



# 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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## Federal Air Surgeon Retires

Editorial, by Mike Wayda



Jon L. Jordan, MD, JD, has retired from the Federal Aviation Administration after a 38-year career in aviation medicine (two years in the United States Army as a flight surgeon). He joined the Office of Aviation Medicine in 1969 as the head of the Projects and Development Branch, was appointed the Deputy Federal Air Surgeon in 1979, and he became the Federal Air Surgeon in September 1991.

Dr. Jordan has established a remarkable standard for consistency in communicating with his readers through his editorials in the *Bulletin*. He wrote the

first one in January of 1991, and his last column, editorial number 59, explains his motivation for trying out a “temporary” career in aerospace medicine (p. 2, and see tribute, p. 3 of this issue).

His columns have always been thoughtful, and they have covered a wide variety of topics — announcements of innovations in the medical certification process, current events, and aviation medical history — to mention just a few.

A compilation of Dr. Jordan’s editorials is available on the FAA Web site:

[www.faa.gov/library/reports/medical/fasmb/Editorials/index.cfm](http://www.faa.gov/library/reports/medical/fasmb/Editorials/index.cfm)

We will all miss him, and we wish him well in his future endeavors.

Dr. Fred Tilton has been named Jan. 13 as the new Federal Air Surgeon.



## QUICK FIX

By RICHARD ‘DICK’ JONES, MD

### WHERE DID THE ERRORS GO?

**Problem:** We began producing the current version of Aviation Medical Examiner (AME) Performance Reports in October 2002. The part of these reports that was historically most important was the Error Report, which listed all administrative errors each AME had made during the 12 months preceding the report and which listed individual error rates. The Regions, in turn, relied on this information to judge the performance of their AMEs. A combination of giving this feedback to AMEs, computer manipulation of parameters, and rethinking the importance of some of the collected information resulted in a reduction in number of errors from about 35,000/year when the report

was reintroduced, to about 9,000 in October 2005. This is a remarkable record, considering 430,000 examinations were performed during the last period assessed and a confirmation of the quality of work done by our AMEs! We have now fielded an improved version of the software used to transmit examinations to our database, which includes a robust validation of information being entered before it is transmitted to us. This will most likely reduce errors to near zero and cause elimination of this part of the AME Performance Reports.

*So how can this great news be a problem?*

**Result:** Loss of Error Reports means the Regional Flight Surgeons will have less information to use to make decisions

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## A Surplus of Serendipity After 36 Years, a 'Temp' Career Concludes

**T**HIS IS MY LAST message to you as Federal Air Surgeon. Effective January 3 of this year, I will retire from the Federal Aviation Administration (FAA) and take up life again as a private citizen.

Largely by happenstance, I began my career in aerospace medicine almost 38 years ago. Shortly after finishing law school at the University of Virginia and during the time our country was engaged in conflict in Viet Nam, I was invited to join the United States Army. Just by chance, while undergoing basic medical officer orientation at Fort Sam Houston, Texas, I was offered the opportunity to travel to Fort Rucker, Ala., and take flight surgeon training. Although aviation medicine was

### The Federal Air Surgeon's Column



By Jon L. Jordan, MD, JD

something I had not before considered, the invitation was too interesting and challenging to pass up.

The conflict in Viet Nam was beginning to wind down at the time and rather than being posted overseas, I was assigned to the 6<sup>th</sup> Army Medical Command at Fort Lewis, Wash. I spent almost two years at Fort Lewis, serving as a flight surgeon at Gray Army Airfield and Madigan General Hospital.

Upon discharge from the army in October 1969, I elected to accept a job with the Office of Aviation Medicine in a capacity that allowed me to use my training in both law and medicine. My thinking was that I would likely stay with the FAA for two-three years and then move on to employment in the private sector. You know the rest. Thirty-six years later, I am retiring from my "temporary" job.

I have stayed with the FAA for a variety of reasons. I like and respect the people I work with, not only in the Office of Aerospace Medicine (OAM), but in the whole of the FAA as well. One could not hope to find a more dedicated, competent, and professional bunch of people. I also stayed because of the fascinating and diverse issues I have had to deal with and the opportunity to use my training in two professional disciplines. This does not mean that my 36 years have been without ups and downs. There have been good times and not-so-good times, but the good times far outweighed the bad ones.

I leave the FAA with a sense of accomplishment. Looking at the folks who make up the OAM, we have the strongest and most competent staff ever. We have efficiently and effectively managed multiple complex programs and dealt with difficult issues. We adopted a philosophy of medical oversight that prolongs and promotes the careers of airmen and air traffic controllers and, at the same time, contributes to the remarkable aviation safety record in the United States. We have developed new systems for data management that improved our effectiveness in all program areas. We have contributed to aviation safety through a variety of important research initiatives, and we have met new challenges and program responsibilities with enthusiasm and effectiveness. To leverage our resources and promote safety, we have built a system of aviation medical examiners that serves as a model for the world.

In spite of our many achievements, I foresee significant new challenges in the future. I believe that the world of aviation will undergo dramatic changes that will have to be met and accommodated by the aerospace medical community. Just to mention a few, these include commercial space operations, use of unmanned aerial vehicles, larger capacity commercial airplanes, longer distance flights, and the ever-evolving medical diagnostics and treatments that make medical certification decision-making more complex.

I am confident that to meet these challenges, those of you who have assisted and supported me as Federal Air Surgeon will lend that same assistance and support to the one who follows me and to the OAM of the present and the future.

Thanks for your help. I'll miss working with you as Federal Air Surgeon. I think, however, I'm going to enjoy my role as a private citizen.

*JLJ*

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## Recognizing Excellence: Dr. Jon L. Jordan

*'Lasting Effect' on Aerospace  
Medicine Noted*

By Lynn McCloud and Mike Wayda

**A**FTER 38 YEARS of government service (36 with the Federal Aviation Administration), **Jon L. Jordan, MD, JD**, retired on Jan. 3, 2006. FAA Administrator **James Busey** appointed Dr. Jordan as Federal Air Surgeon on Sept. 25, 1991. Previously, Dr. Jordan served 12 years as the Deputy Federal Air Surgeon.

Here's how his service to the American people is being described :

"Dr. Jordan made a lasting impression in the aerospace medical community."

—**Nick Sabatini**, Associate Administrator for Aviation Safety

"Dr. Jordan has established himself as a world leader in aerospace medicine."

—**Fred Tilton**, Acting Federal Air Surgeon

"His medical and legal backgrounds have proven very effective in dealing with issues of regulatory aviation medicine and administration of the FAA's medical programs. He is respected and greatly liked by all of his colleagues in the FAA and will be sorely missed."

—**Mark Adams**, Manager, Program Management Division, AAM-100

The Aircraft Owners and Pilots' Association (AOPA) recently honored Dr. Jordan with a special citation for his "dedication to making the FAA Office of Aerospace Medicine a world leader in civil aviation medical certification."

"Dr. Jordan has greatly improved the FAA's medical certification process with AME Assisted Special Issuance, and he's taken other measures that will continue to advance the system in years to come. The next federal air surgeon will have large shoes to fill..."

—**Luis Gutierrez**, AOPA Director of Regulatory and Certification Policy



By **Warren S. Silberman, DO, MPH**

### AASI CLARIFICATION

One of our aviation medical examiners (AMEs), **John T. Phillipp, MD**, asked me some questions regarding AME-Assisted Authorization for Special Issuance (AASI). It occurred to me that others must have similar questions, so here are some clarifications.

**Expiration.** AASI authorization letters are generally valid for six years. However, the six-year limit may be reduced if the condition in question does not require follow-up for that length of time.

Depending on the medical condition involved, medical certificates issued as a result of an AASI authorization letter will usually be valid for one year, and the certificate expiration date will be the last day of the issue month. Airmen with third-class medical certificates, or airmen with first- or second-class certificates who elect to let their medical certificates lapse to third-class privileges, will not be required to have annual FAA medical certification examinations, but they will be required to submit follow-up information to their AME in order to have their certificate renewed.

An airman's certificate will expire if the airman is late in providing follow-up information to the AME. Should the airman subsequently provide the required information, the AME would then be authorized to issue a new certificate without an examination for a maximum of one more year. However, the validity period of a new certificate will always be predicated on the date of the FAA medical certification examination.

So, if an airman over 40 years of age is seeking the renewal of a third-class medical certificate based on an FAA examination that occurred in June

## Certification Update

*Information About  
Current Issues*

2004, the new medical certificate must expire no later than June 30, 2006. If the airman was due to provide a special follow-up medical report from the treating physician on or before June 30, 2005, but did not provide that follow-up until Sept. 2005, the new certificate issued by the AME would still expire on June 30, 2006.

In no case is the AME authorized to extend the FAA medical certification examination validity period. This airman would consequently lose several months of certification time unless the AME were to perform a new FAA certification examination.

**Not the Original AME.** If an airman with an AASI comes to you but you were not the AME who saw the airman for the initial medical certification, you must have the airman produce the AASI letter. If the airman does not have the letter you should:

- Ask the airman to obtain a copy of the letter from the AMCD or the regional medical office.
- Call the AMCD or the regional office yourself to obtain a copy of the letter.

**Early Follow-Up.** What if the airman provides the follow-up material early? Date the next certificate so that its expiration date coincides with the end of the month in which the medical examination expires. In this case, the airman may actually have 13 or more months before providing you with new follow-up documentation. However, in such a case, you should exercise some caution. If the material is submitted more than two months early, you must consult with your regional flight surgeon or the AMCD for advice and direction.

**Electronic Filing Via the Internet.** I hope you have had a chance to use the new front-end Aeromedical Certification Subsystem (AMCS). As you should all know, this is the Internet version of the Form 8500-8 (FAA Flight Examination) that you are required by

*Continued on page 4*

## Certification from page 3

regulation to use. I am quite aware of the issues that some of you are having with this new version. Here are some reminders:

- No one will be penalized for late transmission if it is caused by this modification to AMCS. However, you will hear from your regional medical offices if you are late for other reasons.
- You still must provide the AMCD with the hard copy Form 8500-8 because we must maintain it here for legal reasons.
- Don't forget to turn off the **Pop-Up Blocker** on your computer. This is the part of your operating system that prevents annoying, unwanted advertisements from appearing when you are on the Internet. Also be aware that virus checkers and "spyware"\* may have pop-up blockers, and you should turn them off when you go online to input an examination to the AMCD.

**New AASIs Approved.** The Federal Air Surgeon recently approved four additional cancer-related AASIs applicable for all classes of medical certificate: bladder cancer, breast cancer, melanoma, and renal cancer. The Aerospace Medical Certification Division or a Regional Medical Office must grant the "initial" medical certification.

The AME may issue subsequent time-limited medical certificates if:

- An authorization has been granted by the FAA.
- The applicant presents a current status report, performed within 90 days, that includes all the required follow-up items and studies listed in the Authorization letter, and that also confirms the absence of recurrent disease.

The Examiner should defer to the AMCD or Region if:

- There has been any recurrence of the cancer.
- Any new treatment is initiated.

If you are uncertain about a case, or have any questions, please call either the AMCD or the Region before you decide to defer because we may be able to make a decision on the phone and save the airman a lot of "waiting time."

Stay tuned, we are currently working on AASIs for myocardial infarction, angina pectoris, coronary artery bypass grafting, percutaneous transluminal angioplasty, stent insertion, brachytherapy, atherectomy, and tissue and mechanical valve replacements. This group of AASIs will only be applicable for third-class certificates, but the process may be extended to first- and second-class certificates at a later date.

**Validation.** Hundreds of AMEs complained when we rolled out the AMCS in September 1998. They did not like the 7-page examination or the inability to skip pages when going back to complete an item. They also complained that there was no built in *validation* that would provide warnings if input data were out of standards. You now have all of these improvements! But, as I warned back then, there is a downside. The lengthened exam pages will take longer to submit into the AMCS, and the increased validation will also result in longer submission times. I believe these improvements far outweigh the relatively minor irritants.

**Comments.** AMEs have asked why we require statements regarding an airman's positive comments or positive physical findings. We need this information because we were not getting sufficient information to make the correct aeromedical determination.

**Improvements.** One of your most frequent complaints has concerned the pop-up boxes that appear each time you check a "yes" box. INTEGIC, the AMCS system developer, has always been quick to respond to problems, and they have found a solution to this problem as well. This modification will make the process much easier by allowing you to respond to all the "yes" comments at one time.

## AIRMAN DATA ENTRY

The next step in the evolutionary process is to reduce the processing time for examinations by allowing airmen to enter their own historical data into the AMCS. The most effective way to use this modification would be for you to have a terminal in your exam room so that you could access the applicant's electronic file while you are performing the examination. This is a major step because our current regulations do not allow us to require airmen to do this or to require you to have the equipment. So, for a long while, the airman and you will have several choices. The airman will have a choice of either submitting the information to us electronically or continuing to fill out the 8500-8 in your office.

If the airman elects to submit the information electronically, he or she will be asked to bring a paper copy to your office for use at the time of the examination. You will then have the choice of bringing up the electronic version or having your staff print out a paper version for you, or using the airman's copy of the history to complete your examination.

If the airman elects to do it the traditional way, then there will be no change from the way you are completing the process today.

As you might imagine, we still have many details to work out. Just to name a few, we have issues regarding electronic signatures, controlling who has access to the system, the printing of medical certificates, and the introduction of the system across the country.

Rest assured, data entry by airmen is the logical next step in the aeromedical certification process, and it will happen. You can also count on us to keep you well informed through future issues of the *Federal Air Surgeon's Medical Bulletin*, AME seminars, and other appropriate means of communication.



*Dr. Silberman manages the Aerospace Medical Certification Division at the Civil Aerospace Medical Institute.*

\*Spyware is software that enables third parties to poke around the user's hard drive or monitor the user's network transactions.

# Antisocial Personality Disorder and Medical Certification

Case Report, by Kevin Connolly, MD, MPH

*This case of Antisocial Personality Disorder (APD) highlights typical historical, physical, and test findings. For certification consideration, APD cases must be deferred to FAA's Aerospace Medical Certification Division. APD is a chronic disease without effective treatments, likely to result in medical certificate denial.*

**H**ISTORY. In August 2003, a 36-year-old white male presented to the aviation medical examiner (AME) for a third-class medical certificate. Due to the applicant's history of multiple convictions, his case was deferred to the Aerospace Medical Certification Division for evaluation. This included a psychiatric and psychological examination and a statement regarding convictions.

From age 13 to 17, he was arrested and sent to Juvenile Detention eight times for car theft. At age 17, he held up a store clerk with a knife, resulting in his arrest and conviction for armed robbery. He was sentenced to five years in a "youth authority." While there, he felt "socially alienated" and "did not get along" with others, resulting in an extended sentence. At age 21, he was released. A year later, he was convicted of indecent exposure and spent three weeks in jail. Shortly thereafter, he was convicted of "disturbing the peace." At age 27, while driving after drinking, the applicant was pulled over. The charge was reduced from DUI to reckless driving, for which he was convicted. His license was suspended for three months, and he completed community service. At age 28, he was convicted of "false impersonation," for using another person's name to obtain a home telephone.

Two years ago (age 34), he was cited for "making annoying telephone calls." After being "unjustly fired" from an insurance agency, he "fax bombed" his ex-employer. Over a two-day period, he

continually faxed thousands of black pages to his prior boss until told by police to desist. However, for the "lack of sufficient evidence," he was not detained. Despite his past, the applicant says he "learned from his mistakes" and is "no longer involved" in deviant activities. Reportedly, he has been a licensed insurance agent for the past ten years. He has run his own agency for the last two.

## MEDICAL HISTORY

No history of significant medical problems.

## PSYCHIATRIC HISTORY

No history of formal psychiatric diagnosis/treatment. However, the youth authority required that he receive counseling, and he attended Alcoholics Anonymous meetings while there.

## SOCIAL HISTORY

The applicant's mother was a working single parent, and he rarely saw his father. He denies any history of physical or sexual abuse. He said that while attending school, he was "beat up all the time" because he was not liked. He earned D's and F's in school and was expelled for truancy in the 10<sup>th</sup> grade. He has never been married, but has fathered a five-year old daughter who lives with her mother. For the past year, he has had a steady girlfriend, whom he reportedly loves, but is "not in love with." He denies tobacco or illicit drug use and consumes two alcoholic drinks per week. He denies current legal problems.

## ANTISOCIAL BEHAVIOR

### DIAGNOSIS

The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) states, "The essential feature of antisocial personality disorder is a pervasive pattern of disregard for, and violation of, the rights of others that begins in childhood or early adolescence and continues into adulthood." Thus, both the psychologist and psychiatrist diagnosed the applicant with APD.

### TREATMENT

Since APD patients do not view their behaviors as "bad," they are not motivated to change. For this reason, traditional treatment approaches requiring patient cooperation have not been effective. In some, tranquilizing medications have reduced antisocial behavior for a short time. Intense group therapy in settings where behavior can be controlled (prison, hospital, etc.) may work but only while in that setting. Behavior modification, cognitive approaches, and intervention programs have been advocated without long-term success (7).

### PROGNOSIS

Although APD has a chronic course, it may remit or become less pronounced with age, particularly by the fourth decade. Remission leads mainly to reduced criminal behavior, but a decrease in antisocial behavior and substance abuse may also occur (1).

### FAMILY HISTORY

The applicant's sister has been incarcerated for drug abuse; his aunt and uncle are recovering drug addicts. He denies other psychiatric diagnoses in family members.

Continued ➤

### PHYSICAL EXAM

The applicant was a well-dressed, overweight, and cooperative white male. He was alert and oriented to person, place, and situation. He demonstrated fair eye contact, normal speech, and goal-directed thought processes. His affective range was broad, his mood euthymic, and he denied depression and mood swings. He denied a history of delusions, hallucinations, and suicidal or homicidal ideation. His immediate, recent, and remote memories were intact. Based on verbal ability, he appeared to be of average intelligence. He displayed poor insight and judgment. His physical exam was otherwise normal.

### DIAGNOSTIC TESTING

The WAIS-III test revealed average intelligence (50%) with high average working memory and below-average information processing speed. His auditory attention and nonverbal abstract reasoning were relative strengths, while factual knowledge was a relative weakness. He did well on the Trailmaking Test, indicating above-average speed for attention, sequencing, mental flexibility, and psychomotor speed.

The MMPI-2 test results indicate that he is immature, impulsive, and engages in risk-taking activities for his enjoyment, even when others disapprove. These results indicate a rebellious nature and tendency toward poor judgment but do not indicate anxiety, neurosis, or psychosis. They also suggest that his tendencies toward taking personal risks and acting out will make close relationships difficult to maintain.

### AEROMEDICAL DISPOSITION

As indicated in the *FAA Guide For Aviation Medical Examiners*, a diagnosis of "a personality disorder that is severe enough to have repeatedly manifest itself by overt acts" (including APD) is specifically disqualifying under the regulations (14 CFR 67.107, 67.207, and 67.307). It further states that the AME can deny certification if the standards are clearly not met but must defer equivocal cases to the FAA for action. For an applicant to be considered, the Aerospace Medical Certification Division will need AME input (re-

behavior, mood, cognition, memory, and communication), a psychiatric and psychological evaluation (including diagnostic testing), and an applicant statement regarding past criminal activity. If the findings are favorable, the Aerospace Medical Certification Division will grant a Special Issuance Medical Certificate (3).

According to 14 CFR 67-307.III.B, a patient with such a personality disorder is prone to poor judgment, impulsivity, and antagonism toward authority. There is often a long-standing history of minor (truancy, not adhering to flight regulations, etc.) or major (criminal) behavioral problems (3). Clearly, applicants with such a history pose a risk to flight safety, making certification unlikely.

### CASE OUTCOME

The reviewing AMCD Medical Officer presented this case to the Division's internal medical panel. Because this applicant has such a recent and extensive anti-social history, his request for medical certification was denied.

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*Dr. Connolly is a resident in aerospace medicine at the USAF School of Aerospace Medicine, Brooks City Base, Texas. He wrote this case report while on rotation at the Civil Aerospace Medical Institute. →*

## Letters to the Editor

### AVIATION MEDICAL EXAMINER

### IRAQ VET



Dear Editor:

Just to let you know that I am one of your many AMEs who has returned from Iraq.

As the Flight Surgeon for the Rhode Island National Guard, I served at Camp[s] Speicher and Balad (Camp Anaconda) and returned a couple of weeks ago.

I practiced both Aviation Medicine and OB/GYN and even had a request for an FAA exam (which I did not do).

Many of the physicians who are interested in aviation concurrently belong to the Reserves; we make up the majority of physicians in Iraq.

Should any of our doctors want some details for an upcoming deployment, I will be happy to share the information with them.

**Arnold Sperling MD, MPH**  
Wayland, MA  
ellenarnold@verizon.net  
(508) 358-5707

Dear Dr. Sperling:

Thank you for the note, the photo, and your willingness to provide information to other physicians who are facing deployment to Iraq. Your service to our Nation is greatly appreciated.

—Ed.

Letters continued on page 11

You are encouraged to take advantage of the forum to discuss issues pertaining to airman medical certification. Let us hear from you. Contact:

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P.O. Box 25082, AAM-400  
Oklahoma City, OK 73125  
E-mail: Mike.Wayda@faa.gov

## Air Carrier Cabin Air Concerns

On April 6, 2005, Federal Air Surgeon Dr. Jon L. Jordan testified to the House Committee on Transportation and Infrastructure, Subcommittee on Aviation. These are highlights of his remarks to the committee.

### Efforts to Prevent Pandemics by Air Travel

The Office of the Secretary of Transportation, (OST), in coordination with the Department of Health and Human Services, is compiling a *Best Practices Manual* to assist airport operators and local health authorities respond to threats of contagious diseases at international gateway airports. Guidelines and other important information are being assembled from experiences at airports throughout the world and will be used for training sessions that the CDC plans to begin this spring.

Considering the potential of pandemics and contagious disease transmission on airliners, issues inevitably arise concerning the quality of air in airliner cabins. Studies have indicated that many aspects of cabin air are as good as or better than the air found in office and home environments. Air carriers have the benefit of flying at altitudes above the air pollution that is circulated into spaces on the ground.

For those aircraft that recirculate some part of the cabin air, that air is typically passed through high-quality filters before it returns to the cabin. Manufacturers of new airplanes used by air carriers incorporate either High Efficiency Particulate Air (HEPA) filters, similar to those used in hospital isolation areas and surgical suites, or particulate filters that are somewhat less efficient.

### FAA Air Transportation Center of Excellence for Airliner Cabin Environment Research

In September of 2004, the FAA announced the establishment of the Air Transportation Center of Excellence for Airliner Cabin Environment Research (ACER), headed by Auburn University. ACER will research cabin air quality and assess chemical and biological threats. Seven other universities are taking part in the effort. The FAA will provide funding for the center, and the private sector will match those funds.

The ACER team aims to be a resource for airlines, equipment manufacturers, cabin crews, and the traveling public.

### Disinsection

Chemical disinsection—a term used to describe the process of ridding an airplane of insects—has been a long-time concern, although a 1995 World Health Organization report concluded that aircraft disinsection, if performed appropriately, would not present a risk to human health. Chemical disinsection has been significantly reduced, and approximately half of the 15 countries that still require disinsection of all inbound flights allow disinsection prior to boarding the aircraft. The Office of the Secretary of Transportation chairs an interagency working group that is taking a lead in researching and developing means of non-chemical disinsection of aircraft.

### Tufts-New England Medical Center Study

The *Lancet* published on March 12, 2005, a study by doctors at Tufts-New England Medical Center and the Lahey Clinic Medical Center entitled, “Transmission of Infectious Diseases During Commercial Air Travel.” The report notes that cabin air quality has been the focus of many media investigations and criticism from special interest groups and that most of this concern is associated with the perception that airborne particles are distributed throughout the entire cabin by the ventilation system.

The report states, however, that no peer-reviewed scientific work links cabin air quality and aircraft ventilation rates to heightened health risks, compared with other transportation modes or with office buildings. The report concludes that the environmental control system used in commercial aircraft seems to restrict the spread of airborne pathogens, and the perceived risk is greater than the actual risk.



## QUICK FIX from page 1

about the competency of individual AMEs. Better ways to assess AME performance must be developed.

**Solution:** We have begun to collect information on two specific types of errors committed by AMEs: reversals of issuances and medical histories that don't support the decision to issue.

A serious error is committed when an AME issues a medical certificate that should have been denied or deferred. An example is the 165 reversal letters we sent earlier this year to AMEs for issuing certificates to airmen on antidepressants. Please understand, you cannot violate our policies on when not to issue simply because you do not agree with this or any other policy! Reversals will continue to be tallied and reported on your Performance Reports and will still cause Error Letters to be sent to you and the Regional Flight Surgeon.

We have asked our reviewers to record in our system each time they feel the medical history supporting an issued certificate is lacking sufficient detail, requiring a request for additional information from the applicant. Please be assured these decisions by the reviewer will not be made capriciously, but will be reserved for seriously deficient histories; we will provide enough information on your Performance Reports to permit you to review the history to validate our decision, but you would be wise to print a copy of all examination information before transmitting to us so that you have a record to which you can compare. I am informing you of these changes, however, in the hope that histories will improve, so that these judgments of inadequate histories are rare.

We are considering asking the reviewers to similarly judge when an AME has inappropriately deferred a case to Medical Certification. These decisions will be reserved for cases where it is clear the certificate could have been issued by the AME. This may take some time to implement, but I wanted to warn you now that is a possibility. Please try not to be too conservative when making deferral decisions. →

*Dr. Jones manages the Aerospace Medical Education Division at CAMI.*

# Testicular Tumor in an Aviator

Case Report, by Sarady Tan, MD, MS, MPH

*Testicular tumor is an uncommon cancer mainly affecting males between ages 20 to 54 years old. In the United States, approximately two to three new testicular cancer cases per 100,000 males occur each year. Testicular cancer is disqualifying for all classes of FAA medical certificates, and consideration must be deferred to the FAA for special issuance consideration. This article presents a case report of testicular cancer in an airline pilot, a brief discussion of testicular cancer, and the aeromedical implications of the diagnosis.*

## History

**A** 41-YEAR-OLD pilot, married with children, went to see his aviation medical examiner (AME) to renew his second-class medical certificate one year after completing treatment for testicular cancer. The airman had presented to his primary care physician with a painless right testicular mass that had grown from a small marble-size to that of an almond with shell over a four-month period. The airman's medical, social, and family histories were non-contributory, including no history of undescended testis, previous malignancy, or family history of testicular cancers. Physical examination was unremarkable except for a palpable right testicular mass. An ultrasound of the scrotum showed three round hypoechoic lesions in the right testis.

The histological reports from his right orchiectomy specimen showed a mixed germ cell tumor composed of 60% seminoma and 40% embryonal carcinoma, without evidence of chorionicarcinoma or yolk sac element and no vascular invasion. Subsequent chest X-ray and CT scans of the pelvis, abdomen, chest, and brain revealed evidence of a mass interposed between the aorta and vena cava at the level of right hilum but no mediastinal mass, lymphadenopathy, or brain metastases. Serum alpha fetoprotein (AFP) was 3.3 ng/ml (normal < 6.1 ng/mL), beta human chorionic gonadotropin (hCG) was less than 2 mIU/ml (normal < 5 mIU/mL), and lactic dehydrogenase (LDH) was 223 U/L at the time of initial diagnosis.

The airman received four cycles of etoposide and cisplatin combination chemotherapy along with a retroperitoneal lymph node dissection (3 out of 12 lymph nodes had tumor invasion) for the treatment of his Stage IIIA testicular cancer. Post-treatment serum markers (i.e., AFP, hCG, and LDH) and CT scans of the chest, abdomen, and pelvis showed no evidence of recurrent disease. The airman was also asymptomatic at the time of his second-class medical certificate examination.

Since this airman had had metastatic testicular cancer, he was ineligible for medical certification under Title 14 of the Code of Federal Regulations (CFRs), revised Part 67; specifically under paragraph(s) or section(s) 113(b), 213(b), 313(b). The AME deferred this airman's medical certificate issuance to the Federal Aviation Administration for disposition.

## Diagnosis

Painless enlargement of the testis is the most typical symptom, but up to 10% of patients will have no symptoms at presentation (2). Diffuse testicular pain, swelling, or hardness in the scrotum have also been reported (6). About 5% of germ cell cancer patients develop gynecomastia. Ten percent of patients with testicular tumors will present with

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*Lt. Col. (Dr.) Sarady Tan is a board-certified family physician and resident in the USAF Residency in Aerospace Medicine program. He wrote this case report while on a clinical rotation at the Civil Aerospace Medical Institute.*

## Testicular Tumor

Testicular tumor accounts for about 1% of all new cancers in males in the United States (3). Between 1997 to 2001, more than 90% of testicular cancers developed in males ages 20 to 54 years old, with a median age of 34 at the time of diagnosis (3). In 2004, approximately 8,980 new cases and 360 deaths were expected from testicular tumors in United States (3). A male's lifetime risk of developing and dying from testicular cancer are 0.35% and 0.02%, respectively (3).

Testicular neoplasms are divided into either non-germ cell tumors or germ cell tumors. Non-germ cell tumors are benign for the most part and account for up to 5% of all primary testicular neoplasms (3). Non-germ cell tumors include Leydig cell tumors, Sertoli cell tumors and gonadoblastoma (2,6). Germ cells account for 95% of primary testicular neoplasms and are further divided into seminoma or nonseminoma types (2,6). This division is made primarily for treatment planning, since seminoma tumors are more responsive to radiation therapy (3,6).

Most testicular neoplasms metastasize through the lymphatic system, but the choriocarcinoma type spreads hematogenously (6). Iatrogenic metastases can occur with trans-scrotal testicular biopsy, orchiectomy, or other scrotal surgery (5,6).

Long-term survival may be as high as 100% for localized testicular cancers and up to 95.9% for all stages (3,5). The survival rate for distant metastases is somewhat lower at 71.8% (3). Patients younger than 50 have better survival rates than those 50 and over (3). Other factors that signify poor prognosis for nonseminomatous cancers include: 1) presence of liver, bone, or brain metastases, 2) very high serum markers (e.g., AFP, HCG, LDH), 3) primary mediastinal nonseminoma, and 4) extensive lung metastases (5).

symptoms or signs resulting from metastatic involvement, including cough from pulmonary metastases, back pain from retroperitoneal invasion, or leg edema from vascular obstruction (2). Hepatic and bone metastases may also occur but are less frequently seen (2).

A scrotal ultrasound should initially be used to evaluate all scrotal masses. Differentiation between intratesticular and extratesticular lesion is almost

*Continued* ➤

100% accurate with ultrasound (6). The scrotal ultrasound will show a hypoechoic lesion in the testicle that is typical of a testicular tumor but should be differentiated from scrotal hydroceles, cord hydroceles, epididymal masses or cysts, or epididymitis (2).

Testicular tumors should be further clinically staged through tissue histology, radiography and laboratory studies. As previously noted, a correct histological categorization will enhance and direct further treatment planning. Chest X-ray and CT scan will assist in the detection of pulmonary metastases. An abdominal CT scan will highlight retroperitoneal lymphadenopathy in 90% of patients and other metastases to the area (4).

Three main serum markers are seen elevated in 85% of patients on initial presentation (4). Serum lactic dehydrogenase (LDH) is seen elevated in 60% of patients with testicular tumors (4); 56% of nonseminomatous and 9% of seminoma testicular tumors produce beta human chorionic gonadotropin (hCG) elevations (Table 1; 6). Finally, 65% of nonseminomatous testicular tumors produce alpha feto protein (AFP) elevations, but seminoma testicular tumors do not produce this elevation (6).

**Table 1:** Germ Cell Tumor Types and Frequency of Serum Tumor Markers (6).

Tumor Cell Type	AFP (%)	hCG (%)
Seminoma	0	9
Non-Seminoma	65	56
• Embryonal carcinoma	70	60
• Teratocarcinoma	64	57
• Teratoma	37	25
• Choriocarcinoma	0	100
• Yolk sac	75	25

### Treatment

Treatment depends on the clinical staging of the testicular tumor, but for all cases, the initial management will consist of inguinal orchiectomy to the level of the internal ring (2,5). Histological findings will dictate further treatment with retroperitoneal dissection, chemotherapy, radiation therapy, or a combination of these.

Seminoma testicular tumors are radiosensitive, but in patients with extensive metastases, combination chemotherapy produces better outcomes (2,4). Nonseminoma testicular tumors with metastases to retroperitoneal and/or chest are best managed with combination chemotherapy after orchiectomy. Bleomycin, etoposide, and cisplatin combination chemotherapy will cure up to 90% of stage I and stage II cases and produce a cure rate of up to 70% in stage III cases (4). The National Cancer Institute has extensive testicular cancers treatment protocols available (3).

Surveillance after definitive management will include monthly serum markers and chest X-rays, along with periodic abdominal CT scans for at least two to three years (5). Most tumor recurrence will appear within two years after completion of treatment (5). Those previously cured of testicular cancers have a 2% to 5% cumulative risk of developing testicular tumors in the opposite testis within 25 years of the primary diagnosis (5).

### Aeromedical Concerns

The primary aeromedical concerns for testicular tumors are the clinical effects of metastases, recurrence, and the treatment regimen that was chosen. Pulmonary compromises, to include decreased pulmonary function, have been documented from metastases and the use of chemotherapy agents such as bleomycin (5). A 2.5-fold increase in cardiovascular morbidity (e.g., hypertension, hyperlipidemia, angina/chest pain, myocardial infarction) has been seen in patients with radiation therapy and/or chemotherapy (3,5). Airmen with testicular cancers are medically disqualified for all flying classes. After the airman has completed a definitive treatment for testicular cancer and remains symptom-free for at least one year in cases without metastases, or three years for metastasized cases, he may seek consideration for medical certificate issuance from the FAA. A special issuance may be authorized at that time.

### Certification Outcome

In this case study, the airman was symptom-free 12 months post-orchiectomy and chemotherapy (without bleomycin). The FAA consultant oncologist reviewed this case and recommended special issuance for a second-class medical certificate. Special issuance was authorized by the Aeromedical Certification Division for a second-class airman medical certificate (under Title 14 of the CFRs, Section 67.401). Annual current status reports were required for history of metastatic testicular cancer, to include interpretation of beta-HCG, alpha-fetoprotein laboratory values, and imaging necessary to demonstrate no evidence of metastases.

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## Dr. Deakins New AMCD Medical Officer



Dennis Deakins, MD, PhD, MPH, is the newest aviation medical officer in the Aerospace Medical Certification Division.

Prior to joining the Office of Aerospace Medicine, Dr. Deakins served the U.S. Navy in assignments around the world and amassed 1,000 hours in numerous Navy and Marine aircraft. He was the Senior Medical Officer aboard aircraft carriers, training commands, as well as staff surgeon at COMNAVAIRPAC in San Diego, Calif., the Naval Aviation Schools Command in Pensacola, Fla., and the Naval Aerospace Medical Institute. Captain Deakins retired in January 2005 after an illustrious 20-year career.

Dr. Deakins' personal awards include the Legion of Merit, Distinguished Service Medal (3), Meritorious Service Medal (4), and numerous unit and citation awards, including the Navy Expeditionary Medal and Kuwait Liberation Medal (Saudi and Kuwaiti).

He graduated from the University of Oklahoma (BS, MS, PhD, MD) and the University of Alabama Birmingham (MPH). Dr. Deakins is a graduate (with distinction) of the Naval War College. He is Board-Certified in Preventive Medicine and is a member and associate fellow of the Aerospace Medical Association.

Dr. Deakins is a private pilot and has been active in scouting, soccer, white water kayaking and canoeing, biking, and photography but says he "prefers being a grandpa now." He and his wife, Sharon, have four children and six grandchildren.

## OAM NEWS

Office of Aerospace Medicine

### Tiger Team Meets In High-Tech Conference

*New Method Eliminates  
Travel, Generates 650  
Medical Review Decisions*

By Richard Carter, DO, MPH

*Tiger Team* is a special project initiated by Aerospace Medical Certification Division (AMCD) Manager Dr. **Warren Silberman** to improve customer service by reducing the backlog of certification cases. Previous Tiger-Team efforts have been successful, so Dr. Silberman again called on selected FAA medical officers to jointly process a backlog of complex certification cases.

New this time was a high-tech approach to create a *virtual* Tiger Team. Members of this Tiger Team communicated by teleconference 29 November through 3 December 2005, from 9 am to 5 pm, with Internet coordination. Team members included Drs. **Willis Simmons**, Alaskan Regional Flight Surgeon; **Denise Baisden**, Southwest Regional Deputy Flight Surgeon; **Kim Christensen**, Salt Lake City Center Flight Surgeon, **Byron Baker**, Albuquerque Center Flight Surgeon, **Walter Davis**, Southern Regional Deputy Flight Surgeon; **Stephen Goodman**, Western Pacific Regional Flight Surgeon; **Michael Jordan**, Long Island Center Flight Surgeon; **Dominick Zito**, Eastern Regional Deputy Flight Surgeon; **Steve Schwendeman**, CAMI Occupational Medicine; **Richard Carter**, and **Dennis Deakins**, AMCD Medical Officers; and **Warren Silberman**, Tiger Team leader.

This intense, three-day effort highlights the FAA's commitment to improving its safety oversight of airman medical certification. The virtual Tiger Team generated 650 medical review decisions for airmen pending needed medical authorizations to fly.

## Tiger Team

The term *Tiger Team* refers to governmental agencies designating an elite team of highly qualified, experienced experts to tackle a problem of critical significance that is time sensitive.

This project emphasizes consistent application of medical certification guidelines and the integration of medical certification standards. The continued telephonic and online interaction of Regional Flight Surgeons and AMCD medical officers created a professional atmosphere where the certification objective was high-quality, expedited service for the airmen.

The team also achieved successful training on a new cross-organizational initiative to improve the medical certification database system.



### Dr. Silberman RAM Instructor of the Year

Dr. Warren Silberman (above left) receives the RAM (Resident in Aerospace Medicine) Instructor of the Year award from Lt. Col. Russ Trigg, representing the military RAM residents.

Each year, military participants in the RAM program vote to choose their favorite field instructor from the worldwide teaching staff of medical professionals. This is Dr. Silberman's second consecutive year to receive the honor.



Doug Burnett (l.) is congratulated by CAMI director Melchor J. Antuñano, MD, MS.

## Mr. Burnett CAMI Employee of the Year

**Douglas Burnett**, the Civil Aerospace Medical Institute's Aviation Medical Examiner Program Team Leader, has been named the 2005 Civil Aerospace Medical Institute Employee of the Year.

Quoting just two achievements listed on the citation, "Doug has chaired the Federal Air Surgeon's Education Working Group....developed a questionnaire method to poll members about topics, in lieu of meetings. The polling has produced information permitting CAMI to respond to aviation medical examiner educational needs of the future...."

"The Federal Air Surgeon exclusively trusts Doug to arrange his semi-annual management team meetings, the CAMI Director for him to arrange meeting space for monthly management meetings, and he also arranges lodging for all Office of Aerospace Medicine personnel attending the annual Aerospace Medicine Association Meetings. The confidence placed in Doug to handle these arrangements is [a] testimony to his conscientiousness, negotiation skills, and ability to form trusting relationships with the professionals in the hotel industry."

Mr. Burnett joined the Federal Aviation Administration in 1990.

Each year, employees at the Institute nominate deserving fellow workers for the annual award. An employee committee reviews the nominations and selects the winner.

## In Memoriam

With great sadness the Western-Pacific Regional Medical Division announces that **Gerald Volkman**, MD, passed away on October 28, 2005. Dr. Volkman served as a flight surgeon in Western-Pacific region since October 1994. In that position, he supervised the region's Air Traffic Controller Health Program and participated in several special projects that contributed to aviation safety. His medical expertise and gentle manner will be greatly missed.

—**Stephen Griswold**, MD  
Deputy Flight Surgeon  
Western Pacific Region

## Quality Management System Being Implemented

By Jessica Gillece

The Office of Aerospace Medicine (OAM) is currently implementing the international quality management system, known as ISO-9000. This system ensures continued quality in all OAM processes, both building on previous successes and creating new ones.

The ISO-9000 process collects customer feedback from aviation medical examiners, OAM managers, airmen, and others to facilitate and develop improvements where needed. The quality process communicates OAM objectives so that all team members work towards specific goals:

- Ensure aerospace safety
- Meet customer requirements
- Work towards continuous improvement.

More information will be forthcoming as the program is implemented system-wide.

*Ms. Gillece is a staff writer at the headquarters Office of Aerospace Medicine.*

## LETTERS from page 6

### Heart Statistics

Dear Editor,

I am an AME who is starting a heart attack prevention clinic in my practice. Can you or anyone at the FAA provide me with any statistics on how many pilots have heart attacks, bypass surgery or stents placed yearly and how long they are usually grounded for?

**Larry Kaskel, MD**  
Libertyville, Illinois

Dear Dr. Kaskel,

The statistics you requested were provided by Warren S. Silberman, DO, MPH, manager, Aerospace Medical Certification Division:

**The airman is grounded for a minimum of 6 months after the event. These are the total number of airmen currently issued, by class, who have this diagnosis.**

Path Code (PC) and Event	First Class	Second Class	Third Class
PC 431 (Myocardial Infarction)	420	398	2916
PC 440 (Coronary Artery Bypass Surgery)	373	358	3149
PC 439 (Percutaneous Transluminal Coronary Angioplasty, PTCA)	385	295	1810
PC 437 (Coronary Angioplasty With a Stent)	477	390	2460

**On-Line Ordering of Forms Now Available**  
*Brochure Ordering Coming Soon*

By Mike Wayda

Computer specialist **Tuanb Diep**, in the Civil Aerospace Medical Institute's Aerospace Medical Education Division, has provided a new on-line service for ordering medical forms. Aviation medical examiners can now access a Web site to order these FAA Forms:

- FAA 8065-1 EKG Transmittal

- FAA 8420-2 Student Medical Certificate
- FAA 8500-1 Near Vision Acuity Test Card
- FAA 8500-2 Letter of Denial
- FAA 8500-7 Report of Eye Evaluation
- FAA 8500-8 Application for Airman Medical Certificate
- FAA 8500-9 Medical Certificate
- FAA 8500-14 Ophthalmological Evaluation of Glaucoma
- FAA 8500-19 Cardiovascular Evaluation Specifications
- FAA 1360-57 Aeromedical Certification, Self-Addressed Envelope

The Web site for ordering these forms is:

[http://ame.cami.jccbi.gov/form\\_and\\_brochure/medicalform.asp](http://ame.cami.jccbi.gov/form_and_brochure/medicalform.asp)

**Brochures**

The Aerospace Medical Education Division also plans to have online a similar ordering system for pilot safety brochures. This will be available on the same Web page as the forms. Look for it, and use this system to ensure that you never run out of forms or brochures again.

**AME Seminar Being Held in Germany**  
*Achtung, Bitte!*

The Second International Aviation Medical Examiner Seminar in Europe will be held from July 13 to 16, 2006 in Wiesbaden, Germany, by the German Academy for Aviation and Travel Medicine. Topics covered include cardiology, ophthalmology, neurology, gynecology, and updates on aviation medical certification regulations.

The seminar will fulfill FAA requirements for refresher training of International AMEs. Wiesbaden is easy to reach by train, a 30-minute ride from the Frankfurt Rhein-Main-Airport.

For details about the program, speakers, registration fees, and accommodations, see their Web site (the site is written in German, but has a English-language page for the seminar):

[www.flugmed.org](http://www.flugmed.org)

Click on **Lehrgänge**, then **Intern. AME Seminar**

**Aviation Medical Examiner Seminar Schedule**

2006		
January 20 - 22	San Diego, Calif.	OOE (2)
March 6 - 10	Oklahoma City, Okla.	Basic (1)
May 15 - 18	Orlando, Fla. (AsMA)	Cardio (3)
June 12 - 16	Oklahoma City, Okla.	Basic (1)
July 14 - 16	Albuquerque, N.M.	N/NP/P (2)
August 4 - 6	Washington, D.C.	AP/HF (2)
September 11 - 15	Oklahoma City, Okla.	Basic (1)
September 22 - 24	Atlanta, Ga.	OOE (2)
December 11 - 15	Oklahoma City, Okla.	Basic (1)

**CODES**

AP/HF Aviation Physiology/Human Factors Theme

CAR Cardiology Theme

OOE Ophthalmology - Otolaryngology - Endocrinology Theme

N/NP/P Neurology/Neuro-Psychology/Psychiatry Theme

(1) A 4½-day basic AME seminar focused on preparing physicians to be designated as aviation medical examiners. Call your regional flight surgeon.

(2) A 2½-day theme AME seminar consisting of 12 hours of aviation medical examiner-specific subjects plus 8 hours of subjects related to a designated theme. Registration must be made through the Oklahoma City AME Programs staff, (405) 954-4830, or -4258.

(3) A 3½-day theme AME seminar held in conjunction with the Aerospace Medical Association (AsMA). Registration must be made through AsMA at (703) 739-2240. A registration fee will be charged by AsMA to cover their overhead costs. Registrants have full access to the AsMA meeting. CME credit for the FAA seminar is free.

The Civil Aerospace Medical Institute is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.