President’s Column

Todd “Bucko” Baker, Col, USAF, MC, SFS
President, Society of United States Air Force Flight Surgeons

SoUSAFFS, it is truly an honor to take over the reins from Hoss Hilton and to be following in the footsteps of the other true greats of military medicine who have preceded me. I take this time to share my focus areas for SoUSAFFS for the next 11 months.

The Society was established in 1960 to specifically meet the needs of the U.S. Air Force flight surgeon; presumably, when other constituents were established, the focus of AsMA shifted away from the USAF-oriented organization that was previously AsMA. The USAF has produced the most AsMA members, and we claim to be the largest AsMA constituent organization, but the integrity of our membership rolls is far from perfect. My first task as your president is to try to clean up our roster to establish definitively who is a SoUSAFFS member and who is not. I request your assistance with this task – please update your SoUSAFFS profile on our webpage: www.sousaffs.org. (While there, if you’re not a Life Member, it’s a great way to pay your dues, too!)

After we establish what our current roster truly is, my second task is to ensure that your Society provides value to you and represents you in advocacy efforts with AsMA, the AMA, the ABPM, and other civilian agencies. The Society is actively engaged with the AsMA Council in ensuring that the Annual Meeting is structured to meet the needs of the USAF flight surgeon. Identifying sessions and hosting a panel that provide USAF flight surgeon continuity training and readiness skills verification training are on the table. The shift in AsMA focus to include human performance fits perfectly with this – as Lt Gen Travis

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has repeatedly stated, flight surgeons must expand their efforts to support human performance in other operational groups; it’s not just about aircrew anymore.

My third goal is providing better support to the non-Aerospace Medicine specialist and bringing more 48Gs and 48Rs into SoUSAFFS from the start of their career as flight surgeons. 48G/Rs are the much larger segment of our workforce but are seriously underrepresented on the SoUSAFFS roster. It’s also this pool of flight surgeons who become RAMs – SoUSAFFS can do a better job of putting them in contact with RAM mentors and coaching them along this path. I find it very disheartening to look at the list of recent Malcolm Grow winners and see how many of them are no longer in the USAF. We will be renewing our recruitment efforts at the Aerospace Medicine Primary course and are exploring incentives to better retain flight surgeons once recruited.

Please provide any feedback that you’ve got – and please don’t wait for the next issue of FlightLines to do that! Contact me directly (richard.baker@us.af.mil or tbflydoc@me.com) or contact any Board of Governors member with suggestions that you’ve got along these lines, or anything that will help us to be better advocates for the USAF flight surgeon. The more involved you are as a member, the more membership will return to you. SoUSAFFS truly is your organization!

Col Todd “Bucko” Baker

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:
peter.baldwin.1@us.af.mil
john.miles.2@us.af.mil
danny.pizzino.1@us.af.mil

Information Update!

Moving, need your FlightLines sent to another email address?
1. FlightLines distribution email update—Send to peter.baldwin.1@us.af.mil

From the Editor

Peter “SPANKY” Baldwin, Maj, USAF, MC, FS
RAM XIII

It’s been an exciting past few months, certainly, and an active time for the Society of USAF Flight Surgeons. We’ve elected a new Board of Governors and had a really good showing at our annual luncheon at the AsMA Scientific Meeting in beautiful San Diego, California. Several of our members delivered wonderful presentations, which our editorial staff is hoping they’ll be willing to share with all of you who weren’t able to make it to AsMA (and those who were) in future editions of FlightLines. One of the highlights of the week was the first ever Joint Society Social aboard the USS Midway, which Lt Col MacSparran was instrumental in coordinating. All in all, it was a great week.

In this issue of FlightLines, we bring you some responses to recent articles. They are thoughts on how to approach the challenges we face in the coming months with the advent of the BOMC. This issue also challenges some conventions in the way we handle patient care, especially in the treatment of DCS. We shed some light on the headquarters functions of the AFMS and how they impact your day-to-day life. We also pay tribute to a sister flight surgeon who recently lost her battle with cancer.

Recently, there has been discussion about SoUSAFFS and our purpose. One of Col Baker’s requests of membership is to update your information on the SoUSAFFS website. That goes a long way in letting membership folks know whom we serve. Not only is it important that we know who you are, but we also need to know what you want and need from your Society. Please let your Board of Governors know what is important and how we can best support your care of our aircrew. Once we know who you are, and what we can do for you, it’s also crucial to know what you can do for SoUSAFFS.

Obviously, membership is important, but what else do you bring to the fight? Please tell us! There are a number of committees that could use input and support. Perhaps you can offer input to the new RAMpage online resource. Your FlightLines editorial staff is always looking for content and news to share. Perhaps you have some innovative ideas of how you accomplish training at your base. If you do, others would benefit if you would share them. Certainly, one of the most important things you can do as a SoUSAFFS member is mentor someone and share your wisdom. You never know; the people you mentor may become a member of SoUSAFFS themselves and pay it forward to future generations of flight surgeons.

As we close this “year” in the Society, I’d like to thank everyone who helped make the last three issues of FlightLines possible. I echo Col Baker in thanking Col Hilton for his leadership over the past year. I tip my cap to my editorial staff, Maj John Miles and Maj Danny Pizzino, for their hard work in soliciting content and making this publication the best it can be. A special thanks to all those who have contributed articles – our membership is enriched from your shared experiences and thoughts. Finally, we are indebted to Ms. Sandy Kawano, who does a masterful job behind the scenes to make this publication the fantastic product that it is.

One final note: thanks for reading what we’ve prepared for this issue. We hope you enjoy the great work done by members of our Society, Keep ‘em flying! ♠
Aerospace Medicine Headquarters Functions – We’re Here to Help!

Todd “Bucko” Baker, Col, USAF, MC, SFS
AFMOA Director of Aerospace Medicine

No, really, we are, or want to be, here for you...

As a base-level flight surgeon, there are lots of folks who fall into the category of “headquarters pukes,” and for those of you who support headquarters units on your base, we really do serve a purpose aside from making cameo appearances in your clinics or flying squadrons. I will try and outline who we are and what we currently have for roles and responsibilities – conceivably that will assist you in getting what you need from us.

First, HQ Air Force. Up in the ether of DC, these are the folks who are directly on the Surgeon General’s (SG’s) staff. Rick “Poacher” Mooney is the current AF/SG3P (SG3 is the Assistant SG for Operations, Rick is the “P”). Rick is considered the USAF Flight Surgeon and senior Aerospace Medicine Specialist. On a more practical note, he’s also the Chair of the Aerospace Operations Panel, and in this role he advocates for all of your resources through the Program Objective Memorandum cycle (read: budgeting for manpower authorizations years out – really the strategic look). You might also see his signature on policy memoranda.

Next is the Air Force Medical Support Agency (AFMSA). AFMSA is a forward operating agency or “FOA” that supports the SG on a more operational level and generates most of the SG’s policy for the AF. Most HQ AF functionals have an FOA or two; AFMSA is the SG’s FOA in DC. If you’re reading an Aerospace Medicine Enterprise-related AFI, it was produced by AFMSA. AFMSA has several flight surgeons on staff as well as other Team Aerospace members, led by Duncan “Slash” Hughes, who is the AFMSA SG3P. The policy produced at AFMSA typically carries the signature of an HQ AF General Officer, usually the SG3.

The SG has two FOAs: AFMSA as described above and the Air Force Medical Operations Agency or AFMOA. Unlike AFMSA, AFMOA is not primarily charged with policy generation, but rather with assisting medical treatment facilities in executing SG programs. AFMOA produces execution guides and provides validation of year-of-execution resource requests (like temporary contracts for gap-fills). If you’re working an Overseas Contingency Operations or similar contract to support your Flight Medicine Clinic, that goes through AFMOA for validation. The AFMOA/SGP is yours truly, Todd “Bucko” Baker. AFMOA/SGP has three flight surgeons as well as several other Team Aerospace experts.

Major commands (MAJCOMs) also have Flight Medicine staffs. MAJCOMs are chartered to organize, train, and equip units under their commands. They are structured differently depending on their mission, and their Team Aerospace staffs reflect this. They work with functional headquarters personnel (HQ USAF and FOAs) to help bases execute central policy and are the clearinghouse for resource requests coming up from their bases. Each MAJCOM has an SGP and various Team Aerospace members on staff, tailored to fit the MAJCOM’s mission and/or Manpower & Equipment Force Packaging requirements. MAJCOM SGPs are the “go-to’s” for base-level FS. Any of us at the FOAs and HQ USAF will happily field base-level concerns, but will almost universally include the MAJCOM/SGP in the response.

In summary, the USAF employs a lot of flight surgeons at various headquarters. We’ve got different functions and charters, but also overlap in some ways – most significantly in the fact that we exist to back you up in your efforts to support your operators and your base missions. Please reach out as you need to – we all serve no purpose unless we’re helping you get your work done.

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Flight Doc Passes 1,000 Flight Hours

(reprinted from Air Force Print News Today)

Staff Sgt. Michael Means
380th Air Expeditionary Wing Public Affairs

4/11/2014—SOUTHWEST ASIA—Not often do you hear of a doctor in the Air Force reaching 1,000 flight hours.

Air Force Lt. Col. (Dr.) Robert Craig-Gray, 380th Expeditionary Medical Group deputy commander and chief of aerospace medicine, exceeded 1,000 flying hours. He reached this feat during his 301st sortie which happened here, April 5, 2014.

“It feels good to know that you have done something that not every flight doc gets to do in their careers,” he said.

During his time in the Air Force, Craig-Gray has flown 68 combat and combat support sorties with more than 400 hours over Afghanistan, Iraq and the Persian Gulf in support of Operation Enduring Freedom and Operation Iraqi Freedom.

“I always wanted to fly and was intrigued at the thought of being a flight surgeon after a friend of mine noted they had opportunities in the Air Force for graduating medical students,” said Craig-Gray.

“After speaking with doctors in the local Air National Guard unit, I learned they were looking for flight surgeons,” he said.

Craig-Gray, a native of Washington, D.C., who is currently assigned to Joint Base Lewis-McChord, Wash., joined the Air National Guard in 1997 during medical school where he went through an early commissioning program to train to become a flight surgeon and joined active duty in 2001.

Flight doctors are primarily responsible for the medical care of all Air Force aviators and special duty operators.

“We are also responsible for the occupational safety of all of the Air Force members who work around base in the various shops to ensure that they stay safe as they go about their duties,” he said.

In addition, flight doctors work with bioenvironmental engineering to make sure all airmen have protection from hazards they may face at work and with public health to make sure they have safe food, water and appropriate vaccinations thus ensuring that they are ready to execute their missions.

“While we don’t often do “flight surgery” in the air as some people may think, the various intricacies of aerospace medicine and physiology do come into play and we see those when we fly. This is why I encourage all my flight docs to get out of the clinic, fly and go out in the operational shops so they can see their programs and people and what they face in order to provide a better end product to them,” said Craig-Gray.

Craig-Gray also completed additional training and is a graduate of the Air Force Residency of Aerospace Medicine Program. These flight surgeons also known as RAMs are selected from the regular flight surgeons throughout the Air Force and receive three years of additional training in specialized topics of aerospace medicine, occupational medicine and preventive medicine.

“RAMs are the Air Force’s aerospace medicine experts and after I became a flight surgeon, my next goal was to become a RAM,” he said. “I was selected to attend the residency in 2009. Now, I not only do those things that normal flight surgeons do but am involved in mentoring and training them; as well as developing and maintaining the aerospace medicine programs at my base and throughout the Air Force.”

“You really get to make an impact day-to-day and contribute to the mission which I really enjoy,” he said. “When that stops, then it’s time to find something else to do but 15 years later I am still having fun.”


“I would like to thank all the aircrew I have flown with, and taken care of, for helping to keep me and other flight docs involved in their mission and to help us take care of them,” said Craig-Gray. “It really does help us provide the best care we can to them by flying and deploying with them, and staying operational.”

Air Force Lt. Col. (Dr.) Robert Craig-Gray, 380th Expeditionary Medical Group deputy commander and chief of aerospace medicine, poses for a photo on an E-3 Sentry after exceeding 1,000 flying hours, during a combat sortie flown in support of Afghanistan Presidential Elections, April 5, 2014, over Afghanistan. He reached this feat during his 301st sortie. (U.S. Air Force photo by Tech. Sgt. Jason Robertson/Released)

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.
The Oxygen Paradox and ROBD

Eric “De-Mo” Chumbley, Lt Col, USAF, MC, FS
173 FW, Kingsley Field

Have I told you lately how much I love this job? Well… there I was: I had just dismounted the F-15D Mighty Eagle (and all the appropriately credentialed fighter pilots in the room simultaneously shout Ea-GULLLL!!!!) after observing Maj Michael “Trigger” Hiatt instruct yet another would-be Eagle Driver on the fine points of tactical aviation from the back seat. Coincidentally, the student was a Naval exchange F-18 pilot. More on that later.

As we walked in from the flightline, Trigger remarked that he had gone north the previous week for a reduced oxygen breathing device (ROBD) hypoxia refresher and had some brief worsening of symptoms during his training after he selected 100% oxygen on his regulator. As his oxygen saturation dropped to 68%, he noted increased tingling, warmth, and some visual disturbances. It was that “ahh, I dunno, oxygen something” that the physiologists briefed the class on before they actually got into the simulator. His description was actually funnier than that, but my mother might read this. Wait, no, my mother’s vocabulary would embarrass Trigger. Your kid might read this, so I’ll keep it family friendly.

I quickly accessed the mental rolodex and came up with…crickets. That, and a nagging feeling that I should have been able to sound a bit more reassuring to one of my pilots. So after finishing up the cool part of the job, I stuck my cranium in a book and came up with “oxygen paradox.” Hey, I thought I remembered Col Hadley “The Iguana” Reed trying to teach me something about that back in the summer of 2000 at AMP! A little rust fell off, but I decided to try to get a bit smarter, which is typically where these articles come from.

As all flight docs know, active aircrew members must retrain in the altitude chamber every 5 years, right? Except when they don’t. From 2004-2009, ROBD training was approved and deployed in ACC as a refresher option for fighter and bomber crews. It has had a big impact. AFI 11-403 outlines the requirements, but in brief, ROBD, in conjunction with an appropriate academic course, can meet the requirements for many hypoxia refresher training tracks. Check Table 3.1 for details. ROBD changes the mixture of nitrogen and oxygen in the supply the trainee breathes to induce hypoxia symptoms in a more realistic environment than the chamber without the risk of barotraumas or decompression sickness. While it does not allow the trainee to experience rapid decompression, all else seems positive. And really, which would you rather do? Eat Mexican before the ROBD with impunity or experience rapid decompression? The trainee can participate in actual EPs in a flight simulator using the same life support equipment found on his/her airframe. Just as in the chamber, the trainee is exposed to positive pressure breathing, hypoxia recognition and treatment, and the visual deficiencies induced by hypoxia in night operations. Unlike the chamber, the trainee also gets to practice in-flight checks using the same equipment he or she is used to and the prevention, recognition, and treatment of hyperventilation. By the end of the session, the trainee has increased confidence in his/her life support equipment without the threat of negative transfer. The overwhelming majority of surveyed Raptor pilots have positive opinions of ROBD training. Our Eagle pilots agree so far. And when ROBD is available locally, the wing saves a lot of time and money on travel.

Now let’s scrape off some more of De-Mo’s rust: What is oxygen paradox? Ordinarily, it is a brief, self-limited worsening of the symptoms of hypoxia that occurs when a hypoxic subject begins to breathe 100% oxygen. It can be so brief and subtle that it goes totally unnoticed before regular respiration resumes and symptoms resolve. It was recognized prior to World War II when most aircraft were unpressurized and oxygen sources could be tenuous. Here is why we think it happens: before applying 100% oxygen, the increased respiratory drive of hypoxia induces hyperventilation and hypocapnea. When 100% oxygen is selected, the increased oxygen dilutes the pulmonary vasculature, leading to hypotension. Both hypocapnea and hypotension contribute to diminished cerebral blood flow. Decreased cerebral blood flow is seldom an advantage to a fighter pilot. The hypocapnea also decreases ventilatory effort, sometimes to the point of apnea. Again, not breathing is usually not advantageous. Fortunately, the carbon dioxide rapidly builds in the bloodstream, correcting hypocapnea, and normal respiration resumes. Symptoms of worsening hypoxia tend to abate in 15-60 seconds, but oxygen paradox can lead to convulsions and loss of consciousness. Treatment does not change: use 100% oxygen and wait for symptoms to subside.

Want to hear a funny story? In 2009, Navy flight surgeon LT Natalie Moniaga published her account of an electronic countermeasures officer undergoing a ROBD training session. After recognizing his hypoxia symptoms and correctly responding with no ill effects whatsoever, this Navy flier decided to have another go at it. Because, well, he was in the Navy, I guess. So off he goes on a second, unnecessary ROBD run. Here’s where it gets good. About a minute into a simulated altitude of 25,000 feet, he reported air hunger. I can only assume that he had an 80's tune rolling through his cranium, because he kept crying, “more, more, more!” At 3 minutes he started to feel sweaty and tingly and began his emergency procedures to include 100% oxygen. This is an article about oxygen paradox, so you can guess what happened next. Fixed gaze, seizure activity, and unresponsiveness. OK, in retrospect it’s only funny because it happened to a Navy guy. You get the point. Long story short, he found himself in the ED with three thoracic compression fractures from the seizure activity, but he was returned to flying status. Because, well, he was in the Navy, I guess. And he did recover completely. For the record, no Naval flight officers were injured in the writing of this article, and in all seriousness, I hold my Naval colleagues in the highest regard. Really!
What shall we take away from this brief article? First, oxygen paradox is something we should anticipate and recognize. I can find nothing in the literature that says how commonly it occurs, but it does. It should resolve spontaneously and completely in seconds. Consider this a normal manifestation of physiology. Unless you have clinical suspicion that indicates otherwise, a workup is not necessary, nor is removing the flier from flight status. Second, ROBD and altitude chamber training are not completely benign, and our physiology staff deserves credit for being prepared and able to respond. But they aren’t usually in the jet, where the outcome of the oxygen paradox could be pretty grim in single seat airframes. Therefore, prevention should be the word of the day. Next time you get a chance to brief your fliers, emphasize the need to adequately preflight their gear and prevent hypoxia altogether. Funny stories should be left to the Navy.

Suggested Reading:

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Time for a Paradigm Shift

Dave “Pfieffur” Duval, Lt Col, USAF, MC, SFS
HQ AETC/SGPS

The delivery of ground-level oxygen (GLO) is well established as the initial treatment of decompression sickness (DCS). Nearly ubiquitous in flight medicine policy is the use of the “tight-fitting aviator’s mask” for the initial treatment of symptoms of DCS until definitive care can be started. The reasoning behind the use of the aviator’s mask is to maximize the delivery of oxygen or, more accurately, to minimize the delivery of nitrogen. This creates a nitrogen gradient at the alveolar level, with subsequent denitrogenation in the blood and tissues. Remember, this is done as an initial treatment of DCS while arrangements are made to get the patient to definitive treatment—the mighty hyperbaric chamber.

If asked, most flight surgeons will say using the aviator’s mask is the “standard of care,” or that maybe they were simply taught to do it that way. But is it really the standard of care? Where is the evidence that supports the use of the aviator’s mask? Aerospace Medicine textbooks perhaps? Neither DeHart, Davis, nor Ernsting mentions the use of the aviator’s mask in their respective textbooks. Maybe it’s in the Navy dive manuals. Nope. A literature search will turn up zero papers comparing one mask to another for administering GLO.

As stated before, the purpose of GLO is to create a nitrogen gradient at the alveolar level. Let’s assume we have a flyer with symptoms of DCS in our clinic. Keeping it (very) simple, we’ll say his arterial nitrogen partial pressure (PaN₂) and alveolar nitrogen partial pressure (PAN₂) are equal, at about 608 mmHg (on room air at sea level, 760 mmHg × 80% nitrogen). If we administer GLO by aviator’s mask with 100% oxygen, his PAN₂ will be almost zero, and the resulting gradient is 608 (PaN₂ - PAN₂). If we use a non-rebreather mask, set to deliver 100% oxygen, the PAN₂ will be 76, resulting in a gradient of 532. Even if the mask delivers only 80% oxygen at the face, the gradient will be 456. We all believe a large gradient is best, but even the lower concentrations of oxygen produce a huge gradient. The real question is this: are the differences in these gradients clinically significant? I would argue they’re not, and I submit that this experiment has already been conducted, by our civilian counterparts.

Recently, a directive was published for AF 4N0 EMS techs that allows the use of CPAP (with in-line oxygen) in lieu of the aviator’s mask. This is understandable if one assumes the aviator’s mask is the best way to deliver GLO but has none on hand. But there is no evidence to support the use of positive pressure breathing in the treatment of DCS. The goal of CPAP is to improve oxygenation; the aim of treating DCS is to minimize the delivery of nitrogen. Indeed, there is at least one paper that shows negative pressure breathing may be a better initial treatment of DCS. Also, if arterial gas embolism is present—and it is sometimes difficult to distinguish from DCS—CPAP would be contraindicated (Richards M. Personal communication; 2013 Nov 8). In that case, we could be doing harm.

The time has come to jettison this archaic USAF method of treating DCS. It is not the standard of care, it’s not a best practice, it requires equipment that must be maintained, it requires extra training for techs, and it has zero evidence to support improved clinical outcomes. The tight-fitting aviator’s mask is unnecessary and should be discarded and replaced with an off-the-shelf non-rebreather mask; the use of CPAP, although well intentioned, is an inappropriate application of a technology and could be harmful.

Let’s move into the 21st century!

REFERENCES
I agree with Pfeiffer; the policy of “mandatory” use of the aviator’s mask needs to be revisited. Not because it is wrong, archaic, or fails to meet standard of care, but because it is simply too limiting.

Treatment of DCS consists of two phases: (1) emergency treatment and (2) definitive treatment. The goal of emergency, or initial, treatment of DCS is to supply 100% surface level \( O_2 \) (SLO) to the patient at the highest level available. However, simply eliminating nitrogen is not sufficient, as the inert gas must be replaced with an appropriate physiologic gas, i.e., oxygen. Ideally, this would be 100% \( O_2 \) via tight-fitting mask – any tight-fitting mask – non-rebreather, anesthesia, CPAP, BiPAP, or aviator’s mask. Restricting treatment to an aviator’s mask limits treatment options. Even if all you have is a nasal cannula to provide SLO to the patient, then use it to provide as much oxygen as you can until the patient reaches a higher level of care. And plan better next time. The patient should not be placed on positive pressure breathing if there is a risk of an arterial gas embolism, but CPAP or BiPAP systems can be used with the pressure turned down as much as possible for patient safety and comfort. I would advocate caution in using negative pressure for a DCS patient, since increasing work to breathe may reduce respirations and thereby reduce oxygenation. A pressure demand regulator would minimize problems due to positive or negative pressure systems.

Historically for the Air Force we were treating aviation-related DCS, and the aviator was, quite conveniently, wearing his/her very own tight-fitting mask. So that’s what we used and, yes, the aviator’s mask works great. The Navy treats mostly diving DCS and may or may not have an aviator’s mask available, but a tight-fitting mask of some type is used and these work great as well. Most of my real world DCS experience has been on dive boats, and I’ve never seen an aviator’s mask on deck. Standard of care in the diving community is 100% \( O_2 \) by tight-fitting mask with a pressure demand regulator, the same type regulators normally used by scuba divers.

The type of tight-fitting mask used to supply SLO in treatment of DCS may not be very important. Having a functional 100% \( O_2 \) delivery system to include a tight-fitting mask, and a team that knows how to use it, is very important.

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**Flight Surgeon Oath**

I accept the sacred charge to assist in the healing of the mind as well as of the body.

I will at all times remember my responsibility as a pioneer in the new and important field of aviation medicine.

I will bear in mind that my studies are unending; my efforts ceaseless; that in the understanding and performance of my daily tasks may lie the future usefulness of countless airmen whose training has been difficult and whose value is immeasurable.

My obligation as a physician is to practice the medical art with uprightness and honor; my pledge as a soldier is devoted to Duty, Honor, Country.

I will be ingenious. I will find cures where there are none; I will call upon all the knowledge and skill at my command. I will be resourceful; I will, in the face of the direst emergency, strive to do the impossible.

What I learn by my experiences may influence the world, not only of today, but the air world of tomorrow which belongs to aviation. What I learn and practice may turn the tide of battle.

I may send back to a peacetime world the future leaders of this country.

I will regard disease as the enemy; I will combat fatigue and discouragement as foes; I will keep the faith of the men entrusted in my care; I will keep the faith with the country which has singled me out, and with my God.

I do solemnly swear these things by the heavens in which men fly.
Train Like You Fight

Dave “Indy” Prakash, Capt, USAF, MC, FS
B-52 Pilot-Physician

I read the articles by Gen Travis and Gen Cornum about BOMC and it echoed thoughts I’ve had since first joining the AF.

The decomposition of the AME into the BOMC is long overdue and addresses a plague across the AF—inefficient and ineffective utilization of manning.

Back when I was a bright-eyed, bushy-tailed 31-year-old 1Lt and fresh out of pilot training, I joined my first operational flying squadron. I was surprised at how pilots spent their days in the squadron. We were in a perpetual struggle to schedule jets, aerial refueling tankers, and all the other training activities needed by pilots to maintain mission-ready status. The training flight and PRP shop were always in a trash trying to get records ready for the next inspection. Every 6-9 months, we rotated new people into all of these shops. Why? Because we needed to do more with less. That, and everyone needed OPR bullets to show career progression through additional duties. There was never any stable expertise.

I used to half-jokingly propose that we cut 2-3 pilots every year. We could use the money saved in pilot training and operational flight expenditures to hire a few enlisted personnel or civilians who could become permanent experts in scheduling, PRP, and security. The rest of us could then focus on being better pilots. This is what the Reserves and Guard do.

As the “new guy” in the squadron, I used to take out the trash, vacuum floors, and stock the snack bar. But within a few months I was also responsible for PRP, safety, and security. I became the Life Support Officer, SABC instructor, and COMSEC Manager. These are important functions within a squadron. But as I spent hours managing Excel sheets and pushing paperwork, it was obvious a college degree was not necessary to do any of this, nor was pilot training.

I kept hearing... “We need to do more with less.”

Then I started working as a flight surgeon. In my opinion, the purpose is simple—keep jets safely airborne. You do this by being competent, being available, and being ready to help a pilot back to flying status after you ground him. Your time should be spent primarily with the patient or researching the patient’s problems. But I spent most of my time on administrative processes—documenting PDI for PRP, maximizing RVUs, and tracking metrics. I understand proper documentation is essential to patient care and that RVUs justify costs and future investments. I get it; we need to do more with less. But there comes a tipping point, when LOOKING good becomes more important than BEING good. And we begin to do LESS with LESS. All these metrics may fatten an OPR and get you promoted but they don’t necessarily help get a jet off the ground.

I contrast my experience as a pilot and flight surgeon with what I did as a civilian intern before joining the AF. I worked 6-7 days a week carrying out a long list of “less than glamorous” tasks demanded of an intern. There was a lot of grunt work, but it was work that could only be done by a physician. I never scheduled patients, made beds, replaced oxygen tanks, or distributed medications. That’s what social workers, clerks, and nurses do best...Doctors should be doctors. You can’t win a Super Bowl when your quarterback has to play left tackle, too.

In the flying world, we say “Train like you Fight.” We need to utilize people in the way we trained them. Flight surgeons need to focus on patient care over patient administration.

THIS is how you do more with less.

But identifying and complaining about the problems is the easy part. Getting BOMC off the ground is the hard part!

Which brings me to my parting shot...We reap what we incentivize. How can we incentivize the innovations that Gen Travis and Gen Cornum have prioritized when we have to operate within an enterprise that rewards patient administration over patient care? Maintaining the status quo will get you promoted faster than implementing a novel idea that may fail. “No” is always the default answer in a bureaucratic system.

In the nuke world, there is a zero-defect policy. “If one person poops the bed, we all have to wear diapers.” If a commander implements BOMC but fails an inspection, subsequent commanders will add back layers of unnecessary reporting and documentation.

This is the military, I get it. You do what you’re told no matter what. And if you don't like it, you can get out when your commitment is up. GMO flight surgeons are a renewable resource anyway. For every great FS who have already left the AF.

Without identifying the purpose and rewarding both efficiency AND effectiveness, the streamlined BOMC construct will quickly decay back into AME.

Capt (Dr.) Prakash is a B-52 pilot-physician and Advanced Systems Project Officer with the 49th Operational Test & Evaluation Squadron, 53rd TEG, ACC at Barksdale AFB. He also maintains clinical proficiency in Aerospace Medicine with the support of the 2nd Medical Group, AFGSC.
“Train Like You Fight” Reply

Bill Mueller, Col, USAF, MC, SFS
Director, USAF Pilot-Physician Program

As director of the USAF Pilot-Physician Program, I’m pleased to see this well-written article from Capt Dave Prakash – a B-52 operational test pilot, flight surgeon, and the newest member of our program. As with all pilot-physicians, Dave’s perspective comes from expertise in two areas of particular importance to the Air Force – flying and medicine. In both professions, successful mission accomplishment requires reliable execution of complex processes. This success requires increased emphasis on Human Systems Integration – a way of looking at processes and systems through a “human-focused” lens. HSI is one of the core competencies of the Pilot-Physician Program and is at the heart of the Human Performance Concept of Operations (HP CONOPS). HP CONOPS is poised to transform the AFMS from a health-based delivery system to a performance-based delivery system, and the BOMC test promises to discover key lessons about how this will work one day. The core will be to ensure highly trained AFMS professionals at every level – from technicians to nurses to physicians – are doing the job they have been trained to do. Mission success – ensuring Airmen are fit and ready to execute their war-time mission – will be the result of this important transformation.

Letter to the FlightLines Editor

Patrick Storms, Col, USAF, MC, SFS
Program Director, Residency in Aerospace Medicine

I read with interest Dr. “Indy” Prakash’s comments related to “do more with less” and the administrative burden associated with both the practice of military medicine and life as a B-52 operational test pilot. Flight surgeons active at the flying unit level well appreciate the fact that aircrew members often have to take on a number of additional duties that drive mountains of paperwork, as Dr. Prakash’s experience as both pilot and flight surgeon attests. The development and tracking of metrics, and other described administrative processes, can certainly be burdensome and draw time away from the direct care of patients and support to the operational mission.

I certainly respect his comment that metrics may “fatten an OPR,” but I would contend that many such metrics are driven by a more substantial force than careerism. Our processes and procedures are driven by scores of Air Force Instructions, policy directives, and local operating instructions. I’ve heard that there are over 200,000 individual inspectable line items contained in the sum total of our AFIs. Inspection agencies rarely spend enough time in our facilities to get a genuine “feel” for the quality of care delivered, so they rely on surrogate measures for quality. Those surrogates are metrics, prepared and maintained by medics who would otherwise be employed in the direct care of patients. As an example, in our local GI lab I recently championed a quality improvement process to track colonoscopy withdrawal time. Withdrawal time is a validated measure of the quality of a colonoscopy and is an important metric against which to measure one aspect of procedural skill. Great idea, right? Who would NOT be in favor of doing everything possible to enhance the quality of colonoscopy? Logging procedural start and stop times, extracting withdrawal time from the total procedure time, preparing and populating spreadsheets with the information, then developing and distributing reports to providers as feedback related to their performance become an administrative burden placed on technicians who already have full plates to begin with. Laudable goals (even MY laudable goals) can be responsible for the development of burdensome administrative processes, and those processes can impede the delivery of care that was the focus of the quality initiative!

Quality and compliance champions, generally the authors of inspectable requirements, often feel deeply committed to their areas of interest and might express the opinion that the administrative burden imposed by their requirement is relatively small. Taken all together, however, the individually trivial burdens of 200,000 well-intentioned line items mass into a suffocating weight of metrics, checklists, and quality improvement projects/initiatives.

The BOMC’s laudable goals are to streamline administrative processes, ensure that medical personnel are working to the full depth of their training and skill, and return physicians to the hands-on care of patients. I suggest that concomitant efforts to reduce the number of inspectable requirements would be a worthy complementary goal.

Pat Storms
RAM 2005
If you’ve visited the AFMS Knowledge Exchange recently, you may have noted the absence of your favorite site, the RAM’s Horn. Don’t fret. It isn’t gone. It’s simply been renamed and extensively revised. The RAM’s Horn is now the RAMpage. You may find it on the Knowledge Exchange at https://kx2.afms.mil/kx2/RAMPage/Pages/home.aspx. A link to the RAMpage is also provided from the Flight Medicine Branch homepage.

The left side of the RAMpage now includes links to historical RAM resources including a list of all USAF RAMs from 1950 through 2013, a document detailing the history of the old RAM room at Brooks AFB, and pictures of all RAM class patches. When available, descriptions of the individual patches are also provided. If you know the story behind another patch, please forward it and the RAMpage will be updated with your information.

This page is maintained by a current aerospace medicine resident. It is intended to provide information about the USAFSAM aerospace medicine residency program and to also provide a comprehensive list of links to assist RAMs and other flight surgeons currently working in the field.

The all new Flight Surgeon’s Toolkit is a work-in-progress and is intended to remain so. It has some excellent links, although they are, perhaps, not presented in the most user-friendly format. (Please send suggestions on how to improve this.) This resource replaces the “SGP Toolkit” and the “Flight Surgeon’s Reference,” which had not been maintained and, therefore, consisted mainly of broken links or outdated references. The utility of this website will obviously depend upon the quality of the links provided, so please send suggestions and additional resources to upload. If you’ve written a particularly good Medical Group Instruction, this is your chance to share it with other bases so that they won’t need to reinvent the wheel when they write their own instruction on the same topic.

So the next time you’re asking yourself what regulation governs pseudofolliculitis barbae, or what you might tell a Viper pilot who doesn’t want to poop during a pond crossing, or whether a nurse can review respirator questionnaires, or what the hell’s a bladder bird – don’t spend hours searching the web, simply visit the RAMpage.

The RAMpage is currently maintained by Maj John “VILLAIN” Miles. Please send suggestions, resources, and criticism to john.miles.2@us.af.mil.
Col (Dr.) Joann “Dallas” Richardson passed away peacefully on 28 April 2014 of lung cancer. Her official obituary speaks of her many academic, professional, and military accomplishments. However, it does not tell the whole story, one that touches so many lives. It is telling that many of the cards and letters received by her daughter, Josie, her mother, Fumiko (who witnessed the Hiroshima A-bomb), and her sisters, Karen and Margie, were not just from medics, but also from line Airmen. They spoke of her kindness, compassion, zest for life, love of flying, and living the Air Force core values. We have chosen two such examples to highlight how much she was loved and is missed by so many. One is a poem by one of her Bravo RAM 2009 classmates, and the other is a heart-felt text written by Lt Col Stephen “Ritalin” Damico, an F-15 test flight pilot who knew Dallas when she was the AMDS/CC at Robins. This text was read by her sister, Karen, to Dallas several hours before her passing into “the wild blue yonder.”

**Contrails**

* A passing craft
  * So high above
    * Man-made machine?
    * Or a symbol of love?
  * Worried young parents
    * Holding an ill child
    * A loving, caring physician
    * A warm touch and a smile
  * An injured warrior
    * Struck with fear
    * Can take comfort in knowing
    * That Dallas was here
  * Teaching, commanding
    * Students and staff
    * Preparing their future
    * On that Warrior’s behalf
  * That's not one passing aircraft
    * From both directions it’s two
    * And from this moment on
    * When their contrails cross in the sky
    * We’ll smile and think warmly of you.

Dallas,

Throughout your illness, I've never stopped writing to you...and I'm not going to stop now. Stephanie, Kaitlyn, Mary Anna, and I wish you a pleasant and peaceful journey to the Heaven our God has promised us. We love you with all our hearts.

I am sad to see you go, my friend, not because I fear we'll not see each other again, but because this world will be a lesser place without you. Thank you for the unconditional love you've given my girls and me. You've been a true friend when I needed one most, a confidant when I trusted no other, a sister to my wife, and an adoring aunt to my children. You are an amazingly talented and caring physician and healer. Oh, and lest I forget, one heck of an F-15 back seater! I only hope that, in some small way, you have been enriched by my family and me as we have been by you.

I believe the Lord speaks to us through His Holy Spirit, and that the Spirit speaks through the longings of the heart. Follow your heart, Dallas! Follow your heart Home. To honor you and all you are to me, I'll follow my heart, too.

You taught me two of the most valuable lessons of my life, namely, that leaders serve and nothing comes before family. Forever etched in my memory are scenes of you picking weeds out of the garden of the Colorado house and then tenderly wrapping the girls' fairy dolls for safe transport (by F-15—and Delta) to Georgia. I promise to never forget the image of you and Stephanie hanging shower curtains or for us all searching for the perfect chair for the keeping room. You showed what real love is when you brought over that powered screwdriver to hang pictures (i.e., tough love
for me and tender thoughtfulness for Stephanie). Incidentally, that day spoke to me more than almost any other we spent together. May I be so bold as to ask you if I may have that screwdriver? As crazy as it sounds, it would become one of my most treasured possessions. Possessions should bring joy and the thought of you bringing that silly thing to my home will bring me joy every time I ever use it.

Today I am half a world away from Georgia and I miss my girls. I miss *you.* I know in my heart I'll soon be with my family. I also know I'll see you again soon. I'm not exactly clear on the particulars of how this works, but I just know it to be true. If Heaven is even better than I could possibly dream it to be, then I know we'll see each other there.

So until then, my dear Dallas, I bid you farewell. May the Lord grant you fair winds and a following breeze when he brings you Home. God bless you and rest well!

All my love,
Stephen