Federal Air Surgeon's Medical Bulletin

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From the Federal Air Surgeon: General Aviation is Back!

By Susan Northrup, MD, MPH
Federal Air Surgeon

As I type this column, I am sitting at EAA's AirVenture on Saturday morning, the last day of the event. According to the Experimental Aircraft Association (EAA), the attendance far exceeds 2019 for both people and airplanes. And, I believe it!

One significant thing I've seen this week dovetails very well with my goal of supporting STEM education for all students – EAA and their sponsors have significantly reduced the price of admission for students up to 18 years old (this year admission was free for students!). Further, there are lots of exhibits scattered about the grounds with STEM events for every age group (including the ever popular KidVenture). This week one of their summer camp events was aimed at girls in high school called GirlVenture. I was fortunate enough to stumble across a group of these young women over in Warbirds and chatted with them for several minutes (they had to listen to my pep talk on staying in school, doing well, and setting goals). Watching the wonder and awe on young peoples faces as they learn about aviation and then watch the airshow is positively heartwarming. The Office of Aerospace Medicine (OAM) is dedicated to education and I personally encourage each of

you to get involved with your local schools, youth groups, and flight schools. We have to replace ourselves someday and we need these young people to get enthused.

I also had the opportunity to interact with both the EAA Aeromedical Advisory Council and had a listening session with the AMEs who were on the grounds. We had a wide ranging discussion on what OAM is doing to support airmen and the AMEs. We continue to work on our goals from the Aeromedical Summit last November. The 13 most threatening letters we send to airmen have been rewritten and are in the last stages of coordination before implementation in the coming months. The first Pilot Minute will be filmed in August (think AME minute for airmen). The public outreach through the advocacy groups continues with guest columns and articles. We plan to hold Neurology/Mental Health and Substance Abuse Summits in the next year with experts in the field to critically review our current policies and standards. There are no sacred cows in OAM at this point.

On a personal note, I was fortunate to actually fly into Oshkosh this year in our Harvard Mk4 (think T-6 or SNJ but built in Canada). We had hoped to make the trip in our newly restored Stearman so I could personally land here. Maybe next year. For those of you who are pilots, it was an amazing experience and well worth the trip.

I hope to see many of you in San Antonio or Denver at CAMA or AsMA.

Fly safe!

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Moving the Aerospace Medicine Bar

By Gabrielle Gui

Imagine you are an airman receiving a physical exam for medical certification. At some point during the exam, the doctor hands you a hypodermic needle and you are told to place the needle between your thumb and forefinger. While holding this needle, a loud pistol goes off. If you react in such a way that the needle pierces your skin and draws blood, you have officially failed your medical exam. While this test may seem ridiculous by today's standards, this was a legitimate practice that medical examiners used to test a pilot's "nerve". In fact, many tests of this nature can be found in the history of aerospace medicine. While we've come a long way from these archaic practices, in order to fully understand and appreciate the medical standards that are put into place for airmen today, it is important to get a good understanding of this historical foundation.

To learn more of the history of aerospace medicine I spoke with Courtney Scott, DO. Dr. Scott has worked in the FAA for nearly 11 years, and is currently a certification doctor who reviews medical applications. When an AME has to defer an exam, or there are questions on a specific case, a certification physician is needed. Before he was a certification physician, he was the manager of the aerospace medical certification division (AMCD) in Oklahoma City. Prior to working for the FAA, Dr. Scott was in the Air Force, where he was introduced to flight medicine. He has been on the front lines of change in aerospace medicine ever since. My conversation with Dr. Scott may be paraphrased as:

How would you describe the first Civil Aerospace Medicine standards?

As you may know, civil aerospace medicine standards also have roots in the military. The first person to try to put together standards for airmen in the US was the Surgeon General of the Army in 1914. The standards that were initially put in place were very black and white (with narrow parameters), meaning that obtaining eligibility to fly based on these standards was extremely difficult. The first set of medical standards was so impossible that no one examined in the first eight months was able to pass. The standards were re-evaluated. New standards were developed. While not impossible, the medical standards still served as a high bar to anyone who wished to become a pilot.

Why was the bar set so high for pilots?

This bar was not created without reason. In the past, there was not much known about how various medical conditions would interact with an exposure to the physiologic stresses of flight. We did not have the knowledge about what it is like to be in the air and how your body reacts to altitude and other stresses of flight. Physicians had to be over-cautious. The science of medicine was not nearly as advanced at that time. Altitude, hypoxia, dehydration, vibration, sensory incongruencies, spatial disorientation and other stressors are challenges for pilots with normal anatomy and physiology, not to mention, for airman who have specific conditions and/or illnesses.

In order to prioritize safety, the goal of many past aerospace medical standards was to prevent anyone who posed a risk from flying. This method worked for a while, but as decades passed and flying became the livelihood of more and more people, some pilots began to hide certain medical conditions in fear of getting their medical certificate taken away.

What changes have you seen during your career in Aerospace Medicine and the FAA?

There has been a shift in the goal of aerospace medicine standards from preventing airmen with certain medical conditions from flying, to allowing some airmen with certain medical conditions to fly after mitigating the risks. This mitigation, which we can call aeromedical disease management, is what makes the role of AMEs so important, helping to identify and assess risk. AMEs are essential to getting and keeping pilots in the air. Occasionally, pilots can see the AMEs as an adversary because sometimes in the mind of a pilot, the goal of an AME is to stop them from flying. This attitude goes with the old aeromedical focus of not allowing anyone to fly if they have certain medical conditions. Now the goal is to get the pilot flying if they can do so safely.

How do AMEs help their pilots and keep the airspace safe?

AMEs identify important medical conditions (cancer, heart disease) that not only keep them from flying, but could kill them. For example, I don't remember the AME's name, but he noticed the airman was over 50, and had not had his screening colonoscopy. He talked the guy into getting it done, and he was a Stage II right sided colon cancer. While the focus of the AME exam is to ensure the safety of the national air space, there is nothing to preclude us from practicing good medicine.

By being on the frontline and interacting with airmen, AMEs can identify when a pilot may have a problem. With the right information they can identify a pilot with disease or condition concerns that may be a risk to safe flight. In other words, they can identify when a pilot may be at risk for a sudden or subtle incapacitation.

What is one of the most challenging and satisfying parts of your job?

Let me expand this to two areas that are both challenging and satisfying. First of all, being able to get an airman who would otherwise be grounded to a Special Issuance and keeping them in the air is very

satisfying. The challenge for all of us is keeping up with the changes in medicine. Along these lines, I helped establish an FAA Oncology Summit and brought in first class oncologists from a variety of institutions in the US. We taught them about Aerospace Medicine and, in turn, they taught us about the rapidly changing field of oncology. Because of this summit, the advances in medicine, and the collaboration between specialists and the FAA, we have been able to safely certify a number of pilots who otherwise would have been denied.

Any final words on the current process of aeromedical certification?

Throughout the history of aerospace medicine, the focus has always been on safety. However, this focus created a high bar for some who wished to become airmen. While the focus on safety has not changed, there are new ways to achieve that level of safety that allow airmen to fly who may not have been able in the past.

Medical certification is an ongoing exercise in process improvement. AMEs play a vital role in protecting the safety of the national airspace but at the same time they help the airman to identify and mitigate medical risks to safe flight. As frontline workers, it is important to remember that AMEs have a great amount of responsibility in communicating the status of each individual pilot to the FAA. The more thorough an AME is able to communicate this status, the more effectively we are able to assist the pilot. While we have moved forward from hypodermic needle test, we continue to change and adapt to what comes next.

In conclusion, my conversation with Dr. Scott made me realize the Aerospace Medicine Bar has shifted from being a barrier for the pilots to being a challenge for all of us in aeromedical certification. Instead of preventing pilots from flying, now the challenge is to identify all pilots who are able to fly safely and help them do so.

Gabrielle Gui is a junior at Arizona State University pursuing a B.S. in Software Engineering. She has been working as an intern in AAM-220 through the MSI Summer Internship Program.

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Recent Policy Updates

Arthritis

Updated disposition table Arthritis Disposition Table

***CACI - Arthritis Worksheet* (PDF)**

Updated to identify additional acceptable medications (biologics) and applicable no-fly times. No labs needed if on NSAIDS or steroids **only**. Added ankylosing spondylitis to CACI.

***CACI - Colitis Worksheet* (PDF)**

Updated to add additional acceptable medications (two biologics and 6-MP) and applicable no-fly times.

***CACI - Asthma Worksheet* (PDF)**

Updated to add that Monoclonal antibodies are NOT acceptable for CACI.

Pharmaceuticals, Therapeutic Medications

We added a new vaccines webpage.

Protocol for Bundle Branch Block (BBB)

We updated the age for new RBBB evaluations to 35 y/o (was 30 y/o) and the type of testing was clarified.

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Age-Related Macular Degeneration: Case Reports

Case Reports by Lynn Stanwyck and Anna Poe

History

Case #1: Dry Macular Degeneration

A 79-year-old male presented for renewal of his Class III Medical Certificate with a past medical history of hypertension and hyperlipidemia. His past ocular history included cataract surgery six years prior. Since his previous exam, he had seen an ophthalmologist due to progressive decreased vision in both eyes for approximately eight months. On examination, his ophthalmologist found his best-corrected visual acuity was 20/20 in each eye. Dilated fundus exam demonstrated mild macular pigment epithelium changes and drusen, a normal peripheral retina, and no evidence of neovascularization. Humphrey visual fields were consistent with age related macular degeneration (ARMD), which is alternatively referred to with the acronym AMD. [Amsler grid results were not available]. He was diagnosed with mild, stable dry age-related macular degeneration (ARMD) by his ophthalmologist and was recommended to take AREDS2 vitamins* and follow up annually.

Case #2: Wet Macular Degeneration

A second 79-year-old airman with 1800 hours of flight time and a private pilot license presented to his AME requesting a renewal of his Class III Medical Certificate. On his medical certification exam two years prior, he had identified no ocular issues. Since his previous exam, he had been diagnosed with ARMD with secondary choroidal neovascularization in the **right** eye and is now being followed by a retinal specialist.

His retinal specialist reported his unrefracted near and distant vision stable at 20/30 in the **right** eye and 20/20 in the left eye. His corrected visual acuity was stable at 20/20 or better in each eye during the past year. The patient has been treated with monthly intravitreal injections of both Lucentis and Avastin (for almost two years) for his neovascularization. His retinal specialist reports his condition is stable and no intraocular side effects from the medication. Humphrey visual field testing performed (as part of their clinic protocol), showed high fixation loss for each eye but otherwise looked normal.

Aeromedical Concerns

ARMD is of aeromedical concern due to the possible progressive deterioration and loss of central vision. It can thus cause subtle and/or sudden incapacitation due to decreased visual acuity, visual distortions, poor vision in low light and alterations in color perception. Vision loss in early dry ARMD can be subtle or slow. Wet ARMD vision loss can be insidious (in the nondominant eye or if low grade off fovea leakage) but is typically rapid and devastating with neovascularization. Untreated, wet ARMD typically leads to profound and permanent adverse visual changes.[1]

Pilots may experience central vision impairment with decreased acuity, distortion or defects, and loss of contrast sensitivity between an object and the background.

Pilots with significant dry and most wet macular degeneration who the FAA determines safe to fly will require a special issuance (SI) because the condition is at significant risk for progression. Duration of the SI depends on the stability of the underlying condition and the extent of functional impairment. Visual acuity must meet the standards for the class of medical certificate desired, but visual acuity does not tell the whole story about visual function, and is not the sole criteria for special issuance.

Pilots with significant macular degeneration will require an evaluation by an ophthalmology retina specialist. Among the tests a specialist may order are: Optical Coherence Tomography (OCT) to visualize changes to the layers of the retina and choroid; fluorescein angiography to determine vascular leakage; Amsler grid to identify subjective visual distortions/defects; and central threshold 10 or 12 degree visual field testing for objective sensitivity information.

Treatment options such as AREDS/AREDS2 vitamins* may be considered to reduce the rate of progression for pilots with intermediate to late dry (non-exudative) macular degeneration.[2,3]

In stable cases, the FAA will consider SI for airmen receiving intravitreal injections of approved vascular endothelial growth factor (VEGF) monoclonal antibodies for the treatment of wet (exudative) macular degeneration. Allowed “anti-VEGF” agents include Eylea (afliberecept), Macugen (pegaptanib) and Lucentis (ranibizumab)**.** Airmen receiving intravitreal injections will be closely monitored by the FAA and require an initial observation for two weeks and a 24-hour no fly period after each injection. Pilots should be instructed to monitor themselves for any adverse visual changes or side effects of these medications including foreign body sensation of the eye, eye pain, persistent blurred vision, or headache. If adverse visual change or significant side effects are present, they should not fly.

Outcomes

Case #1: Dry Macular Degeneration

The first pilot, with dry ARMD, was granted a special issuance. In order to renew this SI, he was required to present a current eye evaluation (preferably from a retina specialist), Amsler grid and best corrected visual acuities.

Case #2: Wet Macular Degeneration

The second pilot, had wet (exudative) ARMD due to the presence of neovascularization affecting one eye. Due to the severity of the condition, a FAS ophthalmology consultant reviewed this case. As the condition had been stable and non-progressive on treatment for an adequate time, the pilot was granted an authorization for SI by the FAA for both the condition and the medication. His Avastin (bevacizumab) and Lucentis (ranibizumab) injections were considered acceptable for treatment with close monitoring. He was warned to wait 72 hours after each injection before flying; (Note: the no-fly time after injection has been decreased to 24 hours subsequent to when this case was reviewed). To renew his SI, this pilot is required to periodically submit the results of a current eye evaluation from his retinal specialist, visual fields specific for macular function, and any additional studies deemed appropriate by the ophthalmologist.

Age-Related Macular Degeneration

Age-Related Macular Degeneration (ARMD) is a spectrum of progressive, chronic eye disease caused by the degeneration of the central retina known as the macula. It is the leading cause of adult blindness in industrialized countries.[4] The macula is responsible for central vision, which is important for reading,

seeing colors, seeing in fine detail, and contrast. [5] These functions makes good macular health essential for flying. Vision loss associated with ARMD is typically central and in most cases, peripheral vision remains. ARMD is common with about 11 million Americans having some form of the disease. This number is expected to double by 2050,[6] possibly due to the increasing population of older adults in the United States.

The two types of ARMD are dry and wet. Dry ARMD is divided into early, intermediate, or late stage. Dry ARMD is the most common and responsible for 90% of ARMD cases. It usually causes slow, mild vision loss.[7] It causes progressive deterioration of the retinal pigmented epithelium, the choriocapillaris, and the photoreceptors in the macula.[8] Early symptoms may include mild blurring or difficulty seeing in low light. However, early and intermediate stages of dry ARMD may be asymptomatic[9] and sometimes people do not realize they have lost vison in one eye **when it is the nondominant eye.** Patients with any stage of dry ARMD can develop wet ARMD.

Exudative, or wet, ARMD occurs when there is growth and leakage of new blood vessels from choroid into the retina. These new vessels are weak and prone to leakage and breakage, causing the leaking of fluids, lipids, blood, and eventually causing fibrous scarring.[8] Wet ARMD is always considered late-stage and may cause rapid vision loss. In the late stage many patients experience visual distortions called metamorphopsia which causes straight lines to look wavy or crooked. Individuals may also notice a blurry area in the center of their vision that may get bigger or blind spots may appear. Individuals have difficulty seeing in low light and color becomes less bright, all of which are of aeromedical concern.[10]

Age is the largest risk factor for ARMD; the risk of the disease is almost 30% for those that are 75 and older. Adults presenting with undiagnosed ARMD may have no symptoms in the early stages, which is why it is important to have routine eye exams in individuals over the age of 55.[10] Race and ethnicity are other risk factors for ARMD. In the US, White Americans make up 89% of ARMD cases. [9] Family history is another risk factor.[9] A diagnosis of ARMD is often made with consideration of age, family history and retinal exam. Retinal exam may show localized retinal atrophy and pigment changes in the macula that may correlate with poor central vision.

An Amsler grid is an easy way to routinely self-monitor and assess the amount of defect present. It can help a patient detect and follow abnormalities in their vision. Other diagnostic tests include optical coherence testing (OCT), fluorescein angiography (FA) and central visual field testing. OCT takes cross-sectional photographs of the retina and choroid to reveal information about drusen, retinal structure, neovascularization, bleeding, and edema. In FA, yellow dye is injected intravenously and sequential fundus photographs are taken to provide information about vascular leakage in the retina and choroid.[8] When visual field testing is used, it should specifically test the macula, such as a 10-2, 12-2 or specialized 24-2-C.

Current treatment options depend on the stage and type of ARMD. Smoking increases the risk of emergence and progression of ARMD.[11] Therefore, smoking cessation is an important lifestyle change to someone with ARMD. Anyone with vascular fragility (such a person with diabetes) is also at risk. There are no available treatments for early stage dry ARMD. AREDS/AREDS2 vitamins* may be useful to delay progression of intermediate to late dry ARMD.[2,3] Wet ARMD is most commonly treated with anti-VEGF intravitreal injections to stop angiogenesis and decrease vessel wall leakage. These drugs may help improve vision and slow disease progression in patients with wet ARMD, but are not curative.[11]

Summary

As an AME, what should you do? As mentioned previously, symptoms of ARMD can be the inability to see in low lighting, blurred vision, and visual distortions. These could all be of aeromedical concern. It is important to look for signs and symptoms of the disease and keep risk factors in mind during the medical

certification evaluation. Any airman with a diagnosis of, or who is being treated for, ARMD should be deferred to the FAA**.** The FAA will likely request an evaluation by ophthalmologist or retina specialist and best corrected visual acuity. When self-testing with an Amsler grid, pilots should report any distortions or missing/blurry lines. Additional information may be a statement from the airman whether they have any visual disturbances. Finally, any testing deemed necessary by their ophthalmologist or retina specialist may be requested.

*AREDS/AREDS2 vitamins contain high levels of antioxidants and zinc and have been shown to reduce some risk of developing advanced ARMD.[2,3] AREDS vitamins contain high-levels of beta-carotene and should probably be avoided in smokers due to some evidence of increased mortality.[2] AREDS2 vitamins contain Lutein and Zeaxanthin but no beta-carotene and have been shown to have similar efficacy in patients with ARMD.[3]

Lynn Stanwyck and Anna Poe are interns working with AAM-220. Lynn recently completed her third year of medical school at Virginia Tech Carilion and hopes to pursue a career in ophthalmology and aerospace medicine. Anna is a senior at Virginia University studying Biomedical Engineering with a minor in Computer Science.

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Age-Related Macular Degeneration: Ophthalmologist Comments

By Harriet Lester, MD

I commend the two authors for taking on this important and difficult topic. Anti-VEGF intravitreal injections have revolutionized the treatment of a number of retinal diseases involving vascular leakage, enabling preservation of vision in many situations that were either untreatable or when treatment options had worse risk/benefit profiles. Anti-VEGF injections have kept a number of pilots flying, under close FAA monitoring.

Basically the FAA wants a substantive evaluation and will special issue anything worse than early stage, mild macular degeneration.

Pilots and AMEs sometimes fail to report intra-vitreal injections (anti-VEGF or steroid), not considering them either medication or surgery. The underlying condition and treatment should be reported under item 18, with an explanation by the AME in block 60, even if the pilot considers the situation resolved (note that 8500-8 uses the term “ever”). The pilot should also report visits to the eye specialist.

The AME must defer a pilot receiving any intravitreal eye injections, unless the AME has an authorization from the FAA for special issuance.

OCT is considered an essential part of the diagnosis and follow-up of patients with ARMD[1]. Visual fields testing 24-2 or 30-2 are inadequate to assess macular/foveal function, with the exception of the 24-2C, which includes additional test points in the central 10 degrees of vision.

The Amsler grid is a useful adjunct to monitoring macular/foveal function. The drawback is that it is subjective. Advantages are that it is freely downloaded from a computer and provides useful qualitative information that a threshold visual field may not demonstrate. Pilots will draw and describe any defects and distortions if asked, and the notated Amsler grid can be submitted to the FAA.

Vision is not just about visual acuity. There are many important qualities of vision, some of which the FAA does not require testing for, such as contrast. It is very important that the AME ask pilots about their quality of vision, and one useful question is whether there is driving disability at night. Sometimes a spouse is more forthcoming about this than the pilot! When an aging pilot has macular degeneration plus other pathology such as cataracts, the quality of vision can worsen more than from either condition alone.

With loss of visual function, the FAA may require the pilot undergo a medical flight test (MFT) in the context of macular degeneration. The FAA will not issue a Statement of Demonstrated Ability, (SODA) because the underlying condition is not static. However, a Special Issuance may be considered with regular monitoring.

As Anti-VEGF options and other treatments and diagnostic tests continue to evolve, so will FAA policy. The aviation community, FAA included, appreciates the treatment advances that enable many of these pilots to fly. We take seriously our obligation to appropriately monitor these challenging cases with the assistance of you, our valued AMEs.

Dr. Lester is the Eastern Regional Flight Surgeon.

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Vaccines

By Vinh "Vickie" Kieu, PharmD, BCACP

All vaccines have the potential to be reactionogenic. Most such effects are generally mild and do not have aeromedical concern. This mild reactionogenicity occurs in many of the adult immunizations, such as influenza, shingles, or meningococcal vaccines. However, there are several vaccines known to have to higher risk of reactionogenicity. These vaccines require a mandatory no-fly time following vaccination or additional guidance.

The FAA approved EUA COVID-19 vaccines have common systemic reactions including fatigue, headache, and myalgia. Fatigue was reported above 20% after the first dose and above 50% after the second dose on average among all vaccines currently available in the US. Due to this reactionogenicity, they require a post dose observation time of 48 hours.

The typhoid and rabies vaccines require a 72-hour post dose observation time. Rabies has potential side effects of dizziness, headache, and fatigue, as well as serum sickness. If an airman requires this treatment for post-exposure vaccination, they need to be grounded for at least the first two doses of the 3-dose series to verify there are no side effects.

Due to the recent YF-VAX (yellow fever vaccine) depletion in the US, the FAA allowed substitution of Stamaril when required for US carriers to fly into areas that require the yellow fever vaccination. The CDC has recommended Stamaril, which is an international equivalent vaccine, as a substitute vaccine. There is no mandatory no-fly time following vaccination. However, 14 CFR 61.53 applies and airmen should not fly if they are experiencing significant side effects.

For additional vaccine information, see the Vaccines section of the AME Guide.

Dr. Vinh Kieu is the Clinical Pharmacist in the Medical Policy and Standards Branch at FAA Headquarters, Washington, D.C.

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HIMS AMEs

Looking to expand your role as an AME? Looking for more opportunities?

Consider becoming a HIMS AME.

Airmen who have a regulatory disqualification of substance dependence or substance abuse typically require evaluation and monitoring before they can obtain a special issuance medical certificate. If an airman requires monitoring, they are required to engage with a Human Intervention Motivation Study trained AME (a.k.a. HIMS AME) to help them work through the FAA process. The HIMS AME serves as a neutral and objective sponsor and monitor of the airmen, guiding the airmen towards obtaining and then maintaining the special issuance medical certificate.

To become a HIMS AME, take the following steps:

1. Educate yourself. Good sources are (1) The HIMS website: https://himsprogram.com/about-hims/, or (2) search “HIMS FAA”
2. Contact your Regional Flight Surgeon’s office
3. Enroll in the HIMS BASIC Education Seminar (next available 2022).
4. Pass the required exam at the HIMS Basic Seminar

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In Memoriam

April 28, 2021 was a difficult day for Aerospace Medicine as not one, but two significant contributors to the advancement of Aerospace Medicine passed away.

Dr. Jack Hastings

July 2, 1940 – April 28, 2021
Aerospace Medicine Neurologist. Jack was an AME and longtime Federal Air Surgeon neurology consultant. He has an extensive history with the FAA where he was designated an AME in 1976. He worked closely with the Education Division as a lecturer for the AME seminars and was active in the FAA neurology panel from its inception.

https://www.stjohnsfamilyfuneralhome.com/obituaries/John-Hastings-Md/#!/Obituary

Dr. Thomas J. Tredici

August 27, 1922 – April 28, 2021
Aerospace Medicine Ophthalmologist. Thomas had a career which spanned decades. His dedication and expertise led to significant advancements in aerospace ophthalmology.

https://www.dignitymemorial.com/obituaries/san-antonio-tx/thomas-tredici-10171735

Dr. Marc Schneiderman

April 12, 1954 – December 26, 2020
AME. Marc was a pilot who became an AME in 1989. He will be missed as an AME and Family Physician.

https://www.copelandfuneralhomes.com/obituary/DrMarc-Schneiderman

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Personnel Changes

Dr. Philip Kemp Retires

Dr. Philip Kemp joined CAMI's Forensic Sciences laboratory in 2011 and became the Bioaeronautical Sciences Branch Manager in 2017. Phil has spent a lifetime pursuing his passion of forensic sciences, and is continuing to do so after his FAA retirement in July 2021. Phil has accepted a position at a local Oklahoma university as a Professor of Sciences. Phil's passion for science is infectious and inspires the best in everyone around him. We wish him the very best in his new endeavors.

AME Retirements

To all of the AMEs who retired this year, thank you for all of your dedicated service to protect the safety of the NAS. We will miss working with you and wish you success and happiness in future endeavors.

Welcome Dr. David Hardy

World Series Champion Curt Schilling and Dr. Hardy
(Photo Credit: Dr. Hardy)

Dr. David Hardy, DO, MPH, has been selected as the new manager of CAMI's Aerospace Medical Education Division. He served in the United States Air Force for 21 years. Dr. Hardy was formerly the Commander, 72d Operational Medical Readiness Squadron, at Tinker AFB, OK. His previous assignments include the Family Medicine Residency, 55th Medical Group, Offutt AFB, NE; Emergency Department Physician, 35th Medical Group, Misawa AB, Japan; Squadron Medical Element, 14th Fighter Squadron, 35th Fighter Wing, Misawa AB, Japan; Chief of Aerospace Medicine, 374th Medical Group, Yokota AB, Japan; Chair, International Education and Training Division, USAFSAM and the USAF/RAAF Exchange Medical Officer in Canberra Australia. Dr. Hardy received his Osteopathic Medicine degree from University of Health Sciences, Kansas City, MO, and his Masters of Public Health degree from Harvard University. He completed the Aerospace Medicine Residency Program at Brooks Air Force Base, Texas in 2009. He is board certified in Aerospace Medicine. He is a member of CAMA, an AsMA Associate Fellow and volunteers with the University of Oklahoma School Of Engineering Mentoring Program. And finally, Dr. Hardy is a die-hard Boston Red Sox fan. He is seen here posing with World Champion Baseball Pitcher Curt Schilling in Afghanistan.

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Regional Flight Surgeon Contact Info
Aeromedical Safety Brochures
Multimedia Aviation Medical Examiner Refresher Course (MAMERC)
Medical Certification Information
MedXPress Login & Help
MedXPress: The Royal Treatment Video
MedXPress: It's Easy Video
CAMI Library Services

Sleep Apnea Information
OSA Protocol
OSA Information Brochure

AME Minute Archive
Click here to view

Reminders:
There will NOT be an AME seminar during the Aug 29-Sept 2 AsMA seminar.
The **2022 AME seminar schedule** is now posted under
AME Seminar Schedule & Registration.

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