President’s Column

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President, Society of United States Air Force Flight Surgeons

An Air Force Tradition: Mustache March

It’s March—the one month out of the year where spouses and significant others of fighter pilots dread and arduously count down the days to April 1st. Considering all the other occupational impositions inflicted by the Air Force (TDYs, deployments, exercises, and inspections), I find it amusing that 31 days of follicular hyperplasia is so controversial.

Throughout history, the mustache has been fashioned by military men. Typically, young men and junior ranks wore smaller, less elaborate mustaches. As they advanced in rank, their mustache became thicker and bushier, until ultimately they were allowed to wear a full beard.

The Air Force “Mustache March” is rooted back to the 1960s Vietnam era by Colonel Robin Olds, a “triple ace” fighter pilot with 16 air-to-air kills in WWII and Vietnam, known for his extravagantly waxed handle bar mustache (Figure 1), grown in flagrant defiance of military regulations (Air Force Instruction 36-2903, Dress and Personal Appearance of Air Force Personnel, Section 3.1.2.2; Figure 2). While commanding the Wolf Pack’s 8th Tactical Fighter Wing at Ubon Royal Thai Air Force Base in Thailand, Olds started his “bullet-proof mustache” in January 1967 following the unit’s successes during Operation Bolo. Superstitions proclaimed the presence of a mustache bestowed the wearer with an impenetrable shield around him and his aircraft. Embraced by the Wolf Pack, “everybody grew a mustache.”

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But to Col Olds, the “bullet-proof” mustache had additional meaning. As historians have stated, the Vietnam War was micromanaged by politicians in Washington. “It became the middle finger I couldn’t raise in PR photographs. The mustache became my silent last word in the verbal battles I was losing with higher headquarters on rules, targets, and fighting the war,” said Olds.

In March 1967, Col Olds’ defiance was put to an end. He reported to the Pentagon for an interview with the Air Force Chief of Staff, General John P. McConnell, who was not a fan of Olds’ bullet-proof mustache. General McConnell walked up to Olds, stuck a finger under his nose, and ordered, “Take it off.” To which Col Olds replied, “Yes, sir.”

Col Olds was not upset with the order. He said, “To tell the truth, I wasn’t all that fond of the damned thing by then, but it had become a symbol for the men of the 8th Wing. I knew McConnell understood. During his visits to Ubon over the past year he had never referred to my breach of military standards, just seemed rather amused at the variety of ‘staches sported by many of the troops. [It] was the most direct order I had received in twenty-four years of service.”

Hence the birth of Mustache March, an annual tradition where Air Force pilots, aircrew, and other Airmen pay tribute to Colonel Olds with a “good-natured” protest against Air Force facial hair regulations. ♦

Looking past the mustache, what else can we learn from Col Olds? Col Olds was bold, aggressive, and had little to zero regard for micromanagement. His leadership style kept him out of the office; rather he “led from the cockpit,” never asking those under his command to do anything he wasn’t willing to do first, or hadn’t already done himself.

In this issue, our authors focus on several changes relevant to USAF flight surgeons. Some of the changes are applicable to each and every flight surgeon, like consolidated special pays. Some of the changes are more applicable to those sharpening the tips of our spears. Even the front line of flight medicine is changing, as demonstrated by our authors’ takes on ground operations in the Horn of Africa, aeromedical emergencies and international partnerships in England, and the care of our warfighters who maintain security around the world without leaving American shores. We will learn about Medical Corps efforts to engage our captains and majors in the workings of our AFMS. We will look at an emerging medical specialty poised to change how we practice. We will also look at a NASA experiment designed to facilitate perhaps the greatest change of our generation: establishing ourselves as an interplanetary species.

As you read through these articles, ask yourself what changes you see in the aeromedical world. What contributions can you make? How will you shape the future of aerospace medicine? The more that our community ponders these questions, the more we will drive our own destiny.
### FlightLines: Vision and Mission

Our vision: FlightLines is the written forum for the Society of United States Air Force Flight Surgeons. We help facilitate top-to-bottom, bottom-to-top, and horizontal dialogue within the Flight Surgeon community.

Our mission: We provide a vehicle to pass the vector and tools to Flight Surgeons so they can do their jobs effectively and efficiently as current and future leaders within Team Aerospace.

### Call for Patch Design

Attention artists! SOUSAFFS is looking for a patch and coin design. If you have an idea that captures the spirit of SOUSAFFS, please send your draft design or idea to VADER (christopher.mclaughlin.11@us.af.mil) and Candyman (michael.brough.1@us.af.mil). Drafts will be evaluated by the SOUSAFFS Board of Governors. We are looking forward to your submissions.

### Notice!

#### Call for Content

What makes FlightLines great is that it connects us with the rapid changes and variety of expertise that exist in USAF flight medicine. Send us news that affects us all, teach us about your area of expertise, and share with us your “There I was…” stories from the field. (Include your pictures!)

Submission guidelines:
- 500-3000 words
- Pictures 300 dpi or better in .tif or .jpg

Send your articles, news, suggestions, or comments to:
- christopher.mclaughlin.11@us.af.mil
- eric.chumbley.1@us.af.mil
- michael.brough.1@us.af.mil

Moving, need your FlightLines sent to another email address? For FlightLines distribution/email update, please contact the Executive Editor, christopher.mclaughlin.11@us.af.mil.
Significant Changes in Medical Special Pays

Tammy Baker, Maj, USAF, BSC
Program Manager, Medical Special Pays
Medical Recruiting and Force Sustainment Division Office of the Surgeon General

Medical Special Pays are undergoing a significant shift in policy as the Air Force converts from the Legacy pay program to the Consolidated Special Pay (CSP) program. CSP is a more efficient, effective pay system that will reduce the amount of time members spend completing, routing, and submitting contracts.

The Legacy pay system comprised 32 pay types with Medical Corps (MC) members receiving as many as five different pays at the same time. There are only four pay types under CSP, and members can only receive three of them at any one time. This streamlines the pay system and reduces the potential for submission and processing errors. Another major change is that while some Legacy pays were considered entitlements, all CSP pays are discretionary. This means that all CSP pay types require a contract, and the special pay office is not able to provide any retroactive pays.

Under the Legacy program, many MC members submitted at least one, but often two, special pay contracts every year, Additional Special Pay and Incentive Special Pay. In one memorable case, not submitting these contracts over the course of 2.5 years cost a member more than $120,000. With CSP in place, Additional Special Pay and Incentive Special Pay, as well as Variable Special Pay, are replaced with Incentive Pay (IP). IP is a monthly pay that will incur a 1-year, one-time ADSC. At the end of that year, the member does not need to submit a new contract and the ADSC does not extend or renew. The monthly IP will continue automatically until a different contract is submitted. The result is a pay you can start and forget for years, resulting in fewer opportunities for errors, less administrative burden, and an end to having to line up single-year contract dates with desired separation dates.

Individual conversion details vary widely, including eligibility, pay rates, and conversion dates. Generally, most MC members will benefit from converting to CSP on the anniversary or expiration of their first contract in 2017. Most residency-trained members will make about the same amount annually under CSP as they did under Legacy if they are board certified (see chart). The majority of members who are not board certified will make less, and nonresidency-trained providers who have more than 6 years creditable service will also see a decrease in annual pay.

This is just a brief overview and members should carefully read the FY17 pay plan for a full understanding of eligibility changes and to see how their pay will be affected by the conversion. Conversion details and examples can be found in the FY17 pay plan and webinar slides located on the myPers MC special pay page. Additionally, a conversion calculator is located on the myPers site (https://mypers.af.mil/app/answers/detail/a_id/29357) to assist members in determining their ideal conversion date. Questions can be submitted through myPers and will be routed to your special pay technician. Remember, you are responsible for your own special pay, and the better informed you are, the more accurate your pay will be!

SoUSAFFS Board of Governors Nominations

It’s time to begin the process of electing next year’s SoUSAFFS leaders as we approach our annual society meeting in May. According to society by-laws, we are seeking nominations to identify successors for President-elect, Secretary, and three Members-at-Large for the Board of Governors. These individuals will begin their term following the annual society meeting during AsMA in May 2017.

The nominations process will proceed as follows:

1. Members in good standing may nominate individuals for any of the above positions via email to Lt Col Raymond Clydesdale (mailto:raymond.clydesdale@us.af.mil).
2. The nomination window opens now and continues through 31 Mar 2017. Please include the name of individual and position to be considered for in the body of the email.
3. Due to geographic and communications limitations, the Nominations Committee will consider a nomination “seconded” if the same individual has been nominated by at least one other society member.
4. Once the nominations window closes on 31 Mar 2017, the Nominations Committee will build the voting slate, which will include no more than the top 5 candidates for each position.
Getting the Word Out – RAM News

Rick “Balls” Allnutt, MD
Deputy Program Director, USAFSAM Residency in Aerospace Medicine

The RAM program today is not the RAM of yesteryear. Each class and each graduate coming through training leave behind a number of suggestions and ideas that bloom into the RAM experience for the next year’s RAM curriculum.

My purpose in writing this article is to make sure that everyone is on the same sheet of paper: to make sure that when senior flight surgeons are mentoring their best and brightest younger flight surgeons about their career options, they know what IS going on in the RAM, not what the program USED TO be.

What will these flight surgeons, whom you give an appropriate push, find in the residency now? They will find new clinical emphasis, improved academics, great flight opportunities, and very individualized scheduling.

Time was, when coming to the RAM meant risking your medical privileges and competency. That old worry is now a problem of the past. Residents who have prior residency training and are credentialed/privileged providers in family practice, internal medicine, and emergency medicine have been able to see patients and maintain their skills as privileged staff while also, in parallel, serving in residency status in flight medicine. GMO physicians have been able to improve their clinical abilities with exposure to flight medicine and occupational medicine and with elective rotations with clinical subspecialists – all over the country. Wondering whether a graduated RAM has the clinical horsepower to hold his or her own with clinical members of the MTF is an antiquated notion – instead the RAM is able to do full clinical care and also bring epidemiology tools to the table that very few other physicians have mastered.

Residency academics include multi-platform approaches to the essentials of aerospace medicine and nearly all of the flight medicine courses that the USAF School of Aerospace Medicine has to offer. Clinical lectures still occur, but they are accompanied by clinical and operational scenarios designed to push the envelope for each and every class member. One example is the full class developing in detail the medical training and onboard kits that would be needed for a 3-year mission to Mars – and then briefing this to a faculty member who represents himself or herself as a commercial space entrepreneur.

The RAM starts out the year with a week of FAA-style private pilot ground school, followed by 4 weeks of individualized flight training – resulting the last 2 years in a 90% solo rate. That’s a lot of RAMs who have taken off and landed with NO ONE else in the airplane. Great bragging rights are earned, but they are accompanied by an incredibly improved understanding of the flight environment. The second year of the practicum includes more flying – instrument flight ground school, a taste (12 hours) of instrument and multi-engine flight instruction, and the potential for the USAF MOFFT program at Randolph.

The most recent changes in the curriculum involve very personalized modification of the curriculum to better fit each individual resident. The core material in the first year fulfills ALL the required courses and material necessary to successfully challenge the Aerospace Medicine Boards. The second year is much more tailored toward the needs of each resident.

GMOs right out of the flight medicine trenches will undergo the standard first year training and then branch out into aspects of clinical training they might not have had the opportunity to accomplish in their prior rotating internship. Their second year also includes room for a grand tour of aerospace medicine across the Department of Defense and NATO – with trips planned to the Navy and Army residencies, NASA, the UK, and Germany.

Flight surgeons boarded in other specialties, and who have considerable flight medicine experience, may complete the practicum with 1 year of post-MPH training. The considerable advantage of this for specialists with multi-year special pay contracts is the opportunity to complete the full RAM residency and payback without having to lose a year of multi-year contract time.

Others who come to the RAM with prior boards, but little time in the base level flight medicine environment, can emphasize flight medicine rotations in a second practicum year, gaining mentorship for SGP and AMDS roles from both seasoned and recently graduated RAMs at various bases.

So let us reassure you: The RAM is alive and well, preparing flight surgeons for leadership in today’s Air Force, while staying true to the twin tasks of aerospace medicine – understanding unique stresses of the flight and operational environment and applying epidemiology to develop healthier base communities.

By the way, I’d suggest that SGP and AMDS commanders set aside an appointment this week with every one of their “best and brightest.” How many of your flight surgeons can you encourage to enter training to become an Aerospace Medicine Specialist? Within the period of 4 short years, the 1988 flight medicine office at Langley AFB sent me and four other flight surgeons to the residency. Can you chance losing that many flight surgeons to training? Of course! Think 90% about the future. Two of those flight surgeons ended up being the Surgeon General of the USAF.

The views expressed in this newsletter are those of the individual authors and do not necessarily reflect the official policy or position of the Air Force, the Department of Defense, or the U.S. Government.
Information on Informatics
Matthew Barnes, Maj, USAF, MC, FS
Defense Health Agency
Solutions Delivery Division, Customer Deployment Support Branch

There’s a new board certification riding into town! You’ll hear a lot about Clinical Informatics in the next couple of years. As the military implements MHS GENESIS and Trusted Care concepts (as AHLTA/Essentris are decommissioned), Clinical Informatics is going to be pushed toward the forefront. Clinical Informatics is a board certification that focuses on the crossroads of Healthcare, Health Information Technology (IT), and Business. As clinicians have long known about the impact of systems on Healthcare Delivery, you’ll be seeing more and more “Informaticists” throughout the DoD workforce. After all, human-computer interactions take up 70% of a clinician’s day!

So, what exactly does an Informaticist do? In short, they’re the ambassadors to the Health IT world. Informaticists represent clinicians to Health IT and, in turn, help clinicians understand what Health IT can do for them. Likewise, they often need to be able to manage and lead the teams that work these systems. Informaticists also have to know business, as they cross occasionally into the business realm by running contracts and budgets. Informaticists are already in the field, managing communications to the field on IT, managing the templates in IT, and managing systems trainers and the systems themselves. They are practicing clinicians: physicians, dentists, lab officers, nurses, and providers. Informaticists are more than just data crunchers and coders – while they often have to be able to work with data – it’s just a tool they use, not the only things they know. The impact of informatics is massive – for example, a single change to an AHLTA TSWF form impacts 850,000 people each week.

There are several ways to get involved. The Air Force offers American Medical Informatics Association 10x10 courses each year; these courses help teach what informatics is all about. Likewise, there are other free courses, such as the OHSU Analytics Course and the VA Informatics Course. If you’re committed, the American Board of Preventive Medicine now offers a Fellowship Board Certification in Clinical Informatics, and the DoD offers a joint fellowship in the greater Seattle area. If you have any questions, feel free to reach the point of contact, Dr. Kevin Kaps, at kevin.j.kaps.mil@mail.mil.

The Captains and Majors Leadership Council

Dave Garcia, Capt, USAF, MC
Staff Family Physician, 412 MDOS/SGOP

The Captains and Majors Leadership Council (CMLC) serves as a platform to exchange ideas, to confront challenges, and to help make the Air Force Medical Service (AFMS) a great place to practice medicine. We also serve as a liaison between Air Force Medical Corps (AFMC) senior leadership and the physicians on the frontlines. We started our work in the summer of 2015, when a group of like-minded Captains and Majors began to talk regularly about ways to improve the AFMS. The CMLC received an official charter from the AFMC Development Team (AFMC DT) in the fall of 2016. To support our two-way communication, we send a representative to each meeting of the AFMC DT.

To accomplish our objectives, the council focuses its attention on five major functional areas: strategic communication, recruiting and retention, mentoring and education, supporting clinical care, and physician leadership/force development. Each of these focus areas aligns with the most recent strategic plan of the AFMC DT. This alignment ensures our focus is consistent with AFMC leadership. Each focus area is broken down into small groups of 8-10 members. This ensures group effectiveness and channels members’ passions.

In an effort to reach out across the entire Air Force Enterprise, we established a Facebook page, “AF Medical Corps CMLC Forum,” which generates ideas and raises concerns from group members. This group is closed and private and is only open to Captains and Majors of all specialties (flight medicine is particularly well represented) across the AFMC. It has already assisted senior AFMC leadership with answering questions related to MiCare and physician retention. The numerous, candid, anonymous answers to these questions provided valuable, unadulterated, otherwise unobtainable feedback regarding real world experiences. This has also proven very effective at disseminating important information from senior leadership to AFMC Captains and Majors. If desiring to join us, we encourage you to apply at https://www.facebook.com/groups/AFMCCMForum.

The CMLC is in its early developmental stages, and we are excited about its beginning successes. It has great potential to make significant impact on the future direction of the AFMC and ultimately the AFMS as a whole. Please contact any of the officers if interested in learning more about the Council.

Maj Aaron Brady, Chair, aaron.brady.2@us.af.mil
Maj Shay Moore, Vice Chair, carolyn.moore@us.af.mil
Capt Dave Garcia, Secretary, david.garcia.41@us.af.mil
Out of Africa

J.B. “Nasty” Nast, Col, USAF, MC, SFS

I look around the office and see my deputy, a former Army sniper, now an Army physician’s assistant; my lead medical planner, a mobilized Army reservist; my environmental health officer, a mobilized Navy reservist epidemiologist, and that is just half of my joint staff. And, yes, there is one other Air Force member besides myself, an active duty 4E (better know what that is!). MOS, NOBC, AFSC—that is just the beginning of the alphabet soup of a joint staff. None of them have a foreign accent, but we have those on the J staff as well, making this truly a Combined Joint Staff! And we are in Africa, the Horn of Africa to be more exact, making this Combined Joint Task Force-Horn of Africa (CJTF-HOA), Camp Lemonnier, Djibouti. I am still trying to figure out how I can be “welcomed aboard” or “on deck” a land-based installation, but I have a few more months to figure that one out.

The AOR consists of Djibouti, Somalia, Ethiopia, Eritrea, Kenya, Tanzania, Uganda, Rwanda, Burundi, The Seychelles, and Comoros. I have heard an endless litany regarding the huge distances involved in travel in Africa, but the one that made the biggest impression on me was learning that the coast of Somalia alone was the same distance as the entire eastern seaboard of the United States! Speaking of distances, it has been remarkable to go directly from my fairly service-focused job as SGP at Travis AFB to Force Surgeon for CJTF-HOA. For most of us, our day-to-day jobs involve a tactical focus on medical care for Air Force members. Sometimes, too often begrudgingly, we take care of sister service patients. Well, fact is, we fight as a team, and while I naturally might like to inflate the contribution of the USAF to this fight, the mission will only get accomplished when we all work together as seamlessly as possible. Throw in coalition partners, African nation partners, Department of State, United Nations, etc., and you have yourself a real experiment in coordination of human achievement.

The main mission of CJTF-HOA is to neutralize violent extremist organizations in the AOR. The CJTF-HOA Surgeon Cell helps protect, care for, and optimize the performance of the neutralizers. We can also help directly by forming favorable relationships with local organizations and groups. Day-to-day operations deal mostly with medical planning and engagements. At this level, medical support can sometimes be an afterthought, and it is the job of the Surgeon Cell to keep it from being that way! Our most effective tool is communication. I recall the very helpful risk communication training I received both during my MPH as well as during the RAM. Communicating risk and identifying ways to mitigate that risk are daily duties. Knowing who your audience is and what their motivations are is key. Constant staff meeting churn requires concise communications, both written and verbal. It is often better to meet with someone directly than send another email, even if that means a potentially long journey away from your comfortable location.

Building relationships through good communications can potentially avert information disasters. We have all probably been subject to an “information” emergency. This type of emergency bears little resemblance to a medical emergency; however, if handled the wrong way, it can still lead to significant mission degradation. For example, a number of soldiers present to the expeditionary medical facility at your location. Someone recognizes that some of them appear to all work in the same building (and these buildings are old) and all of the complaints are respiratory in nature. Some of these otherwise young and healthy people are sick enough to require quarters. Maybe this is something environmental? How many people presenting with similar symptoms do NOT work in the same building? What is your initial message to the command when they ask “Why is this building making my people sick?” I can tell you what one of your initial answers should NOT be: “Well, sir or ma’am, given it is in the same building it could be Legionella.” Communicating risk at this point does not have to include sharing a differential diagnosis. Your medical knowledge is a double-edged sword. I will tell you that this simple conjecture led to an email from the Combatant Command Surgeon’s office asking if we had located the source for the 30 cases of Legionella at our location. Seems like good news travels fast. It took a little bit longer to undo the misinformation and reassure everyone that we did not have to start condemning buildings.

Moral of this story is that it is okay to explain that medicine is not an exact science and we must be careful about how we communicate our decision-making processes for fear that the information will be poorly understood. In the places where we work, this misunderstanding could significantly affect mission accomplishment. Nobody had Legionella, and it was ruled out by lab testing. We owe our best medical opinion, but be careful how that is conveyed and leave room for plenty of questions.

To conclude this possibly less than concise communication, you never can be sure where you might end up. As a USAF flight surgeon, you must be the utility player. This job is not specific to a flight surgeon, but it is clear that knowledge regarding patient movement and transport makes the learning curve less steep. The more helpful I can be to my colleagues and co-workers, the more I can contribute to the mission. Learn as much as you can and take advantage of all of the opportunities to get plenty of operational knowledge and experience. You are not just a medical provider—you are a medical operator and, as such, should have a focus on the entire mission.
“Are you the flight surgeon on call, sir?” asked the AE tech.

“Yes,” I replied, with the cell phone clamped to my shoulder, as I gathered the planner and stethoscope off my desk in anticipation of heading home.

“Reach 17 is diverting to Lakenheath,” the staff sergeant informed me. AE diversions to the UK were not common, but several times a year the weather in Germany just didn’t cooperate for missions coming out of the Middle East. Unable to land on a fogged-in runway at Ramstein, the missions would sometimes be forced to divert to England. Usually, we just bedded the patients down for the night, then reloaded them to continue their journey the next day. By 2011, most of the patients coming out of CENTCOM were routine, not combat casualties. Usually the diversion boiled down to logistics. Usually.

“Are there any CCATT patients?” I asked, knowing that ambulatory patients could be easily cared for, while ICU patients were a significant challenge.

After a pause, the tech replied “One, sir. Just one.”

I settled back into my chair and put my bag down.

“Tell me what you know.”

Fifteen minutes, a few phone calls, and a sheaf of papers later, I had a rough outline of events. The CCATT patient was a young Army male, less than 72 hours out from an IED blast in Afghanistan that had cost him both of his legs and left him with a mild TBI. On the battlefield, his comrades had secured two tourniquets around his bloodied calves before a rotary wing transfer delivered him to Bagram Air Base. There, he had been received by one of my colleagues in the ED, where he was found to have a GCS of 13, with unremarkable labs and imaging. After a total of four units of blood products had been transfused, his bilateral below-the-knee amputations were completed in the OR. He’d been evacuated to Landstuhl, where he was extubated and prepared for transoceanic flight from Germany to the East Coast.

Bad weather had had nothing to do with the C-17’s diversion. Over a crackling connection, the on-board AE nurse told me that at some point over Western Europe, he had decompensated. The CCAT team’s efforts to secure his airway were complicated by vomitus, aspiration, and desaturation. So they had declared an emergency and diverted to our base, where they had landed—5 minutes ago!

Fortunately, the ED was just a 50-foot walk from flight med, and I got there a few minutes before our ambulance arrived. Ideally, I should have been on the rig to deplane the patient, but the notification system had been overcome by events.

I walked into the resuscitation bay of the ED where I locked eyes with Steven, a British contractor who covered many of the day shifts. He was a well-trained and experienced family physician, who took some pride in seeing dozens of ambulatory patients during each shift. But Lakenheath is not a trauma center, and he had no experience with battle injuries.

“Why don’t you take this one, Paul? I’ll call Cambridge and arrange for the ICU transfer,” he said after a brief greeting. He patted me on the back, smiled, and strode out of the resus bay and into the com office to begin placing calls.

I had about 1 minute to brief the ED team before the patient rolled through the doors, encased in monitors and equipment, and surrounded by an entourage of CCATT and AE personnel and my ambulance staff. The pulmonologist’s face was furrowed, his lips taut. After delivering a brief history, he cut to the chase. “He started desatting shortly after take-off, and when we tried to intubate him, it didn’t go well. We got a tube in on the third try but he aspirated and has been hypoxic,” he finished, as the patient was set down onto the gurney in front of me.

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All hell broke loose.

I rattled off a series of standard orders, asking for a respiratory tech to bag him manually, a new set of vitals, and a stat portable chest x-ray. I listened to the heart—tachy but otherwise normal—and winced as I heard diffuse coarse breath sounds in all lung fields. As monitors were connected, blood drawn, and the patient exposed, I glanced up. I wanted to see how the ED team was doing, but could barely make them out through the throng of medical and leadership staff. There were two surgeons, an anesthesiologist, a radiologist, and a menagerie of nurses and techs from all over the hospital. Of the dozen full colonels assigned to RAF Lakenheath, I counted five of them in the resuscitation bay.

As the patient was hypotensive, and a bedside CBC confirmed he was anemic, I ordered blood products, pushing on his belly, wondering if somehow an intra-abdominal injury had been missed. This last transfusion order tipped the gathering chaos to the breaking point. There were so many doctors and nurses shouting orders and findings that the resuscitation had ground to a halt.

“Okay, everybody listen up!” I called out, and the room fell silent. I ran through my list of priorities. I would look at the chest film and perform a bedside ultrasound while the blood was going in, and then I wanted the patient in the CT scanner. The differential diagnosis was so broad—hemorrhage, pneumothorax, fat embolism, brain swelling, pulmonary embolism, blast lung, to name a few—I wanted to scan him from the top of his head to the mid-thigh. As the radiologist left to prepare the scanner, I asked if anyone else had any input. Rather surprisingly, a CRNA called out “yeah, let’s do this in the OR!”

“This patient may require an operation, but at this point he needs resuscitation and diagnosis,” I countered, “and we will be doing that right here,” I said firmly, pointing my index finger at the ED floor.

Seventy-two hours later, things were much calmer, and I had a few moments to reflect on how it had all gone. Exactly what caused the patient’s sudden decompensation over the skies of Europe remained murky. But the workup in the ED had uncovered no hidden pathology and confirmed the CCAT team’s fears: the patient had aspirated during intubation. As the radiologist left to prepare the scanner, I asked if anyone else had any input. Rather surprisingly, a CRNA called out “yeah, let’s do this in the OR!”

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But he was the unit’s first blast trauma case, and it had been a very collegial experience rounding with the teams of doctors who had cared for him; I counted no less than seven consulted services. I took some pride in relating to his bewildered and frightened mother, at home in the Midwest, that her son had received world-class care from our British counterparts, renewing military medical ties that stretched back nearly 100 years to the first World War. When I told her he had improved enough to be extubated, she cried softly over the phone, and asked me to thank the English doctors for her.

The capstone of the entire episode was his evacuation. With a little help from the U.S. Embassy in London, the airport in Cambridge—normally closed on a Saturday—was opened to receive a C-130 Hercules. It lifted off through a beautiful English sunrise, carrying the soldier homeward, his journey delayed, but now renewed.

HELP SoUSAFFS GROW!

Flight Surgeons, have you joined SoUSAFFS yet? The Society of Air Force Flight Surgeons is a constituent organization of AsMA that more specifically supports the needs of AF Flight Docs, with a focus on education, mentoring, and networking. We are reaching out to our cadre of young physicians to make our organization one that is essential to be a part of. Not only will SoUSAFFS membership afford you invaluable networking opportunities, but it will also make you eligible for retreats/trips to other bases to experience other missions/airframes and bond with your fellow Flight Docs! There’s even better news…you no longer need to be an AsMA member to join SoUSAFFS*, and instead you pay only $20 annually. We want to grow our organization, and we can’t do that without bright ideas from excited young docs! Join us today at www.sousaffs.org.

For more information, please contact Capt Brooke Organ at brooke.organ.1@us.af.mil.

*If you are a non-AsMA member of SoUSAFFS, you are ineligible to vote in AsMA elections.
The Future of Cyber and Virtual Telewarrior Care – The OME

Paul “Mamba” Young, Col, USAF, MC, CFS
25 AF Command Surgeon

With the full emergence of our nation’s fifth core mission of intelligence, reconnaissance, and surveillance (ISR) in 2012, there has been a proven need for some type of medical support to combat the emerging stressors affecting Airmen exposed to 24/7/365 operations. High workload demand with continuous compartmentalized operations, high cognitive demand, shift work, and long duty hours have likely led to decrements to physical and mental wellness in participating personnel. These concerns and issues have now been displayed and validated through 5 years of various base or Wing Occupational Health Surveys performed by the 711th Human Performance Wing at Wright-Patterson AFB, Ohio. A very important flight surgeon “operational” field and routine term has now placed itself into our everyday vocabulary due to the current USAF mission and National Security Strategy—the Operational Medical Element (OME).

The OME consists of a mission-specific set of medics with various skills that employs focused and general primary and secondary prevention tactics to mitigate the occupational and operational stressors seen in Cyber and Virtual telewarfare activities of the 30,000 plus 25th Air Force personnel. Survey data, base, and local medical resource assessments have been used to shape the composition of each OME unit (or Airmen Resiliency Team described later) assigned to various remotely piloted aircraft (RPA), ISR, or Cyber Group/Wing to enhance resilience, prevent injury/illness, and facilitate access to relevant healthcare systems when needed. Embedded OME medics advise operational unit commanders on the health of unit members and relay policies with impact on human performance (such as shift work schedules). They also assess work station/cockpit ergonomics and other human factors to improve worker and mission performance.

Employment of the OME concept has shown improvements in key operator primary survey metrics concerning chronic fatigue, clinical distress, and exhaustion. The OME model has also drawn Line commander praise for helping to strengthen mission effectiveness. Future research studies/surveys are anticipated to further validate the OME concept across its multiple domains as well as to promote continued refinement of best practices and interventions. In all, current focused use of the OME will likely draw higher Line attention and demand applicable resource increases as our Cyber, ISR, and RPA missions continue to grow.

Since the spring of 2013, routine training regarding OME activities has been inserted into the Aerospace Medicine Primary Course (and other medical training platforms) to provide entry-level physicians or providers an awareness of the characteristics of OME Teams. This is particularly useful for those going to bases that have tenant ISR, RPA, and Cyber units. Further details of the OME Concept of Operations (CONOPS) can be found in the 15 April 2016 ACC CONOPS that provides a full background and rationale for embedded medical support. It defines terminology, describes organizational structure, delineates responsibilities and oversight, defines scope of OME activities, and describes OME capabilities including Mission Essential Tasks and Activities for Line Support (METALS) and some limited scope care actions within applicable operational units. The missions of the target operational units are Total Force Integration (TFI) endeavors; therefore, the medical support is an integrated effort by active duty, Air Force Reserve Component, and Air National Guard. A soon-to-be published 25th Air Force Surgeon Strategic Plan will also be generated to align current mission, vision, TFI environment, business, and strategic goals used to employ medical forces that support the various ISR mission set of the Numbered AF component.

The OME Team works with other entities to include the Chaplaincy to help form some base ISR Wing or Group Airman Resiliency Teams. Wing Safety, Public Affairs (for various information distribution media), Physiology Units, Wing Services, and of course the host Medical Treatment Facility are some of the other main components that work jointly for mission support along with the entire Preservation of the Forces and Family initiative program. OMEs serve as leaders within the Medical AF Medical Home tier as well as clinical practitioners based on current AF Specialty Codes and skills to provide in-garrison support that manages holistic care for deployed-in-place Airmen.

Because of limited access to units for the general medical service, OMEs do require TS-SCI clearances, while being challenged with some autonomous roles to maintain a well-balanced ISR mission support schedule that demand operational experience along with their clinical or technical specialties. In all, though, the job is mentioned as AWESOME by virtually all assigned participants to date!

For more information regarding OME job opportunities or awareness, flight surgeons should contact their base or MAJCOM SGP or the 25th Air Force Command Surgeon, Col Paul Young. Email and phone lines are always open for those interested or desiring to broaden their knowledge base for one of our main medical support missions for years to come. ☝️

The views expressed in this newsletter are those of the individual authors and do not necessarily reflect the official policy or position of the Air Force, the Department of Defense, or the U.S. Government.
You’re in My “Space”

Todd “Quattro” Huhn, Lt Col, USAF, MC, SFS
DoD Aerospace Medicine Liaison, Johnson Space Center

Four complete strangers are isolated together for 30 days in a “tiny house,” while their every word and action are recorded on camera. Give them different tasks to complete, eliminate contact with the outside world, and it sounds like the plot for the latest reality show, doesn’t it?

Welcome to NASA’s Human Exploration Research Analog (HERA), a program that simulates the stresses of long-duration deep space flight with test subjects living and working in a 673-ft² spacecraft-simulation habitat. From the time that the hatch closes, the four subjects are kept in isolation, with mission control as their only voice to the outside world. As they simulate travel farther and farther from earth, even that lifeline becomes tenuous, as communication delays of up to 5 minutes each way make even a simple conversation impossible. Their days are tightly scheduled with system maintenance, ensuring the simulated CO₂ scrubbers and O₂ generators are working nominally, as well as both conducting, and being the subject of, dozens of science experiments. Even the software they use is part of the study; participants provide beta testing for new systems designed to manage scheduling and on iPad software designed to track nutritional intake and provide feedback on newly developed food items destined for orbit. From the food to the software to a host of biomarkers and biosensors, the data collected from HERA are used to sharpen our science on earth and beyond.

As the team nears their goal of rendezvous with an asteroid on the other side of Mars, they train to conduct soil sampling with virtual reality goggles, practice directing the Canadarm, and perfect flying their spacecraft to land the EVA team. All the while, hosts of researchers watch them on CCTV, testing their reactions, memory, and problem solving, using many of the same tools that are used by the astronauts aboard the ISS.

As a means to better acquaint the crew surgeons with the unique stressors faced by our astronauts, the flight surgeons at Johnson Space Center are encouraged to participate as subjects in HERA to gain first-hand experience on life in space. As the DoD Aerospace Medicine Liaison officer to NASA, I work in the flight surgeon office and recently had the opportunity to join HERA mission C3M4 for such a 30-day voyage.

Having pulled two tours at Minot, I’m no stranger to isolation, nor to long-duration flights (although 30 days in-flight might be a bit long, even for a B-52…). Still, I felt a bit anxious when we took our positions and closed the hatch. I was a late addition to the crew, and while they had known each other via email for several months, I had only met them during our 2 weeks of pre-mission training. We quickly found our pace, and I found myself encouraged to participate as subjects in HERA to gain first-hand experience on life in space. As the DoD Aerospace Medicine Liaison officer to NASA, I work in the flight surgeon office and recently had the opportunity to join HERA mission C3M4 for such a 30-day voyage.

But for me, the most memorable part of the voyage was when I was able to apply my medical training, mixed with a bit of ingenuity. Although we were closely monitored with medical coverage on-call 24/7, we found ourselves facing a dilemma. Three weeks into the voyage, one of the crew became ill and needed an ENT examination to vector their treatment. However, due to experiment protocols, if we broke containment to send them to the clinic, they would be unable to reenter the study. Further, if we lost a crew member, we might be required to scrap the entire mission. While the research team was ready to make that sacrifice to protect the crew member’s health, we were able to offer an alternative. Previous HERA missions had physicians serve as crewmembers before, but we had a unique opportunity since I was not only a flight surgeon on crew, but also credentialed to practice at JSC. Our only limitation was equipment, as the on-board medical kit didn’t include exam equipment. However, I was able to raid our life sciences experiment kit and build a working otoscope using a magnifying glass, flashlight, thermometer probe cover, and headband. Based on the exam findings, we were able to determine proper care and proceed with treatment, allowing us to maintain the full crew and complete the mission. (I’ve since been working with the medical team to evaluate potential changes to the medical kit as we prepare for 45-day missions. Oh, and I hear my fellow crew member’s treatment has been successful!)

I’ve found that my HERA experience has been invaluable as I work with USAF Col Jack Fischer as he prepares for his first trip to the ISS. The demands of scheduling, food fatigue, and limited communication aren’t just abstract concepts any more. There has been a definite change in interactions with some of the astronaut corps as well, as they’ve expressed more comfort in me as a flight surgeon, knowing that I have this experience when I work with them.

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As we as a country prepare to expand our reach in space, I take no small measure of pride knowing that I was part of the team that helped develop the technology and countermeasures that our astronauts will be using on their voyage. And I know further, that I could never have succeeded in my mission if I hadn’t had my training and experience as a USAF flight surgeon to draw upon. That, too, fills me with pride. Here’s to the Herd! 👍

Quattro
RAM X, #913

After rendezvous with the asteroid, Geographos, the crew must conduct analysis of samples while maintaining precautions against contaminating the living environment and asteroid particles.

Exercise is an important countermeasure for microgravity, but also for stress relief and health. HERA has a set of weights and a cycle with daily scheduled workouts.

Quattro posing in front of the oxygen generation system. Over the left shoulder, a “window” lets the crewmembers look “outside.”

Countdown – the C3M4 crew posing at the base of the crew ladder.

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A panoramic view of the lab level of HERA. MS1 and MS2 are working over the CanadArm controls.

A look at a typical week’s worth of food for a HERA crewmember. Food is supplied from the same channels as the ISS, so HERA crew can offer insight on new food tastes, textures, and nutrition before the menu items are flown.

The storage lockers are from the retired shuttle program. They look much better with a little USAF RAM bling.

Just like onboard the ISS, the crew is responsible for taking microbial samples of the station to quantify flora.