

Federal Air Surgeon's Medical Bulletin



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Aeromedical Summit, an ARC, and Grand Rounds

*By Susan Northrup, MD, MPH
Federal Air Surgeon*



Welcome to the June 2024 Federal Air Surgeon's Medical Bulletin! A LOT has happened in the last six months. My thanks to each of you for taking this journey with us as we update the medical standards and IT infrastructure. I appreciate your patience as we introduced double authentication for AMEs accessing our medical subsystems. For most people, it was seamless, but not for all. You can expect further enhancements and improvements in our system moving forward.

The Mental Health and Medical Clearance Aviation Rulemaking Committee (ARC). In December 2023, the FAA Administrator announced the formation of the ARC to evaluate the barriers to pilots seeking mental health support and treatment and reporting it to the FAA. The ARC was made up of people from industry, academia, pilot advocacy groups, unions, peer support organizations, flight training organizations, and aerospace medicine mental health experts. Observers and subject matter experts included international partners, representatives from the NTSB and FAA, and other interested parties. In less than four months from inception, the ARC produced [a report](#) discussing the barriers and providing 24 recommendations. The Office of Aerospace Medicine did not wait for the final report to begin implementing new ideas and accelerating efforts already in progress. As a result, we approved three new medications (SNRIs) in April and updated mental health policy in May to allow AMEs to issue Certificates to more pilots and air traffic controllers who meet certain criteria. For more information see [Item 47. Psychiatric Conditions](#) in the AME Guide.

To that end, we continue to encourage everyone to help spread mental health awareness to the entire aviation community. Our efforts have three main themes. I call them the 3-Es.

1. Educate all people in the aviation community to reduce stigma and fear regarding FAA processes and policy.
2. Early Intervention is key through education, peer support networks, outreach, and if required treatment.
3. Evolve medical standards as new science develops.

One of the outcomes from both our Aeromedical Certification Summit and the ARC was a recommendation to provide AMEs more frequent training and education, particularly when we make major changes in policy. In May, we stood up Grand Rounds -- notifications were sent out through AMCS and emails. Approximately 20% of the AMEs attended. The feedback was uniformly positive. And, we provided one hour of CME. Please understand, these sessions are not to discuss specific cases. The design is to provide current policy updates or items generating a lot of interest or questions. We will accept recommendations for future topics.

The Grand Rounds will be scheduled the last week of each month. Information and the virtual meeting link will be send to AMEs via email.

Finally, thank you for all you do to keep the National Air Space safe.

-Susan

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Fatigue Risk Management System (FRMS) Forum

By Thomas E Nesthus, PhD, FAsMA, FRAeS

In the beginning...

When prescriptive regulations constrained opportunities for extended flight operations with aircraft manufactured with advanced technology and ultra long-range capabilities, a performance-based approach was in the offering, that required Service Providers to implement a Fatigue Risk Management System (FRMS) approved by the State¹.

A performance-based Fatigue Risk Management System (FRMS) approach represented an opportunity to apply advanced scientific knowledge on the effects of fatigue and circadian rhythms to improve flight crew alertness and safety, with more efficient use of resources, and increased operational flexibility. This concept allows flight operations outside of the prescribed table limits and focuses on managing the actual fatigue risk rather than addressing predicted fatigue from within the prescriptive regulations¹.

International guidance and developmental recommendations are found within ICAO Annex 6, and the European Aviation Safety Agency (EASA), as well as within the Federal Aviation Administration's (FAA) Federal Aviation Regulations (FAR's), and within other national regulatory authority's flight and duty time regulations².

"While FRMS can offer considerable safety and efficiency benefits, potential safety benefits may be reversed if the State does not have the resources to develop the supporting regulatory processes and provide the necessary oversight³". Therefore, not every State can develop an FRMS approach for their operations. However, even at a minimum of providing fatigue education, training and promotion with a broad fatigue safety awareness approach for flight crewmembers and others that touch the operation, practical fatigue mitigations can be established.

The FRMS Forum was initially formed in 2009, specifically to help the commercial aviation industry both to respond to the new regulatory initiatives and to best manage flight crew fatigue found in their daily operations. Air New Zealand, easyJet, Delta Air Lines, Virgin Atlantic and QinetiQ initiated the Forum with significant support from UK Civil Aviation Authority for the airline industry. The aim of the Forum was to

openly discuss FRMS issues and collaboratively build a body of knowledge to establish best practices for the use of its members⁴.

The Forum provides a vehicle for industry specialists to meet and share knowledge, and experience of developing policies and procedures for managing an FRMS. Year after year, this important exchange of information has led to a growing body of knowledge and relevant guidance.

The Forum focuses on delivering benefits to members, such as:

1. Formal and informal opportunities for airlines to receive and exchange information, ideas and experiences on managing human fatigue;
2. Facilitate and host a downloadable best practice library of FRMS inclusive of documentation covering roster/shift work schedules and latest regulatory guidance/compliance requirements;
3. Facilitate the provision of a general structure of an FRMS manual integrated into a company SMS and fatigue risk assessment tools and processes;
4. Facilitate a formal question and answer session for forum members (guided by the Forum committee) to exchange points of view and information around management of fatigue as a risk; and
5. Facilitate the representation of appropriate FRMS service providers to the forum and guide evaluation reviews by forum members⁴.



Dr. Nesthus (AAM-510) has participated in five FRMS Forum meetings and provided information regarding 14 CFR Part 117 and how the FAA specifically applies §117.7 FRMS. The 2024 FRMS Forum was held in Tokyo, Japan April 15-16, 2024. Over 200 were in attendance and represented industry, labor, and regulatory authorities from around the world.

The following published agenda, included:

Day 1 –15th April 2024

Welcome

Douglas Mellor. FRMSc Ltd,

Welcome Remarks

Captain Munekazu Tachibana. Senior Vice President,
Corporate Safety & Security, Family Assistance & Support, JAL

FRMS in Japan: How FRMS is evolving throughout Japan and the challenges this brings:

- (i) Fatigue Management for Crew Members in Japan from the Regulator's Perspective – Yusuke Fujii, JCAB
- (ii) Developing a structured fatigue risk management using BMM Takashi Tanaka, Kae Yoshida, JAL
- (iii) the view from cabin crew – TBA, JetStar Japan

(iv) the view from the association – Yoshinori Matsushita, Naoya Sawamoto, Kohei Miki, ALPA Japan;

Lessons learned with FRMS in Qatar Airways

Madhu Kailash, Qatar Airways

Why do you need a FRMS?

anti Oviedo, Vueling

What is the role of aircrew culture in the management of fatigue?

A panel session. Moderator: Kathryn Jones, HPSS Ltd

FAA regulation Part 117.7 FRMS

Thomas Nesthus, FAA

Empowering aircrew to provide data without fear

A panel session. Moderator: Darrell Myers, Cargolux

Developments of Post Brexit FRM regulations

Barry Cleaver, UK CAA;

Presented by Kathryn Jones, HPSS Limited

What our European Survey told us about FRMS Management

George Karambilas, ALPL Luxembourg

Day 2 – 16th April 2024

Welcome back

Simon Wickes. FRMSc Ltd.

The challenges of applying new regulations and highlighting issues before they become operational and create fatigue issues

A panel session. Moderator: Kathryn Jones, HPSS Limited

IFALPA's view on operational experience in fatigue management during decision-making

Antti Tuori and Lachlan Gray, IFALPA

Are pilots less resilient than before the pandemic?

A panel session. Moderator: Jim Mangie, Delta Airlines

Experiences in handling FRMS at United Airlines

Chip Benton, United Airlines

Regulating for FRMS in Australia

Mark Ayrey, CASA

New Technology Developments Session: Enhancing fatigue management within the aviation industry through an objective approach

Max Matsumoto, ANA and Bastien Berthelot, Thales

Has eye-tracking a place in aviation? The results of eye-tracking trials. A discussion

Moderator: Jim Mangie, Delta Airlines with Dr Kimberly Honn, Washington State University

FRM Developments at FEDEX: new technology adoption

Rob Bassett, FEDEX

An overview of FRM activities including Project Sunrise (Sydney direct to New York & London)

Paul Kirby, Qantas and Tracey Sletten, Monash University

An Investigation of Pilot Fatigue Effects and the Interaction with Aircraft Control

Florian Stroh, Lufthansa Cargo Germany

Dr. Nesthus is a researcher in the CAMI Human Factors Research Lab (AAM-510)

References:

1. Fatigue Management Approaches. Icao.int. Published 2019. <https://www.icao.int/safety/fatiguemanagement/Pages/FM-Approaches.aspx>
2. About Us. FRMS Forum. Accessed June 10, 2024. <https://www.frmsforum.org/about-us/>
3. Fatigue Management Approaches. Icao.int. Published 2019. <https://www.icao.int/safety/fatiguemanagement/Pages/FM-Approaches.aspx>
4. Terms of Reference. FRMS Forum. Accessed June 10, 2024. <https://www.frmsforum.org/about-us/terms-of-reference/>

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None So Blind As Those Who Refuse To See

By J.R. Brown



JR Brown is guiding 12 FAA Maintenance Inspectors through NVG focusing process during their session in CAMI's NITE-Lab.

Did you know the Civil Aerospace Medical Institute (CAMI) does demonstrations of Night Vision Goggle use for aviation? It's true! In or around 2010, CAMI developed the Night Imaging Training Environmental-Laboratory (NITE-Lab). The primary purpose of the NITE Lab is to demonstrate the proper use of Night Vision Goggles in an aviation environment. However, this training does not target pilot operators. It is primarily offered to FAA Maintenance Inspectors. These specially trained maintenance personnel have been tasked with performing inspections and surveillance operations on all civilian aviation aircraft that are certified for NVG use.

The biggest challenge we face is that most inspectors are not aircraft operator/pilots and have never been trained in how to properly use or operate NVGs. The maintenance inspectors are required to do an objective inspection of any aircraft requesting to be NVG compliant as well as inspecting any lighting modifications that could possibly interfere with the operation of the NVGs. These inspectors will use the owner/operators very own NVGs that they fly with. So, at the very least, these fine employees will need to garner a fundamental knowledge of how a NVG operates along with basic use to conduct their inspections. This is where CAMI's NITE-Lab comes in.



CAMI's NITE-Lab incorporates a functional helicopter instrument panel for a more realistic demonstration. In the background is scaled terrain board, smoke generator, and functional aircraft position lights.

All students will receive a one-hour classroom briefing on NVG history and theory of operation. Once the classroom portion is completed, then it's time for a hands-on demonstration in the NITE-Lab. Students will first learn to power-on and focus the NVGs. This first step very important for anyone using NVGs. They must realize that the NVGs are focused to "infinity." Infinity is a 300 feet distance from and beyond the NVG. Any attempt to use the NVG within 300 feet would require the NVGs to be re-focused to see clearly. This, of course, would be a distraction to safe operations in that the pilot would have to remove their hands from flight controls to do so. This is never recommended for obvious reasons. NVG users are taught to look beneath the NVGs to see within 300 feet. The most obvious to look at is the instrument panel of the aircraft. To adequately see the instrument panel, the NVGs must have the correct distance from the eyes so to look beneath the NVG. With the right distance, they will see the instruments by simply glancing down beneath the NVGs. This action may seem a minor detail, but it's fundamental to the safe and efficient use of NVGs during flight.



Theatrical smoke is added to the demo. The smoke helps to demonstrate how particulates (rain, fog, smoke and dust) can adversely affect NVG functionality. The foreground shows a 1 – 600 scale city with foliage and white-capped mountains in the background.

Once the students have the focusing of the NVG down, then the hands-on portion truly begins. Our NITE-Lab has several innovations that sets it apart from most similar labs. First...We still use a physical terrain board. We feel that this is a real plus. The Virtual Terrain Boards used by other organizations work fine. But, in our opinion they fall a little short in that you are looking at a two-dimensional (a projection onto a flatscreen) representation of the 3-dimensional world. A terrain board allows a truer representation of the real world. The terrain board is a 1 – 600 scale of desert terrain, mountains, open water, and forested areas. Additionally, there are many contrasting colors that demonstrate effective and not so effective albedos that NVG users can use to their advantage. Also, there many hazards that can be difficult, if not impossible to see. High-tension power lines, dead trees and other possible hazards are pointed out and the student is given mitigating and coping strategies to utilize.



In the foreground is our scaled wind turbines with functional blades and beacon. Directly behind are the whitecaps which creates very effective albedo. And our scale model of a Super Cub with functional position, anti-collision and landing lights.

Other unique innovations include scale sized wind-turbines with functional beacons. A model of a Super Cub with compatible and non-compatible external lights. Full function position lights and a landing light that will immediately wash out the NVG image because they are not compatible. Also included is a fully functional instrument panel from a helicopter with both compatible and non-compatible lighting for comparison.

At the end of this 45-minute demonstration, maintenance inspectors will know how to operate the NVGs and to conduct a detailed inspection to assure that aircraft using this vital equipment can do so safely. It is also important to mention that this isn't NVG certification training for pilots. That course would be a lot more intensive and contains a portion that deals with flying with NVGs. We aren't going to be able to do that. Even though there is no certification given, the demo for pilots is important in that it will show them if their aircraft isn't suitable without modification, and the shortfalls of using NVGs during flight without proper training.

Some of these shortcomings include:

1. NVGs will never allow for 20/20 vision. 20/25 is the best you will get and it's more than likely closer to 20/30.
2. Your peripheral vision has been reduced from 180 plus degrees to 40 degrees. Next, colors are now gone. You will see either shades of green (with the older NVGs) or just black and white (newer NVGs use a white phosphor rather than green).

3. Depth perception is adversely affected in that you are seeing the world as a two-dimensional representation. That will affect your ability to take off and land properly.

All NVG pilots face the same problems mentioned above every time they fly. The difference is with time and experience in flying with NVGs. With enough experience and flight hours pilots realize these shortcomings and learn to fly safely.

At the end of the demo...Maintenance inspectors can do their job. And pilots, will realize that it's flat dangerous to fly with NVGs without proper training and the required aircraft modification! If you are interested in a tour of CAMIs Nite-Lab or simply want more info...Please contact the Airman Education Team at 405-954-4837.

Mr. Brown is a training specialist in Airman Education, with the Civil Aerospace Medical Institute (CAMI).

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Aeromedical Summit 2023 After-Action Results

***By Brett A. Wyrick, DO
Deputy Federal Air Surgeon***



Aeromedical Certification Summit

December 5th, 2023 CAMI, MMAC, Oklahoma City, OK

Dr. Wyrick surrounded by other AAM managers who are participating in the recent Certification Summit.

On December 6, 2023, the FAA Office of Aerospace Medicine held an Aeromedical Summit to hear from our AMEs. During the Summit all of you provided very good feedback to the FAA. We held 2 listening sessions, and all of you provided us with 153 ideas, suggestions comments and compliments. Your suggestions and ideas will help us get better at what we do. Dr. Susan Northrup, the Federal Air Surgeon is committed to improving the way we do aeromedical certification and the way we interact with our AMEs. You are our front line in helping our pilots to get their medical certificates. We have already started working on your ideas and answering your questions. Here some actions we have already taken as a result of your comments:

1. Why does the FAA make us wait 3 years after becoming an AME to be promoted up to a senior AME? I have done nearly 200 physical exams, and would like to be promoted early.

Answer: The Regional Flight Surgeon in each region has the authority to promote AMEs to senior AME prior to the three years if the AME demonstrates enough experience and competence. All you need to do is contact your Regional Flight surgeon and provide a completing reason for why you should be promoted early.

Result: The AME who made this comment has been promoted to senior AME.

2. Why does the FAA restrict an AME to 2 sites for doing AME physicals. I would like to have a third site, as the third site would be convenient for my airman.

Answer: The Regional Flight Surgeon in each region has the authority to grant AMEs a third site for doing airman physical exams if the AME has a completing reason for the need for a third site.

Result: The 3 AMEs who made these comment are now being contacted by their Regional Flight Surgeons to help them with the FAA authorization for a third site for doing FAA physical exams. Furthermore, the Regional Flight Surgeons were reminded that they have the authority to grant waivers to the above two policies.

We plan to give you further updates in future Federal Air Surgeon bulletins for how we are implementing your ideas and suggestions.

Dr. Brett Wyrick serves as the Deputy Federal Air Surgeon in the Office of Aerospace Medicine (AAM) for the Federal Aviation Administration.

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Medical Certification Policy Updates

By Judith Frazier, MD, MBA

The Policy and Standards branch continues to focus on helping Aviation Medical Examiners (AMEs) more easily obtain the information needed to make a medical certification decision. This version highlights policy changes and updates published between November 2023 and May 2024. The full list of changes is hyperlinked in the [Archives and Updates](#) section of the AME Guide.

Psychiatry/Behavioral Health

[Anxiety, Depression and Related Conditions](#) – introduced new disposition table and a new [Decision Tool for the AME](#). Using this tool, AMEs may be able to issue a combination of up to two (2) behavioral health diagnoses when uncomplicated, treated with a single medication 2 years ago or longer.

If currently in psychotherapy and no medication, may also be issued using the Decision Tool. Remember to put the specific wording from the disposition table in Block 60 so we know you used the Decision Tool!

Expanded acceptable [antidepressant medications](#) (previous known as the SSRI protocol) to include EIGHT (8) medications of various classes (SSRI, SNRI, and NDRI).

[Post-Traumatic Stress Disorder \(PTSD\)](#) – revised the disposition table to allow ongoing psychotherapy.

Need to reach an FAA psychiatrist with a question? Use the new Branch email 9-AVS-Psychiatry-Branch@faa.gov.

Cardiac

Coronary Heart Disease (CHD) – Expanded disposition table added listing out initial certification requirements by class. Corresponding Protocol page added.

Recertification. Simplified the [AASI for CHD](#) requirements for recertification for all classes by removing the annual stress test. If currently on an **AASI** for CHD/CAD, the RECERTIFICATION evaluation data is based on control of risk factors. Have the treating cardiologist complete the [Coronary Heart Disease \(CHD\)/ Coronary Artery Disease \(CAD\) Recertification Status Summary](#). Please let your pilots know about this new change as we started to update their authorization letters!

If risk factors are not controlled, a stress test may be required. If currently on a **SI**, the CHD/CAD Recertification Status Summary should also be submitted to expedite recertification along with any stress testing requested per the authorization letter.

Atrial Fibrillation (A-Fib)/A-Flutter – Simplified [Status Summary](#) to use for both Initial and Recertification. Remember to send in the clinic notes showing how the A-Fib/Flutter was diagnosed for INITIAL certification consideration.

Chest Pain/Angina – New disposition table.

ECG/EKG – Clarified a full 12-lead ECG is required. (1,2, or 6 leads are not acceptable). Must be 25mm/sec at 10 mV.

Hemoglobin A1c replaces a fasting blood sugar on multiple cardiac pages and protocols.

Pacemaker – [Status Summary](#) expands recertification based on Estimated Replacement Interval. Pilots can be issued an annual SI until the month prior to the ERI expiration which is typically 3-4 months of battery life remaining.

Valve repair and **Valve replacement** – simplified. Removed requirements for stress testing for all classes.

Otolaryngology (ENT)

ENT – Section updated. Expanded and updated disposition tables for both [Middle Ear](#) and [Outer Ear](#).

Cochlear implant – new disposition table.

Vertigo – New or expanded disposition tables for vertigo conditions such as [Benign Paroxysmal Positional Vertigo \(BPPV\)](#), [Labyrinthitis \(Vestibular Neuritis, Viral labyrinthitis, Epidemic Vertigo, Acute Vestibulopathy\)](#), [Meniere's Disease](#), [Perilymph Fistula \(PLF\)](#), [Persistent postural Perceptual Dizziness \(PPPD or 3PD\)](#) and [Superior Semicircular Canal Dehiscence Syndrome \(SSCDS\)](#).

Other Systems/Miscellaneous

GI – [Cholelithiasis](#). Updated disposition table.

Medical Certificate Limitations – Added reference to limitations by system.

Neurology – [Syncope](#). Expanded disposition table. New [Chiari Malformation Disposition Table](#). Added caffeine use to social history the [FAA Specifications for Neurologic Evaluation](#).

Ophthalmology – [Lattice Degeneration](#). New disposition table.

Pharmaceuticals

Pharmaceuticals – Weight Loss Management Medications added as CACI. New Weight Loss Management Status Report (to use with CACI or SI). Clarified Loperamide should not be used for acute illness.

Help us improve the AME guide! Send you comments or suggestions to: AMEGuide@FAA.gov. (This mailbox does not answer case questions.)

Dr. Frazier is the Manager of the Policy and Standards Branch in the Office of Aerospace Medicine.

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