branches, one branch ends at an abandoned fuel farm area that is now only a meadow, and the other ends at the active farm. I go this way routinely for several reasons. One, it gets me off the beaten track; and two, I discover a different variety of butterfly each time I go that way. This day was particularly exciting. Not only did I see Gulf Fritillaries, Cabbage Whites, and Cloudless Sulfurs flying around from flower to flower, but also it seemed that a few came out to fly along with me for segments of my run—pretty exciting. Most of you don't know it, but I've been an aficionado, however amateurish, of butterflies since my youth. It's a part of me that's been "on hold" for a number of years, but recently I've rediscovered the joy of butterflies.

There's something about the butterfly that has always appealed to me. The appeal most likely has to do with the remarkable transformation of the caterpillar into the butterfly—a true joy and miracle to watch. That the earth bound, crawling "worm," eating-machine called the caterpillar can become the creature of beauty and flight called the butterfly is truly one of the wonders of nature. When I think on it, I can't help but feel the same way about the man or woman transforming into the pilot or the young Navy doctor transforming into the Naval Flight Surgeon. What a joy to watch and what a miracle to behold—the beauty of the Naval Flight Surgeon getting Wings of Gold, and launching his/her "High Flight" adventure. And, I must confess, I cherish the fact that I made it through this transformation myself and now mentor others along the same path.

So, it is with significant nostalgia that I write this, my last article in *CONTACT*, as your President—another chapter soon to close but not soon to be forgotten. I'm pleased to report to you that the society passed several significant milestones this year. We placed more emphasis on membership, we established the permanent position of historian, and we continue to do well with our merchandising. Our publication has put on a "new" face and we have given it new direction as a true journal. I'd like to thank all those who contributed articles to the journal this year. You make the journal the success it is.

I'd also like to give special thanks to CAPT Mike Valdez, CAPT Glenn Merchant, CAPT Frank Dully, LCDR Bill Padgett, LCDR Dave Kleinberg, and LT Merrill Rice for being the core members "making it so" for SUSNFS this year. Finally, special thank-you's go to our upcoming President, CAPT Jim Fraser, and to the Board of Governors—

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CAPT Robert Mitchell, CAPT Fanancy Anzalone, CAPT Jerry Scholl, CDR Kris Belland, LCDR Tom Faulkner, and LCDR Dave Gibson—for their strong support.

I look forward to seeing you all in May at the annual SUSNFS business meeting in Montreal when more detailed reports will be given. Until then…again, thanks for giving me this opportunity to serve as your President.

Godspeed,

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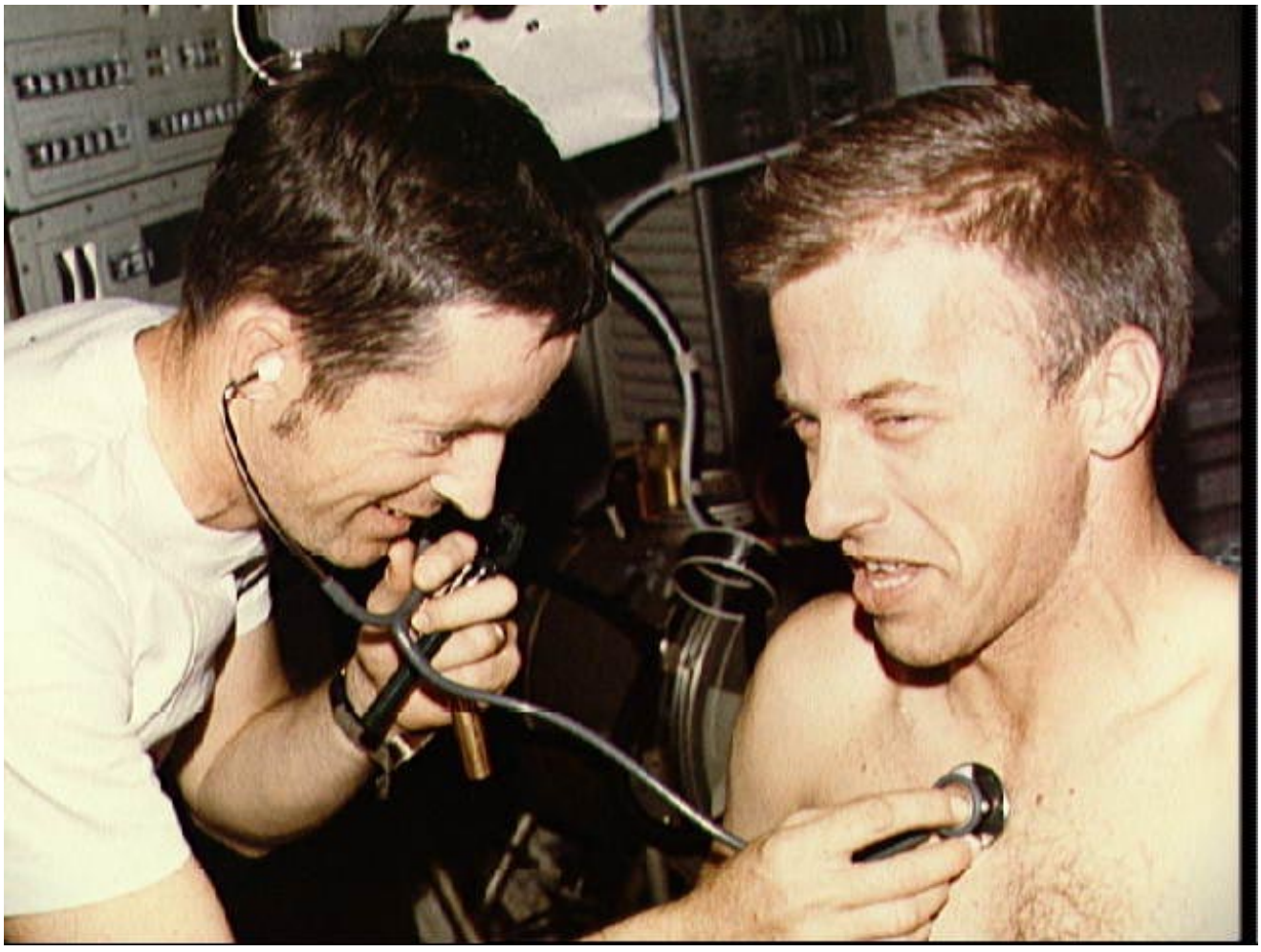
From the Secretary

My last column has come upon me much faster than I expected. It has been a very enjoyable year serving as your Secretary. I highly recommend to anyone coming to the Pensacola area to consider putting their name in the hat for the job in the future. The interaction with current operational Flight Surgeons, retired Flight Surgeons, and the Flight Surgeons presently making policy has been a wonderful opportunity. The camaraderie I have witnessed explains the strength and reputation of Aerospace Medicine. I am anxiously awaiting my foray into the operational realm this summer.

One of our goals last May was to expand the universe of contributors to the publication seeking input



(First doctor and first Navy Flight Surgeon, Joseph P. Kerwin, examining fellow Navy member, Paul Weitz, aboard Skylab: Official NASA Photo)

from a more diverse group of people. You responded much stronger than I had imagined. Thank you. The articles over the last year have been written by NAMI personnel as well as operational Flight Surgeons, retirees, physiologists, psychologists, etc. It has made for a much stronger publication. Please continue to submit your experiences, thoughts, articles, etc. to *Contact.*

For those of you that are graduates of the Navy Flight Surgeon program or RAM program, members of SUSNFS, as well as being current members of AsMA, you should have received a ballot and supporting material in the mail. The ballots went out on 14 March and needs to be back at SUSNFS by 1 May. If you did not receive a ballot, and feel you meet the voting requirements above, please contact me.

HM1 Michael Glen Stahl was named the Aerospace Medicine Technician for 2001 at NEHC this month. SUSNFS took pleasure in presenting a plaque, citation, and check for his outstanding contributions to Aerospace Medicine. He is currently stationed on the USS Roosevelt, and therefore was not able to attend in person. Continue to heap praise on the AVT's who are helping us complete our mission.

Sunday 5 May in Montreal, SUSNFS will hold its business meeting prior to the AsMA conference. The time will be 4 or 5 p.m, check the schedule when you arrive. Please plan on attending. This is when the new officers will be introduced, SUSNFS's operations will be reviewed, the state of Aerospace Medicine in the different Navy communities will be presented, and most importantly you, will have a chance to participate in laying out the future direction of the Society.

The following day, Monday 6 May, will be the Navy Luncheon. This is hosted by BUMED 23 and will be organized by the Society of US Naval Aerospace Physiologists. There will be a distinguished speaker as well as recognition of award winners in the different societies.

Again, I thank you for all your input over the last year and look forward to meeting some of you at AsMA. You have strengthened the publication as well as the Society by becoming involved.

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From the Treasurer

Greetings from sunny Pensacola! It looks as though winter (such as it is down here) has passed and we can begin to look forward to the wonderful spring appearance of so many blooming plants and trees. The azaleas in my yard are still trying to figure out what season it is, but the ones that have bloomed are beautiful.

The Society remains in good financial condition. Our investments provide enough interest to pay for the awards sponsored by the Society. Additionally, we have managed to improve our business practices with the ability to use the Internet and credit cards rather than the slower, less efficient mail system.

The new Mishap Investigation Guide (5th Edition) has been completed by the Safety Center and is now in print and ready for sale. We had a large initial printing done so there should be no difficulty providing all you could possibly want. We have made several changes to the Mishap Guide that I think you will appreciate. The paper is nearly indestructible and waterproof. We all know how tough these books need to be so we continued to use the hard plastic covers with the rounded corners. The book is a little larger than it has been in the past, but that is due to the significant improvements made by the folks at the Naval Safety Center. The cost is $25 for NON-members and $20 for members.

Our approach to welcoming the new class of student Flight Surgeons has been successful. In the past, we held an evening reception, which unfortunately was never well attended by the faculty. After consultation with CAPT Dudley, we decided to hold a luncheon for the new students as guests of the Society and invite the faculty to participate. This has been overwhelmingly successful and I believe we will continue this approach.

Of course, I would be remiss in my duties as treasurer if I didn't mention dues. Please remember that dues expire in May each year. You can pay your dues with your credit card on the Society's website. Click on the link that says "Visit the ONLINE

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STORE..." The first item on the list should be membership dues and you can easily select how you would like to pay.

Below the membership information you will find the wonderful array of items in our inventory, many of which make wonderful gifts for friends and loved ones. Other than the Ultimate Flight Surgeon CD and the Mishap Guide to Mishap Investigation, jewelry continues to be our best selling item with 'T' shirts a close second. LT Brian O'Neal designed the new carrier 'T' shirt just before the last AsMA conference. Due to the very poor interest in sweat clothes, we will no longer offer these items for sale. We still have lots of "scrunchies" for the ladies and ties for the men. Patches are also available and make wonderful items to trade when you meet your colleagues in aviation all over the world.

Finally, since this is my last treasurers column, I would like to thank you all for the privilege of serving the Society for the past three years. I will be detaching from NAMI and reporting as SMO, USS Nassau (LHA-4) hopefully in support of Operation Enduring Freedom. I want to take this opportunity to introduce the new treasurer, LT G. Merrill Rice. LT Rice, a former UMO, graduated from the RAM program and is now assigned to Naval Medical Research Lab here in Pensacola. LT Rice brings youth and fresh ideas to the office of treasurer and I am certain that LT Rice will continue to improve the society's financial status. Please welcome LT Rice with the same enthusiasm that you have shared with me.

Again, thank you for 3 years of service and support of the Society of United States Naval Flight Surgeons. I look forward to seeing each of you as we travel through the "not so big" world of the U.S. Navy.

Semper Fidelis,

Volanti Subvenimus "We support the flyer,"

Done Right, First Time, On Time,

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Specialty Leader (MED-23)

CAREER PIPELINE
for
RESIDENTS IN AEROSPACE MEDICINE
and
FLIGHT SURGEONS

In my last article in *CONTACT*, I emphasized the need for a change in culture within the Aerospace Medicine community. I addressed the importance of broadening the sphere of community influence by instigating a culture that supports and encourages Flight Surgeons (FSs) and Residents of Aerospace Medicine (RAMs) to move into and within both the operational and hospital settings. Important to this culture change is developing a career pipeline for RAMs and FSs that affords the opportunity for lateral movement between the operational and hospital arenas. It is this career pipeline that will be the focus of this article.

Throughout this article, there will be reference made to Operational and Military Treatment Facility (MTF) skill pathways. This is not intended to reinforce the long-standing dichotomy that we in Navy Medicine have created regarding "them" (hospital-based medicine) versus "us" (operational-based medicine). Rather, this is intended to support the fact that it takes different skill sets to function most effectively and efficiently in each of these settings. The best Navy medical officers are going to be those who are able to enhance their abilities in both of these skill pathways.

On page 7 is the career pipeline for a FS or a RAM. The important aspect is the three sub-pipelines leading to the Residency in Aerospace Medicine. The residency will no longer be considered a primary residency. It will be considered much like a "fellowship" (i.e., an "operational medicine fellowship") in that it will be a "follow-on" to a prior clinical residency. The reason is three-fold. First is that the clinical residency allows for expanded opportunities for lateral movement and portability of operationally-oriented RAMs back into the MTFs

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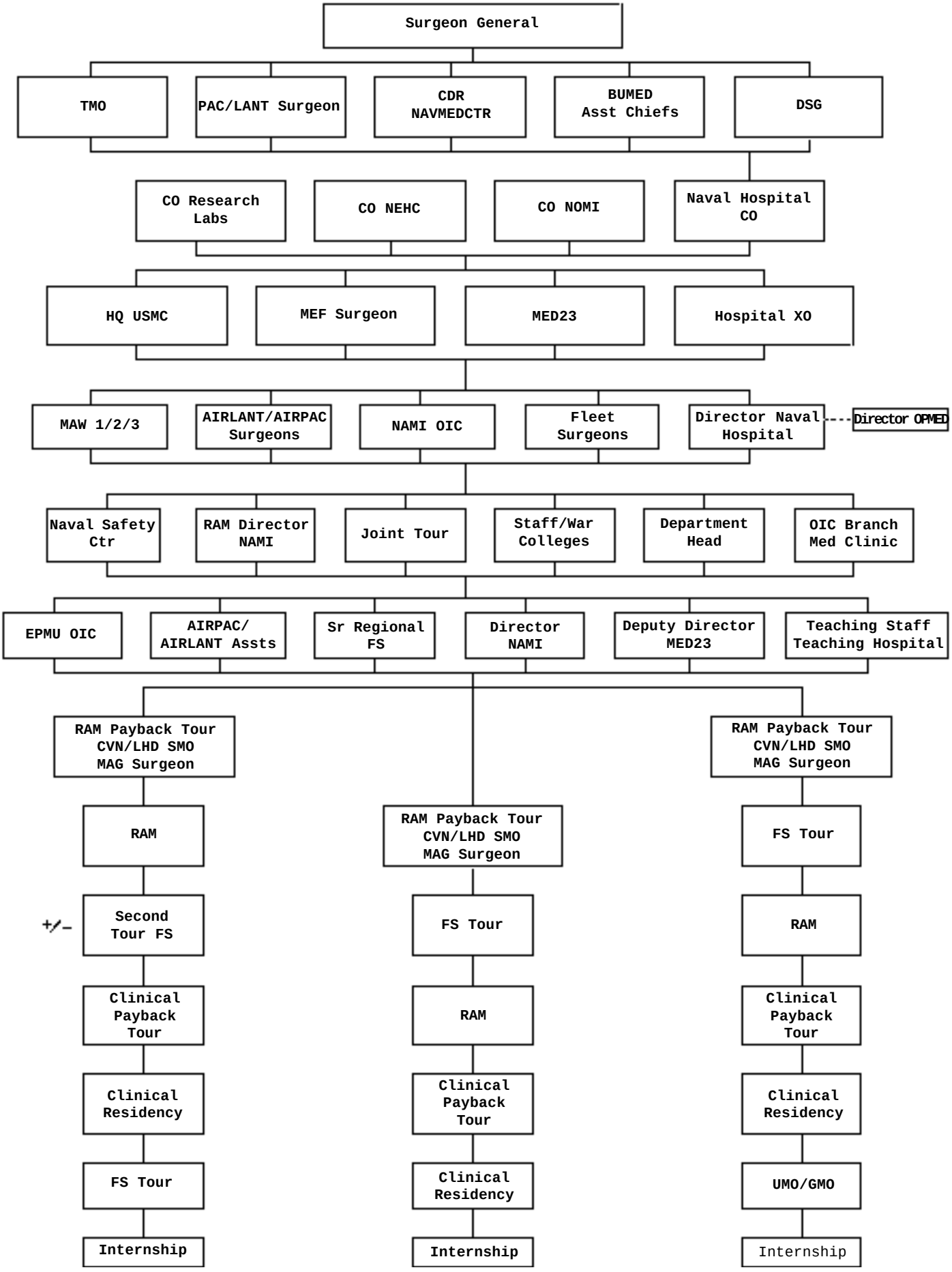
Surgeon General
TMO
PAC/LANT Surgeon
CDR NAVMEDCTR
BUMED Asst Chiefs
DSG
CO Research Labs
CO NEHC
CO NOMI
Naval Hospital CO
HQ USMC
MEF Surgeon
MED23
Hospital XO
MAW 1/2/3
AIRLANT/AIRPAC Surgeons
NAMI OIC
Fleet Surgeons
Director Naval Hospital
Director OPMED
Naval Safety Ctr
RAM Director NAMI
Joint Tour
Staff/War Colleges
Department Head
OIC Branch Med Clinic
EPMU OIC
AIRPAC/ AIRLANT Assts
Sr Regional FS
Director NAMI
Deputy Director MED23
Teaching Staff Teaching Hospital
RAM Payback Tour CVN/LHD SMO MAG Surgeon
RAM Payback Tour CVN/LHD SMO MAG Surgeon
RAM Payback Tour CVN/LHD SMO MAG Surgeon
RAM
Second Tour FS
+/–
Clinical Payback Tour
Clinical Residency
FS Tour
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Clinical Residency
UMO/GMO
Internship

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where they can incorporate their operational skills and their skills in population-based health care into the clinical and administrative practices of the MTFs. Second is that the clinical residency gives the RAM increased credibility, or increased capacity, as a clinical consultant to the younger "docs" under his/her purview in the field. And, third is the fact that the length of the residency can be tailored on a case-by-case basis to meet the specific needs of the selected RAM which in many cases means reducing the residency to two years as opposed to the three that is currently practiced.

Page 9 shows the career pipeline broken down into skill pathways and illustrates the possible crossover points that are afforded to FSs or RAMs to move between the operational setting and the MTF setting. This flexible pipeline allows the RAM and the FS to increase his/her skill levels in operational-based medicine and in hospital-based medicine as part of their overall career development.

(VR-54 C-130 Hercules)
(Shot by CAPT Davenport hanging on a C-130 ramp)

Why is this type of career pipeline important? This career pipeline supports two of the key areas for career enhancement that were outlined by the Deputy Surgeon General after he recently served as the President of the Captain Selection Board.

He wrote, "There are several key areas in an officer's career that need attention to ensure the best qualified are selected. As I see it, the most important areas are as follows:

(1) There should be a noticeable increase in responsibility as an officer moves into new positions. It is difficult to say an officer is progressing if he or she is a CDR who has served in a succession of LT billets or has recently moved to a LT billet. There must be a visible accretion of duties and clear progression into positions of increasingly responsible leadership.

(2) An officer should have a good balance between operational/overseas experience and clinical/academic medicine. This experience can come in many forms: shipboard duty, a tour with the Fleet Marine Force, a Type Commander staff tour, a flight surgery or undersea medicine tour, or an overseas medical treatment facility, to name a few. Every new position should add to the officer's experience base."

This career pipeline affords the FS and the RAM the opportunity to achieve a good balance between operational/overseas experience and clinical/academic medicine as well as the opportunity to seek positions of increased responsibility as they progress through their careers. This in turn will enhance their opportunities for advancement and for achieving the same lofty goals (SG, Flag, CO/XO hospitals) that are currently limited for those medical officers who choose to stay in operational medicine their entire careers.

This said, it is imperative for senior FSs and RAMs to give unbiased guidance and mentoring to the young medical officers early on in their careers so that they can make informed decisions about their military futures. As part of this guidance, encouraging a culture and a career pipeline that promotes the development of skills in both the operational and the hospital settings is vital to the personal and professional advancement of the individual and in the betterment of Navy Medicine.

Admiral Arthur, the Chief of the Medical Corps, CAPT John Sentell, the Deputy Chief of the Medical Corps, and I would be more than happy to receive calls, answer email, or visit any groups wishing more clarity on this career plan.

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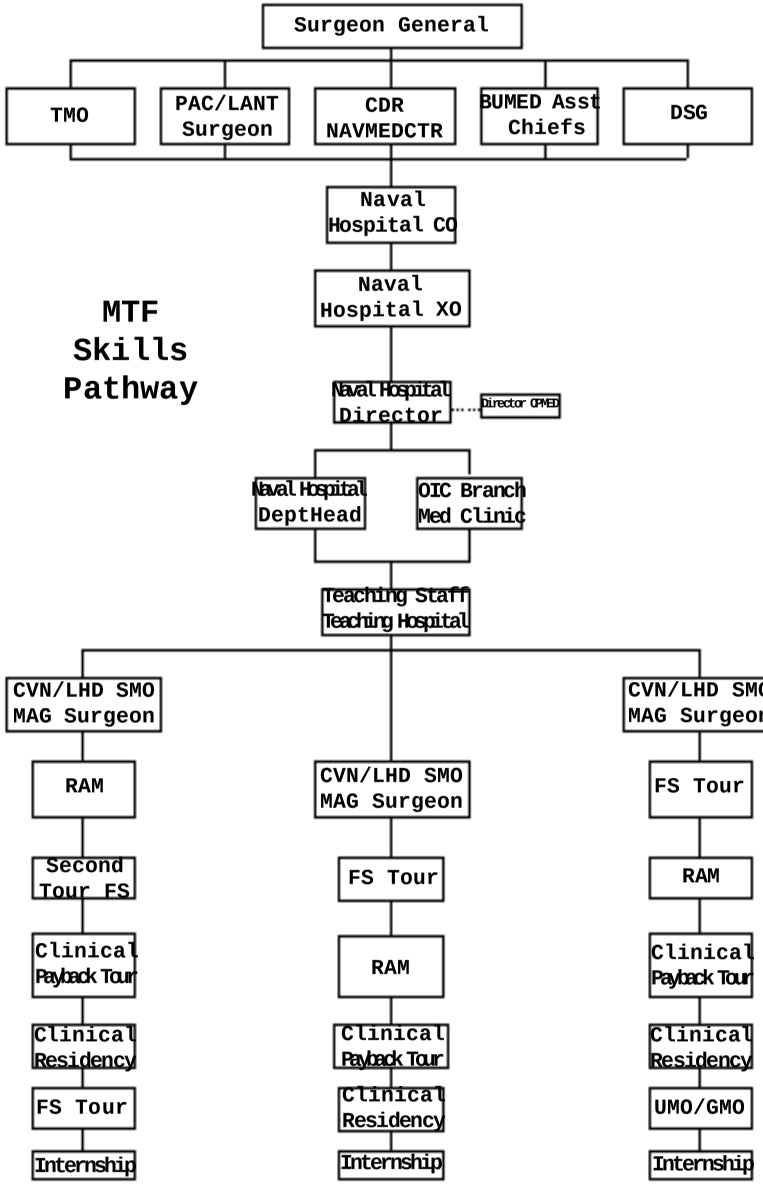
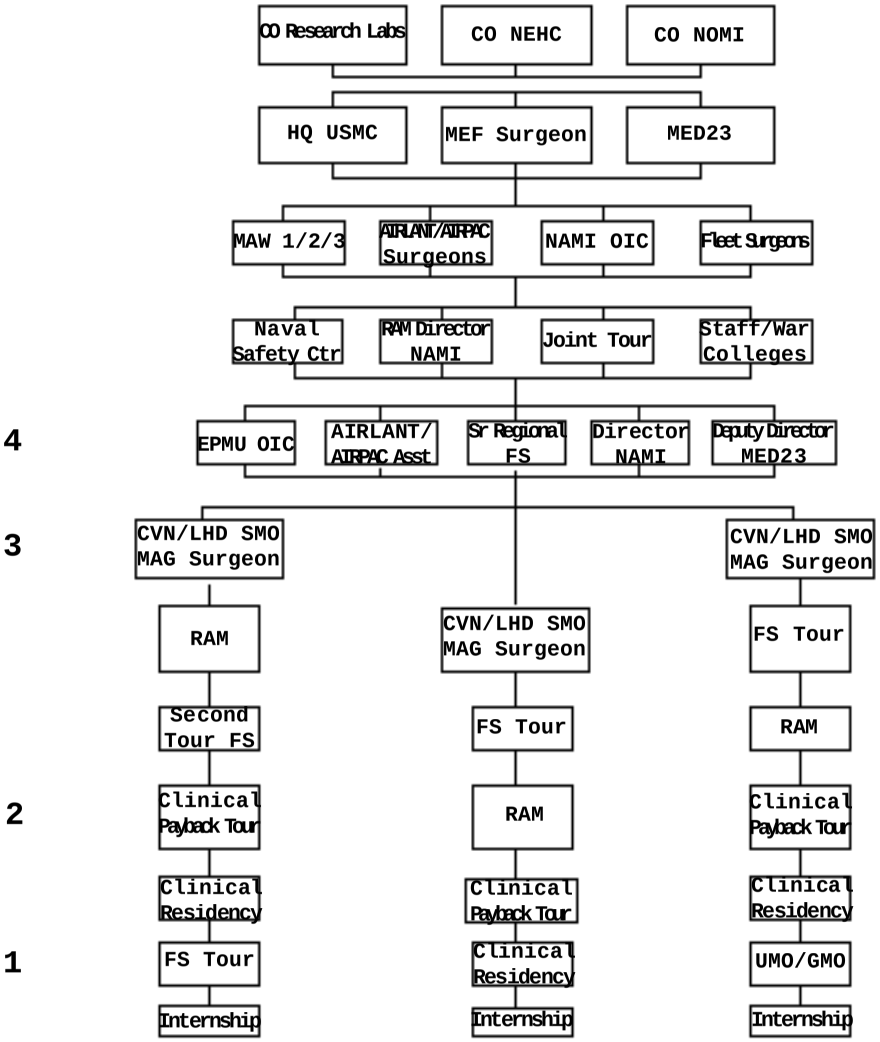
MTF Skills Pathway



Operational Skills Pathway



Observations: The Selection Board Process

I recently served as President of a Captain Selection Board. Here are some of my thoughts and observations on the selection board process.

1. Promotion to Captain serves not just to reward prior performance but, just as importantly, signifies our high level of confidence that an officer will lead his or her peers and subordinates in advancing medical science and assuring operational readiness. Those on selection lists are our next generation of fleet surgeons, commanding officers, and, indeed, Surgeons General.

2. I believe the right records and, consequently, the right people are selected for promotion. However, there are several key areas in an officer's career that need attention to ensure the best qualified are selected. As I see it, the most important areas are as follows.

a. There should be a noticeable increase in responsibility as an officer moves into new positions. It is difficult to say an officer is progressing if he or she is a CDR who has served in a succession of LT billets or has recently moved to a LT billet. There must be a visible accretion of duties and clear progression into positions of increasingly responsible leadership.

b. An officer should have a good balance between operational/overseas experience and clinical/academic medicine. This experience can come in many forms; shipboard duty, a tour with the Fleet Marine Force, a Type Commander staff tour, a Flight Surgery or undersea medicine tour, or an overseas medical treatment facility, to name a few. Every new position should add to the officer's experience base.

c. An officer should consistently do well when compared with peers in a summary group. Larger summary groups offer a better opportunity to highlight leaders. Reports which continually place an officer in a "1 of 1" category at consecutive duty stations are more challenging to evaluate.

d. Continual improvement of professional skills and expertise should be a life-long endeavor. Officers can demonstrate commitment and leadership by pursuing advanced training and education to improve performance and prepare for positions of greater responsibility.

e. Your promotion recommendation is critical. Normally, officers consistently in the early promote and must promote categories do very well in the selection board process. Officers in the promotable category are the most difficult to evaluate. Matching the promotion recommendation and narrative is critical in determining which officers in the promotable category should be selected. The narrative must describe the officer's performance, leadership potential, and ability to perform at the next paygrade. If an officer has been in the promotable category on consecutive fitness reports, the narrative should clearly outline the reason he or she has failed to progress into the must promote category.

f. The narrative and the promotion recommendation must be synchronous. It is difficult to evaluate an officer who is described as "the best I've seen," then given a promotable recommendation. Use the narrative to break out your top performers in the promotable category. These records end up in the "crunch" and the more descriptive the narrative, the better job the Board can do at selecting the most qualified officers for promotion. Suggestion: in plain English, tell the promotion board which of the promotable officers should receive the highest priority for promotion consideration.

3. As the Reporting Senior, you are the ultimate career counselor for all of our officers. As a Board member, I depend upon you to tell me, in clear language, who should be promoted. When the communication lines are clear, we have a much better chance of selecting the very best. If you have any questions on selection boards or fitness reports, please don't hesitate to contact me or my Deputy at (202) 762-3063.

Hope this is helpful! V/R,

Rear Admiral Donald C. Arthur, MC, USN
Chief of the Medical Corps

Naval Safety Center

OPNAV INSTRUCTION 3750.6R (NAVAL AVIATION SAFETY PROGRAM) Aeromedical considerations

About one year ago, OPNAV 3750.6R was released to update a 10-year-old instruction. 3750.6 is the Naval Aviation Safety Program and contains information for aviation hazard identification evaluation, aviation hazard mitigation, mishap investigation, and mishap reporting. This note outlines areas of change effecting aeromedical professionals.

Human factors have been identified as causal in 70 to 80% of Naval aviation mishaps. The instruction now provides specific guidance on the conduct of human factors councils and boards. This is a proactive approach to safety that previously was only discussed in TYCOM level instructions. Review Chapter 2 Paragraph 205.f for additional information.

Hazard reporting has been modified to improve the quality of information gathered. For the aeromedical professional, this means more in-depth evaluation and reporting of physiologic events. Review Chapter 4 Paragraph 419.

OPNAV INSTRUCTION 3750.6 guides Aeromedical Analysis of mishaps. The instruction now provides a human factors approach to the evaluation of mishaps. The new format requires the Flight Surgeon to be the Human Factors expert on the Aviation Mishap Board. If you are not familiar with the Human Factors Analysis and Classification System (HFACS) refer to the HFACS primmer in Appendix O of the instruction. The instruction also contains a sample Aeromedical Analysis (Appendix J).

One item that is not a change but needs highlighting is the medical department awareness of guidance provided in the 3750 series. Naval medical facilities must train their staff members in the general medical and administrative requirements of this instruction, prepare and keep current a pre-mishap plan, and have ready both personnel and material to support the Naval Aviation Safety Program. Review Chapter 6 paragraph 608.d for additional information. During my travels evaluating squadron safety programs, I have noticed that many clinics have substandard mishap kits and no pre-mishap plan. Additionally, there is confusion regarding the funding for mishap kits. The clinic should be funding the creation and maintenance of these kits. Suggested contents for the kits can be found in The Naval Flight Surgeon's Pocket Reference to Aircraft Mishap Investigation, Fifth Edition. This reference is available for download from the Naval Safety Center web site http://safetycenter.navy.mil. A hard copy of the text can be ordered from SUSNFS.

Change 1 of the Instruction was released in November of 2001. Changes include, correcting the headers on the AA FORM SIR 3750/14 and 72 hour history FORM SIR 3750/15 to reflect the privileged nature of the forms' contents.

Changes were also made to the AA enclosures. A requirement now exists to attach a number of enclosures to the AA, including information supporting the findings in the AA as well as the last two physical examinations. Review Chapter 7 paragraph 716.d(3) to obtain additional information. The distribution of the SIR and AA packages has changes to include the TYCOM Surgeon. This was done to facilitate AA review by the aeromedical staff of the TYCOM. Review Chapter 7 paragraph 704.b.

All aeromedical professionals should have a copy of OPNAV INSTRUCTION 3750.6R. The instruction, with change 1 included, is available for download from http://safetycenter.navy.mil.

A CD that includes this instruction along with many other aeromedical safety resources will be distributed at the Aeromedical and Operational Problems Course in March 2002. Soon, it will be available through your TYCOM Medical department as well.

Keep 'em Flying, SAFELY

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NAMI Physical Exams (Code 26)

MA-HUANG, EPHEDRA, RIPPED FUEL, METABOLIFE – There are lots of our aviation personnel and candidates that are looking for the same things that their civilian peers are: shortcuts, magic bullets, alternative medicine, etc.

Last week I saw two Naval Air Crew candidates in the same morning with a history of taking ephedra or "Ripped Fuel". One was a 25 year old who had a six hour episode of crushing chest pain, ischemic changes on his ECG in the ER, slightly elevated enzymes with no MB band, and had a coronary catheterization which demonstrated no coronary artery disease. Kind of radical, but he was thought to have had a vasospastic event associated with taking his dietary supplement of ma huang. We recommended a waiver for the history, with counseling. The second individual had a slightly less complete evaluation, but still had a maximum exercise stress test and work-up for a trigeminy ECG pattern resulting from his dose of "Ripped Fuel". We also recommended for a waiver, with counseling.

I just saw another young Marine ATC candidate who was taking several dietary supplements, and there are quite a few body builders out there still convinced that it is a medical and government conspiracy and overkill to not be able to do their choice of anabolic steroids. We are aware of at least one recent PFT death in an individual who had bulked up 30+ pounds after having his exam here, in order to pass his intake Marine PFT.

You can find more than a few Flight Surgeons or other physicians who are into this. You can find chelation therapists, hot-tub obstetricians and midwives, pain specialists, and all sorts of other alternative practitioners. For reference try Virtual Flight Surgeons: www.aviationmedicine.com

OPNAVINST 3710.7 series states: Drugs, defined as any chemical that when taken into the body causes a physiological response . . . over-the-counter drugs -- because of the possibility of adverse side effects and unpredictable reactions -- their use by flight personnel is prohibited unless specifically approved by a Flight Surgeon - - and ground support personnel should be discouraged from their use. Further, anabolic steroids are illicit drugs . . .

FAA Policy: Because the FDA considers these products food additives or nutritional supplements and not medications, the FAA does not prohibit their use. There is no reporting requirement on the FAA Airman's Medical Application, Form 8500-8, for use of these compounds. A pilot is obligated to report any treatment by a health care provider or any known medical condition.

The Flight Surgeon should recognize that the purity and effects of dietary supplements are not controlled, and they should be considered unnecessary and undesirable in aviation personnel. Counseling should include the NATOPs reference, and that they are prohibited. The government has rented these folks' bodies, and wants them rested, adequately fed and exercised, but is **NOT** interested in making them better through chemistry, or rather alchemy. Unless there is a documented deficiency, a single multivitamin is about as far as the Flight Surgeon ought to be willing to go in nurturing self-medication and support of the unscientific claims of manufacturers and cultists.

If you don't ask, you probably will never know about many of these cases. You ought to be at least informed on the products, and the web provides a good starting point. Creatinine has been regularly associated with kidney stones, probably with inadequate hydration. It's hard to convince folks that using steroids is bad, when high school coaches and trainers, and weight lifting trainers are providing them (and often making a profit as well). The majority of studies have shown that placebo effect can account for much of the "benefit", though there may be some increased aggressiveness, fluid retention. Bottom line, we're more interested in strong minds than in bodybuilding. Eat right, rest right, exercise properly and you won't need short cuts.

KEEP 'EM FLYING, SAFELY!

"Attack quack"

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The Flea Bag (NAMI Internal Medicine)

Welcome to another installment of The Flea Bag. For this installment I am going to discuss a patient with Crohn's Disease (CD) that was recently evaluated at NAMI for waiver at a Special Board of Flight Surgeons (SBFS). Now those of you who have bothered to cure your insomnia by reading the waiver guide or who have been designated a Naval Flight Surgeon in the last three years while I was teaching the Internal Medicine section, might recall that the section on CD is very short. In fact, in my lectures the only slide dedicated to CD simply states Crohn's disease is considered disqualifying (CD is CD) and that waivers are not recommended for this condition.

Well now that we have had a thorough review of our official policy, lets explore the real world for a second. Did you know that over the last 15 years, 13 pilots have actually requested waivers for CD? Now asking for the waiver shouldn't come as a surprise. What may be surprising is that 5 pilots actually received waivers for this condition despite our policy. Now I am not going to tell you that I can explain why these 5 patients received waivers. All were senior aviators with mild disease. All but one was waived to service group III. All were either on no maintenance medications or on one of the 5-ASA compounds approved for use in inflammatory bowel disease in aviation (albeit for ulcerative colitis, not CD). In fact, the case I am about to discuss was one of those people who was waived, until he had the misfortune of experiencing a flare of his disease that did not respond to medical therapy and actually required surgical intervention to achieve remission. I am discussing this case **not** as a proposal to change policy, but as an interesting case (for a flea) and as a reminder to the Squadron FS out there that nothing is impossible as long as it makes good aeromedical sense. If you apply sound medical and risk management principles to a patient's individual circumstances and in your honest assessment feel the benefit is worth the "risk" (to both the patient and the Navy), then even though policy may say otherwise, a waiver may be possible, even if it takes a SBFS to achieve that end. So with that in mind let's get to the case.

SV was a typical P-3 aviator who had completed his first squadron tour and had returned to the "Cradle of Naval Aviation" as a T-34 instructor pilot. While I won't bore you with all of the details of his initial diagnosis, it is worth mentioning some of the story as it may help you to recognize someone in your squadron who may need a little more diagnostic evaluation to come up with a definitive diagnosis.

SV initially presented with a non-healing anal fissure following a short bout with constipation. When the fissure wouldn't heal after months of conservative therapy, he was treated by general surgery with a sphincterotomy and anal dilation. While the fissure healed he then began to experience diarrhea. Initially it was attributed to the anesthesia, but when the diarrhea persisted his Flight Surgeon began to doubt that impression and began to look for other causes. He had multiple evaluations with stool cultures, O&P studies, fecal leukocytes and C. diff toxins that were all negative. He was even treated empirically with antibiotics on at least two occasions despite the negative evaluations. The diarrhea persisted and SV also noted a 15 pound weight loss,

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(Official US Navy Photo #DNST8902165)

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some fatigue and occasional hematochezia finally prompting his FS to refer him to GI for evaluation. After his colonoscopy, SV was diagnosed with inflammatory bowel disease, probably CD. The pathology confirmed the diagnosis and SV was grounded, started on mesalamine and eventually placed on a limited duty board. He was followed locally in Pensacola by both GI and NAMI Internal Medicine and eventually was tapered off his medications. At one year after his diagnosis he was placed back to full duty and because of the mild nature of his symptoms, the rapid resolution on the mesalamine and the ability to come off all medical therapy, a service group II waiver was recommended. He flew as a service group II pilot for one year and then he was granted a service group I waiver in April 1996. He flew as a service group I T-34 instructor pilot for the remainder of his active duty obligation and in November 1996 left active duty to pursue a career with the civilian airlines.

Now that could well have been the end of our association with SV, but SV decided to join the reserves. In January 1997, SV was accepted into the reserves. He transitioned to the C-9 aircraft that he flew until December 2000. That is where SV's story gets a little more interesting. While he had been restarted on mesalamine in December 1999 prophylactically, he remained asymptomatic from July 1996 until December 2000. He flew over 500 hours with the reserves and over 1800 hours as a commercial airline pilot during that time, not to mention a few hundred hours of instructor pilot time prior to leaving active duty. He never had any trouble during flight and was well on his way to thinking that his experience in the mid 1990's was going to be a one-time event, when the natural history of CD came knocking on his door. SV started to have crampy abdominal pain, diarrhea, nausea, postprandial bloating and night sweats. He also reported intermittent low-grade fevers and nocturnal diarrhea, which he had not had since before beginning treatment in 1995. He was diagnosed with a partial small bowel obstruction and treated conservatively while awaiting repeat colonoscopy and small bowel follow through.

SV became concerned about his health and grounded himself in Dec 2000 while he was having these symptoms and was transitioning to a new GI physician. By the end of January 2001, he had been evaluated by his new doctor who continued mesalamine, started 6 mercaptopurine (6MP) and initiated a steroid taper to resolve this presumed CD flare. The doctor even ordered a thiopurine methyl transferase (TPMT) level to evaluate SV's ability to metabolize 6MP. This enzyme is absent in 0.03% and low in 11% of healthy patients. Those with no enzyme are unable to be treated with 6MP while those with low levels generally can take 6MP but must be monitored closely for toxicity and may have therapeutic efficacy at lower dosing ranges. SV turned out to be among the 11% and so his doctor continued him on the 6MP. SV had also been treated for a UTI in mid 2000 and his new doctor noted another UTI at his initial evaluation. Coupled with the symptoms he was experiencing his physician suspected small bowel disease with possible strictures and fistulas to the bladder. When he experienced a third UTI less than 6 weeks later, SV also reported experiencing pneumaturia. (Well of course he didn't call it pneumaturia, but his physician understood his description of feeling like he was urinating air). SV was scheduled for surgical and urological consults but before he could make either appointment he became acutely ill and was admitted to the hospital. Despite a course of high dose steroids, SV continued to have symptoms and was taken to the operating room for exploratory laparotomy. Prior to surgery, a cystoscopy confirmed a pinhole fistula. At laparotomy, three distinct areas of inflammatory changes were noted in the small bowel, one causing an entero-entero fistula, one causing an entero-vesicular fistula and a third causing small bowel obstruction. The fistulas were closed and 1.5 feet of small bowel was resected. Fortunately the terminal ileum, including the ileocecal valve was spared allowing for primary re-anastomosis. SV had an uneventful postoperative recovery (except a bout of cellulitis following an insect bite on his left hand which was probably facilitated by his high dose steroids causing immunosuppression). SV was only hospitalized for about two weeks. He continued on the 6MP and mesalamine and was able to taper completely off of his steroids by mid July. The FAA returned him back to flying status as soon as his steroids were completed and SV then asked to continue his service

group I waiver and resume flying with the Naval Reserves.

SV's waiver was contingent upon not having any complications of his disease and using only mesalamine or one of the other 5 ASA compounds. Clearly he had a complication. He had had a bowel obstruction, had lost 1.5 feet of small bowel and was now taking 6MP, a medication not approved for aviation duties. The powers that be at NAMI, with a good deal of input from me, decided that a continuation of his waiver was not necessarily in the Navy's best interest without closer inspection. The fact that SV was still taking steroids at the time of his waiver request certainly did not help his case. A waiver was denied and SV appealed via his CO for a SBFS. This would be the second SBFS in a row for a reservist (see the last Flea Bag for the previous case), demonstrating the importance of total force integration between our active and reserve forces, especially in light of today's operational climate.

SV had his special board and as you have already guessed, he received a recommendation to continue flying as a service group I aviator. Now while this may be contrary to our policy, it made good operational sense. SV has demonstrated that he will not get into the cockpit if he is experiencing any symptoms from his CD. He grounded himself in December 2000. He did not wait for his Flight Surgeon to tell him he could no longer fly. SV is able to recognize his symptoms at an early stage, which greatly decreases the chance of in-flight incapacitation. SV has tolerated his medications without side effect for over a year and it is easy to follow for side effects of the 6MP with CBC and LFT's. We do believe SV will have a recurrence of his CD at some point in time. After all, 70% of CD patients require surgery at some time in order to achieve a clinical remission and 45% of patients will eventually require a second surgery somewhere between 5 and 20 years after the first surgery. Quiescent CD with little or no symptoms usually marks the intervening periods if patients are maintained on their medications. Only about 10% of patients ever require a third surgery. So while SV is likely to experience symptoms at some point in time, the likelihood of them occurring acutely is slim. The SBFS felt that SV could still contribute in a safe manner to the overall mission of his squadron and of the Navy with no risk of making himself worse. Furthermore, the SBFS felt SV did not pose any significant risk to safety of flight nor to mission accomplishment. Even if he were to become symptomatic, it would likely be insidious in onset and allow for SV to be removed from the schedule before it could have significant mission impact. Given SV's position as a department head in a reserve C-9 squadron, the SBFS felt assured that he would never be flying any other Naval aircraft, adding a further margin of safety since there are always two qualified pilots aboard.

The SBFS did inform SV that his waiver is still contingent upon remaining asymptomatic, his medication doses remaining stable and that he has no side effects from the medications. We also want monthly CBC, quarterly LFT's, and a colonoscopy every 1-2 years. Most importantly, SV must not develop any extraintestinal manifestations of his CD, especially ocular and arthritic problems, or his waiver recommendation will be revoked.

As I mentioned earlier, I am not advocating a change in policy. Crohn's is a serious disease and often cannot be managed this well in an operational environment. Active disease still needs to be considered for a medical board. Patients with aggressive disease may require frequent steroids and not be deployable. Patients who lose their ileocecal valve during partial small bowel resection are prone to chronic diarrhea and may not do well in the cockpit or other operational environments. What I am trying to remind you all about is that when an individual patient has demonstrated the ability to recognize and control his disease and the risk to the patient, the aircraft, the crew and the mission is acceptable, then even though written policy may state the patient can not be waived, a waiver may still be possible under the right circumstances.

Until next time…….

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NAMI Physical Qualifications (Code 42)

Greetings from sunny Pensacola! While many of you are having a wonderful time out there in the fleet, we back in Code 42 continue to work hard to provide you with the most up-to-date and accurate guidance in aerospace medical qualifications and standards.

The Aeromedical Advisory Council (AAC) has been busy trying to provide changes to policy that meet the "reasonable man theory". As a result, the waiver guide has been changed frequently to provide the fleet with the most current policies approved by BUMED. There are a few issues that need to be reiterated because they still seem to be unclear to many in the fleet. One of the most common problems we have been having in Code 42 is the issue of timely submission. Many Flight Surgeons seem to wait until long after the 60-day period to submit requests for waiver. If a member on aviation duty is going to be grounded for 60 days or more, a grounding physical or AMS must be submitted to Code 42. Also, please remember that a Local Board of Flight Surgeons may only issue an up-chit for 90 days but may never issue an up-chit if there is a grounding letter from BUPERS/CMC/CNRC in the members record.

Phone calls and email to Code 42 are always welcome and we encourage you to communicate. While phone calls are less reliable due to time zone differentials, email seems to be the best for several reasons. First, it leaves a paper trail and can be tracked for future reference. Secondly, the Flight Surgeon can always refer to the information and recall for it will not change with time. PLEASE remember to include the member's name and serial number when you call or write so we can accurately evaluate the issue and give you the best possible information. All to often, we get the "I got this guy who…" but no name or serial number. This detracts from our ability to serve you effectively, so please remember to include this information when requesting assistance.

Don't forget there is new guidance regarding pregnancy and flying. Reporting of pregnancy to Code 42 is for information only and does not require a waiver. Pregnant aviators may fly with concurrence of the obstetric provider up to the third trimester in an uncomplicated pregnancy. Please refer to OPNAVINST 3710.7S.

Among the most recent changes is the approval of several medications for use in aviation, and some surgical issues frequently seen in aviation duty personnel.

Orthopedic

The policy on knee surgery approved by BUMED has become clearer and more reasonable. Surgically corrected and fully rehabilitated meniscus injuries are no longer disqualifying, i.e. they are now NCD. Surgically corrected anterior cruciate ligament injuries that are fully rehabilitated, are still CD, but will be waived as a "one time submission." Additionally, submission for waiver request shall include Navy PFA scores or Marine Corps PFT scores. Waiver will **NOT** be considered for conservatively treated or un-repaired cruciate ligament tears in applicants.

One of the less common surgical conditions recommended for waiver and passed by the AAC **(still pending approval by BUMED)** is Total Hip Replacement surgery in designated aviators. Applicants will **NOT** be considered for waiver with this condition. Captain Tormes, Chief of Orthopedics at the Naval Hospital Pensacola, recommended guidance to the AAC regarding this condition and presented four criteria that must be met for waiver consideration. These criteria include: Patient released by the Orthopedic surgeon; the patient must be asymptomatic, pain-free and on no medications; a 6 month period of rehabilitation must have elapsed and the patient must demonstrate adequate range of motion on the affected side. Additionally, the patient must pass an ejection seat training device with emphasis on avoidance of flail injury and be fully informed of the risk of dislocation in the event of ejection.

ENT

Stapedectomy may be considered for waiver to the same service group after remaining stable at the three month post-operative follow-up.

The four criteria established by the Otolaryngology department for seasonal allergic rhinitis were re-affirmed and remain as published.

Medication Use

One of the prime areas of interest is the guidance regarding medications. The use of HMG Co-A reductase inhibitor medications (statins) has been approved as a class of drugs for use in aviation duty as long as several criteria are met. The aviator must have a brief two-week grounding and appropriate chemistry evaluation, but use of this medication is no longer disqualifying. Although it does not require a waiver, an aeromedical summary shall be submitted by the Flight Surgeon to Code 42 for "information only". Inclusion of the chemistry evaluation is required in the aeromedical summary.

Another medication frequently requested for use in aviation is the non-sedating antihistamine. The AAC reviewed this class of medication and formulated the following recommended policy **(still pending approval by BUMED).** Claritin in doses of 10 mg daily or Allegra in doses of 180 mg daily may be used if prescribed by the Flight Surgeon without need for waiver (i.e. NCD). Any use of these medications in excess of this dosing schedule is CD and will require request for a waiver due to the known incidence of sedation at higher doses.

Treatment of urinary incontinence with Detrol (2 mg. twice daily) will be considered for waiver in all but service group I and II, after an initial grounding period of 30 days during which the member will be observed for side effects of the medication. Waiver will **NOT** be considered for applicants. This has been approved by BUMED.

Dose restrictions for ACE-I's have been eliminated. Use of ACE-I and HCTZ as individual medication will be considered for waiver in all aviation personnel. Use of ACE-I and HCTZ in combination will be considered for waiver for all aviation personnel other than service group I and II.

Ophthalmology

BUMED has endorsed the new AAC policy on pterygium. Pterygium up to and including 1.0 mm in size is now considered NCD for designated and applicants provided their vision meets SNA standards or corrects to $20/20^{-0}$. Pterygium greater than 1.0 mm is still considered disqualifying (CD) for all aviation personnel. Waiver will be considered in designated personnel only if the following conditions are met: the pterygium must be measured by color corneal photography; the vision must correct to $20/20^{-0}$ and the waiver request must be accompanied by an ophthalmology consultation.

The topic of Photorefractive Keratectomy (PRK) continues to occupy a great deal of attention in aviation. The AAC recommended that after the Aviation Retention Study is capped, all aviation personnel with a history of PRK be eligible for waiver consideration, i.e. (CD, Waiver Recommended) Current recommendation by the AAC states that individuals with a history of PRK, who are other than SNA or SNFO candidates, are still considered disqualified, (CD) but may be considered for waiver without requirement for enrollment in the SNA/SNFO accession study. This group includes Student Naval Flight Surgeons, Student Naval Aviation Physiologists, Student Naval Experimental Psychologists, Naval Aircrew, Air Traffic Control and UAV Operators. Please refer to the waiver guide for the appropriate template and the latest guidance on the submission of waiver requests for PRK. **www.nomi.med.navy.mil/Nami/WaiverGuideTopics/641010.pdf**

One of the more significant changes in ophthalmology is the approval of LASIK surgery for Class III (ATC, UAV) designated or candidates. Please note that this procedure is **NOT** approved for anyone who is actually involved in flight, (Class I or Class II). Although this has been agreed upon by the AAC, **this change is still pending BUMED approval.**

Internal Medicine

Wolf-Parkinson-White syndrome has long been a difficult condition for aviation, particularly candidates. Recent changes in policy recommendation include the following: There is no requirement for repeat electrophysiology study (EPS) after surgical ablation; a waiver to service group one will be considered three months after EPS and ablation provided no evidence of pre-excitation remains on the ECG. EPS will be required for SNA, service group I and service group II individuals who are asymptomatic. Non-invasive evaluation will be acceptable for SG III, Class 2 and 3. Recommendation for waiver will **NOT** be considered for symptomatic designated individuals until successful ablation is completed and confirmed with non-invasive evalua-

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tion. Symptomatic aviation candidates or candidates with a history of symptoms will only be considered for waiver after successful ablation with subsequent non-invasive evaluation. While the AAC has approved this, **BUMED has not finalized approval**.

Several new approaches to a variety of forms of hepatitis have been passed by the AAC, **but are still awaiting BUMED approval.** Chronic hepatitis B will not be waived for applicants. A waiver recommendation will be considered for designated individuals provided they meet specific criteria: The member must be asymptomatic; liver enzymes must be less than 100 :/L or a maximum of 2.5 times the upper limits of normal; GI consultation to determine severity of disease and treatment requirements; and liver biopsy (if indicated by GI Consultation) demonstrating only mild inflammation with no evidence of fibrosis. Chronic hepatitis D virus with hepatitis B virus is disqualifying for applicants and designated personnel and will **NOT** be waived due to the risk of progression of this disease. Chronic hepatitis C Virus will **NOT** be waived for any applicants. Designated personnel will be considered for waiver provided the liver enzymes must be less than 100 :/L or a maximum of 2.5 times the upper limits of normal; GI consultation to determine severity of disease and treatment requirements; and liver biopsy (if indicated by GI Consultation) demonstrating only mild inflammation with no evidence of fibrosis, negative qualitative Hepatitis C virus PCR, and the member remains asymptomatic.

As you can see, "aviation physical standards" is a dynamic area. We hope this information will help you in your practice of Aerospace Medicine and most importantly keep our aviators at their station on the flight deck. If you have any questions, please let us know. Remember, VOLANTI SUBVENIMUS "We support the flyer"

Best Wishes,
The Code 42 staff

The Flying Couch (NAMI Psychiatry)

This is my first article as NAMI Psychiatry Department Head, so I'd like to start off by introducing myself. I was "winged" as a Flight Surgeon in 1985; at that time, CAPT Ben Ogburn was sitting in this chair, and CDR John Mangrum was the other staff psychiatrist here. Having started out to be a surgeon, I should say my ultimate decision to become a psychiatrist was strongly influenced by my experience here as a student under those two excellent teachers. My squadron tour was with VP-22 at NAS Barbers Point, and included a deployment to NAS Cubi Point, Republic of the Philippines, during which President Ferdinand Marcos was deposed; it made for a memorable tour. After that I did my residency in Psychiatry at Portsmouth, where I kept up my interest in Aerospace Medicine and particularly aerospace psychiatry, with CAPT Buck Aitken, a former NAMI psychologist, as a mentor. After graduation from Portsmouth, I returned to NAMI as the Psychiatry Division Officer, under CAPT Jim Baggett, another cherished mentor in this field. From there I returned to Portsmouth, where I was the Residency Program Director, and made it a priority to ensure the residents, particularly those without operational experience, understood the operational consequences of their decisions. After eight years at Portsmouth, I "came home" again to NAMI, and am enjoying once again the congenial and stimulating environment of the "center of excellence in operational medicine." I hope I can make some small contribution to the field, remaining mindful of the large footsteps I am following, including those of my esteemed predecessor, CAPT Deborah J. Wear-Finkle, who is now enjoying the serenity of the Maine woods, at NAS Brunswick.

Many of you know the other two thirds of our department here, but I want to acknowledge them as well, and say it is the closest thing to pure, unalloyed satisfaction to work with CAPT Myron Almond, MC, USN, our other psychiatrist, and CDR Shirley Ellis, MSC, USN, our psychologist. Not only are they both consummate professionals with extensive operational and clinical experience, they're great friends, and fellow movie lovers! See CAPT Almond's excellent article in this issue on "Suicides

at Sea."

This and future articles will be something of a smorgasbord of aerospace psychiatric topics. I'd appreciate your feedback, questions, comments or requests, to help me make this as useful to you as I can.

"Operational Psychiatry Afloat: SSRIs at Sea"

In this section, I'll spill a little ink each issue reviewing some basic area in clinical psychiatry, with special emphasis on the operational and aviation aspects. Since a good deal of the clinical work of the Flight Surgeon is with non-flyers, and since most aviators will be NPQ once they become psychiatric patients, much of this section will apply to the "ground pounders" in your practice.

I'd like to start off with a brief discussion of the use of antidepressant medications at sea. This is a controversial subject, and one in which strong emotions (and I'm not talking about those of the patient!) sometimes eclipse good, sound clinical judgment. My goal is to give you some guidelines to help you care for these patients in a helpful, rational way, and to avoid, as much as possible, stirring up more controversy. In sharing this advice, I am not arguing that antidepressant medications SHOULD be used at sea, but rather acknowledging that they ARE being used at sea. That being the case, the Flight Surgeon needs to be familiar with them.

(MV-22 Osprey Official US Navy Photo)

Historically, anyone with a single episode of major depression was removed from sea duty, placed on a limited duty medical board, and treated for a period of six months to a year. Once the disease was in remission, and the patient was off all medications, he or she was returned to full duty. In most cases, a recurrent major depression resulted in a medical board and the end of the patient's naval career. How much of that was rational, based on the clinical features and natural history of the disease and the effects of the medications available at the time, and how much was due to stigmatization of patients with psychiatric disorder, I can't say. It is true that the older medications, such as tricyclic antidepressant (TCA) and monoamine oxidase inhibitor (MAOI) drugs had side effects that made them too hazardous to be used in the dynamic and high-risk environment of a ship at sea. In a way, it was a clean, elegant solution, from the operational point of view.

All that changed in 1987 when fluoxetine (Prozac®) was approved for use in the U.S. Within a few short years fluoxetine, joined by many newer drugs in the same selective serotonin reuptake inhibitor (SSRI) category, became some of the most-prescribed drugs in America. For example, the National Center for Health Statistics lists 3 SSRI drugs in the top 20 of all drugs prescribed in doctors' offices in 2001. A combination of safety, efficacy, and aggressive marketing by the pharmaceutical industry have resulted in much wider use of these antidepressant medications than anyone could have dreamed a generation ago. Currently SSRIs are considered the drug category of choice for depressed patients. Their efficacy is comparable to that of the TCAs, but they do not exert the same anti-cholinergic and sedative effects, are not as lethal in overdose, are easier to administer and are well tolerated. SSRIs are relatively free of the adverse effects on cognitive skills and psychomotor ability that are associated with some other antidepressants. SSRIs do not appear to exert the cardiotoxic effects that other antidepressants have shown, and so are safer for cardiac patients as well as in overdose for all patients. For all these reasons, psychiatrists as well as non-psychiatric physicians have grown progressively more willing to send active duty patients back to sea duty on

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SSRIs.

Ideally, in my opinion, SSRI pharmacotherapy should not be initiated in patients who are on sea duty. Rather, a brief period of limited duty would allow time for the therapeutic effect to "kick in" (could take as long as twelve weeks), switch drugs if the first trial didn't do the job, and to monitor any side effects. It would also make the patient available for psychotherapy, since there is now clear evidence that a combination of medication and psychotherapy is better than either treatment alone. Once remission is secure, low-risk patients could then be sent back to full duty. By low risk I mean, for example: first episode, non-psychotic, with full remission on a single, newer agent, and no side effects that might interfere with shipboard duties and living. Once in this "continuation" phase of treatment, the patient could be managed by the Flight Surgeon, provided an adequate supply of medication could be assured. Anybody who doesn't meet these criteria should be continued on limited duty till they do, or medically boarded and placed on the Temporary Disabled Retired List (TDRL).

Let's say all that was done, and the patient is now coming to your ship or squadron for duty. What do you, as the operational physician, need to know? First off, there are a number of behavioral side effects of SSRIs, including nervousness/anxiety, increased energy, restlessness/akathisia, insomnia, irritability/agitation, silliness/euphoria and disinhibition. Most of these will occur early in treatment, so it shouldn't be a common problem for you, but just in case, the best approach is to have the patient skip a day or two of medication, then resume taking it at a lower dose. If that doesn't work, it may be time to send the patient back to the shrink for re-evaluation.

Some other side effects to be aware of are nausea, diarrhea, headache, nervousness, insomnia, fatigue and sexual dysfunction (e.g., anorgasmia, decreased libido, impaired arousal, delayed ejaculation in men). Weight gain or loss may occur; the literature says weight gain is rare, usually mild, and transient. My experience has been different, and a number of patients have stopped medication because of weight gain, particularly if they're over the PRT limit. Many of these symptoms are also characteristic of depression, and it's sometimes hard to tell a drug side effect from "break-through" or recurrence of the disease itself. Drug-drug interactions may result from cytochrome P450 isoenzyme inhibition resulting from any of several SSRIs, so bear that in mind when prescribing, and have a handy reference for drug interactions (I like ePocrates®).

I should mention a rare, but potentially fatal side effect, the "serotonin syndrome," which may occur when an SSRI is taken with another serotonergic medication. Signs and symptoms include euphoria, drowsiness, sustained rapid eye movement, hyperreflexia, rapid muscle contraction and relaxation in the ankle causing abnormal movements of the foot, clumsiness, restlessness, feeling drunk and dizzy, muscle contraction and relaxation of the jaw, sweating, muscle twitching, rigidity, hyperpyrexia, mental status changes (e.g. confusion and hypomania), shivering, diarrhea, loss of consciousness and death. Most of the offending, interacting drugs are other psychotropics your sea-going patients should not be taking. One exception is L-tryptophan, so be sure to ask about nutritional supplements as well as pharmaceuticals. Treatment is discontinuation of the causative agents and general supportive measures; it will usually resolve within 24 hours after that.

One other reminder: when you stop an SSRI with a short half-life, such as paroxetine (Paxil®), you may see withdrawal effects, including dizziness, nausea, tremor, anxiety and dysphoria. You can avoid this by slowly tapering the dose, or by using a longer-acting drug that "self-tapers," like fluoxetine. Having said that, I don't advise you to stop any of these medications at sea, as long as the patient is stable and doing well. When you think the patient is ready for discontinuation of an SSRI, it's time for a psychiatric re-evaluation.

Finally, a word or two about some non-pharmacologic hazards of SSRIs at sea. In the best of all possible worlds, you, as the Flight Surgeon and the patient's primary care physician, have been in regular communication with the treating psychiatrist, and the two of you have collaborated on a plan for returning the patient to duty, with the approval of your commanding officer. Also, while deployed, all medical department personnel likely to treat the patient should have been briefed, so nobody gets blind-

sided when this comes to light well into treatment. I wish we lived in THAT world. In THIS one, you will discover that members of your squadron have been started on SSRIs without your or the CO's knowledge, sometimes on the eve of deployment. You don't want somebody running out of medication at sea, and you don't want to deploy someone who is not in that low-risk category I described, especially if he or she is having significant side effects. Remember: even military psychiatrists may not think about the operational ramifications of what they do. I'm sorry to have to say that. It's your job, as the Flight Surgeon, to make sure someone else's mistake doesn't harm your patients, or adversely impact their mission. Know your people.

"Loose Associations"

In future articles, I plan to add a section on our waiver policies, with some background and rationale for the more common scenarios. I also hope to include a section on "Psychiatry and Cinema," with brief reviews of recent and classic films pertaining to Naval Aviation and operational psychiatry. For example, we have watched "Dive Bomber" (1941) and "Twelve O'Clock High" (1949) with recent Student Flight Surgeon classes, along with pizza, sodas and a little discussion afterward. If you have favorite movies you'd like to see discussed here, drop me a line with your thoughts.

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(F/A-18 alongside a Soviet TU-142 Bear)
(Official US Navy Photo #DNSC8601314)

Suicides at Sea

Greetings from the Psychiatry Department here at NAMI. This is the first of what I hope to be useful articles that are based on both my experience as a Flight Surgeon and insight I have gained from closely following Navy and Marine Corps active duty fatalities for almost eight years. The idea is to pass along "corporate memory" to more junior Flight Surgeons to potentially help them avoid "making the same mistake again." During three Senior Medical Officer tours (the Kennedy, Lincoln, and Washington), I certainly learned some lessons "the hard way." Additionally, my impression from following active duty fatalities for many years is that there are lessons to be learned there also. My hope is that readers of this article might find it useful as they look for ways to intervene and lessen the possibility of "bad outcomes" at their commands.

In this article I would like to discus active duty Navy and Marine Corps deaths over the last eight years associated with a specific cause that occurred in a unique environment. Suicides in general are very "high visibility" occurrences – but when they occur in an operational setting away from port – I would suggest they receive even more "command attention."

The information in this article is from a personal study of all Navy and Marine Corps active duty deaths since 1 May 1994 when I began to track them. It is not official Navy or Marine Corps data.

First of all I think it is useful to put this topic in perspective. Since 1 May 1994 until late February 2002 (as I write this article) there have been about 3037 Navy or Marine Corps fatalities while on active duty from all causes. The major contributor over this time period has been accident (54%) followed by suicide (20%), natural (18%), and homicide (8%). The 20% self inflicted fatalities reflects a total of 597 or an average of about 76 suicides per year for the last 8 years.

I wish to discuss specifically suicides that have occurred in an "at sea" environment. In reviewing my database – I could find only 23 (or roughly 4% of all Navy and Marine Corps suicides) who were actually at sea when they intentionally killed them-

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selves. This is roughly 3 suicides per year. 96% of all naval suicides over the last 8 years or so occurred "in port."

Of these 23 suicides which occurred at sea – the method of suicide was as follows: hanging (13), jumping (7), gunshot with duty weapon (2), and ingestion (1).

The average age of the group was 23 – ranging from 19 to 40. The age breakdown was as follows 19-21 (14), 22-24 (6), and 25 and older (3). With respect to rates: 14 of the group were E1-E3, there were 4 E4s, 3 E5s, 1 E6, and 1 O2.

Eleven of the 23 were aboard carriers at the time of their death. Unfortunately, two of the 23 were "in-patients" when they died. In one case the patient jumped overboard as he was being escorted from medical to make a phone call. In the other case, the member ingested malaria pills he had hidden as he observed corpsmen on the ward as they separated the pills from their plastic packaging.

So having described the Navy's experience with "suicide at sea" over the last 8 years – here are my thoughts concerning this phenomena.

1. The Naval suicide rate overall actually is less than an appropriately matched civilian population and only about 4 % of all Naval suicides occur at sea. Nevertheless, suicide of a crewmember while at sea remains a significant risk that needs to be addressed by medical personnel as well as the entire chain of command.

2. The age and rate breakdown suggests that it would be inappropriate to judge someone "low" risk solely based on their being young and seeming to fit in the "personality disorder who just wants out" category. 14 of the 23 were in the E1-E3, 19-21 category.

3. How does one predict which one of potentially many at risk crewmembers will actually suicide - in order to prevent it? Prediction of a rare event (roughly 3 per year) is difficult. I encourage everyone to establish the best possible Suicide Prevention Program possible because it is the proper thing to do – not in reaction to a successful suicide of a crewmember. There are numerous instructions concerning suicide prevention – but here are my personal thoughts concerning suicide prevention:

a. When evaluating an individual – get as much collateral information as possible (e.g. from his supervisor) in addition to your clinical interview. On my first carrier, a sailor was evaluated for suicidal potential as his wife had informed the command she was concerned. The member denied any thoughts of suicide – and the GMO believed the patient. Unfortunately collateral information concerning the member was not obtained. (The member had changed his will a few minutes before the interview and later that day killed himself.) After that event and on subsequent carrier tours – I attempted to facilitate communication between departments concerning potential high risk members. Meetings were held monthly with Medical, Legal, DAPA, Family Advocacy Representative, Chaplain, and Financial Counselors in attendance. The idea was to share as much as possible concerning crewmembers who were under increasing legal, medical, financial, or relationship stress in order to ensure we had the "big picture" concerning the member.

b. How do you cover suicide prevention in crewmember Indoctrination classes? Do crewmembers realize this is not an abstract concept – but rather a real risk for their shipmate (or for themselves)? Are you showing the Navy's recently released video and giving all hands training on "Suicide Prevention – Taking Action – Saving Lives?" (This video is easy to obtain – drop me a line for more information.)

c. I consider Administrative Separations as one potential suicidal prevention tool. Members with certain types of personality disorders (e.g. borderline) are indeed at increase risk of self destructive behavior when stressed.

Alcohol use leads to impaired judgement and reduced impulsive control – key factors in self destructive behavior. A strong DAPA program with command support can be a major contributor to suicide prevention.

Finally, let me review for you the Navy and Marine Corps' points of contact concerning suicide issues. For the Navy, LCDR Kevin Kennedy can be contacted at (901)874-4256 (DSN 822) or p601b@persnet.navy.mil. For the Marine Corps, LT Danicha Robbins can be reached at (703)784-9526 (DSN 278) or robbinsd@manpower.usmc

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NAMI ENT

Waiver Guide Update

On January 25, the Aeromedical Advisory Council was asked to vote on two significant changes in ENT waiver policy. Both were approved by wide margins, and are now awaiting the final OK from BUMED. If and when that happens, the on-line Waiver Guide will be amended. **Until then, here are the new policies that are PENDING awaiting BUMED approval.**

Non-sedating antihistamines:

The present policy on these drugs, only two of which are approved (loratadine and fexofenadine), is that they require a one-time waiver for use in aircrew. Because hundreds of these waivers have been granted with no evidence of adverse consequences, it was felt that a waiver is no longer necessary. This will mean that aircrew with uncomplicated allergic rhinitis who benefit from taking one of these two medications will be PQ, and not require either a condition or a medication waiver. The stipulation still holds regarding the seven-day grounding period when either drug is first prescribed. The Flight Surgeon should manage these medications and record their use, efficacy, and lack of side effects in the health record. Once this has been recorded, the member should be able to use that specific medication as needed without any further grounding. The new policy should help reduce the Flight Surgeon's workload, and relieve Code 42 of having to process the waivers.

Stapedectomy/stapedotomy:

When an aircrew is found to have a significant conductive hearing loss due to stapes fixation (otosclerosis), there are three options: 1) Do nothing as long as he or she is having no problems with job performance, 2) Try a hearing aid, which can be very effective, but may not be fully compatible with some helmets or headsets or 3) Surgery.

The usual surgery for otosclerosis involves severing the incudostapedial joint, cutting the stapedius tendon, removing the stapes superstructure, and either removing or fenestrating the stapes footplate. A prosthesis is then placed from the incus to the oval window, with a tissue graft effecting a seal to prevent leakage of perilymph..

The present policy is to ground every aircrew for six months following surgery. Class II personnel are then allowed back in the air if they have no signs of complications such as fluctuating hearing loss or intermittent vertigo. The most controversial part of the present policy is not this grounding period, but the fact that designated aviators must remain in Service Group Three for 30 more months. This restrictive policy was based on the fear that the patient could develop a perilymph leak at almost any time in the future, resulting in vertigo and possible loss of aircraft control. In the early days of stapedectomy, the late 1950s, this was a real concern. Some of the prosthesis designs were notorious for creating delayed fistulae.

More recent published data from U.S. and Israeli sources indicates that this fear is no longer founded. Although the incidence of fistulization is not zero, it is sufficiently low that if a patient has not suffered vertigo or fluctuating hearing loss by the end of the third postoperative month, he or she is unlikely to at all. The Israelis have returned several tactical jet pilots to full flying duty after they passed the three-month mark, and they suffered no adverse effects.

The policy change approved by the AAC will allow Flight Surgeons to apply for a waiver after the patient has demonstrated no complications during the first three months post-op. This includes pilots, who

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(AV-8B Harrier in Yuma)
(Official US Navy Photo)

NASA News

Navy Medicine has been intimately engaged with the U. S. Space Program since the beginning. The monkey cages that, until fairly recently, stood atop the Naval Aerospace Medical Research Laboratory, attested silently to this heritage, and made more than one Navy Flight Surgeon wonder what it must have been like to have been there, to have been part of it all, in the glory days. We were in a race to the moon, and beyond that, we were going to build a space station, and we were going to develop a reusable spacecraft that would launch like a rocket, but land like an airplane.

Recently I had the great pleasure of talking with the first American physician in space, CAPT Joseph P. Kerwin, MC, USN (Ret.). He was definitely part of it.

Like so many Navy doctors at the time, he entered the Service through the Berry Plan after internship. He was winged as a Naval Flight Surgeon in December, 1958, and his first Flight Surgeon tour was with a Marine Corps A-4 squadron that deployed with the carrier air group in USS Essex (CVA-9).

Catching the "bug," he requested flight training through the "dual designator" program, and received the wings of a Naval Aviator at NAS Beeville, Texas, in 1962. He was then assigned to the CAG's staff in CVG-4, the newly designated Replacement Air Group.[1] There, he became day carrier-qualified in the A-4, and also flew the F-4 and F-9. He was selected for the astronaut program with Group Four in 1965, and later assigned to the first crew of Skylab, an all-Navy crew, with Charles Conrad and Paul Weitz.

(CAPT Joseph Kerwin: Official NASA Photo)

(Skylab: Official NASA Photo)

Hot on the heels of the last lunar mission, America launched Skylab into orbit atop an unmanned Saturn V on May 14, 1973. Unfortunately, during the trans-sonic portion of the launch phase, a part of Skylab's meteorite shield was torn off by the slipstream, resulting in the loss of one of her two solar panels, and obstructing the deployment path of the other one. Without the shield, the lack of shade allowed temperatures inside Skylab's workshop to climb to 126° F. The remaining solar panel, stuck almost completely closed, was essentially worthless. Her first crew's launch was postponed while NASA engineers developed procedures to address these two problems.

On May 25, 1973, the crew launched, and achieved rendezvous with Skylab on the fifth orbit. After initial docking problems necessitating an unscheduled EVA, they were able to dock. On the first day, using fishing poles and nylon cloth deployed through the airlock on the "sunny side," they created a parasol to shade Skylab, lowering her internal tem-

perature to about 75° F. Using electricity from the solar panels on the telescope, they were able to begin their many scientific and biomedical experiments, albeit in "semi-darkness and with no hot coffee." Two weeks later, on an EVA, the good doctor and CAPT Conrad were able to free the stuck solar panel, using "good old-fashioned Southwestern Bell limb-loppers," and adequate power was restored. When it was done, the twenty-eight day mission comprised 404 earth orbits and three EVAs, and broke the records for man-hours in both.

CAPT Kerwin continued to work at NASA, and was Director, Space and Life Sciences, when he retired from NASA and the Navy in 1987. He then worked at Lockheed for ten years, during which time he helped develop the Simplified Aid for EVA Rescue (SAFER), a nitrogen-powered, backpack-mounted device astronauts can use to get back to the ship if they should find themselves accidentally untethered. Today, he is Senior Vice President of the Life Sciences Division of Wyle Laboratories, which provides contracted biomedical research support to NASA.

You can learn more about CAPT Kerwin's career on the Johnson and Kennedy Space Centers' web sites. Or you can go to the annual meeting of the Aerospace Medical Association, and meet him yourself. He'll probably say to you what he said to me: "It's great to catch up with what's going on in the real Navy!"

[1]Thus, we call them "RAG squadrons," and East Coast tailhook RAG squadrons tend to have AD on the tail.

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Puckett's Perspective from PERS

Over the years, several successful medical corps officers have shared their experience and perspective on career milestones that lead to continued promotion. Let's discuss how those achievements are presented to and reviewed by selection boards.

The week prior to the convening date of a selection board, the board recorders arrive in Memphis to review the microfiche and Performance Summary Record (PSR) for everyone in and above zone. Their primary job is to identify and correct record discrepancies before board members arrive the following week. Recorders will concentrate their review on the PSR and fiches 1,2, 4 and 5. It is important to review your microfiche at least 6 months prior to the selection board and to ensure that what the board will see is, in fact, accurate information. The website at http://www.bupers.navy.mil/periodicals/perspective/2002/careerissue/microfiche.htm describes the different components of your microfiche as well as provides order information.

BUPERS will attempt to contact members whose records are discovered to be in error during "recorder week." However, by the time messages and phone calls reach the member, only a couple of days are typically left before the board convenes and often it is too late to correct the discrepancy. The last thing anyone in zone wants to hear the day before their selection board convenes is that their record is incomplete! Once again, the only way to avoid that eleventh hour general quarters call is to review your record in advance.

During the first several hours (and sometimes days) of a selection board, candidate records are assigned to individual board members who will review both the member's microfiche and PSR. Board members often make temporary annotations on your PSR for later use in presenting your record. After that review, they and other selection board members reconvene in "the Tank" where the board member who reviewed your record will brief your case to the entire selection board. Your PSR will be shown on 5 large screens and will be what the board sees before them in making its final vote to select or not select. Although the presenter will have seen your complete record, it will be the PSR that he or she

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briefs. Thus, the importance of having an accurate, up to date PSR can not be overstated! Now, thanks to modern technology, you can see the same PSR that the board will see. You can access your PSR on line at http://www.staynavy.navy.mil Please take the time to access and download your PSR now. If you experience any problems accessing your file, please contact the BUPERS Help Desk at (901) 874-4714, DSN 882-4717.

Let's take a look at the PSR Part I. While every block is important, crucial ones include the dates of rank listed for each prior rank category, education and service school history, personal awards and special qualifications.

Be sure the education block contains your medical/osteopathic school and degree as well as any advanced degrees such as M.P.H., M.B.A., or Ph.D. Bachelor degrees can be listed but add little value for selection purposes. The service schools block lists data for up to 6 Navy-sponsored courses such as Intermediate/Advanced Officer Leadership, Military Justice, SMRC, and C-4. CME courses are not listed here. To update your education and/or service school data, email a scanned copy (*.pdf is preferred) of your diploma/completion certificate(s) to PERS 312G at p312odc@persnet.navy.mil Copies can be faxed to (901) 874-2660, DSN 882-2660. You can confirm receipt of your email or fax at (901) 874-3377/3392, DSN 882-3377/3392.

The Personal Decorations block lists each of the personal awards you have received. Unit awards, Battle "E," Sea Service, and Markmanship medals are not included. While the award and citation may be included in your microfiche, it is very important that it be listed here as well. If an award is not listed on the PSR, a copy will need to be mailed or faxed to the Board of Decorations & Medals (BDM) in order for it to be added. For more information, call the BDM at (202) 685-1770. The website www.bupers.navy.mil/pers4413/persawards.htm provides additional guidance and point of contact information.

The Special Qualifications block lists those qualifications for which Additional Qualification Designations (AQDs) have been assigned. Typical AQDs listed include general flight surgeon, USMC medical department officer, aerospace medicine specialist, family physician, etc. For a complete listing of AQDs, please see the Manual of Navy Officer Manpower and Personnel Classifications, Volume I, Section D, Health Care Services. The manual may be accessed via the secure website at https://buperscd.technology.navy.mil/bup_updt/upd_CD/BUPERS/OFFCLASS/Offclas1.pdf For questions concerning your eligibility for a specific AQD, please feel free to contact me.

Parts II and III are also very important in the selection process and we'll take a look at those in subsequent articles.

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WebBoard: Naval Aerospace Community Building

Since the Christmas holidays, NOMI has stood up a web conferencing site within the NOMI web to facilitate information exchange peer-to-peer, promote the dissemination of information from the Naval Aerospace Medical Institute, and strengthen the Naval Aerospace community. NOMI is using a product called WebBoard to perform this function. WebBoard is a tool for fostering communication among people with common interests and can be used anywhere, at any time, through a browser, or email program - all that is needed is Internet access. The NOMI Forum functions similar to the old bulletin boards system (BBSs) where there were discussion topics and messages (with attachments if desired), but with augmented capabilities. Each topic area will be moderated by the subject matter expert (usually at NOMI). As the Forum grows, AIRLANT/PAC and the Safety Center will also moderate their own areas to help guide and facilitate answers to the posted questions. If you find this service a valuable resource, NOMI can add other features to the program including:

• **Online brainstorming:** Team members will hold brainstorming sessions, even when separated by time and distance. The fundamental idea behind brainstorming is never to discard ideas, but share them all. Additionally, WebBoard keeps conference postings until removed by the moderator. Participants in a WebBoard brainstorming session can refer to earlier comments, previous ideas, and the entire flow of the conversation throughout its lifetime.

• **Virtual meetings:** WebBoard could provide an effective alternative to face-to-face meetings by allowing a meeting place without regard to time or location.

Log on now to the NOMI Forum at forum.nomi.med.navy.mil and bookmark this page, you will find this to be your aeromedical equivalent to GOOGLE for searching out Navy aerospace medicine issues. To activate your account, go to the link above and click the **[Message Board]** button at the top of the screen. When you come to the login page click the **[New User]** button and fill out the appropriate fields. Within minutes, the webmaster will send you a computer generated password to use (for the first time) to login. Once you gain access to the forum go to the **[My Profile]** button and then **[MORE]** button to change your password to a more user - friendly one. Several user definable features will allow you to personalize your Forum experience: One of the most useful will be your ability to "watch" various topics which can trigger an email message back to you when someone posts a response under your treaded email. I hope you find this service useful.

Feedback is always welcome at jsdudley@nomi.med.navy.mil or the NOMI webmaster at jalacario@nomi.med.navy.mil

Fly Safe.....

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The Little Red School House

Billet Selection Process

The Little Red School house and the Flight Surgeon detailer have now completed detailing their second student Flight Surgeon class. Again, the interview process appeared to work very well and was able to give 21 Flight Surgeons the following preference rating: 14 students received their 1st choice, 3 students received their 2nd choice, and 4 students received their less than 2nd choice. This is amazing considering the billet options contained the ever-popular Diego Garcia and other "more opportunity challenging" billets.

With the advent of email and Internet based military information (specifically www.dmdc.osd.mil, click on the Sites button), the students have been able to thoroughly research their prospective billet locations and make an informed decision about their upcoming tour. This was all completed without any blood being spilt between students! My class left with some significant hard feelings regarding who got what billet! For those of you who have not been informed, I am trying to attain additional flight surgeon billet information at www.nomi.med.navy.mil/NAMI/forms/response.htm At this web page you can add your impression of the billet you are currently in through various topics to include: command climate, Flight Surgeon support in the form of hardware, software, clinical support, opportunity to fly, opportunity to deploy, opportunity to moonlight, and various quality of life issues. If you are currently serving in a Flight Surgeon billet, take the 5-10" to fill out the on-line survey to help your follow-on Flight Surgeon. Due to the possible sensitive nature of certain comments, this database is currently not available for on-line review. This may be possible in the future if the demand is demonstrated and is approved by information management.

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A View from Enduring Freedom

One JO flight doc
Sat on a cruise box
Waiting for her turn to fly.
When along came a war call
After the Towers did fall.
That was why she was there, after all.

Actually, I spent a lot of time in clinic before September 11 because the USS CARL VINSON had just pulled out of port from Thailand and Singapore. There were volumes of personnel with gastroenteritis and dehydration; diarrhea; and STD lines, in spite of an in-depth disease education and prevention campaign before the port calls. The routine morning and evening sick call clinic hours were not long enough to take care of these mini epidemics. I was learning to dread ports because of the disease and injury they could bring, but at least we would go to Australia on the way home.

One year ago this month, I decided to extend my tour with CVW-11 in order to make a WESTPAC deployment. I love the aviation community, and while I had been with the air wing for two years, our long turnaround time meant that I had not deployed within my two-year tour. I had a bunch of sea time and flight time as an operational flight doc during work-ups, but no cruise. I had to get a WESTPAC in. And I wanted to see Australia.

Everyone said that cruise would be a lighter load than work-ups. Less stressful. Less busy. Less chaotic. The air wing squadrons had gone through a series of, well, less-than-competent and more-interested-in-trouble-making AVT's last year. There was no problem-solving scenario at NAMI about "What to do when you have inadequate AVT support and there are two docs for 2000 personnel … and one of the docs is brand new, and you are the bastard child to both your home base's shore clinic and the floating medical department by virtue of tradition?" The squadrons deserved better than that. It was also clear to me that these personnel issues that plagued me paralleled the personnel issues the squadrons had: spending incredible amounts of operational readiness time diverted to disciplinary problems. Maybe an air wing aeromedical HMC would solve my problem? Or a secretary? Or something!

So, while three AVT billets were gapped and other AVT's pitched in for squadrons as they could, the air wing became combat ready for WESTPAC by the grace of hardcore teamwork, dedication, lots of drills, and some sleep deprivation. I could not wait for some rest on cruise. CVW-11 and USS CARL VINSON were just west of the southern tip of India on September 11. We sailed a ways north to the North Arabian Sea. And there we stayed for 111 consecutive days. These were phenomenal days.

My colleague, LT Nick Pollard, (Thank goodness for good colleagues!), and I shared an office in the ship's Aviation Medicine area. We had a port-starboard duty schedule with each other so that one could fly and go to meetings one day, see patients the next. We were also incorporated into the ship's medical department's duty schedule for medical alert responses and after-hours visits to the medical department. We put out a Binnacle List at the end of every day (usually between 0100 and 0400) to the squadron CO/XO's and to the CAG to keep them apprised of air wing accidents, injuries, illnesses, and referrals back to shore. We worked closely with our CVW-11 Chaplain, FR John, who brought no end to good morale. At times, we made provisions to include him in our human factors councils and disciplinary review boards. Human factors were also easily assessed during MIDRATS, which became the central meal of the day. And we kept watch (i.e. visited daily) over the Ready Rooms, the LSO (Landing Signals Officer) Platform, CIVIC (Intelligence), COPs (Current Operations), FOD (Foreign Object Damage) walkdown, the Flight Deck, and Flight Deck Control, and our staff. Flight time was readily available, too, with certain squadrons. We were an integral part of any day's events. It became a tradition to go up to the Platform with the LSO's for the last pass of the night. And we noticed that miracles occurred everyday in all these places.

As you have probably already learned, read, or seen on CNN, the aircrews were flying six to nine hour missions once the strikes started. To do repeated night tanking with night vision goggles, come home and land on the carrier at night after nine hours, whether or not you were given a target to hit, was a lot to ask of the pilots night after night. The air wing discussed the option of the performance maintainence drug protocol (Thank goodness I

brought it with us "just in case.") wherein dextroamphetamine is used as an upper and restoril can be used as a downer. I thought it would be keen if aviators who consented and passed the trial could use it on the way home from Afganistan to heighten their altertness and reflexes on the ball. I had the foresight to make the necessary arrangements to have the drugs onboard, available if necessary.

After the first two long, arduous weeks of the strikes the squadrons learned how to juggle the flight schedules, personal readiness issues, and mission tasking so that single seat F-18 pilots, for instance, were flying every other or every third day and the average flight time was pared down to five hours a mission. A total of two million pounds of ordnance was dropped in three months!

LT Young and Sponge Bob

Our tankers, the S-3B squadron, were the busiest aircrews of all. Flying ridiculous numbers of missions to keep the fighters fed with fuel and all the while asking, "Doc, doc! We're over the NATOPS limit for flight time for this week! ….for this month! … for each day! What do we do?" All things change in war, even regard for NATOPS recommendations. So Nick and I kept weekly tabs on flight time, personal readiness, and made recommendations accordingly on specific aircrew. The long missions became part of our routine, and it was decided that there was not a compelling argument to implement the performance maintenance protocol. If we had to do it again, we would have more aggressively argued for their trial. The pilots were SPENT, and I believe these drugs could have helped ease a major physiologic stressor that the pilots could not control: the length of their missions. Take that learning point and stow it away.

Another new dilemma aircrew faced was poorly fitting gear. Standard flight gear is designed to be worn for an hour or two at a time. The Koch fittings left deep and sometimes problematic indentations. Helmets turned out not to fit as well as aviators once thought, leaving them with significant abrasions, sores, and pressure points at the places were the night vision goggles weighed down, for instance. Helmets that did not sport Oregon Arrow ear cups systematically chewed up aviators' ears. The Lady J adaptor for women once again failed to be a realistic accommodation for in-flight bladder relief, as I stashed away a few boxes of Depends for those brave enough not to go dehydrated. But diapers are so unbecoming, especially in an evasion situation. I thank the Aviation Physiology units at Lemoore and Oceana, who have expressed an interest in collaborating to address, formally report via message traffic, and then resolve these flight gear issues.

For three months, our SH-60 squadron carried out innovative and exciting Combat Search and Rescue support in Jacobabad, Pakistan. With the help of medical intelligence and the support of the ship's medical department, we were able to educate participants in the Jacobabad detachment and supply them with malaria prophylaxis and antidotes for potential biological and chemical agents. (Okay, and the people who had been around long enough, such as myself, to receive the Anthrax vaccine, were grateful for the trouble of past Anthrax shot-ex's.) Jacobabad was also the one divert airfield we had at the time for in-flight emergencies that could not make it all the way back to the carrier. Anyone who had to land in J-bad has a good story to tell.

The flight deck workers, ordnance handlers, plane captains and maintainers were heroes. They took care of each other and their airplanes. They were just as high maintenance as the aircrew, at

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times, but the choreography of the load-launch-and-recover dance depended on them. I discovered through interviews after airplane crunches on the flight deck, squadron surveys, and treating people for dehydration or palpitations, that there was an alarmingly high rate of stimulant abuse. Young flight deck personnel took products that contained xenedrine or ephedrine to stay awake, stay more alert, or lose more weight during work-outs. But there was no way to monitor their intake. Almost all users were using more than the recommended doses more frequently for effect. It became our policy in the air wing that use of such products was not recommended, and we set about educating the squadrons on this problem. Message traffic came out coincidentally requiring waivers for medications for use by flight deck personnel. This message furthered our cause.

(USS Carl Vinson during Operation Enduring Freedom)

No one had trained for the specific mission we carried out during Operation ENDURING FREEDOM, but we had rehearsed for combat and flexibility. We had rehearsed how to work as a team. And we learned how to do things better, faster, and more efficiently and safely along the way. Our leaders were ready to lead, and we were as ready to follow and heed the call. It was overwhelmingly fulfilling and meaningful to make a difference. Yet, I have to pause and pay tribute to those who have gone before, whether at war or during peacetime, because they gave us a standard to live up to. And I have to remember the medical personnel who responded in New York City and Washington, D.C. — theirs was the combat casualty zone.

After three-and-a-half months on station and three Foc'sle Follies that were some of the most memorable and treasured moments of cruise, we turned over the watch to the Stennis and headed East. We spent Christmas in Singapore, rid the boat of all slimey wogs a couple days after that, and came home just over a month ago. I will have to make some other arrangement to get myself Down Under, but I have no regrets.

We are still keenly grateful that everyone came home safe and sound. No one lost an arm, an eye, an ear, a knee, a life. I anticipated some serious traumas outside of the context of the new War on Terror, but no. Not even during war. Not this last time, anyway. We kept our mishap investigation skills honed, all the same, with aircraft ground mishaps, or in-flight aircraft damage (One of our S-3B's lost a radome), but no tragedies. I am still celebrating this victory because the opportunity was certainly there more than ever.

I salute all the new junior Flight Surgeons and those about to graduate from Flight Surgeon school. Be prepared and be flexible. This account does not suffice as an expression of what it is like to be at the right place at the right time. But be ready, because it's your turn. You do make a difference.

LT Amy Young
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Lessons Learned as Carrier SMO

I have had the privilege of being the Senior Medical Officer aboard USS Theodore Roosevelt (CVN-71) during a tremendously historic and productive deployment in support of Operation ENDURING FREEDOM. We departed Norfolk 19 SEP 2001, just one week following the World Trade Center and Pentagon attacks and made best speed to the North Arabian Sea. We have been actively engaged in operations on a daily basis since and have had tremendous success. At the time of this writing in mid-February 2002, we have yet to enjoy a liberty port since our departure from Norfolk in September and have set a new modern Navy record for consecutive days at sea; 159. The performance of every Sailor and Marine onboard has been flawless. The nation, and specifically our Navy, can be justifiably proud of our young men and women in uniform.

Preparation is obviously the key to success during any deployment. During this current deployment, I have been reminded daily of the tremendous efforts of my predecessor, CDR Bob Frick. I have enjoyed the fruits of Bob's foresight, attention to detail and his true caring attitude for the members of the Medical Department. I thank him and congratulate him on the recently announced Battle 'E' that was awarded to TR and Blue 'M' that was awarded to the Medical Department. These awards are a great reflection of Bob's leadership and talent.

If there was a single piece of advice I would pass to a colleague preparing for the position of Senior Medical Officer aboard a modern U.S. Navy carrier, it would be to know the content of "the 6000". I am, of course, referring to the recently released COMNAVAIRPAC 6000.2C/ COMNAVAIRLANT 6000.1E. Every question, concern or dilemma that I've encountered during my tour as SMO has been answered in "the 6000". This instruction reflects the wisdom and experience of many of our predecessors and will guide the SMOs in their efforts.

As TR enters the final stages of this deployment, a piece of conventional military wisdom comes to mind when I think of how to characterize the past months of sustained combat operations; "Train as you fight." For ship's company, this deployment's daily routines were no different than those during work ups, only occurring at a higher intensity, for a more sustained period of time and with a greater sense of purpose. All the medical programs require maintenance. All of the physicals need to be completed. All the inspections need to be performed with reports filed. Doing our daily jobs the very best we could was our war contribution. That is what the Captain expected from the Medical Department and that is what he received.

The key element to our success as we entered the combat environment was the need to pace ourselves. Once on station, we were in flight operations 13 hours per day, 13 of every 14 days, for several months with the "day off" reserved for maintenance and re-supply. But with the sustained nature of our tasking, the schedule required we not lose sight of the requirement for training for corpsman advancement, attention to taking in a good diet, obtaining good exercise and much needed rest. This formula has served the TR Medical Department well as our Hospital Corpsmen are completing college courses, studying for the advancement exam and earning their Enlisted Surface Warfare and Enlisted Air Warfare designations pins.

Although the training we receive as Residents in Aerospace Medicine properly emphasizes the preventive nature of our chosen field, it became very evident early in TR's deployment that the SMO is required to be clinically astute as well. If not actively managing the patient yourself, you're overseeing the care of some critically injured and ill patients. The array of talent assembled in the Medical Department can handle most anything.

Aboard TR, we had a hard charging Sailor present with an upper GI bleed who had clearly lost in excess of 50% of his blood supply based on his 24 hour history, the vigorous hematemesis witnessed as he presented to Medical and his physical exam. While preparing the OR for emergent endoscopy, we activated the walking blood bank. Although the walking blood bank is a system that needs scrutiny in this world of transmissible viruses, a properly screened crew and existing log of crewmembers categorized by blood type was essential in this resuscitation. After transfusion of three units, a surface asset was used for transport into Bahrain where the

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Sailor arrived with a HGB of 3.3 g/dl. He was returned to CONUS and he has done well in convalescence.

Our clinical challenges have also included unstable angina, dysphagia due to esophageal carcinoma, numerous fractures requiring ORIF, edema due to nephrotic syndrome, pleural effusion secondary to lymphoma and headache due to meningioma, to name a few. Our experience on TR clearly reinforces what we all know; despite the young age of our Sailors and Marines, there is pathology out there.

(USS Theodore Roosevelt General Quarters Drill)
(Official US Navy Photo)

Based on these experiences and the need to MEDEVAC the seriously ill or injured crewmember, I would emphasize to a new SMO that early and open communication with the Fleet command is required as you make your way around the world. Being stationed in the Atlantic Fleet, TR sequentially chopped from Second into Sixth and Fifth Fleets. Captains Spivey, Rose and Hinkson and their staffs are tremendously helpful in MEDEVAC planning. They are aware of the resources in the theater, they are aware of your position on the map and can therefore provide expeditious advice on the best course of action. You cannot always assume that the nearest U.S. military treatment facility will be the best option. Distance and clinical acuity may require you consider other options. This is where early Fleet input is essential.

The SMO aboard the modern nuclear carrier is responsible for many programs that impact the health and welfare of the crew. The one program that I have found to be particularly labor intensive and demanding of attention of the SMO is Radiation Health. Naval Reactor has an impeccable reputation for attention to the minutest detail. Lacking the precision they require, a ship can be shut down. As the SMO, I feel compelled and responsible to know the details of the program's requirements and how we, as a Medical Department, are doing in meeting those requirements. The inspection teams that come aboard will require meticulous recording of radiation health physicals, accurate calculations of dose estimates and flawless execution of decontamination procedures. Early and thorough familiarity with this program, I believe, is necessary to ensure success in your tour.

As the carrier SMO, you will also be the Battle Group Senior Medical Officer. I have received numerous clinical and administrative questions from the General Medical Officers and Independent Duty Corpsmen on the supply ships, cruisers, destroyers and frigates in the theater. I would recommend that the SMO attempt to meet all of these individuals prior to deploying. To meet the individual, to visit their department and to have a sense of their clinical acumen will go a long way when you're called to Combat Direction Control to go onto 'chat' to discuss a patient with an IDC. They are faced with the same challenges as the carrier except with fewer resources. They need and rightfully expect your assistance. Get to know them.

I have heard from many of my colleagues during this historic cruise and I thank them for their support. I congratulate John Lee on ENTERPRISE, Jay McMahon on VINSON, Jim Black on STENNIS and Tom Brown on KENNEDY for their successes as well. I'm humbled to be counted in their number. I'll see you in the GOO.

CAPT Mike McCarten, MC, USN
Senior Medical Officer
USS Theodore Roosevelt

Hypercholesterolemia for the FS

Although this has little to nothing to do with aviation – it has everything to do with being a good doc and hopefully helping add a few years and improving the quality on the other end of your patients' lives. As Flight Surgeons, we often get so caught up in ensuring someone doesn't have an unsafe or "CD" diagnosis, that we may overlook the conditions that are "NCD" but have potentially serious sequelae if left untreated. This article will cover some of the "process" issues of concern in hyperlipidemias, followed by three recently encountered cases in Mooseland, a summary of the Waiver Guide, and a review of the current recommendations for treatment of hypercholesterolemia. I won't cover the treatments here but will refer you to some good websites for all the info [also a really cool site with lots of stuff including a download of the treatment guidelines to your Palm! – OK, only cool if you're a bit of a technogeek].

Do you know ***your*** cholesterol level? I expect about 75% of you know at least your general range of TC and TG, your last LDL, HDL, and TC/HDL ratio. If not, you probably use denial as your primary defense in other areas of life too! Or else, you are under the age of 30.

Okay, whether you know your numbers or not, pick up a pen and write down that level of LDL that would trigger you wanting to get yourself started on 20mg of Zocor? Or the level where you would want your mom or dad to initiate treatment? Please remember that number and pull the last 10 physicals you have done. Have you applied the same level of concern to them? Do you use the five year PE to really do a good CHD risk screen and focus on the correctable things? Do you make sure that every short form gets a review for past elevations and appropriate f/u?

The reason I'm asking, is because of the unfortunately large number of patients I've seen for routine physicals that either have a long history of elevated lipids or there is a significantly worrisome level in the past that was never followed up. Often on a PE I've seen a level of 250, "Elevated Cholesterol" noted under diagnosis, and in recommendations read, "counseled." And then,. . .*NADA*. Five years later they come in with it at 280+ and looking back there was an LDL over 190/HDL under 35 in the past and NO follow-up. Remember, ***someone with a cholesterol over 240 has double the risk of heart disease compared to an individual with a cholesterol under 200.***

Please read the following cases and think how you would want your family member treated. These are pretty typical of what comes through the door up here in Maine – perhaps the whale blubber sliders we eat in the northern climes are to blame. . . .but I doubt it.

1. 38 year old PO1 seen for retirement physical. Review of record reveals at least 12 year h/o mildly to moderately elevated cholesterol levels (225-260) but particularly significant for current level of 290 and LDL 190 with a family history of premature CAD. Per the current AHA guidelines, anyone with two or more risk factors for CAD should have their LDL treated to be <130 (see below). He was in excellent physical condition and had received counseling in dietary control of hypercholesterolemia.

2. 34 year old PO1 AC/FW currently on waiver for moderate hypertension controlled on lisinopril. *Strong* family history of premature CAD on both sides and clear mixed hyperlipidemia on past physicals with at least two HDL readings under 35 (with TC of 250), ratios of 7-8, and TG 280-420. He was in on a short form PE so I ordered the LFTs along with the lipid panel. He also ended up with an elevated AST/ALT 1.5 to 2 times normal. Needless to say I sent him to the internist. He was diagnosed with nonalcoholic steatohepatitis which was expected to resolve with treatment of his hyperlipidemia and weight loss. Treatment with just 10mg of Lipitor markedly normalized his lipids and his abnormal LFTs are resolving.

3. 25 year old PO2, air traffic controller, also seen on short form physical. Review of record revealed (from June 2000): TC-321; TG-239; HDL-45; LDL-228 with a ratio of 7. He had received a routine letter stating that his cholesterol was elevated but did not specify further recommendations. At this time (he was exercising regularly and following a healthy diet) his numbers are essentially unchanged (other than his LDL being higher and HDL being lower. . . . .)

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The aviation point of this article is twofold; as noted above, please don't overlook the "NCD" conditions that may have more significant long-term effect on our population, and second, that as Flight Surgeons we have a duty to provide the full range of care to all of our patients – even the routine and somewhat boring preventive stuff. I don't think anyone on flight status ever had a desire to have inscribed on their epitaph, "I may have died prematurely but I never needed a waiver." [well, OK, one or two jet jocks might]

With recent changes to the Waiver Guide, both hypercholesterolemia and its most common treatment are NCD. No waivers needed. No excuses not to evaluate and treat appropriately.

Here is the most recent (March 2002) update from the waiver guide on the Antihyperlipidemics:

GEMFIBROZIL/LOPID:

CD. This drug is indicated only for quite high triglyceride levels and is not a first line drug of choice. We will consider a waiver to SG1 after two months of stable dosage and no side effects. Try diet, exercise, and statins first. Resins may in some cases be used in conjunction with this drug. Prior to initiating RX, and at 3, 6 and 9 months do SGOT, SGPT, Alk phos, CPK and CBC. Do total cholesterol, HDL, TGs every 3 months for one year then every 6 months. Report all these with the annual physical.

STATINS:

HMG Co-A reductase inhibitors (Pravastatin, Simvastatin, Lovastatin, Atorvastatin, etc.) are all NCD, a waiver is not required. Liver function testing (SGOT/SGPT/ALK PHOS) with CBC, CPK at baseline, at 3 and 6 months, then annually will be needed. Liver elevations above three times normal will be DISQUALIFYING. Try diet and exercise first.

NIACIN:

CD, no waiver

RESINS:

NCD if tolerated without side effects

Good Sites:

The best (from which you can reach all others) is http://www.americanheart.org. This is the official site of the American Heart Association and a good spot for any related info (not just hyperlipidemias). To get to some excellent sites click (on the left sidebar) on Diseases --> Cholesterol --> For Professionals --> Resources.

If healthcare professionals desire more information, they can be referred to "ATP III at a Glance: Quick Desk Reference" at http://www.nhlbi.nih.gov/guidelines/cholesterol/atglance.htm

For individuals, a risk assessment tool for estimating the 10-year risk for developing coronary heart disease can be found at http://hin.nhlbi.nih.gov/atpiii/calculator.asp. You can plug in your patient's data here.

And, for the *piece de resistance*, (REALLY cool!) – go to: http://hin.nhlbi.nih.gov/atpiii/atp3palm.htm - to download the NCEP ATPIII guidelines to your PALM!

And, of course, if you have ANY questions, please call or email your friendly and helpful internal medicine consultant!

CAPT D. J. Wear-Finkle, MC, USN
FS Brunswick, ME

First line treatment of hyperlipidemia consists of non-medical therapeutic lifestyle modifications per the NCEP guidelines. If additional intervention is needed then the use of HMG-Co A reductase inhibitors ("statins") are typically considered first line medical therapy. Binding resins or fibric acid derivatives may be used depending on the individual circumstances (i.e. gembfibrizol for high triglycerides). Binding resins are not well tolerated and not as effective as either statins or fibric acid derivatives. Niacin, while effective for certain cases of lipid disorders, is not approved for use in aviation duties.

Now more than ever it is important to pay attention to the overall health and well being of your aviators. The stigma of a waiver can no longer be used as an excuse for letting aviators who should be treated for hyperlipidemia fall into the "lost to follow-up after dietary counseling since last physical exam" black hole. Let's do our part to be good stewards of all our resources, especially our human ones. Dietary counseling is a first step, but as CAPT Wear-Finkle points out, this is all too often the only step and is a disservice to the patients entrusted to our care.

LCDR Paul D. Kane, MC, USN
NAMI Internal Medicine

Here is a summary of the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III, or ATP III. . .hereafter fondly known as the NCEP ATPIII:

Drug therapy can be considered for patients who, in spite of adequate dietary therapy, regular physical activity and weight loss, need further treatment for elevated blood cholesterol levels. The guidelines for those who qualify are:

LDL cholesterol level for drug consideration/goal of therapy

Risk Category	LDL Level	LDL Level at which to consider drug therapy
Without coronary heart disease and with fewer than two risk factors	Less than 160 mg/dL	190 mg/dL or higher (160-189 mg/dL; LDL cholesterol lowering drugs optional)
Without coronary heart disease and with two or more risk factors. 10-year risk 10-20%*	Less than 130 mg/dL	130 mg/dL or higher
Without coronary heart disease and with two or more risk factors. 10-year risk less than 10%*	Less than 130 mg/dL	160 mg/dL or higher
With coronary heart disease **(Diabetes, peripheral vascular disease, abdominal aortic aneurysm, symptomatic carotid artery stenosis are considered coronary heart disease.)**	Less than 100 mg/dL	130 mg/dL or higher (100-129 mg/dL; drug optional)

*For info on how to calculate the 10-year risk for a heart attack go to the following site for the Framingham Tables: http://www.nhlbi.nih.gov/guidelines/cholesterol/risk_tbl.htm

In men less than 35 years of age and women 20-45 years of age LDL cholesterol levels of 130 mg/dL or greater Total Lifestyle Changes (TLC) should be instituted and emphasized. When young adults have cholesterol levels of 190 mg/dL or greater, drug therapy should be considered.

In coronary heart disease patients with LDL cholesterol levels of 100 to 129 mg/dL, the physician should exercise clinical judgment in deciding whether to initiate drug treatment.

In some cases, a physician may decide that using cholesterol-lowering drugs at lower LDL cholesterol levels is justified. On the other hand, drug therapy may not be appropriate for some patients who meet the above criteria. This may be true for elderly patients.

The presence of other coronary heart disease risk factors influences the use of cholesterol-lowering drugs:

- **Age —** This includes men 45 years or older, women 55 years or older OR who have premature menopause without estrogen replacement therapy.
- **Family history —** This includes anyone having a father, brother or son with a history of coronary heart disease before age 55, or a mother, sister or daughter with coronary heart disease before age 65.
- **Smoking —** This includes anyone who smokes or who lives and works every day around people who smoke.
- **High blood pressure —** This includes anyone with a blood pressure of 140/90 mm Hg or higher, measured on two or more occasions.
- **HDL cholesterol —** This includes anyone with an HDL cholesterol level of less than 40 mg/dL.

Posterior Epistaxis

History of Present Illness

SGT J.S. is a 23-year-old Active Duty Marine who presented to the branch medical clinic for an initial evaluation of acute epistaxis. The patient, otherwise healthy, was in his usual state of health until the morning of presentation. He was working at his shop (Avionics Department) when he began bleeding through his nose. There were no precipitating events or trauma. He denied any current use of NSAID's or other new medications or herbal remedies. The patient denies smoking, seasonal allergies, or any prior bleeding history. He denied any family history of bleeding disorders. Review of system was negative.

On initial examination in the acute care area, his vital signs were as follows: P 72 BP 118/72 R 16 T 98.7 SaO2 98% on room air. General examination revealed a young healthy male in no acute distress. He was applying local compression to his right nostril with his fingers. Examination of his nasal cavity revealed no identifiable anterior source of nasal bleeding. There was visible mild hemorrhage in the posterior pharynx. Initial resuscitation procedures were started. Airway was patent, the patient was breathing at a normal rate with optimal oxygen saturation. His hemodynamics were stable. Intravenous fluids were started with normal saline. A complete blood count, electrolytes, and coagulation studies were obtained. Type and screen for possible transfusion were also part of the initial laboratory studies. The next step was to apply a nasal packing to achieve hemostasis. This was done by using a Foley balloon catheter through the right nostril. Once inserted, the balloon was inflated with sterile water. The patient was transferred to the emergency department for further observation and treatment. A diagnosis of posterior epistaxis, unknown etiology, was made.

Otolaryngology evaluation via nasopharyngoscope confirmed initial diagnosis of posterior bleeding. The patient was admitted to the hospital, sedated, and a posterior packing was inserted by the surgeon. His vitals remained stable. The patient was in severe discomfort during the 2 days of the packing. After 48 hours, the posterior packing was removed. There was still evidence of posterior bleeding, according to the surgeon. An angiogram was ordered and this revealed an arterio-venous malformation of the internal maxillary artery (IMA) at the level of the sphenopalatine foramen, as this vessel divides into its medial and lateral branches. Giving the findings and the availability of interventional radiologist on site, the decision for IMA embolization was done. The patient was kept for observation for 24 hours and was discharged instable condition. No further episodes of epistaxis have been reported by the patient.

Introduction

Posterior epistaxis is an uncommon otolaryngology emergency and accounts for approximately five to ten percent of all cases of epistaxis [1]. This case is rather unusual in that most patients with posterior epistaxis are usually older and with co-morbid conditions suck as long standing hypertension, renal or liver disease. There is, however, a subset of patients that present early and suddenly. In this case, other factors such as tumors, coagulation, and vascular abnormalities should be excluded first.

In this article, I will review the anatomic considerations in epistaxis, pathophysiology and initial management of patients that present with epistaxis.

Anatomy

Approximately ninety percent of all nosebleeds occurs from the anteroinferior part of the nasal septum. This area is referred to as Little's area. It is supplied by many blood vessels, collectively known as the Kiesselbach's plexus. It is this area that is very sensitive to environmental (temperature, humidity) and local factors (digital trauma). In the other ten percent, nasal bleeding originates from areas posterior to the inferior meatus, near its junction with the nasopharynx. [4]

Etiology

Epistaxis may result from a variety of factors that damage the nasal epithelium and its vessels. The most common initiating event is digital trauma. Posterior epistaxis is a particularly challenging problem for physicians. Literature suggests that there are multiple etiologies and predisposing factors, including mechanical, environmental, infectious and inflammatory causes as well as tumors, drugs, blood

dyscrasias, and cardiovascular and endocrine disorders. In adolescents, recurrent epistaxis could be the only sign of juvenile angiofibroma. [2]

Pathophysiology

Most nosebleeds stop with digital pressure. An intact coagulation mechanism with accumulation of platelet and clot formation is essential. Abnormal platelet count, or function, any abnormality in the coagulation cascade or vascular system will lead to persistent bleeding and failure of clot formation. [3]

Risk factors

Clinical studies have shown that approximately 40-50% of patients presenting with posterior epistaxis have underlying hypertension [2]. Other clinical factors associated with this condition include previous nosebleeds, COPD, diabetes mellitus, and trauma.

Management

First aid – It is important for us to educate our squadrons on fundamentals of first aid. For nose bleeds a few simple techniques can help. Examples include digital compression, applying a cotton or tissue plug in the nose, as well as applying a cold compress on the nasal bridge for vasoconstrictive effects.

Acute management – Here is where initial care by a health provider will minimize complications. The basics of airway, breathing circulation remain the first step of management. It is important to secure the airway and ensure adequate oxygenation. Use supplemental oxygen via facemask if needed. Obtain intravenous access and initial laboratory studies.

It is important to obtain an accurate history. Ask about precipitating events, past history of nosebleeds and family history of any bleeding disorder. Trying to assess the amount and duration of bleeding are key elements in the history.

The use of local vasoconstritive agents such as oxymetazoline nasal spray (Afrin), phenylephrine (Neo-Synephrine) applied to area has been shown to work in acute cases.

Cauterization, usually performed by silver nitrate sticks achieves hemostasis. A good clinical pearl is to avoid the temptation of cauterizing a large area or cauterizing both sides of septum at the same time (risk of septal perforation). Other initial measures include light packing with Vaseline or electrocautery if available [3].

Interventions

Nasal packing - Anterior and posterior nasal packing should be considered when local measures described above have been unsuccessful in controlling the bleeding. Nasal packing is an uncomfortable procedure and can have life-threatening complications. Refer to a surgical textbook for appropriate technique for nasal packing. When placing a posterior packing, leave in place for 48-72 hours. Studies have shown the there is increased risk of rebleeding with early removal [2].

Endoscopy – The use of an endoscope can identify the source of the bleeding. Using sedation and a good suction/electrocautery unit most posterior bleeds can be cauterized with minimal complications.

Arterial ligation and embolization are also commonly used to achieve hemostasis. Discussion of these modalities can be found in other reference sources and are beyond the scope of this case.

Acute complications

These include risk of re-bleeding, sinusitis, and blood loss requiring transfusion. A small set of patient may require mechanical ventilation due to hypo oxygenation. Refer to Table 1 as a general guide to differentiate anterior from posterior bleeding sources.

Key points

- Posterior epistaxis represents 5-10% of nose bleed cases.
- Diagnosis of posterior epistaxis is made by documentation of bleeding in the posterior pharynx, with no other identifiable anterior source of nasal bleed, or nasal hemorrhage refractory to anterior packing [2].
- Posterior epistaxis is multifactorial. Clinical factors associated with posterior epistaxis include hypertension, previous history of nosebleeds, liver, and chronic renal disease.

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- In the younger population, consider neoplasms, coagulopathies, vascular abnormalities (i.e. AVM) and platelet dysfunction as part of working differential diagnosis
- Initial management includes ABC's followed by posterior nasal packing.
- Close monitoring of patients for 72 hours observation is recommended. Analgesia, sedation, and oxygen supplementation are standard of treatment.
- The most common acute complication is rebleeding. A good clinical pearl is to only remove the nasal packing after a minimum of 48-72 hours.
- Other complications include sinusitis and otitis media, which occur because of blockage of the eustachian tubes and sinus drainage into the nasopharyx.
- Toxic shock syndrome may occur with nasal packing. All patients should receive prophylactic antibiotics.
- Treatment modalities for posterior epistaxis include posterior packing, arterial ligation and embolization. The terminal branches of the internal maxillary artery are usually the culprits for most of these bleeds.

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LT Jorge Garcia-Zuazaga
VMFA-122 Flight Surgeon

Table 1. Anterior and posterior epistaxis

Characteristics	Anterior epistaxis	Posterior Epistaxis
Location	Little's area (anteroinferior septum)	Inferior meatus (at the junction of the inferior meatus and the nasopharynx.)
Etiology	Trauma, environment, allergies, medications (Aspirin, NSAID's)	Multifactorial - usually patients are older population with increased risk factors of bleeding and other systemic illnesses. Hypertension, renal, liver diseases.In the young population - consider coagulopathies, vascular abnormalities, malignancy, hereditary conditions such as von Willenbrand's disease and hereditary hemorrhagic telangiectasia (HHT)
Basis of diagnosis	Diagnosis usually made by careful examination of the nasal cavity. Source of bleeding can be located in anterior aspect of nasal septum.	Diagnosis is made by documentation of hemorrhage in the posterior pharynx with no identifiable anterior source. Nasal hemorrhage refractory to anterior packing.
Initial Rx	Steady pressure Cauterization Use of local vasoconstrictors Anterior packing	ABC's Posterior packing - leave in place form 48-72 hours because of risk of re-bleeding. Analgesia, sedation and oxygen supplementation as needed. Hospital admission for observation

Blue Angel Flight Surgeon

Are you looking for another exciting Flight Surgeon tour? Do you enjoy traveling and meeting new people?—then have I got an opportunity for you! The Naval Flight Demonstration Squadron, the Blue Angels, is looking for a Flight Surgeon for the 2003-2004 show seasons. The CNO message requesting applicants went out late last year, but I know there's a lot of mystery about the actual application process and the position itself, so here's some basic job and timeline information.

First of all, any Naval Flight Surgeon may apply. Experience with Hornets wouldn't hurt, but it's definitely not necessary. Second, this position is not like any other Flight Surgeon job out there (although I only have Air Wing and Training Wing experience to which to compare it). Although the health and medical readiness of the 120 squadron personnel are the Flight Surgeon's responsibility, the majority of your time is spent on the squadron's main mission—recruiting—which means flight demonstrations and all of the events associated with an air show. The Flight Surgeon works closely with the Maintenance Officer as a ground safety observer and air space controller and provides the primary critique for all practices and demonstrations—like I said—very different. The application or "rushing" season begins with our first show on 09Mar02 and ends in June. Applicants are encouraged to attend at least one show weekend—not only for current team members to meet you, but also so that you can see how the team operates on a daily basis, in order to decide whether or not the job is something you'd like to do. Applications are due by 30Apr02. Application instructions and forms are available on our website: **www.blueangels.navy.mil**. A command endorsement is absolutely necessary with your letter of intent to apply. Please ensure that a copy of your letter of intent is sent to our detailer as well, because team members are often selected prior to PRD's. Finalists for the various opening team positions will be selected in June. All finalists will then be invited to Pensacola in mid-July for interviews and team selection will be made at the end of that week. The 2003 Blue Angel selectees will then transfer to Pensacola in September to join the 2002 team for the last six weeks of the show season. Formal turnover occurs in November.

This billet has definitely been a once in a lifetime experience. I thoroughly enjoy the opportunity to help represent the Navy and Marine Corps across the country. It is truly an honor and a privilege to work with so many highly motivated individuals who strive for perfection in all that they do. The camaraderie and family support are also incomparable. Our schedule is busy, but the past year and a half has flown by. I can't believe it's almost time to pass on the reins to the next Flight Surgeon. If you're interested in applying or have any questions, please don't hesitate to contact me or our Applicants Officer, LT Dan Martin (contact information on the message).

LT Tamara Schnurr, MC, USN
Blue Angels Flight Surgeon
tkschnurr@aol.com

Another Good Deal!!

During the last few weeks of August 2002 the Refractive Surgery Center at NMCSD will be conducting high altitude research on LASIK patients at Pikes Peak in Colorado. Patients will spend three days in an Army research facility at approx 15,000 feet. The study will be the first in a series of studies investigating LASIK in Naval Aviation.

We are looking for a Flight Surgeon with interests in Mountain Medicine and Ophthalmology to be the on site medical monitor for the protocol. Travel and Per Diem for the medical monitor will be covered.

If you have any nominations, or can think of a good way to get this message out to the FS community, please contact me.

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Toxicology Revisited

I graduated from Georgetown University School of Medicine in 1958. Back then, there seemed to be only a superficial and academic appreciation of the interface between the workplace and the health problems we studied, or such is my recollection. If the truth was otherwise, they missed me. My D.C. General Hospital Rotating Internship, great though it was, did nothing to alter this uninformed perspective. Neither did my Family Practice Residency in the Bridgeport (Conn.) Hospital that followed. After being drained by five years of private practice in rural Connecticut, I sought and received a commission as a Naval Medical Officer. Following a tour with Atlantic Fleet destroyers, I entered NAMI as a student Flight Surgeon in SFS Class 111. For the first time, the novel concept of the workplace as a significant factor in the health of the worker was presented to me in a way that was potentially commanding. As it had to do with aviators, I got the message. The rest of the message escaped me.

A NAMI Resident was charged with the responsibility of teaching aviation toxicology to our class. Most of his material seemed to originate with NASA, and had to do with rocket fuels and esoteric metals I had not heard of since college chemistry, such as beryllium. The Resident had his hands full retaining my interest. I learned enough of what was presented to pass the examination that would follow, but I was singularly unimpacted that his topic had any relevance for me. It may well be that my classmates took aboard what he presented but his efforts to get my attention failed. The only thing I took out of those sessions was the addition of the word "hypergolic" to my vocabulary, defined in Webster's New Collegiate Dictionary as "igniting upon contact of components without external aid". I knew many folks whose relationships with others could be defined using that word, meaning that for me the new word had more social utility than scientific.

My first duty station as a Flight Surgeon was as SMO of USS Hornet, CVS-12. During my 30-month tour there, a gradual awareness came to me that the carrier was a bustling industrial environment that dynamically interfaced with the lives of many of my shipmates. I eventually acquired a gut-level suspicion that I was unprepared to recognize the relationship of the occupational sources of some of what I was seeing. Professional inadequacy had never been something that had touched me before, but it surely gnawed at me by the end of my tour. I reluctantly admit to being a slow learner because this uncomfortable realization should have dawned on me much sooner than it did. I took no steps to remedy my shortcomings because I already had my hands full just being SMO.

Following a short tour as SMO at NAS Glynco, Georgia, where NFO training was headquartered, I was accepted into the Navy's Aerospace Medicine Residency. My first year was at the UC Berkeley School of Public Health MPH program. Like the answer to a prayer, crusty old Professor Irving Tabershaw, Chairman of their Toxicology Department, oversaw the four military medical officers in the program while making a tremendous impression on me. In retrospect, I'm sure he was impressed at this particular student's hunger for learning because he generously offered me important encouragement to grasp the relevance of the related disciplines of Environmental Health and Epidemiology. The more I learned, the more I became embarrassed at my own prior performance. Like a good soldier, I gritted my teeth to endure the other required "core subject matter", Biostatistics and Public Health Administration as being manda-

tory added burdens that came with the academic territory. Through it all, the workplace took on a new and appropriate significance for me, one that left me asking how I could have come that far without having grasped the truth earlier.

Returning to NAMI for the clinical years of my Residency, I volunteered to be the Resident assigned to teach toxicology to the students. Interspersing my notes from Dr. Tabershaw's classes with happenings on the carrier, my teaching style could be described as a series of sea-stories based on actual experiences, mine as well as others, intertwined with the science I had learned. I was hyperaware that my topic could be boring and made it a point to stay out of that trap. I discovered that being a teacher is a wonderful way to be forced to thoroughly learn your subject inside and out. It was my distinct impression that I benefited at least as much from the experience as the students could have. Then I went back to sea as SMO of USS Enterprise, CVAN-65.

The difference between how I practiced medicine aboard Hornet compared to that aboard Enterprise was that I actively sought out the potential health issues that arose in the workplace. In addition to on-site visits of these spaces, I correlated this information with what presented at Sick Call. In the AIMD spaces, for instance, hydrocarbon solvents were ubiquitous. Some were legal. Some were not. Thus, the appearance of a case of painless jaundice in an avionics technician from there got my full attention. So did the complaints from the print shop about the solvent odors related to poor ventilation and shoddy housekeeping practices. About the ventilation shortcomings I could only recommend future structural changes; but the housekeeping issues such as the fate of discarded solvent-soaked rags were right up my alley. An at-sea epidemic of beta-hemolytic streptococcal pharyngitis [(1)] taxed my epidemiological skills and forced me back into my biostatistics textbook. The relevance of my new knowledge and perspective ended up being reinforced on a regular basis. The practice of medicine afloat may also deal with the unique problems of the aviator, but the backbone of what we do centers on the industrial environment that is the modern day aircraft carrier.

The great irony of the Anthrax scares of 2001 was the hype associated with the novel discovery by the press that where a person works has much to do with the kinds of diseases to which they are exposed. That this is not a universally understood truth remains newsworthy.

[(1)] Dully, FE, Jr. Streptococcal Epidemic On An Aircraft Carrier. Aerospace Med.1973; 44:1181-82

CAPT Frank E. Dully, MC, USN (retired)
frankdully@att.net

(USS Hornet CVS-12 underway 9 AUG 1968)
(Official U.S. Navy Photograph #1116887)

Recollections of Times Past

Occupational Medicine in the Practice of Aerospace Medicine

When Frank Dully sent to me for review a prepublication copy of his article "Toxicology Revisited," it occurred to me my personal perspective of the history leading to present fleet Occupational Health Programs might be of interest also. Frank and I were in Flight Surgeon Class 111 together in 1965 and our residency years overlapped by one. My early shipboard toxicology experiences were very similar to his.

After my post residency aircraft carrier tour on the USS Constellation, I left the Navy, spent one year as a civilian, and then six years in the USAF. It was during that time a more complete understanding of Occupational Medicine and the uniquely military concept of Operational Medicine were forged in my mind. I got to work with such USAF stalwarts as Russ Raymond, Bert Bonfili, Royce Moser, and General Howard Unger in bringing together AM and OM programs. I learned to appreciate the Bioenvironmental Engineers - the Industrial Hygienists, Air, and Water specialists of the USAF. I began to understand how much I was limited in my decision making when I did not have the information they provide.

As valuable and enjoyable as my Air Force experience was, I missed the Navy. I applied for, and with the help of Dan Lestage, received an interservice transfer. I asked for a carrier assignment and was obliged with the USS Independence. In October 1980 I walked on board ready to put into place all I had learned and hadn't done on the USS Constellation. It wasn't that simple. First, remember all those IH and Environmental Health personnel I had available to me in the AF? Not a one to be found. There was a very willing PMT who may have had a one day course in environmental monitoring, a sound level meter, some drager tubes, myself, and the willing participation of other Medical Department personnel. Were those solvents in the machine shop Frank referred to really a hazard, or were the exposures at a level of no clinical consequence? I could only guess. If a seaman came to the clinic with symptoms consistent with a solvent exposure, I would assume a connection and perhaps miss a true diagnosis. If the exposure were significant, it really would have been nice to have previously known the environmental problem existed and had it corrected before the seaman became sick. Second, few outside the Medical Department, were interested. The mantra of "This is fighting ship", or words to that affect, were repeated over and over. Even the Safety Officer was not initially on board. One day he came to my office dumping on my desk the Navy's equivalent to OSHA reporting forms, forms that had been returned to him with red lines all over the place. He wanted nothing to do with them. I, of course, politely declined to take them, but did make sure that in the future he had accurate information from us. We did manage to start a primitive medical surveillance program based on job description. The PMT did some elementary monitoring with the Drager tubes.

(USS Independence (CV 62) underway Atlantic Ocean 14 April 1988)
(Official US Navy Photo #DNSN9001107)

We were able to implement some education programs, and exposure education became part of our I Division presentations. The Safety Officer and some other senior personnel including the C.O. came to understand what we were doing and became big supporters.

Sometimes it takes tragic or very politically visible events to attract attention. We had both during the two years I was there. A break in a valve of a pipe leading to the human waste holding tank resulted in a severe exposure to H_2S of a seaman. It resulted in a classic delayed pulmonary edema response. We nearly lost him. Only early recognition during the mildly symptomatic phase and the resulting timely medevac saved him...The Captain later went on to the Safety Center as CO and while there gave a presentation to the NEHC workshop. He complimented the medical staff for recognizing the potential severity of the medical problem early, but he severely criticized the whole ship for being so operationally oriented that the accident was allowed to occur in the first place. I was not excused. I had not gotten through to the workers or the supervisors. He was right. I had failed in my first function, primary prevention.

After leaving the ship I was assigned the position of Head, Occupational Health at the Navy Environmental Health Center. With the very strong support of our Commanding Officer, then Captain, later VADM, Dick Nelson, and a number of personnel at BUMED and NAVSEA, a primitive concept of Operational Medicine began to evolve. We held "Occupational Health for the Fleet Physician" seminars at NEHC workshops. We pushed the Occ Docs at shipyards to work closer with the physicians on the ships in for overhaul. Highly visible incidents such as occurred on the USS Independence and, even more so, pressures from outside the military (read Congress) resulted in significant changes in the fleet. Audiologists and Industrial Hygienists began wearing Navy Blue.

The audiologists assisted in shipboard hearing conservation programs. The Industrial Hygienists began baseline monitoring of ships for occupational hazards and, as important, perhaps more so, helped with the abatement of the identified hazards. I can still remember Charlie Bercier complaining in one NEHC seminar that all we did was identify problems they already knew existed, and then left them to solve the problems alone. He was right. We started having physicians like myself, and later Nick Davenport, dually certified in AM and OM. Flight Surgeons like Dick Seeley, who was Surflant Medical Officer, occupied senior fleet positions unrelated to Aviation Medicine.

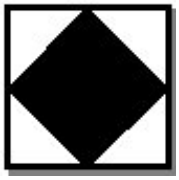
I would like to submit this observation for your consideration and one that I wish were available to me early in my Flight Surgeon career. The current core of clinical occupational medicine is understanding the workplace, providing guidance on how to prevent injuries and illness from occurring in the first place, understanding work requirements, and facilitating return to work after an event in as timely a manner as possible. It sounds a lot like what you have learned about the practice of aviation medicine. Keep them flying (working) safely. This is best done cohesively with other Occ Health and Safety personnel. If you practice good occupational medicine for the whole crew you will reap rewards that will strengthen your Aviation Medicine program.

I retired in 1987. I have not followed closely what has happened since that time, but looking at the program for this year's NEHC conference, I am encouraged that what was started so many years ago has indeed bloomed into the type of program far beyond what I envisioned when I first walked so expectantly onto the USS Independence on Oct 31, 1980.

CAPT John A. Calcagni, MC, USN (retired)

*(Official US Navy Photo #*DNST8906957*)*

Naval Aerospace Medical Institute
216th Flight Surgeon Graduation Ceremony
25 January 2002



Navy "Wings of Gold" were awarded to a new class of Navy Flight Surgeons, Aerospace Physiologists, and Aerospace Experimental Psychologists at the National Museum of Naval Aviation on 25 January 2002. The speaker was RADM Donald C. Arthur, Deputy Surgeon General and Chief of the Medical Corps.

The following is a list of the graduates and their new assignments.

Anchors Away!

Flight Surgeon Class 0103	**Billet Assignment**
LT Ritesh R. Bhandari, MC, USNR	HM-15, Corpus Christi, TX
LT Jeffrey S. Brackeen, MC, USNR	NAS New Orleans, LA
LCDR David Byman, MC, USNR	Branch Clinic, NAS Brunswick, ME
CDR James L. Caruso, MC, USN	AFIP, Washington, D.C.
LT John B. Cason MC, USNR	VAW-120, Norfolk, VA
LT Michael R. Cathey, MC, USNR	VP-4, Kaneohe, HI
LCDR H. Wesley Cho, MC, USNR	CVW-9, Lemoore, CA
LT William T. Elliott III, MC, USNR	1st MAW, Iwakuni, Japan
LT Franklyn F. Farrell, MC, USNR	Branch Clinic, Kingsville, TX
LCDR Gavin M. Gassen, MC, USNR	CVW-5, Yokosuka, Japan
LT Thomas R. Grant, MC, USN	MAG-26, New River, NC
LT Christopher V. Holthaus, MC, USNR	2nd MAW, Cherry Point, NC
LT Mark E. Lambert, MC, USN	3rd MAW, Miramar, CA
LT Prentice M. McCullough, MC, USNR	CVW, Jacksonville, FL
LT Joel R. Metzger, MC, USN	VP-16, Jacksonville, FL
LCDR Edward F. Miles, MC, USN	VAQ-129, Whidbey Island, WA
LT Eric E. Netland, MC, USNR	MAG-26, New River, NC
LT Aaron A. Patterson, MC, USNR	VP-26, Brunswick, ME
LT Justin R. Racht, MC, USNR	MAG-13, Yuma, AZ
LT Frederick Satkowiak, MC, USNR	Medical Clinic, Pearl Harbor, HI
LT Patrick J. Schuette, MC, USN	CVW-8, Oceana, VA
LT Jon Selbyg, MC, USNR	Medical Clinic, Patuxent River, MD
LCDR John C. R. Sims, MC, USNR	3rd MAW, Miramar, CA
LT Christopher M. Tepera, MC, USN	3rd MAW, Miramar, CA
LT Matthew E. Vogt, MC, USNR	3rd MAW, Miramar, CA
LT Joseph B. Wilson, MC, USNR	CVW-2, Lemoore, CA
LT Richard Zeber, MC, USNR	Branch Clinic, Key West, FL

CLASS 0103
(16 JULY 01 – 25 JAN 02)

Top Row: (Left to Right)

LT William Elliott, LT Henry Phillips, LT Matthew Vogt, LT Mark Lambert, LT Michael Cathey, LT Joseph Wilson, LT Prentice McCullough, LT Joel Metzger

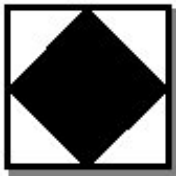
Center Row:

LT Matthias Stopfkuchen-Evans, LT Patrick Schuette, LT Thomas Grant, LTjg Jason Morarend, LT Aaron Patterson, LT Ritesh Bhandari, LT Christopher Tepera, LT John Cason, LCDR Gavin Gassen, LT Christopher Holthaus, CDR James Caruso

Bottom Row:

LCDR John Sims, LT Justin Racht, LCDR Wesley Cho, LT Mohammed Al-Thwanay, LT Maurice Hagenbeek, LCDR Luiz Froes, LT Eric Netland, LT Edward Miles, LT Jeffrey Brackeen, LT Franklyn Farrell

Naval Aerospace Medical Institute
217th Flight Surgeon Graduation Ceremony
5 April 2002



Navy "Wings of Gold" were awarded to a new class of Navy Flight Surgeons, Aerospace Physiologists, and Aerospace Experimental Psychologists at the National Museum of Naval Aviation on 5 April 2002. The speaker was CAPT Liberato, USN (retired).

The following is a list of the graduates and their new assignments.

Anchors Away!

Flight Surgeon Class 0201	**Billet Assignment**
LT Miguel Aguilera, Jr.	Branch Clinic, Atsugi, Japan
LT Christin Brown	CVW Det, Whidbey Island, WA
LT Robert Carpenter, III	NAS JRB, Ft Worth, TX
LT Carina Cezar	NAVSUPPFAC, Diego Garcia
LT Michael Clarke	MAG-29, New River, NC
LT Daniel Combs	Ambulatory Care Center, New Orleans, LA
LCDR William Cramer	Branch Clinic, NAF, Washington, D.C.
LT Christopher Dale	MAG-13, Yuma, AZ
LT Mark Eaton	NAVSUPPTACT, Souda Bay, Greece
LT Nathan Enoki	MAG-39, Camp Pendleton, CA
LT Lee Friedman	3rd MAW, Miramar, CA
LT David Furlong	VFA-122, Lemoore, CA
LT Jamie Goodman	MAG-26, New River, NC
LT James Goudie	Branch Clinic, Iwakuni, Japan
LT Todd Guth	CVW Det, Jacksonville, FL
LT Daniel Hawley	VP-46, Whidbey Island, WA
LT Denny Kim	NAF, Misawa, Japan
LT Sean McGrath	HC-5, Agana, Guam
CDR Kirk Moss	Alaska
LT Tracy Novosel	CVW-1, Oceana, VA
LT Ethan Prince	1st MAW, Iwakuni, Japan
LT Michelle Seelman	Naval Hospital Jacksonville, FL
LT Marshall Shook	MAG-31, Beaufort, SC
LT Kurt Snyder	HSL-51, Atsugi, Japan
LT Timothy Styles	VC-8, Roosevelt Roads, Puerto Rico
LT Douglas Winstanley	Naval Hospital Roosevelt Roads, Puerto Rico

CLASS 0201
(24 Sep 01 – 5 Apr 01)

Left to Right
Bottom Row:

LT Christin Brown; LT Joanne Delaney (Forstu); LT Michelle Graves; CDR Kirk Moss; LT Ethan Prince

2nd Row:

LT Carina Cezar; LT Tracy Solom; LT Ellis Gayles; LT Timothy Styles; LT Robert Carpenter

3rd Row:

LT Michael Clarke; LT Miguel Aguilera; LT David Furlong; LT Kurt Snyder; LT Douglas Winstanley; CDR Jeffrey Davis

4th Row:

LCDR(sel) William Cramer; LT Lee Friedman; LT Nathan Enoki; LT M. Shannon Shook

5th Row:

LT Denny Kim; LT Sean McGrath; LT James Goudie; LT Daniel Combs; LT Christopher Dale

Top Row:

LT Jamie Goodman; LTDaniel Hawley; LT Todd Guth; LT Gary Johnston (Forstu); LT Mark Eaton

Flight Surgeon Adventures

In mid November, in the middle of the Pacific Ocean during "blue water ops," the USS John C. Stennis received a late afternoon emergency call from the US Coast Guard. A Japanese fishing boat over 600 miles south of the Battle Group was requesting help with an injured crewman. The Fukuyo Maru had a 25-year old Indonesian man aboard who'd been struck in the face with a half-inch thick fishing line, which had snapped under pressure. He was over 24 hours out from the time of injury, and in addition to nasal and left eye trauma, his mental status had deteriorated. Due to language barriers and no way to communicate directly with the trawler, no further history could be obtained. In light of the incomplete history, and the possibly grave diagnosis of intracranial hemorrhage due to head trauma, the decision was made to attempt the rescue.

I was the CVW-9 Flight Surgeon on medevac duty at the time, and within an hour I was in an HS-60 Bravo helicopter (from the HSL-49 Scorpions) headed to the Aegis class cruiser USS Lake Erie, the nearest Navy ship to the trawler. We landed safely on the pitching deck ninety minutes later, and the cruiser made way for the smaller ship with a plan to intercept early in the morning for a daylight rescue. Since I had lived in Japan for two years as an LDS (Mormon) missionary, I was able to interpret. At midnight we were able to raise the Fukuyo Maru via satellite phone, and ascertained that the injured man was breathing at a normal rate, and that he would open his eyes to verbal stimuli. He had not experienced loss of consciousness, but had complained of severe headache, and was becoming less responsive. The Coast Guard had sent a KC-130 overhead to drop medical supplies, and the trawler's crew was able to place the man on oxygen.

The biggest decision at that point was whether to send the helicopter to attempt a night rescue in 8 to 10-foot seas. After discussion with the HSL-49 pilots and the cruiser's CO, CAPT Hammerer, the decision was made to wait until morning to attempt extraction. I was sent to the darkened bridge around 0330, and was able to contact the Fukuyo Maru via bridge-to-bridge radio to coordinate nighttime rendezvous. At dawn, the helicopter pilots noted the fishing boat's rigging and sea-state would make for an extremely dangerous air extraction. I informed the Fukuyo Maru of our secondary plan to send a team of medical and security men to their boat via RHIB(Rigid Hulled Inflatable Boat), to board and search their vessel, and to take the injured man back to the Lake Erie for transfer to the aircraft carrier for medical treatment.

The Force Protection team, SAR Corpsman HM3 Golightly, and I were able to safely board the RHIB, and in the early light of morning made our way to the Fukuyo Maru, roughly 400 meters away. The six to eight foot swell intensified both loading and transit, but we were able to safely board the trawler. After a rapid search by the Protection Team, we were led to the injured man, who was lying in a 6-foot by 4-foot space in berthing. His breathing was regular, and lungs clear, but he was lethargic. His external injuries were limited to nasal and eyelid abrasions, but what was more concerning was that he had been in bed for over 36 hours without rising to drink, had not urinated, and was tachycardic with a somewhat thready pulse. After 2 liters of Lactate Ringer, his vitals signs stabilized, and we were able to immobilize his C-spine and load him on a backboard and onto the RHIB. Following safe transport to the Lake Erie, he was more fully assessed, then loaded onto the helo. Halfway through the 300-mile flight back to the Stennis we made a quick refueling stop aboard the Lake Champlain, and within 3 hours the patient was being assessed in Stennis' medical department.

With aggressive IV rehydration and close monitoring, the patient became more responsive over the following 24 hours. Though he spoke virtually no English, we were able to communicate through broken Japanese, and I discovered his name was Ibrahim

Mansyur, and that he was from an Indonesian island close to Java. With our limited communication, we were able to ascertain that he did not lose consciousness during the original incident, and had no neck or back pain, but he had severe left eye pain and a headache. On examination, his left eye visual acuity was below 20/400, and a microhyphema was noted through the slit lamp. His C-spine was cleared, he was placed on steroid and dilating eye drops, and his condition both mentally and physically improved over the next several days. As the Stennis neared Midway Island, Ibrahim was transferred there by helicopter, and from there to Oahu, where he was sent for a prearranged appointment with a Japanese speaking physician for assessment of eye and head trauma.

Given the 600-mile distance of the Fukuyo Maru from the Battle Group, and the dangerous nature of removal of an injured patient from a foreign vessel in rough waters, the decision to rescue this fisherman posed a considerable risk and cost to the Navy. Nevertheless, true to the code of the sea to never leave a fellow seaman in distress, the correct decision was made to attempt rescue, and a flawless operation was

tient's injugood at last e was both n that being jobs in the

In Memoriam

SHERRY K. HENDERSON
CAPT MC USN (RET)

Dr. Sherry K. Henderson, 56, of San Diego, died of breast cancer on December 23, 2001. A native of Oswego, Illinois, she graduated from the Oswego High School in 1963, received her cum laude premed training at North Central College in Naperville, Illinois, and her MD degree from the University of Utah in 1973. During her senior year, she accepted a commission as an Ensign in the U.S. Navy Medical Corps. Following a civilian internship in Child and Adolescent Psychiatry in Salt Lake City, she entered NAMI's student Flight Surgeon class 74-2 in July of that year. The published obituary notice observed that "…she attended a grueling 6-month course of Basic Aerospace Medicine…(and) was the third woman to win the wings of a Naval Flight Surgeon", adding that she won the Surgeon General's Award for her class.

Dr. Henderson's initial assignment put her at VC-5 in Okinawa where the USAF promptly hid her in the Dependents' Clinic at Kadena. She fought a frustrating but ultimately successful battle to get to her squadron. Her second tour was with the VP community at Moffet Field where she deployed with her squadron to Adak, Alaska.

In July of 1978, Dr. Henderson began a three-year Family Practice Residency in Jacksonville, Florida, the specialty she practiced at various duty stations until she completed her 20-year Navy career, achieving the rank of Captain, retiring in 1993. Until her second retirement in October of 2000, she was the full-time clinician at the Student Health Service at San Diego State University.

CAPT Frank E. Dully, Jr, MC, USN (retired)
frankdully@att.net

Basic information extracted from notice published in the San Diego Union-Tribune December 30, 2001, with thanks to CAPT Richard A. Millington, MC, USN, (Ret.)

Head and Neck Support Update

Since writing the article on head and neck restraints in the last issue, I was invited to an all-morning meeting at Naval Air Systems Command at Patuxent River, the purpose of which was to hear a presentation by Dr. Bob Hubbard, inventor of the HANS® device. Bob was asked to brief the members of the Crew Systems Engineering Team on the device's characteristics and its current application in auto racing. The HANS (short for Head and Neck Support) has shown a huge upswing in use over the past two years, and has been credited with preventing serious C-spine and basal skull injuries in a number of potentially fatal or crippling crashes. The aim of the presentation was to give NavAir information that could spur research on adapting HANS for use in aviation. There were approximately 35 people in the room, including at least five Naval Flight Surgeons, two of whom are also designated aviators. NAMI's Residency in Aerospace Medicine was also represented, with a current RAM and a recent RAM graduate attending.

After presenting a complete history of HANS, including videos of crash testing and photos of actual crashes, Hubbard gave a demonstration of a HANS that was tethered to a helicopter helmet. He made a strong point that the helicopter environment is most promising for HANS use, and even though he noted some potential problems with the location of the helmet's tether anchor points, the strength of the helmet (when compared to a racing helmet), and even the height of the lower edge of the helmet above the eyes, he indicated that these were minor obstacles and could be easily overcome.

He pointed out that the HANS may offer an additional protective function in helos that wouldn't generally come into play in racecars. Helicopter crashes often result in significant vertical deceleration, and the HANS may well dampen c-spine compressive forces because the helmet's downward travel is limited by the presence of the HANS collar.

Hubbard's recommendation? The HANS, as configured in his demonstration, "is close enough to a useful configuration in helicopters that initial crash dummy tests should be conducted to assess the potential for injury reduction." Although his presentation did touch on the possible use of the device in other aircraft, including tactical ejection-seat aircraft, he acknowledged that it would be "a more difficult development challenge than for helicopter pilots." He felt that initial efforts should be directed at helicopter applications, and investigate possible tactical air use in the future.

Recent Motorsports Data

From January 17 to 19, the International Council of Motorsports Sciences held a joint meeting with the FIA (the oversight body for international racing) in Miami. Dr. Terry Trammell, orthopedist to many injured racers, presented data on crashes involving drivers wearing the HANS. He detailed some of the Championship Auto Racing Teams crashes mentioned in the last issue of Contact, as well as others from competing racing series, and he concluded that no driver wearing HANS suffered a serious head or neck injury in 2001*. He showed a tape of the horrendous crash in Germany that essentially vaporized Alex Zanardi's legs, but above the waist left him with only a mild concussion. (As an aside, Zanardi made a speakerphone call to the members during the Friday evening banquet, and he sounded extremely upbeat. With his new prostheses he is able to stand without assistance, and even ambulate a bit. It wouldn't surprise me to see him in some kind of racecar in the future, although Indy-type cars would be out of the question.)

Of interest to auto racing enthusiasts is that this is the first full season in which NASCAR drivers must wear approved head and neck restraints, and it is also the first time all the premier Winston Cup cars will be instrumented with crash data recorders.

Although they have a choice of devices, at least 33 of the 43 Cup drivers wore a HANS during the Daytona 500 on February 17th. At the three-quarter point in the race there was a huge crash involving 18 cars, but it did not appear that any of the multiple impacts were severe enough to put the restraints to the test.

As the smoke was clearing, the TV commentator pointed out that one of the crashed drivers was wearing a HANS. At the same time the audience could see the agitated driver angrily removing the device while pacing up and down beside the steaming remnants of his racecar!

Hutchens device users were in the minority, but the race winner, Ward Burton, was clearly seen to be wearing one as he exited his car in Winner's Circle. I'm glad to see that the concept of using such restraints is beginning to get the media's attention, which it clearly needs and deserves.

**During the meeting I found out that David Pook, son of CART's new CEO Chris Pook, that week suffered a C-2 fracture when he hit the wall extremely hard during a testing accident in a stock car at Phoenix International Raceway. He was wearing a HANS, and fortunately suffered no neurologic injury, but he will be in a halo collar for some time. Representatives of NASCAR and General Motors indicated that he would have been injured more severely, or even fatally, if he had not been wearing the restraint. Bob Hubbard noted, "while he will recover, he is the first serious head or neck injury with a HANS in over ten years – no more perfect record." I pointed out that a perfect game spoiled by a walk is still a no-hitter.*

CDR Jay Phelan, MC, USNR
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Letters to the Editor

Letters to the Editor is a column that permits readers to comment on CONTACT content or other topics of interest to Navy Flight Surgeons. We reserve the right to edit and condense all letters submitted.

Captain Edwards,

Thank you for your insightful article in the last *Contact ("Best Practice Squadron Time, p. 36, Contact XXVI No. 1 Jan02*.) I'd be honored if you would consider a few questions I have about the survey study.

It was probably cut in editing, but of what are the percentages a fraction? I'd think highest value data would be hours expended on each task. Did all 29 Flight Surgeons spend the same weekly hours in squadron time vs. clinic time, and how do you know? Were all 29 equally productive in the clinic bean count and clinic admin/management contribution, the other elements of medical officer best practice? Did they all deploy equally? Did the FSOY shirk his clinic duty to shine as a squadron FS? (I don't think so at all; just like to see the data.)

Why isn't the FSOY's flight time difference statistically significant (10% vs. 5% average)? Should effective Flight Surgeons fly more often--I'm all in favor of that! Is that percentage backed up by logged hours?

Why is exercise included in squadron time?

A cynic might comment that FSOY's excessive face time on "Rounds" (21% vs. 14% average) was responsible for his glowing squadron CO nomination which secured him the award. Again, I don't think so at all.

This is a great contribution toward defining an effective Flight Surgeon's tasks and perhaps what performance and FS productivity measures should be, and defending squadron time out of the MEPRS sump.

V/R,

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Naval Aerospace Medical Institute
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(CAPT Edward's reply on page 46)

(continued from page 45)

CAPT Anderson,

Thanks for your inquiry. I have not received my newsletter yet but should be able to answer your questions.

The percentages are a fraction of squadron time only and should add up to 100%. We did not track exact hours spent in clinic versus squadron, but the written schedules reflect the approximate 50:50 split (Miramar sqdn=50%, Pendelton sqdn>50%, Yuma sqdn>50%). The 29 flight surgeons included all 3 sites.

Each site has a different set-up for clinical work: Miramar (blue BMC with a Wing Aid Station inside), Pendelton (green FSSG clinic with our MAG-39 inside), Yuma (green MAG-13 Flight Line Aid Station). I assume that our Flight Surgeons are productive during clinic time based on our QA program and feedback from OICs of BMCs.

Almost all of our Flight Surgeons deploy, but at different rates. The survey only included Flight Surgeons who were in garrison during the 3 month time period.

The Flight Surgeon of the Year deployed more than most of our Flight Surgeons, and this factor definitely contributed to his selection. The other factor was his contributions in garrison, which included excellent clinical competence and very active role in the squadron. He is really a gung-ho Flight Surgeon.

The survey was too weak in terms of numbers to perform a statistical analysis, so we simply used standard deviations to determine if our Flight Surgeon of the Year was different from the average. His percent for flight time was greater than the average flight surgeon, but it was not more than 2 standard deviations from the norm (came close).

Hope the above answers your questions.

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Dear Editor,

Congratulations to all those who had a hand in changing the name of the Newsletter back to *CONTACT*. Those who were born into the jet age of Naval Aviation may not appreciate the full impact of this change, but it will always take me back to my cadet days at NAS Glenview in '45. "Contact!" yelled loud and clear into the cold wind off Lake Michigan was part of the starting ritual for the N2S before each of my initial excursions into the exciting world of Naval Avaition.

In 1952, when I was designated Naval Flight Surgeon Number 769, *CONTACT* was our means of keeping in contact with other Flight Surgeons. Many of the WWII Flight Surgeons were still active as well as some that had served in WWI. In these simpler times it was possible to know most of the active Flight Surgeons in the Navy and some of those who had gone before.

Quite naturally, I appreciate the interest that SUSNFS members have shown in our history. While researching articles on the WWI Naval Aviator (FOUNDATION Vol. 17-2 and Vol. 18-1) and The History of the Flight Surgeon/Naval Aviator, (FOUNDATION Vol. 19-1 and ASEM Vol. 69-3, March 1998) I collected Bio's on many of the early Naval Flight Surgeons. Some of these like RADM Clint DeFoney who served as a Navy Flight Surgeon in both WWI and WWII might be of interest to *CONTACT* readers. If you or the History Committee are interested in this information please contact me.

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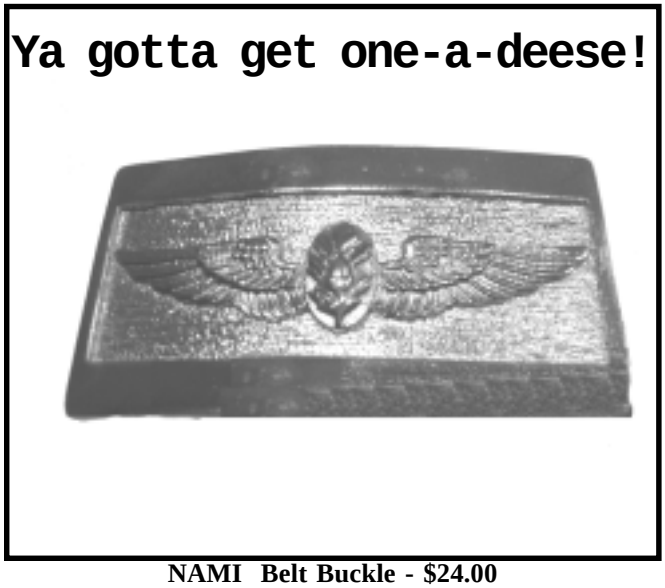

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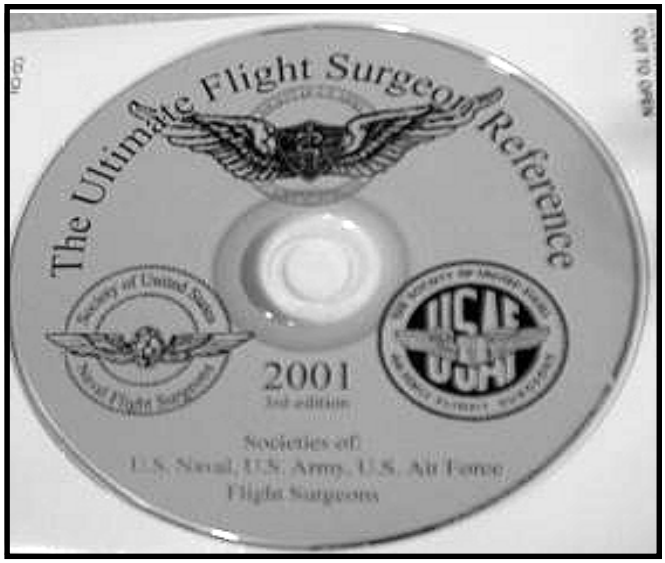

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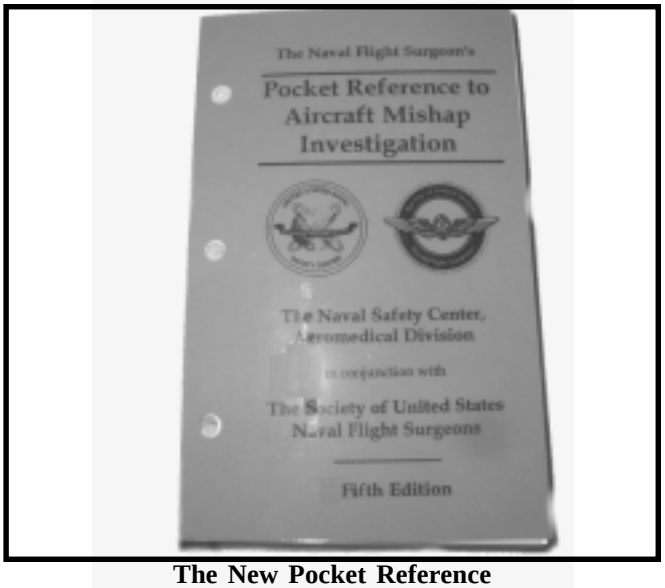

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will be allowed to go straight back to their pre-op Service Group. The only caveat is that the prosthesis must not be of the wire-Gelfoam type. And of course the patient must be asymptomatic. I would expect that the soonest a pilot might return to SG1 flying after stapes surgery would be four months, but compared to the old policy of three years, that is a huge improvement.

If you have an aircrew member who has been offered stapes surgery, make sure he or she realizes that there is a small risk of losing all the hearing in the ear secondary to the procedure, and that there is also a chance of prosthesis dislodgement and fistula formation, either of which would delay their return to flying, and in the worst cases might prevent them from ever flying again. Remember, in designated personnel we can waive unilateral hearing losses when the better ear is able to carry the load, so stapes surgery shouldn't be undertaken lightly.

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If you would like to discuss naval active duty mortality patterns further please give me a call or email me. Additionally, I have enjoyed giving a multimedia presentation on the "top ten" causes of death at safety standdowns for wings and squadrons. If your command is interested, please contact me.

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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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