



Federal Air Surgeon's Medical Bulletin



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Aviation Safety Through Aerospace Medicine
For FAA Aviation Medical Examiners, Office of Aerospace Medicine Personnel,
Flight Standards Inspectors, and Other Aviation Professionals.

U.S. Department of Transportation
Federal Aviation Administration



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WAKE UP!!

Fatigue, Poor Sleep Affect Safety

By Fred Tilton, MD

Hello, everyone, and welcome to summer.

“Wake up!” is not what one wants to hear on the flight deck.

A former airline pilot recently told me this story about one of his missions. He and his crew were completing a round-robin trip with several intermediate stops that had taken up most of their crew duty day. This was the third day in a row that he and his copilot had flown. They had left their home domicile in the late afternoon, so they had been up several hours before their departure.

It was approximately 3:00 a.m., so they were returning at the worst possible time with respect to their circadian rhythm cycle, and they were exhausted. They had configured the airplane for landing. The autopilot was engaged, and they were flying a coupled ILS approach. The pilot told me he woke up when the auto-throttles retarded at the beginning of the final descent to the airport.

He looked over to discover that his copilot was fast asleep.

Fortunately, the story has a happy ending. He yelled at his co-pilot to wake up, and they completed an uneventful landing. Everyone went home safely to their families, and no one outside of the flight deck was ever aware of these events.

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In Memoriam

Dr. **Margaret Dennis Smith**, a dedicated pilot and Aviation Medical Examiner since 1994, tragically passed away in a fatal aircraft accident involving her single-engine Cirrus SR22 on Monday July 5, 2010. She was piloting her plane on a trip from Plattsburgh, N.Y., to her home base in New Jersey, along with two other family members, who also died in the accident.



FAA Photo by Jeff Revock

She was an accomplished rheumatologist, educator, avid flyer and talented AME. Few will impart to others as much as Dr. Margaret Smith. Her devotion to her family, colleagues, patients, and airmen was immense.

Dr. Smith was both a Senior AME and Human Intervention Motivation Study (HIMS) program sponsor for the Federal Aviation Administration. Her love of aviation was deep and committed. Dr. Smith found the time to make flying a significant part of her life. In many ways, she represented the true spirit of American medicine. Her extraordinary kindness and professionalism have been a great benefit to the health and well-being of our pilot community.

Dr. Smith was Senior Associate Dean and Professor of Clinical Medicine at New York Medical College, as well as the Program Director for Internal Medicine at St. Vincent's Hospital in Manhattan, N.Y.

She was a distinguished physician, professor, and program director for residents at St. Vincent's Hospital.

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Obviously, a similar set of circumstances could have ended in disaster. The aviation community is well aware that fatigue can be a major safety issue. The Federal Aviation Administration has drafted a notice of proposed rule-making on pilot flight duty and rest. It has been forwarded to the Department of Transportation for review and clearance, and I expect that it will be published for comment in the Federal Register later this year.

Research is also being done to identify what else can be done to combat fatigue and make flying even safer.

These projects are very important, and I am sure that they will help to enhance the safety of the national airspace in the future.

However, I want to let you know that the Office of Aerospace Medicine is working on a project that I believe will



help to mitigate one cause of fatigue in our pilot population. We are developing initiatives to improve our ability to identify and assure appropriate follow-up for airmen who are suffering from obstructive sleep apnea (OSA).

Obstructive sleep apnea risk varies with respect to gender, age, and body mass index (BMI). It is more common in males, and the more obese an individual is the more likely he or she is to suffer from OSA. The evidence is clear that OSA is markedly under-diagnosed and therefore left untreated.

The National Transportation Safety Board has also cited several incidents where fatigue and OSA were considered to be contributing factors in incidents. A preliminary literature review revealed:

- Some of the high-risk criteria for OSA are: obesity; new onset hypertension or hypertension that is uncontrolled, or that requires two or more medications for control; and type 2 diabetes.
- Loud snoring is an indicator of OSA.
- It is fairly easy to screen for OSA.
- OSA causes fatigue and daytime sleepiness.

Analysis of the Civil Aerospace Medical Institute 2009 medical certification database indicates that 0.39 percent of over age-20 pilots have a diagnosis of OSA. So, it appears that there are a significant number of pilots with unrecognized OSA because the prevalence of OSA in the general population varies from 2.0 to 7.5 percent.

I hope you will agree that fatigue is a safety risk factor and that it is very important to do all we can to mitigate the risk. I hope that you will also agree that untreated OSA is a fatigue risk, and there are probably a significant number of undiagnosed pilots who should be receiving treatment.

Therefore, we have added an OSA lecture to the AME seminar curriculum, and we have developed an OSA brochure (see article, page 8). In the coming months, we will be giving OSA increased emphasis. These are some of the other things you may see:

- Enhanced guidance for pilots, employers, and physicians regarding the identification and treatment of individuals at high risk.
- Modification of the AME Guide to add a BMI calculator and to include questions regarding risk factors and/or a history of OSA.
- Addition of a BMI calculator to the Airman Medical Certification Subsystem.
- Screening requirements for pilots at high risk of OSA.
- Required treatment and follow-up for individuals with OSA.

I believe these initiatives are very important. You can help by taking a couple of extra minutes to assess your pilots' OSA risk. Ask them if they snore or if they experience daytime sleepiness. If they answer *yes* or if they are hypertensive and have a high BMI, it is possible that they are suffering from OSA. Talk to them about OSA and consider recommending that they see a specialist for further evaluation.

If it turns out they have OSA and receive proper treatment, they will most likely come back and thank you because they will feel so much better.

And, who knows? it is possible that these simple measures may help to prevent the next accident.

Thanks for "listening," and thanks again for all you do for us and your airmen.

—Fred

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