Federal Air Surgeon's Medical Bulletin

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From the Federal Air Surgeon: The Office of Aerospace Medicine and You

By Susan Northrup, MD, MPH
Federal Air Surgeon

An airman's post on a social media site was recently brought to my attention. In that missive, the airman complained about what he had to go through to get a special authorization in 2007 (yes, 13.5 years ago) which he never renewed. He stated in his post that he would rather not fly than go through that process again. So, he didn't. Sometime after 1 May 2017, he returned to flying under BasicMed. He now believes he deserves an apology from the FAA (but he is not holding his breath). The sad part of this post is he grounded himself for nine years when he had options including pilot advocates, AMEs, and Light Sport.

In my career with the FAA, mostly as a Regional Flight Surgeon, I have communicated with thousands of airmen – sometimes in person at Sun 'n Fun, Oshkosh, or other aviation events, sometimes on the phone, and sometimes via

email. And I listened. I understand it can be particularly challenging to get the initial special authorization, especially if you have never done it before. Depending on the condition, or set of conditions, subsequent renewals can be equally difficult (although, typically it gets easier).

You as AMEs and pilot advocates can help these airmen.

- First, help the airman get smart about the requirements. The FAA's Guide for Aviation Medical Examiners is on-line at https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/ and is full of good information to discuss with the airman and his/her treating providers.

- Second, if the airman is going to submit directly to the FAA remind him or her to review their own medical documentation to make sure there is nothing else in materials we might ask questions about (or they forgot to mention in previous applications) because we really do read what is submitted. If you are submitting on the airman's behalf, please read the documents.

- Third, make sure every page is legible, contains at least the airman's name and a date, and any letters from providers are actually signed (clinical notes from the airman's chart do not require signatures).

- Fourth, ensure that each item requested by the FAA is in the package.

- Fifth, make sure the contact details for you and the airman are correct in our system and on your paperwork. (I can't begin to tell you how many times I could have solved an issue with a phone call where the listed number was incorrect, forcing me to send a letter.)

- Finally, should you need a limited extension, contact the Airman Medical Certification Division or your Regional Flight Surgeon's office.

- One other note, keep a copy of everything you send. Mail, and even FedEx packages, can go astray or be mis-delivered.

A lot has changed in the Office of Aerospace Medicine in the last decade for the better -- expansion of AASIs, CACIs, approval of new medications to name a few. And, we aren't done.

What about the airman I started this column with? I looked him up. True enough, he was initially (and appropriately) deferred by his AME under the policy in place in 2007. However, he was granted an AME Assisted Special Issuance (AASI). All he was required to do was provide a lab value and a clinical summary from his doctor. Then the AME could have issued on the spot if he otherwise met the standards. Further, he would have been released him from the AASI in 2012 if nothing changed. The condition became one of the Conditions an AME Can Issue (CACI) in 2013 without FAA review. The really unfortunate part of this whole event is he never appears to have reached out for assistance or critically read the actual special issuance letter.

In closing, thank you all in advance for what you do! Our National Air Space is safer because of you.

Fly Safe!

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General Doogie

By Curtis Edwards, MD

It was Saturday evening on call and I had begun really enjoying the anatomical beauty of the inside of my eyelids when the FAA phone abruptly interrupted the dive into REM. The Regional Operations Center (ROC)? Glancing at my iPhone and muttering, “Midnight? Oh come on!”

My wife rolled away, softly snoring. After marrying a surgical resident, she was conditioned to fall right back asleep after rude late night phone calls. It’s been years since I have needed to explode out of bed, grabbing my coat and keys then running to an ER, occasionally giving only lip-service to traffic laws.

I answered the phone and the technician immediately apologized. She just didn’t know what to do. Call Dr. Edwards (he’s like Mikey; he’ll eat or do anything). She had a call holding from Guam. Guam? Now, this was interesting. It didn’t matter that Guam wasn’t one of the western states in Northwest Mountain Region, or that it was past midnight, now. She had my attention; focus would follow.

It seemed that a charter crew of a Gulfstream Five had taken off after delivering vaccine, *without checking in with public health authorities for the results of their COVID19 PCR tests.* A crew member was positive. The Air Traffic Organization (ATO) general manager in Guam had been called, who then called Hawaii (the plane’s destination), who then called the ROC, who tried to call Western Region, gave up and called me. I felt it was critical that I include the powers that be so I called, Doogie. That is, the Acting Federal Air Surgeon, Dr. Brett Wyrick, a friend with the misfortune to having been my previous boss as Regional Flight Surgeon, meaning I possessed his personal cell number.

Dr. Wyrick, or General Doogie (as he is affectionately known behind his back), though groggy at 0315 EST was helpful, if not kind in his instructions. We managed to corral the errant charter jet crew upon landing in order to obey Hawaiian Public Health rules for quarantine. The lesson is that FAA spans half the globe. Sometimes, in a global pandemic, it may be zero dark thirty your time, but it is tomorrow morning somewhere else and people may need your help. We cover for each other because AAM is a team-- and we are physicians, after all.

Dr. Edwards is the Flight Surgeon in the Northwest Mountain Region.

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Document Management

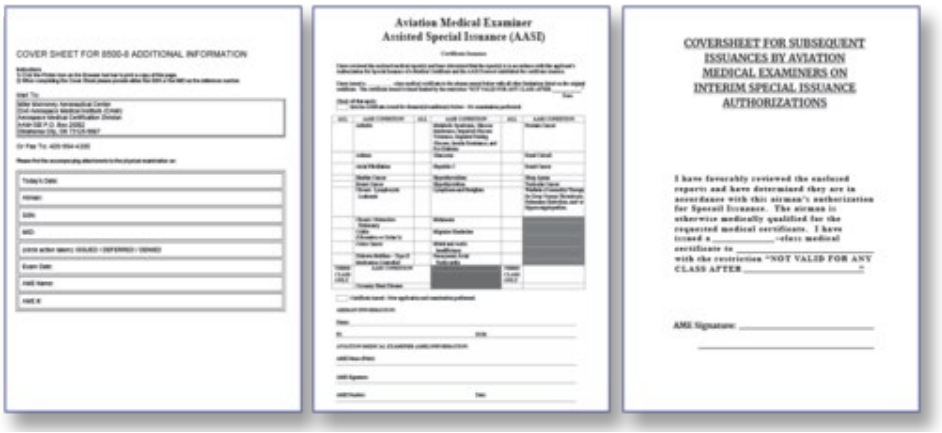
By Maria Connors and Mindy Zalcman

While medical documents are necessary for timely review of an airman’s case and for continuation of Special Issuances, more is not always better (the FAA received more than 1.5 million pages of clinical documents last year alone). As AMEs, there are several ways that you can assist in improving the Airman Medical Certification Process, and expediting decisions for your airmen. Follow the guidelines below to properly submit airman reports to the FAA. Feel free to share these guidelines with your airmen for expedited processing.

1. **Submit only the documents requested by the FAA.**
   Help your airmen identify what supporting documents are actually requested. Remove any extraneous items.
   Exception: if a new event has occurred since the Special Issuance letter, the AME should submit the new pertinent information.

2. **Use a Cover Sheet.**
   Use the appropriate cover sheet when submitting supplemental documentation for an exam (currently three are available for AMEs). The following cover sheets can be downloaded at: https://www.faa.gov/other_visit/aviation_industry/designees_delegations/designee_types/ame/amcs/information/

   • Coversheet for 8500-8 (should be provided to airman sending in records)
   • AASI Coversheet
   • Coversheet for Interim Certificates



3. **Divide and Conquer.** If submitting multiple reports in one submission, Include a title page for each document to include the following information:
   • Airman Name
   • MID/App ID or PI#
   • Type of document (stress test, cardiac narrative, eye report, lab)

   Group together documents of same type (e.g. doctor notes, labs, radiology) and put in chronological order

4. **Index Electronic Medical Records** and Hospital Records. Describe what record is enclosed and where to locate the information the FAA has requested.

5. **Remove the following before submitting** (the FAA has an electronic copy)**:**
   • Letters from the FAA to the airman;
   • 8500-8 summary;
   • a copy of the medical certificate.

6. **Regional Offices Can Help.** Most regional offices will accept time sensitive and priority paperwork for expedited review. Contact your Regional office for their requirements, which may include an email option.

We appreciate the job you do as AMEs and value your dedication to the safety of the National Airspace. Following these guidelines will reduce the extraneous documents that the FAA receives which slows the review process. With your help, cases can be reviewed quickly and efficiently!

Ms. Connors and Ms. Zalcman are program analysts in the Eastern Region supported by Dr. Harriet Lester, Regional Flight Surgeon.

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Spotlight on Airman Education

By Judith Frazier, MD, MBA

Have you ever wondered how a new general aviation pilot, or new AME, can learn about the physiological and psychological stresses of flight? Where can you go to learn first-hand what hypoxia feels like and what specific symptoms you display? Do you want to know what spatial disorientation really feels like? If you have not already had these experiences, you should know about AAM-400 and Airman Education.

Most AMEs are familiar with AAM-400 as the smiling faces who proudly bring you AME seminars, MAMERC online training, or AME minutes. We also answer certification questions for International and Military AMEs. However, there is another side to AAM-400-Airman Education.

Airman Education (they like to refer to themselves as “the grumpy old men”) is an integral part of AAM-400 and well known to pilots. These seven specialists travel the country to deliver life-saving training to thousands of pilots per year. This group collectively has hundreds of years of experience in training pilots (and AMEs) in post-crash survival skills, altitude physiology, spatial disorientation and human factors.

If you have seen the long line of pilots at Oshkosh, Sun-N-Fun or other air shows waiting to go into a square aluminum and plastic enclosure that will purposely expose them to hypoxia; you have seen Airman Education in action. When it comes to an ounce of prevention----Airman Education is worth tons. They can help train you or your pilots to identify symptoms of hypoxia, which in turn can keep you safe and flying.

The following article series will describe what Airmen Education does, and how it can help you (especially if you are not a pilot) and your pilots stay safe. To find more information about Airman Education, visit: https://www.faa.gov/pilots/training/airman_education/

The first article by Mr. J.R. Brown talks about the history of the altitude chamber (we have two at CAMI) and the PROTE (Portable Reduced Oxygen Training Enclosure) device used to train pilots what it feels like to be hypoxic. While travel is currently on hold, when travel restrictions are lifted, we hope to see you at an airshow, one of the WINGS events, or CAMI.

Dr. Frazier served as the Manager for the Civil Aerospace Medical Institute’s Aerospace Medical Education Division.

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Hypoxia Training in Aviation…A 40-year perspective

By J.R. Brown

An introduction to a profession…

During my 40-year career in the Phyz-Bizz (Aerospace Physiology career field), I have seen many changes. I worked with wonderful people during that 8-year stint. Work wise, the altitude chamber operation and related training principals remained pretty steadfast for many years. Of course, human physiology had not changed much in the last few hundred thousand years. Therefore, the basic teachings on the subject did not need to change except for the occasional revelation from our researcher’s findings. Likewise, the altitude chambers I first started working with in 1981 remained largely unchanged from the chambers built in the 1930s. In fact, some of those chambers built in the 1930s, if not earlier, were still in use when I started.

Pull off the flight suit and put on a tie…
After the Air Force, I accepted a job with the FAA. When I arrived at the Civil Aerospace Medical Institute (CAMI) and saw the altitude chamber, it was what you would expect in 1989…Steel Box…Vacuum Pump…Seats…Oxygen Regulators and Mask. It looked familiar to what I saw in the military. However, I did notice some ways the FAA chamber differed from the military counterpart.

A new approach with an old box…
The first thing that I noticed was the 1970s interior. We are talking -- green shag carpet, wood paneling on the walls, and Braniff Orange seats for the students. In the words of Austin Powers, it was definitely GROOVY, BABY!!

The next thing I noticed -- NO LOCK! In the military, each chamber had a small compartment, called a lock, which would seat about six pilots. The lock had two purposes. First, it acted as a sort of an elevator that could take people and equipment up and down in altitude while the main portion of the chamber (operating independently) continued the training flight. We rarely used the lock for that purpose but was available just in case.

The primary use of the lock was for the pilots and crewmember to experience a Rapid Decompression (RD). It was a two-flight process. The first flight would take the students to 43,000 feet (FL430), which is the ceiling of the T-38 Talon. The chamber with the students inside would then be brought back to ground level (GL) and students exit the main chamber. The empty main chamber was then sealed off from the lock and climbed to roughly FL300. The lock remained at ground level. Six students at a time would be loaded into the lock and ascend to 8,000 feet (which represents 8,000 foot cabin pressure). The chamber would remain at FL300. With a flip of a switch, a valve would activate and create an opening between the two compartments. In accordance with Graham's Law…The high pressure 8k lock environment (once again, the students are sitting at 8k to represent cabin pressurization) would move to the low pressure environment (represented by the empty chamber at 30k). The result is a rapid decompression from 8k – FL220 within 2 seconds. To experience a rapid decompression is a very valuable hands-on training for a pilot. So this civilian chamber…No lock…No RD? What gives?

A better way…
Remember the people that ran the chambers at the FAA at that time were all military retirees. A couple of them actually were around when the FAA was the Civil Aeronautics Authority. So, they knew as much about altitude chamber training as anyone in the world. With that experience, knowledge, and a management team that fostered an environment of trying a newer and better way, good ideas flowed freely. One of those ideas was to do the rapid decompression demo during the main chamber flight profile. This demo consisted of placing a 15,000 cubic foot tank outside the building. The tank would be brought to altitude, via a vacuum pump, before the training flight and level off at FL220. At that point, students entered the chamber at ground level for a flight to FL250. Once the chamber reached 8,000 feet, a valve opened that connected the main chamber to the tank outside the building. With a flip of a switch, a valve opened and the chamber climbed to FL180 in about 7 seconds. How genius was the idea? It allowed the pilot to experience RD with only one flight, not two.

So the civilian chamber that did not have a lock or RD actually provided a more realistic decompression and safer for students. Go figure! The FAA altitude chamber accomplished everything the military flight did as far as training objective was concerned, but more safely and efficiently. A BETTER WAY!

Usher in HAL 9000…
When I joined the FAA, we used research and training chambers built in the 1940s. By 1997, the FAA built the first new altitude chamber in America in nearly 50 years. So with an opportunity to design an altitude chamber from the ground up, we were chomping at the bit to give our input. Of course, we had grand ideas like making the FAA chamber bigger than the military version. We wanted a chamber with no lock but built to be the safest in the world. Ultimately, CAMI's new chamber became the first altitude training chamber to be certified as a

Pressure Vessel for Human Occupancy (PVHO). This meant the chamber had more stringent safety standards than typical training chambers.

Next…computer control. In normal chamber operations, the chamber operator must concentrate on all the gauges, dials, valves and indicators. That requires their full attention and takes a set of eyes away from the students inside. With a computer doing most of the controlling and monitoring, the chamber operator can be more heads-up and help monitor students. CAMI developed other innovations, including using Closed Circuit TV (CCTV) to monitor and record students. CAMI was also the first to incorporate the use of pulse oximeters with every student.

The bottom line is CAMI took an antiquated but effective training system and made it better. As a result, CAMI altitude training and research chambers are used as a model for other chambers and the envy of the industry.

An even better approach…

Altitude chambers are a valuable training asset with limited availability to the general aviation pilot. There is more demand for this training than the current seven-man airmen education team could ever meet at CAMI. We had to put our heads together to figure out how to meet the training demands. The biggest problems with chambers is that they are not mobile. Now I know some of you “old hats” will remember the portable altitude chamber from the 1950s. It was mobile, but only by use of a railroad car. So, that is a bit of a problem.

In addition, altitude chambers in the military began drastically downsizing. At one time, there were well over 40 military chambers where students could train. Nearly 2,000 students per year trained at these various military bases all over the world. That is now history. For security reasons, civilian access to military bases came to a halt shortly after 9/11.

So, we asked how do we meet training needs in an environment of increasing demand and ever-shrinking access to chambers? Our answer ---take the chamber to the masses. We needed a new approach that was safer, faster, cost effective, and PORTABLE!

It’s called the PROTE…

Around 2010, CAMI ushered in the era of normobaric training in the recognition of hypoxia. Enter the Portable Reduced Oxygen Training Enclosure (PROTE). The PROTE is a pretty straightforward concept -- keep students at ground level, and without reducing atmospheric pressure, induce hypoxia to a level for them to recognize their personal symptoms.

By using air scrubbers to remove the oxygen from the incoming air and redirecting the high nitrogen air to an outlet, we can use this high nitrogen air to our advantage. So basically, we take 12 of these scrubbers and attach them to a cube constructed of an aluminum frame and see-through vinyl sheeting. As the scrubbers pull the air from within the cube they remove the oxygen and then send the nitrogen rich air to the enclosure. As this occurs, we drop the oxygen content within the enclosure and subsequently increase the percentage of nitrogen.

Once the oxygen percentage within enclosure is down to 7% (this is a physiological equivalent to being at 25,000 feet) the students enter for a 5-minute exposure to this hypoxic environment. After getting three symptoms the students put on an oxygen mask and recover just like they would in the aircraft or the altitude chamber.

A change to an industry…

The PROTE has been well received by peers and students alike. CAMI conducted a study in 2010 (DOT/FAA/AM-10/20. Physiological Equivalence of Normobaric and Hypobaric Exposures of Humans to 25,000 Feet) and found that the symptoms of hypoxia in the PROTE are the same as in the altitude chamber. Of course, the chamber symptoms are the same symptoms you will experience in the actual flight environment.

The advantage of being portable is a big game-changer. The PROTE can be set up and operational in about two hours. It is then broken down, crated up, and sent to its next destination. It is also safer. When you consider that the atmospheric pressure remains at ground level value, you can see how it avoids many of the potential medical problems that result from atmospheric pressure change (e.g., ear/sinus blocks and decompression sickness (DCS).

The PROTE is a time saver. Most altitude chamber flights take around an hour. Thirty minutes of that time involves the instructors and students pre-breathing 100% oxygen at ground level. This occurs before the chamber even leaves the ground. The purpose is to eliminate about 50% of the stored nitrogen you have in cells. This is a mitigation action to help prevent DCS (eliminate 50% of the nitrogen in the body and eliminate 50% of the risk of DCS). This is not necessary in the PROTE. Additionally, the PROTE does not require a controlled ascent or descent to and from altitude. The bottom line is the average PROTE flight is 10 minutes as opposed to over an hour in the chamber.

Another advantage of the PROTE is that we can train more students in a 24-hour period. In the altitude chamber, we can train only 18 students in a 24-hour period. This limit is set because it is unsafe to take the human body to and above 18,000 feet more than once in a 24-hour period. Repeated exposures above 18,000 feet will increase the likelihood of DCS. It is limited to once every 48 hours if you had a rapid decompression on the chamber ride. These limits are to prevent DCS among instructors and students. Bottom line is we can train nearly 10 students an hour and 60 - 80 students per day in the PROTE.

It is cost effective. An altitude chamber can cost upwards of $2 million (USD) and an additional ~$25,000 per year to maintain. A turn-key PROTE operation will cost around $150,000 with virtually no maintenance, which is a significant cost savings!

A change for the better…
The U.S. military, foreign militaries, universities, and flight schools all have embraced normobaric way of training with great success. However, I propose we do not throw the baby out with the bath water. I strongly feel that that the altitude chamber still has great value. Sometimes you need true pressure-reduced simulated altitude for research. Therefore, there will always need to be altitude chambers in the research world.

But is student training still needed? I say yes! I feel very strongly that any pilot who flies a pressurized aircraft needs altitude chamber training during their initial training phase. They need to experience a rapid decompression up close and personal. They need to feel the effects of reduced pressure on their body. They need to use the oxygen mask and its related equipment in a realistic flight environment. Once they have experienced the chamber, it is something that will stick with them for the rest of their life. After the initial training in the altitude chamber, a pilot should take a 10-minute ride in the PROTE every 4 or 5 years to refresh themselves on their personal hypoxia symptoms.

40 years later and here I am…
I have witnessed significant changes over the last 40 years. It is interesting that prior to my entering this wonderful profession, the chamber training operation and equipment had not changed in the prior 50 years. Now, in the last 20 years it has changed rapidly and for the better. I have come up with three possible reasons:

1. A jump in technology;
2. A management team that fosters an environment where new ideas are welcomed;
3. The fact that you have “seasoned” instructors who are the most experienced chamber crew in the world (we average nearly 40 years’ experience each) and… nothing teaches like experience.

Where does it go from here?…
I think that the altitude chamber is still a viable training tool. It would be particularly effective for new pilots and crewmembers to know what true unpressurized altitude feels like. They should know what it feels like to experience the signs and indications of a rapid decompression or to consciously clear your ears and sinuses on descent. That being said, once a pilot has experienced all that the chamber has to offer, doing another full-

fledged chamber flight 4 years later is overkill. I would suggest that all pilots who fly routinely above FL180, or those who fly in a pressurized cabin, if available, get their initial training in an actual altitude chamber. Following that, I would recommend a PROTE ride every 3 - 5 years for a quick refresher on their hypoxia symptoms.

Mr. J.R. Brown is a Training specialist with Airman Education.

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Dr. Peter Hansen

By Marcel Dionne, MD, MSPH

Photo credit: Peninsula Community Health Services

Long-time Senior AME Dr. Peter Hansen passed away of natural causes on 3/25/2021 at the age of 83. He was an active AME since 1965, serving the rural Alaska aviation community for over 56 years. Dr. Hansen was the quintessential country family doctor practicing in the community of Kenai since 1967. Although he “retired” from his full-time practice two years ago, he continued on a part-time basis to perform periodic medical exams for airmen and air traffic controllers. Truly an amazing lifetime of dedicated service to the residents of Kenai, the Alaskan aviation community, and the FAA....he will be missed.

RIP, Dr. Hansen.

Dr. Dionne is the Regional Flight Surgeon for the Alaska Region

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Recent Policy Updates

COVID Policy Posted

AMEs have asked, what should we do if a pilot had COVID? The Disposition table below should answer that question. It was added to the AME Guide with the 3/31/21 policy updates.

If you have specific questions about a pilot not covered here, you should contact AMCD or your RFS office.

Click here to view the COVID-19 Disposition Table.

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2021 AME Feedback Survey Is Now Available

The Office of Aerospace Medicine strives to continuously improve airman medical certification services provided to you and by you, as an AME. Approximately every two years, we ask you to complete an important survey evaluation of the services and support provided through the AME Program.

You should have received your email invitation to complete the survey the week of April 19, 2021. For your convenience, you will be able to complete the survey online using a direct link that will be provided in your invitation email. You will also receive a letter via US Postal mail notifying you of the survey.

The **AMCS User Alerts** system will also send regular reminders to complete the survey. Please disregard these alerts once you have competed your survey.

- If you **did not receive your survey invitation email or have technical issues**, please send an email to: **9-AMC-SurveySupport@faa.gov**.

We value your feedback and rely on it to determine how to better support you in fulfilling the duties of an AME. The AME Feedback Survey will be accessible through **Monday, July 12, 2021**.

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Personnel Changes

Drs. Baker and Griswold retire

Dr. Byron Baker retired from the Albuquerque Medical Field Office in December 2020 after more than 33 years of service. As the Flight Surgeon for the Southwest Region, Dr. Baker managed the Air Traffic Control Specialist (ATCS) Health Program, reviewing all ATCS exams and issuing medical clearances.

Few people know he is a chemical engineer and an anesthesiologist. He is famous for eating take out from McDonalds while his colleagues sampled local restaurants. He remains the absolute expert for quoting FAA orders and past precedent when it came to AAM history. His colleagues had to be careful with using the exact words around Dr. Baker because he actually remembered them.

Dr. Baker's depth of knowledge, experience, and corporate history of the program will be greatly missed. We hope he now has time to try out some of good local restaurants.

Dr. Stephen Griswold retired from the Western Pacific Region in January 2021 after almost 30 years in the FAA. He most recently was the Regional Flight Surgeon, but had previously spent time as a flight surgeon and Deputy Regional Flight Surgeon.

Dr. Griswold was always even keeled, patient, helpful, and thoughtful. He was a typical internal medicine physician at work. He used a systematic approach to medicine, running down his internal checklist and doggedly following up. He examined and thought out the medical issues thoroughly and fairly. He was always supportive of the staff and a great mentor.

He throws himself completely into whatever project is asked of him. He built his own airplane from scratch over the years (although we never heard him say he flew it?). He is very proud of his three sons who all went on to

remarkably diverse and successful careers. While we will miss him at work, we hope he checks all the steps involved in “enjoying retirement”.

Congratulations to Drs. Baker and Griswold!

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Dr. Hackworth Receives 2020 Henry L. Taylor Award

Dr. Carla Hackworth was awarded the 2020 ***Henry L. Taylor Award*** by the Aerospace Human Factors Association (AsHFA).

The Aerospace Human Factors Association (AsHFA) was established to further the goals of the Aerospace Medical Association (AsMA), increase AsMA membership, and serve as a voice of the Human Factors community within AsMA.

The Henry L. Taylor Award is given in recognition of outstanding contributions in the field of Aerospace Human Factors.

Dr. Carla Hackworth is the Manager of the Aerospace Human Factors Research Division at the FAA’s Civil Aerospace Medical Institute. She has oversight of the research activities of 37 personnel composed of psychologists, statisticians, human factors engineers, simulation engineers, and administrative staff.

Dr. Hackworth has led assessments of organizational effectiveness, general aviation testing issues, weather-related general aviation incidents, and human factors in aviation maintenance. To date, she has authored and co-authored over 30 publications examining aviation human factors. She continues to be a voice for aviation human factors.

Congratulations Dr. Hackworth for a job well done!

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Test Yourself

Case #1

You see a 45 y/o 3rd class pilot with a head injury after a motorcycle accident 14 months ago. He states all of his other injuries have resolved. His physical exam is negative. He brought some of his hospital records as he was not sure what information would be needed. While examining the hospital records, you realize he had a subdural hemorrhage in the temporal region. He is doing well, no medications, no seizures and his neurological exam is non-focal. The clinic note from neurology three months ago says he will follow up next year.

What do you do?

a. Issue the medical certificate. The pilot passed the test of time after 14 months and is no longer high risk for sequelae from the event.

b. Have the pilot obtain an additional evaluation from the neurologist. If the subsequent follow up shows the condition is stable, no medications are needed and he can follow up PRN you can issue a one year time limited medical certificate.

c. Defer. Blood in the brain can be of significant aeromedical consequence.

Discussion:

Head injury can result in short-term or long-term sequelae, focal neurologic deficits or post-traumatic epilepsy. For these reasons, a traumatic brain injury (TBI) requires a recovery period. The more severe the head injury, the longer the recovery period.

Seventy-five percent (75%) of TBIs are mild brain injury. The pilot can have headaches, photophobia, blurry vision, or loss of energy. Cognition can also be impaired seen as problems with concentration, memory, or the inability to multitask. There can be irritability, depression, mood lability or anxiety. Sleep may be affected resulting in either hypersomnia or insomnia. These symptoms may be delayed in onset. Due to these concerns, even mild head injuries (loss of consciousness < 1 hour) require a 6-month recovery period.

In contrast, a severe TBI (LOC 24 hours or longer, bleed or depressed skull fracture) usually requires a 5-year recovery period. Long-term sequelae of brain injury can include increased risk of cognitive impairment, depression and neurodegenerative conditions. Cognitive impairment is the most disabling sequelae.

Memory is in the internal portions of the temporal lobe. Temporal lobe damage can result in short-term memory problems. This may persist even though cognitive domains experience recovery.

An additional concern in this airman is the risk of posttraumatic epilepsy (PTE). There are multiple risk factors for the development of PTE such as a personal or family history of seizures, type of injury (penetrating head injury vs CHI), intracranial hematoma (blood in the brain is an irritant), and location (blood in the cortical tissues has an increased risk of seizures).

Moderate injuries (LOC 1-24 hours, no bleed), in general, will require a 1-2 year recovery period. The time will vary based on the factors listed above.

Answer:

a) Incorrect. Blood in the brain requires a 5-year recovery period to verify no long term sequela, no neurocognitive deficiencies, and no evidence of post traumatic epilepsy.	b) Incorrect. The risk for seizures and long term sequela is multifactorial. A follow up evaluation will not change this risk.	c) Correct. Due to the subarachnoid hemorrhage this airman will require a 5 year recovery period, a neurology evaluation, neurocognitive testing. Due to the severity of the injury, after the recovery period, this case will find it's way to the FAS Neurology Panel.

Case #2

You see a 57 y/o 2nd class pilot previously on a special issuance for diabetes treated with three medications. His endocrinologist took him off the medication and put him on insulin.

What do you do?

a. Defer. Insulin is not allowed in 1st or 2nd class pilots.

b. Defer. The pilot will need to be re-evaluated by the FAA due to changing from oral medication to insulin.

c. Verify the pilot meets all the CACI criteria for insulin treated diabetes (ITDM) and issue a regular (no time limit) certificate and place “CACI qualified ITDM" in block 60.

d. Issue the medical certificate with a one-year time limit as the pilot has a Special Issuance letter.

Discussion:

Insulin treated diabetes (ITDM) is a specifically disqualifying condition (14 CFR 67.x13) which states **(a)** No established medical history or clinical diagnosis of diabetes mellitus that requires insulin or any other hypoglycemic drug for control.

The only way the pilot can fly is when granted a Special Issuance. 3rd class pilots have been flying on insulin since 1996. The protocol for ITDM 3rd class requires the pilot check their glucose levels before, during and at the end of flight. If their FSBS is less than 100 or more than 300 mg/dl, they are given instructions on how to proceed.

In November 2019, the ITDM protocol for 1st and 2nd class pilots was published in the AME guide. It allows all classes of pilots to be considered for Special Issuance under the Continuous Glucose Monitor (CGM) protocol. The fundamental change is using the CGM Protocol, pilots are evaluated for Special Issuance based on their ability to keep their sugars in a consistent range rather than only when flying. The CGM device allows the pilots to see their glucose trends and make corrections before there is a problem.

Answer:

a) Incorrect. Insulin use may be considered for Special Issuance in ALL classes of pilot.	b) Correct. Because this 2nd class pilot changed from an oral medical to insulin, they need to be reviewed under the CGM protocol. faa.gov/go/itdm	c) Incorrect. There is no CACI for ITDM or DM treated with medication. This is due to the CFR. The Pre-Diabetes CACI is only to be used in pilots who do NOT have a history of diabetes. For the most up to date CACI conditions go to www.faa.gov/go/caci	d) Incorrect Changing from oral meds to insulin is a change in status that will require FAA review. The AME should not issue.

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AME Minute Archive

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Reminders:

All AME seminars will be via zoom through August 2021.
There will NOT be an AME seminar during the Aug 29-Sept 2 AsMA seminar.

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