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Society of United States Naval Aerospace Physiologists

Message From the President



Welcome back SUSNAP members, this is our second published journal for this year! We are happy to announce that the Board is quickly achieving our objectives which were set forth at FAILSAFE 08. Our SUSNAP Web Site will be up and running please take the time to check it out at www.susnap.org. Great thanks go to LT "Vegas" Jones and LCDR "Puffy" Lando! We really appreciate your time and effort. They are always looking for information to post so let them know what you'd like to see on "our" website. Also thanks to CDR (r) Little who donated a great deal of information from his current Naval Aerospace Physiology web site. SUSNAP members will soon have electronic access to the long awaited Naval Aerospace Physiologist "scroll" which has been a desired item for years. Probably since it's creation by CDR (r) Jack Gear in circa 1932!! LCDR (r) Brian Swan and LT Tiffany Landis have worked together w/CDR (r) Gear to produce an electronic version. I understand this document is quite large and colorful. We will be able to place it on a CD for those who are interested in receiving. It is too large to post on the website. Send me an email if you'd like a CD

copy and we can mail it to you.

Great news for our community, since our last publication LTJG Boggs became an Official Naval Aerospace Physiologist. LTJG Brighton was commissioned on 8 Aug 08, there is an article on him on page 14. He will be stashed at HPTT here in Pensacola, with an OIS commencement date in the fall. In addition to LTJG Brighton, LTJG Dobbs was commissioned on 10 Sep 08. It's wonderful that we have an avenue to learn more about our newest and future Naval Aerospace Physiologist, please take the time to hear what they have to say about themselves. Welcome the new and say hello to some retired Naval Aerospace Physiologist. "Where are they now?" is debuted this issue with a quick look at CDR (r) Guy Banta. We'd like to post more in the future if you communicate with retirees please encourage them to let us know about what they are doing now!! Remember they have gone before us, paved the way and have given our community a great path to follow and branch off from. We appreciate the retired community's involvement in our society!!

Finally it is with sad news that we say farewell to a retired PRC who has given a great deal of his life's work to our community and the Naval Aviator. PRC (r) Malcolm Bridgeforth died in August and we've put together a memorial article to remember a "true" friend, father, and Parachute Rigger! His memorial is on page 17.

Thank you for your time, enjoy your reading and keep those who are forward in your deep thoughts and prayers!

Very Respectfully,
Your SUSNAP President
LCDR Debra Yniguez



Spatial Disorientation/ROBD Part Task Trainer

By CDR Mike Prevost

Assistant Program Manager, Training Systems, PMA 205

PMA 205 (Training Systems) plans to start development of a Spatial Disorientation / ROBD Part Task Trainer in FY 09. The idea is to have a single device with robust simulation capability that can be used for both spatial disorientation and ROBD training. We are in the fortunate situation of having a great idea, a plan, and the funding to be able to execute that plan. The basic concept of the trainer is largely the idea of LCDR Rich Folga of NSTI's Human Performance and Training Technology Directorate (HPTT).

We are teaming up with PMA 205's Research and Development department, NAWC's Manned Flight Simulator Department, NAWC TSD Orlando, Microsoft, and other industry partners. We will simultaneously develop a commercial off the shelf solution (COTS) based on Microsoft ESP (the open source version of Microsoft Flight Simulator) and a government off the shelf (GOTS) solution developed by NAWC TSD, PMA 205 and Naval Postgraduate School. Both COTS and GOTS solutions will result in prototypes in CY 09 for testing by NSTI HPTT and eventual production. PMA 205 will test the prototypes as well with the idea of producing a low cost Distributed Mission Readiness Trainer (DMRT) (basic flight simulator) for the F/A-18 Hornet. This could be a huge plus for us. If the Hornet program adopts the trainer, any enhancements in the system that they pay for would be available to us at no cost. Additionally, as other type/model/series (T/M/S) platforms adopt the system, those would be available to us as well, saving us the cost of developing those T/M/S ourselves. The idea is to reap a huge return on investment by developing a system that can be used across T/M/S by starting with the more basic requirements of our program (spatial disorientation training and ROBD). In other words, we create a basic prototype that satisfies the requirements of our program (NASTP). If it is successful, PMA 205 R&D will expand the prototype to include basic Hornet DMRT requirements and then market the low cost PC based simulator across T/M/S in the Navy and Marine Corps.

Our plan is to put 4-5 of these trainers in each ASTC. The 4 basic functions of this system include:

ROBD Instructor Qualification System: Because training instructors to run the ROBD scenarios is labor intensive, we would like a self-paced instructor qualification system. This system would run on the same PC and use the same simulation as the ROBD training part task trainer. Some features would include:

- Capable of running industry standard computer based training (CBT) (i.e., Flash)
- CBT integrates with the simulator (i.e., can launch simulation from CBT)
- Includes CBT based on ROBD Job Qualification Rating (JQR) and NSTI approved ROBD scenarios.
- Tracks qualification status and progress
- Self paced
- Ability to pause and resume

Report generation capability

The basic idea is that new instructors would use the self paced system to learn the ROBD scenarios and how to fly the trainer. All training would be self paced and tracked and reported automatically by the system.

ROBD Part Task Trainer: This is simply a robust, PC based flight simulator system to be used for ROBD training. The goal is to accurately model each type/model/series to be used for ROBD training. We will also have networked trainers so that NFOs could be paired with a pilot so that they could fly the same flight and interact like a real crew. The technology also exists for automatic air traffic control (ATC) interaction through voice recognition technology so that our instructors do not have to become ATC experts. We will also include realistic hypoxia related warnings/indications (i.e., loss of cabin pressurization, OBOGS cautions).

Spatial Disorientation Part Task Trainer: The basic concept of a spatial disorientation part task trainer is to use a basic flight simulator (appropriate type/model/series) to demonstrate



various visual illusions and spatial strategies by placing the pilot in specific scenarios and having them fly through a series of simple tasks (i.e., approach and landing, form flight, turns, low altitude). The trainer would need to have the ability to present a wide variety of terrain features in both day and night, have some weather capability (clouds, fog) and have functional navigation and aircraft altitude and attitude instruments. Additionally, the trainer would need to have the capability of presenting the scenario from an initial conditions (IC) file and have record and playback capability.

Mishap Scenario Re-creation: This system will be used to re-fly selected mishaps to demonstrate the spatial disorientation/spatial strategy issues involved in the mishap. The ability to re-fly from aircraft flight recorder data would be a bonus. Record and replay from various camera views (i.e., inside looking out, outside looking in, wingman view) would be essential. Recorded video would be exported to be used in classroom courseware for mishap lessons learned training.

Development of the system will be guided by PMA 205 with customer requirements and testing of the system provided by NSTI's Human Performance and Training Technology Directorate. HPTT will play a critical role in defining the requirements and in testing the prototypes. The projected timeline includes development of the trainer prototype in CY 09 with fielding of the trainer at the ASTCs in CY 10.

Where Are They Now?



Guy R. Banta, Ph.D., MPH
CDR MSC USN (Retired)
Naval Aerospace Physiologist #77

Twenty eight years (28) of naval service
8 yrs enlisted and 20 yrs commission

Physiologist duty assignments:

- Pensacola SNAP and primary flight training
- APTU Norfolk, VA
- AMSO (one of original) NAS Meridian, MS

- USUHS Doctoral Student
- NAMRL Pensacola (Director Human Performance Research)
- NMRDC/BUMED (Program Manager Naval Aerospace Medicine & Human Performance)
- NHRC San Diego, CA (Dept Head, Executive Officer, Commanding Officer)
- Retired June 10, 1993

Employment post retirement:

- Krug Life Sciences/NASA-JSC Houston, TX: Director of Research Development
- Science Applications International Corporation (SAIC) Houston, TX: Biomedical Manager International
- Space Station; NASA-JSC
- SAIC San Antonio, TX: Manager/Director Biomedical Research-San Antonio

Current Employment

- Eagle Applied Sciences, LLC San Antonio, TX: President & CEO
- Government Contractor supporting DoD, NASA, DHS, CDC, NIH, DHHS
- Provide Life Sciences, Biomedical Research, Medical Staffing, Program Management, High-end Applied Science support
- 130+ employees-27 states, 5 countries-\$65M awarded contracts
- Offices; San Antonio (HQ), Houston, TX, Washington, DC, Huntsville, AL, Dayton, OH

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PPBE for Dummies

By LCDR Debra Yniguez

SUSNAP President

The Planning, Programming, Budgeting and Execution (PPBE) System provides the combatant commanders with the right mix of: people, equipment, capabilities and funding to enable them to meet their missions. This system converts the National Security Strategy and foreign policy of the President into military strategy, war plans, programs and eventually the DoD budget. This budget is the final product of the PPBE.

Planning: This phase begins with the National Security Strategy (NSS) issued by the President based upon input by those officials with significant national security responsibility, including the Secretary of Defense, Secretary of State, National Security Advisor, Director of Central Intelligence, Director of Homeland Security, and others. The Secretary of Defense crafts a National Military Strategy Document (NMSD) based on DoD's role in carrying out the objectives of the NSS.

These planning documents feed the services' individual PPBE processes, but also serve the joint planning processes. Specifically, the Joint Strategic Planning System (JSPS) relies on the NSS and NMSD to develop assessments, strategy and program recommendations from a joint perspective. Further, the Joint Operation Planning and Execution System (JOPES) uses these documents to develop war-fighting plans which drive inputs to PPBE known as the Combatant Commanders' Integrated Priority Lists (IPL's).

So in planning, the national leadership provides strategic direction to the services and the joint commanders who initiate their own planning and requirements generation processes. The outputs from those joint and service-specific plans take the form of IPLs, CNOs Program Assessment Memorandum (CPAM), the Joint Planning Document (JPD) and the Chairman's Personal Recommendation (CPR). Other documents of strategic nature are also produced, i.e. Quadrennial Defense Review, Navy's SeaPower-21 document, etc... This set of strategic planning outputs serve as inputs to the Secretary of Defense in his development of the Defense Planning Guidance.

Looking specifically at the Navy the CNO's Program Assessment Memorandum (CPAM) is built using the Integrated Warfare Architecture (IWAR) framework

for assessing the overall Navy program. The IWAR framework has been replaced with Naval Capability Plans which describes the Navy across four broad capability areas, in concert with strategic plans and five support areas. The development of the CPAM (and its objective as a planning tool) ensures a balanced and capable Navy within resource constraints.

The Defense Planning Guidance (DPG) is the end of the Planning Phase of PPBE. Remember planning is a continuous process. An annual DPG is provided to the services, but the input is not on a neat cycle like the budget. While the DPG is normally issued in the spring each year, the second phase of PPBE, the programming phase, is already underway. Programming actually begins in the late months of the preceding calendar year. It is important to note that at any given time, multiple fiscal years of budget are "in play". For example: If we are in the summer months of an even year (2008), the second even year (2010) (the budget year, or funds to be spent two years hence) is being programmed and budgeted while the prior fiscal year (2009) is being enacted in Congress and the year prior to that is being executed (2008), meanwhile the subsequent fiscal years are in the planning stage.

It is important during the PPBE process to stay abreast of what is happening in actual execution of the current year budget -fact-of-life changes- and what is simultaneously happening in Congress with next year's budget. The budget being built in the current PPBE cycle must take into consideration those events.

- 1)PPBE provides Combatant Commanders with what they need to complete their tasks.
- 2)National Military Strategy Document crafted by SECDEF is based on the NSS.
- 3)These documents direct the individual services PPBE as well as joint planning processes.

Next issue we will explore the next step in the PPBE cycle "Programming".



History of NAPP Installment #1

By LT Tiffany Landis

SUSNAP Historian

Hello fellow Phys types,

Thank you for allowing me to serve as our society's historian this year. As I have been sifting through our historical files, I am awed by our haphazard beginnings, immensely inspired by the efforts of the many individuals that have helped to form and grow our program, and astonished at the impact that we have had on maximizing performance and increasing the survivability of our warfighters.

My intent is to share bits and pieces of our history with you through the eyes of various authors. The submissions will not be in chronological order but will hopefully help you appreciate the momentous efforts of those that have come before us in formulating our program, give you insight into how our program has materialized into the productive organization we are today, and entertain you a bit as well.

In 1987, CDR (ret) Bill "Maytag" Little, (Aerospace Physiologist #87, designated 8 April 1976), took on the momentous task of documenting our red-headed step child inception, soap opera beginnings, and "Saturday Night Live" ninja sprawl; seriously – parts of our history are absolutely hilarious. If you haven't had the opportunity to read the history book he has written, please contact me and I will send you the pdf. It was written by an Aerospace Physiologist for Aerospace Physiologists (now Aerospace / Operational Physiologists). The book is WELL worth your time.

CDR (ret) Little finished his labor of love (with help from numerous others to be written about in future installments) in 2000.

Year 2000 side Bar: feel free to use during your next MSC trivial pursuit game; during our annual 2000 FAILSAFE meeting, the first SUSNAP officers were elected. Free magenta pie piece to anyone who can name all of the first officers.

As I was reading all the fine writings and compilations of historical documents of CDR (ret) Little, I laughed, I cried (not really), and mostly I thought, HOLY CRAP – did this really happen?

Enjoy the first segment,

LT Tiffany Landis

SUSNAP Historian

From the Preface of Bill Maytag's book:

History of the Naval Aviation Physiology and Naval Aviation Survival Training Programs.

It has been said that if we fail to learn from the lessons of history, we are bound to repeat them. To this end, this book was written for the men and women who have put their hearts and souls into the development of the Naval Aviation Physiology and Water Survival training program over the last 58 years. It is dedicated to the thousands of men and woman who have lost their lives pushing naval aviation to where it is today. We must never forget them. As the Good Book states, "There is no greater love than a man can have, than to lay down his life for a friend" (John 15:13)



The following is an excerpt from Chapter 1, THE EARLY HISTORY AND DEVELOPMENT OF THE NAVAL AEROSPACE PHYSIOLOGY PROGRAM (NAPP), under the World War II section.

NOTE: I found this" excerpt from a diary" during my search for historical documents. I don't remember where I found it, but I assume it is authentic. It is included here, just as it was written.

THE FOLLOWING EXCERPT FROM AN OLD DIARY DESCRIBES A STUDENTS'S CHAMBER EXPERIENCE IN 1943. NAMES HAVE BEEN DELETED. TIME HAS BROUGHT MANY CHANGES TO THE AEROSPACE PHYSIOLOGIST PROGRAM.

Today is a very important day as a 4 eng. Bomber pilot. Some way it has always happened that I have missed every pressure chamber. Truthfully I have been just a little worried over my going through this test alright.

My crew and I met at the chamber and up we went. The hardest thing about this kind of a test is that one has to just sit and wait for something to happen. Some people are apt to let their mind fool them in believing that they are not feeling well. In these following lines, I will give the details of out rip and the different things that were experienced.

We went into the chamber installed the masks and jumped the pressure to 5,000 ft and then back down. Then after, everyone was put through an anoxia test. A person that has anoxia has a fake sense of security. He thinks he is O.K... and then the next moment he is out. This anoxia state slows down ones mental and physical abilities.

“Everyone is now at 38,000 ft. We stayed two hrs.”

For a test several of us cut off the oxygen to see how it is affected everybody. After 3 min. my writing didn't make sense and I wasn't writing straight. As I got more anoxia my writing became illegible. If I hadn't gotten oxygen I would have passed out from the lack of oxygen in my blood and brain. (Any way I know I have blood)

Everyone is now at 38,000 ft. We stayed two hrs. I had gas on stomach, ears crackled for a bit, eyes watered bad for a second or so; I got knee pains in my knee joints after 1 hr. 40 min. Not bad though. Chest after 1 hr. 30 min. hurt when I took deep breaths. Chest felt O.K. if I inhaled slowly though my nose. The pain was a dull one which made me cough at times. This was rather painful! 20 min. before I came down, being that I didn't have a shirt on I noticed that my skin had broken out in a rash-large itchy red welts appeared. It was very uncomfortable until we started back down. I also got a little sick to my stomach from the hot inside and breathing oxygen for so long.

Lt. _____, my bombardier, got bad pains in his right arm. He had to be taken out and then go through later. Sgt _____ (ass. Eng.) got bad stomach pains from gas and he had to be taken out and then sent up later.

Coming down I had no trouble in clearing my ears of the difference in press. The past 30 min. sure were bad therefore it (time) passed like hours.



History of the USMC AMSO Program (as I remember it)

By CAPT Vince Musashe

**Commander Joint Task Force NCR
Medical**



I've been asked to give my recollections on how the USMC AMSO program as we know it today came about. As I write this almost 20 years after the fact, I don't have the luxury of going back into the files to

get accurate dates and other pertinent information. Therefore, I'm relying on my long-term memory and will be guilty of several generalizations I'm sure. Every attempt will be made to remain factual, but those facts will be as I remember them. If I leave someone out, or attribute something to the wrong person, please forgive me. No slight intended. I'm sure others will remember these same events, but may see them slightly differently. I encourage those who read this and can provide amplification to please do so. The history itself is much more important than the individual author. So with that as prologue, let me begin.

Most people look to the mid-1980's as the start of the USMC AMSO program, but in reality it started much earlier than that. As with any program, it just doesn't happen. It's the result of a continuous input process of personal effort and events over time until finally critical mass is reached and the program defines its direction and takes off. This is just such a program.

For the purposes of this history, I'll call the years circa 1974 to 1984 as the developmental years. Back in the 1970's the AMSO program had its beginnings as an expansion of the Flight Surgeon program. It was begun by Frank Austin, a flight

surgeon, who envisioned a team of aeromedical specialists providing direct support to the aviation community. The community that found a home with the AMSO effort was Aerospace Physiology. As these billets with the larger aviation activities developed, their benefit was slowly realized. The early AMSOs went to Aviation Safety Officer school at the Naval Postgraduate School at Monterey California. Their value to the squadrons was immediate and enormous. FAILSAFE was coming into being and the AMSO structure provided just the right vehicle to bring direct support to the fleet. However, if there was one weakness to the early days of the AMSO, it was the

fact it was disjointed and non-standardized. Each individual did the job as they saw fit, with little coordination. That would be an important element in the years to come.

In the developmental years, there were four AMSO billets that could be construed as providing support to the Marine Corps. Those billets were located at MCAS Cherry Point NC, MCAS Beaufort SC, MCAS El Toro CA, and MCAS Futenma Okinawa Japan. The East Coast billets supporting the 2nd Marine Aircraft Wing were different than the two west coast billets supporting 3rd and 1st Marine Aircraft Wing. The billet at Cherry Point was actually assigned to the Naval Hospital with additional duty to 2nd MAW. It was one of two aerospace physiologists assigned to the training unit there. The billet at Beaufort was actually the remnant of a physiology training unit that was once there. The unit closed, but the aerospace physiology billet stayed there as an AMSO billet. It was assigned to Naval Hospital Beaufort with additional duty to Marine Aircraft Group 31. It's important to note these two billets were assigned to the hospital, then ADDU to the line. The West Coast billets did not have that same relationship. I'm not sure how the El Toro billet came on line originally, but it was assigned directly to 3rd MAW. No hospital relationship. This would prove to be beneficial and the model to be followed in the future. The Okinawa billet supporting 1st MAW was also a line billet, but this one was unique in that it provided direct support to the Air Force's physiology training unit at Kadena AB. Since there was a hyperbaric chamber at Kadena, the aerospace physiologist

"FAILSAFE was coming into being and the AMSO structure provided just the right vehicle to bring direct support to the fleet."

going to 1st MAW had to get the Air Force's Compression Chamber Team Training at Brooks AFB, TX prior to reporting to Okinawa. Not a bad deal for the person going out there. Also, the 1st MAW billet was a one year unaccompanied

tour.

These are some of the early holders of these billets that I can remember. No sequence is implied and is not considered all-inclusive. Some folks who have served at Cherry Point in the developmental years (circa 1974 – 1984) include Glenn Armstrong, John Etheredge, Jerry Patee, and Paul Toops. Bill Little and Steve Feith served at Beaufort. Bill Little can be seen in a cameo role in the film, *The Great Santini*, from his days there. Steve Feith as far as I can recall was the first AMSO ordered into Beaufort as an AMSO only. The training unit was closed prior to his arrival. I remember Dave Johanson as a 3rd



MAW AMSO during this timeframe, but I can't remember anyone prior to him. Some aerospace physiologists who served the one-year tours at Okinawa during this period were Bob Moynihan, Steve Tolan, Dan Robertson, and Tom Fleishman.

I can't stress enough that while we are credited with establishing the USMC AMSO program, what we put together was made possible by the work of the AMSOs during the developmental years I've just described. However, the USMC AMSO program as it is known today was born as a program in 1984 with the assignment of four officers of a common purpose who wanted to coordinate the Marine Corps effort and make a difference. Those four officers were Jeff Clark assigned to NH Beaufort/MAG 31, Mike Wilkinson assigned to 3rd MAW, Rick Mason assigned to 1st MAW, and myself assigned to NH Cherry Point/2nd MAW. All four officers asked for assignment to the Marines. All four wanted to serve with the Marines. In fact, Rick changed the paradigm at 1st MAW by taking a three year accompanied tour to Okinawa. Tours have been three years ever since. All four officers had a vision of how aerospace physiology could get out of the classic setting and provide direct operational support in the field. But most important of all, all four officers wanted to share information and truly have a coordinated, consolidated USMC AMSO program.

As luck would have it, Rick, Mike, and I were sent to ASO school in the same class in July 1984. Jeff had attended ASO school in the class just prior to ours. So all of us were relatively new in our jobs, and could expect to work together for the next three years. During those six weeks of ASO school, the three MAW AMSOs got together in my room at night and talked about each other's vision of what the USMC AMSO program should be. We blended our own individual visions with elements from each other to come up with a framework of a coordinated program. Perhaps the most important mutual agreement was our decision to share the wealth. We would continually and extensively communicate with each other. The whole would be greater than the sum of the individual parts. Service to the Marine Corps would be paramount. We were in communication with Jeff back in Beaufort this whole time as well and he was completely on board.

Mike Wilkinson may see it differently, but a significant event occurred during our time at Monterey that sowed the seed that blossomed into our work with NVGs and Lasers today. During our class tour of air stations (not sure they do that anymore at ASO school), Mike met with the Marine pilot who led the failed Desert 1 hostage rescue mission. There he was able to see a set of NVGs and learned what the limitations were during the mission. Since we were visit-

ing a 3rd MAW air station, I remember Mike asking if he could come back and find out more about this stuff when he got back into his office after ASO school. I know Mike did, because he became our original subject matter expert for NVG and directed energy. More about that further on in the history.

Once back at our respective duty stations, we set about putting the USMC AMSO program into place. We knew it was one thing to talk about it, but quite another to actually do what we talked about. However it was amazing to see how everything fell into place for us, again testimony to the benefit of the work done by those who preceded us. Prior to my arrival at 2nd MAW, Jerry Patee and Sonny Carter had developed an aeromedical briefing program. This program, complete with slides and printed material covered 10 common aeromedical topics and was designed to be given in the squadron spaces. This was an annual requirement for all 2nd MAW squadrons. This program, continually modified and updated for then current physiological threats, was exported to 3rd MAW as part of a NATOPS school that 2nd MAW gave to 3rd MAW as a standardization effort directed by DCS for Aviation at HQMC. All four USMC AMSOs used this foundation to present relevant threat briefings to our aircrew. The concept of the physiological threat brief was born out of the aeromedical briefing program. A physiological threat was any environmental or physiological condition that could serve to limit an aircrew's ability to accomplish a mission. Our intent was to look at our operating environments and tailor physiological briefings to cover that specific area of operations. We structured them just like OpsIntel briefs. These were particularly beneficial prior to and during deployments. Each AMSO would tweak the briefs, then share their thoughts with everyone else. No pride in authorship, our intent was to serve the Marine aircrew the best we could.

As I mentioned, all four AMSOs wanted to get as close to the operational forces as we could. We felt the AMSO should be in the readyroom, not bring the

"We felt the AMSO should be in the readyroom, not bring the aircrew into classrooms."

aircrew into classrooms. That was the mission of the physiology training units. To do this effectively, we needed to be able to

deploy with our units. That was a goal all of us shared. For me, this was brought home a year earlier. During our FAILSAFE banquet that year, the guest speaker was a Major who had been in Beirut at the time of the airport bombing. At the end of his presentation, I asked him what he thought aerospace physiologists could do to provide better support to the Marines. His response was simple and stays with me as a personal motto to this very day. He said, "Spend some time with the bubbas at the front". In



1984, we had a chance to try this out. Back then, Marines trained their own helicopter aircrewmembers. All of them did not go through the aircrew candidate school in Pensacola. Since there were physiology units at Cherry Point, El Toro, and Kadena, it was possible to get them trained and out to the squadrons quickly. Anyway, the composite squadron floating in the Mediterranean at the time was in dire need of additional helicopter aircrewmembers and came to our office for a waiver of initial physiology and water survival training to cover the deployment. Our boss was not any too happy, was reluctant to grant the waiver, and was contemplating the cost of bringing the candidates back to the states to get trained or to send qualified aircrewmembers from a sister squadron at MCAS New River NC. I remember going into his office and volunteering to go out to the ship and provide at a minimum the required didactic physiology and survival training that would hold them over until they returned from the float. He was amazed that I would even suggest such a thing, that I would be willing to go out off Beirut to the ARG and provide the training. He at first said it was out of the question, then the more he thought about it, he realized that is exactly the type of thing an AMSO could and should provide. As it turned out, the squadron pulled back its waiver request, making any thought of my going out there to provide the training moot. But another seed was planted that would blossom the very next year.

While all this was going on in the field, significant events were also taking place in Washington. Building upon the support the Marine Corps had always given flight surgeons, the Marine Corps was POM-ing for additional aerospace physiologist AMSO billets. They POM-ed for enough billets to have an AMSO at every level of Marine aviation from the Marine Aircraft Group up to and including HQMC. Tom Cooper was our program manager at BUMED at the time and was the key architect along with Tom Stoddard (MSC Manpower Officer at HQMC at the time) in getting these billets on line. With the increased emphasis on Marine aviation safety led by the tireless efforts of LTGen Keith Smith, the Marines put their money into our program. Now, once those billets were POM-ed, it was up to us in the USMC AMSO program to determine what value added they could be to the Corps.

In 1985, I was still at 2nd MAW. Since I was the senior AMSO assigned to the Marines, and since Cherry Point was the closest geographically to Washington, I became the de facto Marine AMSO coordinator. All this really meant at the time was I was the one HQMC came to for staffing AMSO issues and developing a coordinated concept of operations for Marine Corps AMSOs. Again, this was not done in a vacuum. Even though the taskers came to 2nd MAW, I continually coordinated the inputs from my other

three counterparts. By this time, the Marines had a pretty good idea how to use an AMSO based on our work with the physiological threat briefs, our work with unique (at the time) equipment such as lasers and NVGs, and through the FAILSAFE Program. But these accomplishments only got us to the table. Now that the Marines had the billets coming on line, we had to show an even greater value added to Marine aviation. That was our task in 1985.

As I remember, we had two major tasks in front of us. First, we had to come up with a plan of how to bring the billets on line. Knowing the POM process, the billets were not coming on line all at once. They would be phased in over the course of the next six years. The first billets would come on line in 1987. We were told the billets would come on line in groups of four. We had to tell HQMC which billets needed to come on each year. I remember the original plan called for HQMC getting their AMSO billet first, followed by the FMFs (now called MARFORs), then 2nd MAW (remember my billet was a NH Cherry Point billet ADDU to 2nd MAW), and finally the Marine Aircraft Groups. Reasoning behind this was HQMC would get their billet first to be the coordinator for all that would follow. As it turned out, this is not how it came about. In fact, just the opposite approach actually occurred. It was decided that the first billet to come on line was the 2nd MAW billet, thus freeing the hospital billet to revert back to the ASTC for use as a preceptorship billet. Once the 2nd MAW billet was in place, the MAGs would be filled first, then HQMC, then the MARFORs. After much discussion, the decision was made based on taking care of the "bubbas at the front". To the Marine Corps, it made much more sense to get this valuable asset down to the level where it would do the most good and have the greatest immediate impact. To be very honest, this would also prove to be a litmus test to the Marine Corps manpower folks. By that I mean if the Marine Corps AMSOs at the MAGs did not show any value added immediately, then they could choose not to bring the additional billets on line and reprogram those assets to more deserving programs.

That leads me to the discussion of the second major task facing us in 1985. We had to show immediate benefits to the Marine Corps to justify this expenditure of resources. We had to put into practice what we were only talking about, and expand those services we already were providing. As aerospace physiologists, we were always seeking ways to get closer to the aircrew, i.e. meet them where they work vice having them come to us. Remember the seeds that were sown in 1984 with the offer to deploy to the ARG to provide didactic physiology training to helicopter enlisted aircrew. Having AMSOs at the MAG level gave us the numbers we would need to be able to make actual deployments with squadrons



and still have the basic AMSO coverage in garrison, either from the MAW AMSO or other MAG AMSOs. LTGen Smith, DCS for Aviation at the time, liked the idea of having his Flight Surgeons deploy with his squadrons and was intrigued by the possibility of having an AMSO at the front as well. Word came down to me at 2nd MAW to put together a proof of concept for an AMSO shipboard deployment. We developed a list of things an AMSO could provide a deployed squadron, as well as those things we could provide the other elements of a Marine Air Ground Task Force. Our proposal was accepted, and on 3 July 1985 I was privileged to leave Morehead City NC embarked on the old USS IWO JIMA assigned to the 22nd Marine Amphibious Unit (now MEU) as the deployed AMSO. The after action report from that deployment was sent throughout the Marine Corps and was enthusiastically received and became a template upon which all other AMSOs continued to build upon. From what I can remember, after that float it was full speed ahead in getting the additional billets on line. This was followed up by an additional float in 1988 with HMLA-167 specifically to address CBR and laser protection as well as the physiological threats of operating in the Persian Gulf.

Getting back to Mike Wilkinson at 3rd MAW. Remember his keen interest in NVGs and lasers. While all this was going on in the east, Mike was nurturing his deep desire to expand our horizons in this fascinating new subject matter area. With the help of his boss at 3rd MAW, he was instrumental in the establishment of the very first NVG lab. This work, and the value it added to Marine aviation safety, led to the establishment of the AMSO billet at Marine Air Weapons and Tactics Squadron -1 billet at MCAS Yuma AZ in 1986. Mike Wilkinson became the first MAWTS-1 AMSO with its establishment. This billet was unique in that it could focus entirely on these new areas, allowing Mike to become the subject matter expert for NVGs and directed energy for our program.

In 1987, the POM-ed billets began to come on line as programmed. I remember Tom Cooper asking me to "PCS to my own billet", i.e. move in place, leaving my hospital billet and moving into the newly created purely 2nd MAW billet for an additional tour. I had been scheduled to move to HQMC under the original plan since I had been the de facto coordinator to bring this all on board. When the decision was made to bring the MAGs on first, I was kept at 2nd MAW to continue in that role. That year, the MAG-31 billet at MCAS Beaufort SC came on line. The vacated NH Beaufort billet was then moved to ASTC El Toro to become the preceptor billet there. In 1987 and

1988, billets came on line for MAG-14 and MAG-32 at MCAS Cherry Point NC as well as MAG-26 and MAG-29 at MCAS New River NC. If my memory serves me right, Fred Patterson was the first AMSO at MAG-14, Barbara Boyd at MAG-32, Terry Rickey at MAG-26, and Donnie Plombon at MAG-29.

The Marine Corps then brought several billets on line in 1989, including the HQMC billet. I was lucky enough to move to that billet in 1989 to become the first CMC AMSO and officially be the AMSO program coordinator. During this time period, the following AMSO billets came on line. I hope I have the names right for the plankowners. They were Chris Schuyler at MAG-24 at MCAS Kaneohe Bay HI, Bob Hertan at MAG-39 at MCAS Camp Pendleton CA, Mark Baysinger at MAG-16 at MCAS Tustin CA, Keith Syring at MAG-11 at MCAS El Toro CA, Tom Wheaton at MAG-12 at MCAS Iwakuni Japan, and Lynn Wheeler at MAG-36 at MCAS Futenma Okinawa Japan.

With the success of the MAG AMSOs, coupled with the keen interest in special areas like NVGs and lasers, the Marine Corps did a little course correction on their billet establishment plan. Rather than bring billets on at both MARFORs, the decision was made to take one of those billets and stand up a billet at HMX-1 in 1991. Mike Wilkinson, fresh from his FTOS doctorate training at Indiana University, became the first AMSO at the MCAF Quantico squadron. He built upon his experience at MAWTS-1 and brought this expertise into the world of operational test and evaluation. At this same time, the final AMSO billets to come on line were 4th MAW in New Orleans LA, MAG-13 at MCAS Yuma AZ and MARFORLANT, first in Norfolk VA, then MCB Camp Lejeune NC, and now back to Norfolk. The first AMSOs in those billets were Ryan Eichner at 4th MAW, Jeff Andrews at MAG-13 and Tom Wheaton at MARFORLANT.

A very significant event occurred following the establishment of these officer billets, the establishment of the Aeromedical Safety Enlisted, or AMSE program. This built upon the successes of the parent AMSO program and tapped into the vast wealth of experience and knowledge of our HM8409/8406 community. The Marine Corps manpower folks, seeing how much value was added by the AMSO program, found unfilled enlisted endstrength and realigned them with the AMSO billets to form a solid aeromedical team. Just as the AMSO program provided the officer community with another avenue of service, so did the AMSE provide the enlisted force with a chance to branch out into a purely operational setting. This was a perfect example of success breeding additional successes. Hopefully the AMSEs will capture their thoughts on what that program

"The Gulf War solidified the concept of the Marine Corps AMSO."



means to them and the aerospace physiology community as a whole.

In this short history, I have not to this point mentioned our role during Desert Shield and Desert Storm. That history has been captured elsewhere by those who actually served in theater. From my perspective as the HQMC AMSO at the time, we had over 70 percent of our Marine Corps AMSOs deployed for varying durations, providing all kinds of services from CBR protection introduction and training, FAILSAFE work, aviation survival training, as well as physiological threat briefings. The Gulf War solidified the concept of the Marine Corps AMSO program as one of service to the Corps where they live. That basic tenet continues on even to this day, and the rest as they say, is history.

Well, that's the way I saw it and as I and our many counterparts lived it. As I said at the beginning, I encourage all those involved to provide amplification and their perspective on the events depicted herein.



ASTC Whidbey Island Intern Cheryl Griswold



LT Cheryl "Clark" Griswold is currently the intern at ASTC Whidbey Island. Born in Manchester, Connecticut and raised in Stafford Springs, Connecticut, LT Griswold attended Cedar Crest College in Allentown, Pennsylvania where she graduated in 1995 with a Bachelor of Science degree in Biology. LT Griswold obtained her Master's degree from the University of Florida's College of Health and Human Performance in 1997.

Prior to joining the military in 2006, LT Griswold worked as an exercise physiologist at the University of Florida conducting graded exercise tests for a large scale NIH funded research project and later as an exercise physiologist prescribing exercise programs for gastric bypass patients at a surgical center in Tampa, Florida.

In August 2006, she was commissioned as a Lieutenant Junior Grade in the United States Navy as a Medical Service Corps officer. LTJG Griswold attended Officer Indoctrination School from August to September 2006 in Newport, Rhode Island. After completion of OIS she reported to the Naval Aerospace Medical Institute for training as an Aerospace Physiologist and graduated 1 June 2007. LTJG Griswold was designated as Aerospace Physiologist number 291 and received orders to Aviation Survival Training Center Whidbey Island on NAS Whidbey Island in Oak Harbor, Washington. LTJG Griswold was promoted to Lieutenant on 1 July 2008.

LT Griswold's parents currently reside in Stafford Springs, CT. LT Griswold has one older brother, MAJ Mike Griswold, US Army, who is currently the Chief of Operations, 1st Battlefield Coordination Detachment, Combined Air and Space Operations Center located at Davis-Monthan AFB in Tuscon, Arizona.



ASTC Cherry Point Intern Dustin Huber

I was commissioned as a 2nd Lieutenant in the U.S. Army in 1996 through the ROTC program of Duquesne University. Immediately after that I took an educational delay and began working on my doctorate at the University of Cincinnati College of Medicine. I graduated from UC and became an Active Duty Captain on September 23, 2001. After Officer Basic Course, I spent an extended tour at the U.S. Army Dental and Trauma Research Detachment, co-located at NTS Great Lakes with Navy and Air Force research units.

I spent my time in the Army as a research scientist in the combat casualty care field, primarily with two products: a new hemostatic agent based on DARPA-funded freeze-dried platelet technology and a spit-based stress sensor. While in the Army I was awarded the Expert Field Medical Badge and the Basic Parachutist Badge.

I was recruited into the Navy at a conference by CAPT Dave Street (AEP), through some mutual colleagues. It was time to think about my next tour and as I began looking at the information about the aerospace physiology program (including some previous editions of the SUSNAP journal I found online) and talking with other aerospace physiologist I was hooked. The inter-service transfer process was long and tedious, but I know I made the right decision.

ASTC Miramar Intern Marcus A. Gobrecht



Lieutenant Marcus A. Gobrecht hails from Hanover, PA, the snack capital of the world. He graduated from the U.S. Naval Academy in 2000 with a Bachelor of Science Degree in Mechanical Engineering. LT Gobrecht attended flight school after graduation and was winged as a Naval Flight Officer in 2001. He was selected to fly the P-3C Orion out of flight school and joined Patrol Squadron Sixteen in Jacksonville, Florida. In VP-16, LT Gobrecht deployed to EUCOM, SOUTHCOM, and CENTCOM. After his tour in VP-16, LT Gobrecht served overseas at the P-3 Tactical Support Center in Okinawa, Japan, Patrol and Reconnaissance Force Seventh Fleet Detachment Okinawa. While living in Japan, LT Gobrecht was selected for lateral transfer to the Medical Service Corps as a Naval Aerospace Physiologist. He returned to the United States in 2007 to attend the Student Naval Aerospace/Operational Physiologist Course and was winged in March, 2008. He also graduated from the University of Maryland in 2008 with a Master of Life Sciences Degree with a concentration in Biology. LT Gobrecht is currently serving as an intern at the Aviation Survival Training Center in Miramar, CA.

ASTC Norfolk Intern LT John Cooke

Lieutenant John Cooke graduated from USNA in 1997. He accumulated over 2,500 flight hours while stationed at VRC-40 and NAS Oceana Air Detachment Norfolk. After receiving his Aerospace Physiologist wings 01FEB08 LT Cooke reported to ASTC Norfolk. His free time is spent with his family (wife of 11 years Nikki, Ryan-9, Rachel-6 and Nathan-2).

New SNAP LTJG Kevin Brighton

LTJG Brighton, born and raised in Manhattan, KS, attended Kansas State University where he received his Bachelors Degree and Masters Degree. In between those degrees he briefly attended Veterinary Medicine School, also at Kansas State. Upon graduation he worked as an Intern Athletic Trainer at the University of Charleston for 10 months, and then transitioned to Samford University as an Assistant Athletic Trainer where he worked for 1.5 years. LTJG Brighton enlisted in the Navy as a Hospital Corpsman and attended boot camp starting in February 2006. From boot camp, he attended Naval Hospital Corps School, followed by Aerospace Medical Technician School (AVT) and then Aerospace Physiology Technician School (APT). His first duty station was NSTI Pensacola Physiology Unit where he worked for 1.5 years prior to his commission. He was commissioned on 15 Aug 08.



Congratulations to the following Lieutenants for their selection to LCDRs:

LT Dustin Huber (ASTC Cherry Point Intern)

Aerospace Physiologist #287 expected promotion date of 1 Oct 08

LT Chris Cooper (VAQWINGPAC AMSO)

Aerospace Physiologist #257 – expected promotion date of 1 Apr 09

LT Sean McCarthy (MAG 12 AMSO)

Aerospace Physiologist #258 - expected promotion date of 1 Apr 09

LT Tom Murphy (MAG 14 AMSO)

Aerospace Physiologist #282 - expected promotion date of 1 Jul 09

We also have four new Aerospace Physiologists undergoing training or soon to undergo training:

LT Grey Pickerill (graduates 30 Jan 09)

LTJG John Mahoney (graduates 30 Jan 09)

LTJG Kevin Brighton (starts 7 Nov 08 graduates 29 May 09)

ND1 Phillip Dobbs (starts 7 Nov 08 graduates 29 May 09)

Congratulations to those who have been screened for XO:

CAPT Jim Norton

CDR Dave Service

CDR Rich Jehue





SUSNAP Leadership at AsMA conference luncheon LT Welsh, LCDR(s) Murphy, CAPT Musashe, Mrs. Musashe, CDR Hebert, and LCDR Yniquez



ASTC PAX River serves the community during a school tour



LT Jabs, LT Hayes, LCDR Patterson, and LCDR Peterson, HMC Rivera, HM1 Whichman, and HM2 Christy supporting the fleet by pouring custom ear molds



Former President of the Aerospace Physiology Society, CAPT(s) Wheeler passes gavel to new President Col White



Even LT Clifford the Aerospace Physiologist of the year still has to pull duty at AsMA conference



Looks like LT Schwerdtfeger has found a friend while learning how to make custom ear molds



In Memory of PRC(ret) Malcolm Bridgeforth

May 6, 1964 - July 29, 2008



Malcolm E. Bridgeforth VIRGINIA BEACH passed away on July 29, 2008. Malcolm Everett Bridgeforth, son of Ethel Peterson Bridgeforth and the late Clarence Byrd Bridgeforth, was born May 6, 1964, in Mecklenburg County, Virginia. He was educated in the Mecklenburg County Schools and graduated from Central High School in 1981. Malcolm joined the U.S. Navy Feb. 14, 1984, and served for 21 years before retiring as a Chief Petty Officer. He was most recently employed with AIRLANT as an aviator life support systems specialist. Malcolm joined the Rosebud Baptist Church in Dundas, Va., at an early age, and later joined Second Calvary Baptist Church, Norfolk. He leaves to cherish his memory, Shinese, his wife of nine loving years; son, Malcolm Jamar; daughter, Mariah Janay; his mother, Ethel; brother, Alvin; sisters, Marchelle (Darnell) Jackson and Carla Tisdale; six uncles, six aunts, in-laws, Ernest and Hattie Macklin; and a host of nieces, nephews, cousins and friends.

Enlisted 1984

84 PR "A" school

84-87 VF-41

87-91 AIMD Norfolk

91-93 AIMD Oceana

93-95 USS America

95-98 AIMD Oceana

98-02 CVN-69 IKE

02-02 NAS Oceana Det Norfolk

03-05 COMNAVAIRLANT



AVIATION LIFE SUPPORT TECHNICIAN CREED

I am a Naval Aviation Life Support Technician.

The Aircrew Systems produced by my Country men are the best in the world.

The Life Support Systems in my charge increase combat capabilities and keep my Navy and Marine Corps aviators and aircrew men alive.

It is my solemn duty to give my shipmates the best equipment with which to fly to victory.

The equipment I prepare must be perfect for I am the aviator's last best chance to survive and fight again.



Society of United States Naval Aerospace Physiologists

Directions for Authors

1. Submit articles as Word documents only
2. 10 font Times New Roman
3. Single spaced justified text
4. List your name, rank, and current billet. Your picture is encouraged but optional.
5. If using references use the following style:

Gore C.J., Hahn A.G., Scroop G.C., et al. (1996). Increased arterial desaturation in trained cyclists during maximal exercise at 580 m altitude. *Journal of Applied Physiology*, 80, 2204-2210.
6. When submitting photo or image, make sure the pictures are in the order you wish them to be presented and list them with a figure number (i.e. Figure 1). ***No PDF images please.***
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