



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
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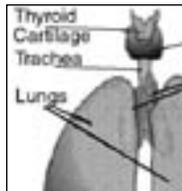
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Medical Certification Tiger Team Twists Tails

By Richard Carter, DO

IN A SINGLE ROOM with a bank of computers, seven FAA medical officers performed 28 hours of intense work, generating 724 medical review decisions for airmen pending needed medical authorizations to fly.

This weeklong effort improved medical certification service to airmen and implemented training needed for the new Document Imaging and Workflow System technology used in the certification process. Authorization letters generated by the review process are being generated as this *Bulletin* goes to press. *Continued on page 3*



TIGER TEAM MEMBERS. L-R: Dr. Warren Silberman, AMCD Medical Officer Dr. Richard Carter, Great Lakes Regional Flight Surgeon Dr. Nestor Kowalsky, Medical Specialties Division Medical Officer Dr. Arleen Saenger, New England Regional Flight Surgeon Dr. Paul Clark, and Northwest Mountain Regional Deputy Flight Surgeon Dr. Christopher Taylor. Not pictured: CAMI Occupational Health Division Medical Officer Dr. Steve Schwendeman.

QUICK FIX

Flawed Airman Medical Certificates

By Richard "Dick" Jones, MD

Problem: Aviation Medical Examiners (AMEs) are issuing medical certificates to airmen that are handwritten, contain pen and ink changes, have obvious typewritten corrections, include misspelled words, and/or do not follow the prescribed format.

Result: Federal Aviation Administration Flight Standards personnel have instructions to consider airmen medical certificates that are not perfect to be potential forgeries. They are required to prevent the pilot from flying until the matter has been investigated. There is a pending case with the National Transportation Safety Board in which an airman, possessing a certificate with a clearly altered date of issuance and several pen and ink and typographical errors, is attempting to defend against an emergency revocation of his pilot's license. If the revocation is sustained,

he will lose various type ratings that cost him about one million dollars to obtain and put his two-million dollar business at risk. An Administrative Law Judge must rule whether the airman or the aviation medical examiner altered the date. The AME's position is undermined by numerous examples of errors on the certificate portion of the FAA/Original copy of FAA Forms 8500-8 he had submitted in the past, even through none were related to issuance dates, and no examination had been performed by any AME on the pilot within the past two years. Even if the airman falsified the certificate, he might mount a successful appeal because of the AME's past errors on medical certificates.

Solution: The Medical Certification Standards and Procedures training (MCSPT) manual specifies: "Medical

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Your Opinions, Please

*Changes Are Not Only
Inevitable, They Are Welcome*

IN THIS PAST winter's issue of the *Federal Air Surgeon's Medical Bulletin*, I wrote an article titled "Same-Day Certification: Elusive Dream" [Vol. 41, No. 4, p. 2]. In that article, I discussed the significance of technology in our efforts to improve the airman medical certification system. What I neglected to address was the significance of aviation medical examiners not only accepting the changes we have made in the system but in providing valuable insight into the system's development.

Adjusting to change can be quite difficult, especially for those of us have been accustomed to doing business in an established way for many years. I am certain that our staff at the Aero-

The Federal Air Surgeon's Column



By Jon L. Jordan, MD, JD

space Medical Certification Division (AMCD) in Oklahoma City can attest to the difficulties in transitioning from processing paper medical records to processing electronic records.

I am also aware of some of the difficulties aviation medical examiners have had in accepting new ways of doing airman medical certification business. I recollect the uproar when former Federal Air Surgeon **Frank Austin** announced that electronic transmission of routinely required ECGs would be necessary.

We had a similar reaction when I decided that the time had come to require AMEs to electronically transmit data from FAA Form 8500-8. The reaction to that decision might have been much more dramatic had it not been for several years' experience of voluntary transmission of data by a significant number of AMEs using the old Airman Medical Certification Subsystem (AMCS). As you may recall, "Year 2000" compliance issues and advancing technology hastened the demise of AMCS.

Although we have a few AMEs who continue to resist the changes in the medical certification system, the overwhelming majority of AMEs now accepts those changes. As time goes by, I anticipate that the current minor resistance will further diminish to the point that it will be unheard. I deeply appreciate the cooperative and accepting spirit AMEs have exhibited in respect to our automation initiatives.

What might not be fully recognized is that, in the development of our systems, we turned to you AMEs for technical assistance and that we have taken note of various recommendations for system improvements. Admittedly, some of the recommended improvements in the Document Imaging Workflow System (DIWS) have been slow in coming, in part related to the unavailability of funds to promptly make indicated changes.

We are about ready to "roll out" several modifications of the DIWS that are responsive to AME comments and suggestions. The first three will be available for beta testing soon.

- Foremost among these is a reduction from seven pages to two pages of screens that AMEs must complete. What "pops up" on the computer screen will look more like the Form 8500-8.
- Data input portions will have "pop-up" boxes that will appear if the AME records a value that is out of standards—as a reminder of acceptable values.
- Also, when the AME records an applicant's use of a medication, a "pop-up" box will appear if the spelling is incorrect and provide spelling options. This will allow the system to accurately reject for FAA staff review medications that have not been previously reported that may constitute a safety hazard, or it will identify an underlying condition that must be assessed. This will reduce the number of cases that require AMCD staff review.

While these are but a few of the modifications of the DIWS that we plan, they represent our most recent responses to recommendations received from both AMEs and our medical certification staff.

I hope that, as you think of other possible changes that might make our certification system work smoother, you will share those thoughts with us. Anything that will make life a little easier—whether for airmen, AMEs, or FAA staff—will be most welcome.

JLJ

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Point Zero Two Two

Breaking the Accident Chain

Excerpts from a speech by
FAA Administrator Marion Blakey

AS WE [Gen. Chuck Yeager, DOT Secretary Norman Mineta] talked yesterday, the conversation focused on safety and the era when aviation was just coming into its own. From sand dunes at Kitty Hawk to pistons to jets to the speed of sound. We discussed **Burt Rutan** introducing America to the sub-orbital manned rocket. There's no question that's going to change our perspectives on aviation. Imagine millions of passengers headed one day toward space.

But we also talked about another number — point zero two two—that's the commercial fatal accident rate over the last three years: the lowest accident rate in history. The *Washington Post* said we're in the golden age of aviation safety, and I think they're right.

Point zero two two. What does that really mean? Dr. **Arnold Barnett** from MIT puts it this way: Pick a random flight every day, and you'll fly 21,000 thousand years before you experience a fatality. He also says that any one of our children has a better chance to win a presidential primary than be involved in a fatal airline accident. Now that's a safety record we can be justly proud of.

And when you're looking for the reason why, look no farther than the decision makers in this room. When government, academia, and industry get together to choose a common path, good things happen.

My optimism is plain, because I know that in order to keep this record going, we have to stretch higher and higher still. I'm here to tell you that the FAA is stretching further than ever before.

Step number 1 is the FAA Flight Plan. With input from industry and academia, the FAA has committed to four aggressive goals that will enhance aviation. Call them a set of marching orders for the next five years.

The first goal in the Flight Plan is to increase safety. There are those who'd argue that something is safe or it's not. Point zero two two shows us that there are degrees of safety and, over the years, we've been able to whittle away at the major causes of aviation accidents. As everyone in this room knows, however, much of the low-hanging fruit is gone.

AVR's Responsibilities Under the Flight Plan

- **Reduce...** commercial airline fatal accident rate, number of fatal general aviation accidents, accidents in Alaska, cabin injuries caused by turbulence
- **Develop** composite index to measure the safety of US civil aviation

Now, we're in a place where we must focus on the nitty-gritty. As the portal of what causes an accident gets smaller and smaller, we're sharpening our programs and projects. An aviation accident has been described as a string of dominoes, each of which has to fall at a specific, particular time in order for an accident to occur. Our projects are all designed to break that chain. Point zero two two. We're well on the way.

So the FAA is making strategic changes, experiencing some real progress, doing new things in a new way. We've set a plan in motion, a new organization is in place. We're looking to industry and academia to help us make the safe even safer still. Together, you and the FAA have created the safest form of transportation in the history of the world. Point zero two two. From what I see here, from what I know about the ideas to come, with a little help from providence, we expect it to stay that way.

You know, Chuck Yeager had an interesting observation about making progress. He said, "It's called a *barrier* until someone breaks it. Then it's called *history*."

That's where we are right now. It's more of the Right Stuff, and it's at just the right time.

—From a speech to the Aerospace Industries Association of America, Washington, DC, April 20, 2004. →

TIGER TEAM from page 1

The term *Tiger Team* refers to governmental agencies designating an elite team of highly qualified experts to tackle a time-sensitive problem of critical significance. The Tiger Team creates a solution for a problem posing significant mission or safety concerns. The medical certification Tiger Team was initiated by Aerospace Medical Certification Division (AMCD) Manager Dr. **Warren S. Silberman** to improve customer service by reducing the backlog of certification cases. A previous Tiger Team effort was extremely successful, so Dr. Silberman again called on selected FAA medical officers to assemble in Oklahoma City for a week of hard work.

Safety Oversight

The intensive effort highlights the FAA's commitment to improve its safety oversight, including airman medical certification. This project emphasizes the consistent application of medical certification guidelines and integration of medical certification standards. The interaction of regional flight surgeons, AMCD medical officers, and headquarters staff medical officers creates a collaborative atmosphere in which to determine clear medical guidelines for airman certification involving complex medical issues.

Objective

The key team objective was high quality, expedited service for airmen. The team also achieved successful training on a new cross-organizational initiative to improve the medical certification database system.

Federal Air Surgeon Dr. **Jon Jordan** said he was "extremely pleased" with the team's outcome and he expressed thanks to the physicians who participated in this important customer service initiative. The tasks accomplished during the weeklong campaign were "significant," and he indicated that another Tiger Team exercise would likely be conducted again later this year.





Certification Update

Information About Current Problems

By Warren S. Silberman, DO, MPH

THREE ISSUES HAVE arisen recently that you need to know about. First, as you may know, all incoming mail (overnight, FedEx, UPS, etc.) is now being sent from our mailroom directly to be scanned into the Document Imaging Workflow System. We have noted that laboratory test results that are *highlighted* are generally impossible to read once scanned, even

if you zoom in on the area. I have instituted a process to detect these areas, but I also need your help until we can get a technological fix. If you provide us with highlighted lab results, could you please write the value above the highlighted area? Thanks to all you folks who make the process go smoothly.

The second issue is that we have been seeing an increased amount of incorrect airman addresses. This is discovered when we mail a letter out and it is returned. So, please have your office assistants double-check the address when the demographic data is presented as you transmit an examination.

Finally, we continue to receive hard-copy examinations (Form 8500-8) that have not been marked "TRANS" or "TRANSMITTED" in the upper right-hand corner of the form. If you recall from a recent reminder, we have been receiving hard-copy 8500-8 forms where the backside has been left empty (as the FAS has said you may do), but the examination was never transmitted. Writing on the front side that you have transmitted the examination allows us to separate those examinations from the other "non transmitted" ones, thus saving some steps in the process.

AEROMEDICAL CERTIFICATION QUESTIONS AND ANSWERS

WELL, HERE IS another series of case presentations. I truly hope that these are still stimulating your minds. This time, I thought I'd write some cases that pertain to cardiovascular disease, one of our most significant areas of concern.

1 Clark S. Kent, a 48-y/o, mild-mannered news anchor for a local television station, thought he was invincible until the day he developed chest pain. Mr. Kent had no prior history of chest pains with exertion or rest. He was a smoker and had a family history of coronary disease. He went to the local emergency room, and a series of tests determined that he had suffered a myocardial infarction. There was evidence of ST segment elevation on his electrocardiogram and cardiac enzymes were positive for damage. A cardiac catheterization was performed that did not show any evidence of coronary disease. The cardiologist did not give any ergonovine in an attempt to repeat possible coronary spasm, and he labeled the airman with the diagnosis of *Prinzmetal's variant angina*. The airman waited 6 months after the event and presented to his AME for medical certification.

Review of the material the cardiologist provided demonstrated that the patient was able to exercise for only 7.45 minutes on the treadmill, although the Aerospace Medical Certification Division requests that an airman go through Stage 3 of the Bruce protocol, or 9 minutes! The test was negative for ischemic changes, and the lipid panel demonstrated an increased LDL to 140.

Upon completion of his Bruce protocol stress test, his treating cardiologist discontinued the calcium channel blocker medication that Kent was prescribed at the time of his infarction. He was not treated with a lipid-lowering agent. His physician reiterated the diagnosis of *Prinzmetal's angina*.

So, Mr. Kent appears to have all the prerequisites to be considered for an authorization for special issuance. With the negative stress test, demonstrated evidence of normal coronary arteries, and lack of symptoms, he has a good chance of medical certification. *Yes or no?*

ANSWER: No! *Prinzmetal's angina* is unacceptable for medical certification. Recall that angina pectoris is one of the 15 specifically disqualifying medical illnesses. The FAA generally will grant a waiver if there is resolution of anginal symptoms with treatment of coronary disease but not for untreated or even treated *Prinzmetal's angina*.

2 Fabrezo Detergenta is a 55 y/o 2nd class airman flying for a well-known, international cargo-carrying airline. He was being observed for a history of a bicuspid aortic valve. The valve had become quite stenotic with a gradient across the valve of 50 mm Hg and valve area of 0.8 cm sq. He was subsequently denied his medical certificate when he presented to the AMCD for consideration. The AME, rightfully so, deferred his medical certification because he knew that a mean gradient of 40 mm Hg or greater was a concern to AMCD. The airman was subsequently denied medical certification by the AMCD.

Mr. Detergenta has now had an aortic valve replacement with a mechanical valve. He did well pre- and post-operatively and presented 6 months later for medical certification. His AME did not want to "take the time" to prepare the documentation necessary for special

Dr. Silberman manages the Civil Aerospace Medical Institute's Aerospace Medical Certification Division.

Continued ➤

AEROMEDICAL CERTIFICATION QUESTIONS AND ANSWERS

issuance consideration by the FAA, so he hired one of the several pilot advocacy organizations to do this for him.

The airman's cardiovascular evaluation (CVE) mentioned that he had been doing well with no evidence of chest pain, shortness of breath, or syncope. His medications included warfarin anticoagulation and an angiotensin-converting enzyme inhibitor for blood pressure control. Mr. Detergenta's most recent International Normalized Ratio (INR) levels (from oldest to most current) were: 1.9, 1.6, 2.8, 3.1, 2.5, and 2.0. Fasting blood sugar and lipid panels were satisfactory. A 2-D echocardiogram showed some left atrial dilation and a functioning prosthetic aortic valve with gradient of 15 mmHg. Since the airman was requesting a 2nd-class medical certificate, his case was reviewed by the Federal Air Surgeon's cardiology consultant. What do you think the cardiologist's recommendations should be?

Answer: All of the tests and medical records provided were favorable, with the exception of the INR levels. The FAA follows the recommendations of the American Heart Association for mechanical valve replacement in that the levels need to be between 2.5 and 3.5 for mechanical valve replacement. FAA cardiologists have devised a protocol requiring that 80% of the INR levels be between the recommended levels. The cardiologist agreed that all the material was favorable, with the exception of the INR levels (half of them were not within the range requested), so medical certification was withheld pending better control. The airman's warfarin dosage was adjusted and he retuned later with satisfactory INRs, resulting in an authorization for special issuance.

3 Barney Fink is a 55-y/o 1st-class airman with a history of aortic dissection and aortic valve replacement. Mr. Fink works for a major air carrier. He has a history of hypertension and was being treated with

a mild diuretic. This was known to the FAA's Aerospace Medical Certification Division. He developed a tearing chest pain and was seen at the Massachusetts General Hospital, where a diagnosis was made of aortic insufficiency with an acute dissecting ascending aortic aneurysm. An emergent aortic valve replacement with graft was performed and the coronary arteries were transplanted.

Six months later, Mr. Fink presented to the Federal Air Surgeon's Cardiology Panel for consideration. His CVE was favorable. At that time, he was being treated with a beta-blocker for his hypertension and *Coumadin* (warfarin) for his mechanical valve replacement. His BP was 130/82. The past 6-month INR levels were: 2.0, 1.8, 2.2, 3.9, 3.4, and 2.2. A current 2-D echocardiogram showed the mechanical valve to be functioning well with no perivalvular leaks or significant gradient across the valve. A maximal Bruce protocol stress test was performed. Mr. Fink was able to exercise to 12 minutes with a maximal heart rate of 165, which was 100% of his predicted maximal rate. There was no dysrhythmia or ischemic changes. A pathology report on the aorta demonstrated *cystic medial necrosis* and a Type I aneurysm. The airman did not demonstrate evidence of Marfan's syndrome. What do you think the decision of the panel was?

Answer: Denial of all classes. Two-thirds of all aneurysms are Type A, or proximal. A pathological diagnosis of *cystic medial necrosis* implies severe dissection. Most cases with this pathological diagnosis are associated with Marfan's syndrome or Ehler's Danlos syndrome. This pathology implies a tendency for further episodes of dissection and thus the major reason for its unacceptability for flight.

Another issue with this case, as in Case #2, is the anticoagulation. As I have mentioned in previous *Bulletin* articles, we require that 80% of the INR levels be within the standards set for the condition. In the case of mechanical valve replacement, we require that the levels be between 2.5 and 3.5. In this case, only 13% of the levels were within these boundaries, and thus for certification, the airman would need to demonstrate better control.

4 Lee Minor was a 1st-class pilot at age 50. Several years earlier, he developed atrial fibrillation. His physicians attempted cardioversion two times, both of which resulted in resumption of the dysrhythmia. When he was placed on medications, his heart rate dropped to significant bradycardia and he had sinus pauses that were 3.2 seconds and even greater. Without medication control, his rate would rise to 140 to 160 with little exertion. He felt poorly. It appeared to his doctors that he had some AV nodal disease. This resulted in insertion of a VVI (ventricular paced, ventricular sensed, and inhibited) pacemaker. He was then restarted on medication for rate control and felt much better. He presented to the Federal Air Surgeon's Cardiology panel for their recommendations on resumption of privileges.

A current 2-D echocardiogram showed an enlarged left atrium without evidence of valvular disease. Maximal Bruce stress nuclear scan to 9.0 minutes did not show any ischemic changes. His ejection fraction was 50%. He was able to override the paced rate and increase his heart rate to 90% of maximal predicted. Twenty-four hour Holter monitoring revealed minimum heart rate of 50 and maximal rate of 110. A test for pacemaker dependency was undertaken. The pacer was turned off and his intrinsic heart rate was 28. Mr. Minor also complained that he did not "feel well" during this time. So, let's say you were one of the panelists. Would you recommend issuance of 2nd class medical certification?

Answer: I hope not! Mr. Minor is in a quandary, mainly because of his flying career. His rate/rhythm control was not satisfactory for medical certification without pacemaker backup, and with the pacer in place he is pacer dependent. Our cardiology consultants feel that pacemakers are quite reliable but have not as yet recommended that we grant medical certification to individuals who are pacer dependent. The airman did provide the proper information and testing that we require for medical

Continued on page 7

Version II of the *Guide for AMEs* Now Available On-Line

New version features user-friendly, easier access to everything you need for determining the right medical certification decision

By Kelly Spinner

ON MARCH 19, 2004, the Office of Aerospace Medicine introduced Version II of the *Guide for Aviation Medical Examiners* (Guide). It is accessible via the Internet at:

http://www.faa.gov/avr/aam/Game/Version_2/03amemannual/home/home.htm

Note: Remember to update your 2003 Guide shortcut and/or bookmark with Version II.

What's New in Version II

1 Search Engine: Installed a Search Engine site at the top of the Navigation Bar.

2 What's New: Inserted a "What's New" site in the Navigation Bar. This link provides important airmen medical certification decision-making revisions or items of significance.

3 Instructions Site: Deleted the "Instructions" site located in the Navigation Bar of the 2003 Guide and incorporated its information into the "Introduction" and the newly developed "Available Downloads" sites.

4 "Available Downloads" Site: Inserted in the Navigation Bar an "Available Downloads" site, where you can access, download, and print copies of the Guide (236 pages); Synopsis of the Medical Standards (one page); Preambles of Title 14 of the Code of Federal Regulations, Medical Standards and Certification (14 CFR, part 67) (98 pages); and/or 14 CFR part 67 (18 pages).

Table of Contents and Index: Inserted a Table of Contents and Index in the printable PDF version of the Guide (236 pages).

5 Synopsis of the Medical Standards: Inserted in the Navigation Bar a single-page synopsis of first-, second-, and third-class airman medical standards.



New AME Guide Web Page. Significant revisions on navigation bar are numbered (1-7) and described in text).

6 AME Assisted Special Issuance (AASI): Deleted the AASI History of Monocularity in the AASI section.

7 Archives: Inserted an Archive site that delineates all modifications, their effective dates, descriptions, and reason for modifications.

8 Items 31-34. Eye: Inserted Section 6. Orthokeratology into Items 31-34, Eye, located on page 48, as follows:

6. Orthokeratology is acceptable for medical certification purposes, provided the airman can demonstrate corrected visual acuity in accordance with medical standards defined in 14 CFR Part 67. When corrective contact

lenses are required to meet vision standards, the medical certificate must have the appropriate limitation annotated. Advise airmen that they must follow the prescribed or proper use of orthokeratology lenses to ensure compliance with 14 CFR 61.53. Airmen should consider possible rotation, changes, or extensions of their work schedules when deciding on orthokeratology retainer lens use.

9 Item 46. Neurologic: Relocated Footnote #21 in Item 46. Neurologic, Head Trauma Aerospace Medical Disposition table of the 2003 Guide, to Footnote #19 in **Version II**, and renumbered the Footnotes accordingly.

Ms. Spinner is a Program Analyst in the Office of Aerospace Medicine's Aeromedical Standards and Substance Abuse Branch at FAA headquarters.

Continued on next page

ITEM 47. PSYCHIATRIC.			
Disease/Condition	Class	Evaluation Data	Disposition
Psychiatric Conditions			
Attention Deficit Disorder	All	Submit all pertinent medical information and clinical status report to include documenting the period of use, name and dosage of any medication(s) and side-effects	Requires FAA Decision

10 Item 47. Psychiatric: Inserted Attention Deficit Disorder into Item 47. Psychiatric, Psychiatric Conditions Aerospace Medical Disposition table, as shown above.

11 Item 60. Comments on History and Findings: Comments on all positive history or medical examination findings must be reported by Item Number. Item 60 provides the Examiner an opportunity to report observations and/or findings that are not asked for on the application form. Concern about the applicant's behavior, abnormal situations arising during the examination, unusual

findings, unreported history, and other information thought germane to aviation safety should be reported in Item 60. The Examiner should record name, dosage, frequency, and purpose for all currently used medications.

If possible, all ancillary reports such as consultations, ECGs, X-ray release forms, and hospital or other treatment records should be attached. If the delay for those items would exceed 14 days, the Examiner should forward all available data to the AMCD, with a note specifying what additional information is being prepared for submission at a later date.

If there are no significant medical history items or abnormal physical findings, the Examiner should indicate this by checking the appropriate block.

12 Item 63. Disqualifying Defects: List all disqualifying defects, diagnoses, or conditions by **ITEM NUMBER** that serve as the basis for **denial** or **deferral** in Item 63. Comments or discussion of specific observations or findings may be reported in Item 60 or submitted on a separate sheet of paper.

If the Examiner denies the applicant, the Examiner must issue a Letter of Denial (FAA Form 8500-2) to the applicant, and report the issuance of the denial in Item 60.

If you haven't already, please navigate through **Version II** of the Guide and become familiar with the airman medical certification decision-making criteria.

Should you have any comments or recommendations, feel free to provide them via E-mail by accessing the FEEDBACK section located at the bottom of the navigation bar of the Guide. →

CERTIFICATION From page 5

certification. The airman must provide the documentation surrounding the insertion of the device. For this particular airman's atrial fibrillation, he gave us results that demonstrated that he did not have valvular or coronary disease. His cardiac ejection fraction was satisfactory. He performed adequately on his exercise test. Also, he appeared to have adequate rate control with the pacer and medication.

5 Lucy Mcguilicudy was a 40-y/o wife of a well-known cabaret singer. She had always wanted to learn to fly. Several years prior, she had developed a viral upper respiratory illness. A short time later she became quite ill. Her physicians thought she had developed a viral cardiomyopathy. Her resting ejection fraction was 30%. Despite treatment and time she maintained this level of cardiac function.

Her instructor pilot, being an AOPA member, went to the medical section of their Website and discovered what she would need to have her medical condition

assessed by an AME. She presented to her AME with the medical records of her illness and a current status report from her treating physician that included a list of current medications. She had also obtained a maximal Bruce stress test. On the test, she went 6 minutes for a maximal heart rate of 160. During peak exercise she developed ventricular bigeminy and had numerous couplets and triplets. It took about 4 minutes of recovery time for her heart rate to drop to pre-exercise levels. A 2-D echocardiogram revealed biatrial enlargement and global hypokinesia with an ejection fraction of 30%. Her treating physician, Dr. Feelgood (the name has been changed to protect privacy), said that she was performing well and had great exercise tolerance. In his report to the AMCD, he said that Ms. Mcguilicudy was "good enough" to fly as a private pilot. (Dr. Feelgood's brother-in-law is a pilot with a cargo-carrying operation.) The AME was impressed with the supporting documentation and issued a 3rd-class medical certificate. Was this the proper thing for him to do?

Answer: It sure wasn't! Ms. Mcguilicudy did not perform well enough on her exercise test. The FAA would like an airman to reach at least 9 minutes on a stress test. She either has poor exercise capacity or cardiac reserve—or both. The arrhythmias likely are associated with their increased incidence in cardiomyopathy, which is the major reason that we do not grant medical certification to airmen with this condition. Her treating physician should not have told her that she was healthy enough to fly, even in private operations, unless he was well versed in civil aviation medicine. I can understand his zeal to assist his patient, but it gives the AMCD folks a very difficult job to make the airman understand our negative decision.

The AME should never have granted medical certification but should have deferred the case to the Regional Medical office or the Aerospace Medical Certification Division in Oklahoma City.

→

There Are No Gas Stations In the Sky

By Parvez Dara, MD

The author is a medical oncologist, an aviation medical examiner, and a flight instructor, somewhat an unusual combination. His message underscores the value of helping pilots understand the importance of embracing the concept of aviation safety. —Ed

DANCING ON THE edge of an active volcano or leaping from tall buildings with your feet tied to a string involves the same sense of self as a pilot who ventures over a populated suburb buzzing his girlfriend's house. What makes them tick? I set about exploring this with a true pilot of pilots. A man named Bobby.

Once, ten minutes into a flight with Bobby, I heard the engine hesitate. That gets one's attention, since there are no gas stations in the sky. I looked over at Bobby, whose eyes were skimming over the instruments, acknowledging the responses as he tweaked and prodded the controls—quite the man in his domain.

We were climbing slowly and turning back. Six minutes later, we were back at the airport. After an uneventful landing, Bobby climbed out and proceeded to the mechanic asking him to check and replace a plug or a magneto.

Now you may be reading this and thinking, "So what?" There was nothing spectacular about the incident. My point exactly! In the company of such an aviator, an emergency was not made a spectacle; it was merely a successful outcome.

Bobby is a practical man, and having him mull over theories is asking the impossible. But I figured I'd get him when he came in for a flight physical.

"Bobby, don't you see, it was your experience and aircraft knowledge that induced you to land when you lost the plug?"

"Yes, but anyone would do the same, that's second nature," he replied in a slightly tremulous 78 year-old-voice.



"It may be second nature to you, but to most it could be a catastrophe, and who knows how many pilots have died as a result of what we experienced because they panicked or did not take appropriate action?"

"So what is this Flying Delta stuff you keep talking about?" he asked. I had him cornered.

The first time I had reflected upon this theoretical argument was when I was flying with another flight instructor in his Bonanza. A small blob of oil grew steadily to obscure vision through half of the windshield. Leaning to his left, the pilot ignored the urgency of the oil leak. He kept pressing the IGNORE button in his brain.

"Gees, man," I thought, "CFI or not, I am taking control!" I asked him to put his gear down, cut the electrical load, and find the nearest airport.

He doggedly flew us to our home base and, as we taxied to the hangar, a trail of oil followed. Only when he shut the engine down did the flood of dark oil cover the hangar floor. Later, it was determined that the prop governor had failed. Here was a 2000-hour pilot ignoring reality.

Bobby sat there shaking his head while the vein on his forehead visibly throbbed. He grumbled with disappointment as I pressed on with another true story, one about a commercial airline pilot. With 12,000 hours of flight time, this pilot whom I had the luxury of instructing in his newly acquired single-engine Mooney should have been a no-brainer. This man flies left seat and monitors the autopilot while his first officer finds all the charts, tunes the radios, and communicates with the ATC. But this was a check flight, and there were no first officers on board.

Under the "hood" and deprived of the outside visual cues, he masterfully set the plane up for the initial approach fix and shifted in his seat—a sign of his clear dominance in the field of aviation. I allowed him the momentary self-indulgence. Then my "see if you can handle this" spirit of the flight instructor rose and swooped down to pull the circuit breaker for the radio tuned to the ILS. As expected, the cross hairs of the localizer and the glide slope remained fixated, and my efficient pilot kept flying the plane, comfortable in his experience. We flew along at 2,000 feet—right over the airport.

After a few minutes, I asked him how the flight was progressing. He looked at the instruments and nodded—pleased.

Moments later, he realized he had blown the approach. He flung his "hood" off, let loose a stream of expletives as his face changed shades of red. He complained of a headache and wished not to pursue the flight any further. A tarnished ego had come down with the "flu."

Continued ➤

“And these tales relate to the ‘Delta’ theory of yours?” Typical Bobby.

“Yes of course,” I said. “Don’t you see the relationship?”

“Okay?” He muttered under his breath, more a question than an acknowledgement.

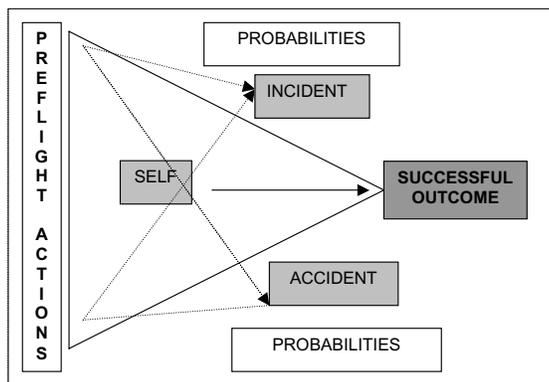
“Consider the Flying Delta,” I asserted, “as a triangle with the point facing side ways. Imagine a flight before it occurs. Place all the preflight actions on the left side, or the base of the triangle. Any breakdown of this scenario can and should require abandonment of the flight. True?” I asked.

“Yes, but...”

“Bobby, the discussion is about the middle of the triangle, the self.”

“Okay,” he growled.

“The pointy side of the triangle is where all the probabilities exist. If all those actions are undertaken, then all probabilities dissolve into one conclusive possibility – that of a well-executed, safe flight.” However, the “self” garners the



‘Flying Delta’ Schematic

entire inside of that triangle and can be the weakest link. As in the case of the first person, who denied the existence of oil leak and allowed us to continue towards a dangerous outcome. Although the probabilities were many, the outcome of landing safely was mostly an element of luck. And how many times can you bank on luck?

“Now, place yourself in that situation,” I said. Bobby’s frown deepened across his brow with that rhetorical question.

“And,” he paused with a hint of skepticism, “what about the second story?” I could see him grudgingly cross over the mental divide. “The outcome in the pilot’s mind was predestined.”

“So you theorize that all flights begin with multiple probabilities and the outcome is one of the possible outcomes. If that were true, wouldn’t there be more incidents or accidents than there are?”

Bingo!

“Bobby, most times we walk away from the flight with a nagging feeling that something was not just right. This self-critical nature allows for successful outcomes. The eventual outcome remains the final arbiter of all probabilities. History teaches. This is how we learn. The problem is some of us are not self-critical and learn to repeat mistakes.”

Pocketing his medical certificate with a smirk on his face, he walked out of the office with, “Keep it up, Doc.” The gold seal of approval had anointed my theory.

I sat back and wondered at how one mandates common sense. As an AME and a pilot, the rules of the game appear different. Filtering out the medical risks according to the FAA requirements is easy, given the set of guidelines. As a pilot, you have to know who could pose a threat, in spite of having a valid medical.

Pilots love to talk. Let them open their mouths, and you will hear their minds. I encourage pilots to relate their hangar stories to get a feeling for their risk-taking habits. So, I listen. Sometimes, it is catch phrases like *buzzing, low-level flight, had a little*, or a VFR pilot venturing, “I flew in the clouds for the first time” without instructions.

I tell them about Bobby and use him as a benchmark so that, hopefully, they may learn. We should, as AMEs, interact and educate pilots while we determine their medical eligibility to aviate. FAR 61.53 encourages self-monitoring. A pilot must desist from flying in case of “any change in the airman’s medical, mental, or emotional condition that would affect the validity of his medical certificate.”

Therefore, the AME can determine and defer an airman on the basis of soundness of the mind. Only the most

egregious cases need be considered, while others mostly need education. The AME, as an ambassador for safety, enables the FAA to reach out to a larger base and make our skies safer for flying. In the end, a safer flight environment needs a healthy body and a healthy mind – a healthy self.



The Flying Delta is a concept borrowed from the book “Computers as Theater,” by Brenda Laurel, published by Addison Wesley Publishing Company (1993).

Letter to the Editor

TRANSIENT GLOBAL AMNESIA

AND STATINS

Dear Editor:

I found your recent article [Transient Global Amnesia, by Dr. Rod Friend, FASMB, Vol. 42, No.1, p. 8] very interesting due to the fact that I have had multiple patients with almost identical findings as the patient reported in your article. The fact that all of the patients involved were on statin drugs is most interesting. I have read that cholesterol is a very important molecule in neuro chemistry. Could there be a connection?

Gene Anderson, MD
Bakersfield, Cal.

Dr. Friend’s Reply:

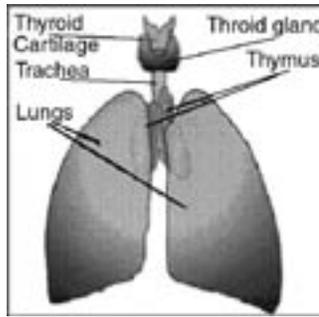
I had not uncovered any references to statin drugs and transient global amnesia during my research for the article, though [Dr. Anderson] may be on to something here. On the other hand, it could be that people with hypercholesterolemia are more at risk for this instead of people on statin drugs. It would be worthwhile for someone to do an epidemiological study on any possible association...after all, the highest incidence of the disorder is in males in their 60s (if I recall correctly)...about the same [as] for heart disease. Personally, I believe the disorder may be related to migraines and/or some sort of wave of depolarization taking place in the memory centers...just speculation, though.

Rod Friend, MD

Thymoma

Case Report by Chris Tabatzky, MD, MPH, FACS

THYMOMA ACCOUNTS for 20-25% of all mediastinal tumors and is the most common primary neoplasm of the anterior superior mediastinum. Approximately one-third to one half of patients with thymoma are asymptomatic, and the tumor is discovered as an incidental finding on chest X-ray. Disease at presentation can vary from discrete local involvement, confined within the gland, to extensive mediastinal, lymphogenous, and/or hematogenous spread. This condition is disqualifying and special issuance consideration must be deferred to the FAA for all classes. This article presents a case report of a commercial airline pilot diagnosed with malignant thymoma and includes a discussion of this disease and its aeromedical implications.



History

A 43-YEAR-OLD male airline pilot with 20,500 hours of flight time presented to his primary care physician for complaints of malaise and persistent fever. He described a 2-3 week history of fevers (up to 103°F) with associated cough, congestion, and sinus pain. Medical history was non-contributory: The pilot was a non-smoker, and he had no prior history of significant medical problems.

Chest auscultation revealed rhonchi, crackles, and minimal end expiratory wheezes, left greater than right. Chest X-ray demonstrated a left lower lobe infiltrate consistent with a clinical diagnosis of pneumonia. An incidental finding of a large mass within the anterior mediastinum was also noted. The mass was described as a lobulated, 8 x 5cm rectangular opacity overlying the cardiac silhouette that was visible on both the PA and lateral views. Differential diagnosis included germ cell tumor, lymphoma or thymoma.

The patient's left lower lobe pneumonia resolved following a course of IM and oral antibiotics. Subsequent chest CT scan delineated a large (7.2 x 5.7 x 11cm) soft tissue mass occupying the anterior mediastinum with extension along the right pericardium. No other mediastinal masses were identified, and

there was no axillary or hilar lymphadenopathy.

CT-guided core needle biopsy was then accomplished. Tissue returned cytologic, histologic and immunohistochemical features consistent with thymoma. Flow cytometry demonstrated a normal population of T cells at various levels of maturation. No B-lymphocytes or blastic populations were identified. The patient sustained a 10-15% right-sided pneumothorax during the procedure, which resolved promptly following placement of a pigtail catheter chest tube (8 Fr).

Treatment and Clinical Course

Cardiothoracic surgical consultation was obtained. The airman remained completely asymptomatic with no complaints of cough, dyspnea, chest pain, muscle weakness, or fatigue. Decision was made to pursue a course of watchful waiting with periodic chest CT scans. Follow-up CT scan 7 months later demonstrated a significant increase in tumor size with deformity of the superior vena cava and right atrium. Decision was made to proceed with surgical resection, and he underwent median sternotomy with excision of the thymoma 3 weeks later. Intraoperative findings included a massively lobulated tumor, 15 x 15 x

THYMOMA

Thymomas are epithelial neoplasms of the thymus gland. Located in the anterior mediastinum, the thymus arises from the third and fourth branchial pouches and the third branchial cleft. Early in life, the thymus participates in developing cellular immunity and influences the selection and maturation of T lymphocytes. An estimated 500 thymomas are diagnosed each year in the United States.¹ Although rare, thymomas account for 20-25% of all mediastinal tumors and are the most common primary neoplasm of the anterior superior mediastinum. Peak incidence occurs in adults, typically in the fourth to fifth decades (mean age 52 years); men and women are affected equally.²

No specific inherited, environmental, or lifestyle risk factors have been identified for developing thymoma. Some studies suggest a possible association with previous radiation exposure to the thorax, but this has not been confirmed.¹

12cm in size that enveloped two-thirds of the superior vena cava and was adherent to pleura. The mass was peeled off the pericardium, and metastatic nodules were excised from the diaphragm and posterior pleura. All evidence of tumor appeared to be completely resected, and the patient had an uneventful postoperative recovery.

Histopathology returned well-differentiated, invasive thymoma. Due to the extensive local infiltration and intrathoracic metastases, the tumor was termed a "malignant thymoma." The pathologist noted however, that this did not represent a thymic carcinoma. Clinical classification was consistent with Matsuoka Stage IVa.

Dr. Tabatzky is a flight surgeon in the Virginia Air National Guard and is board-certified in Otolaryngology-Head and Neck Surgery. She wrote this case report while rotating at the Civil Aerospace Medical Institute as an Occupational Medicine resident at the Rocky Mountain Center for Occupational and Environmental Health, University of Utah.

Continued ➤

Postoperatively, the patient was evaluated by both Radiation and Medical Oncology. He subsequently underwent radiation therapy (total 5400 cGy) and concurrent chemotherapy with etoposide and cisplatin over the next 5 months. During this time, he experienced a transient episode of febrile neutropenia secondary to his chemotherapy that responded rapidly to supportive care. He also experienced an episode of radiation pneumonitis approximately 2 months after completing radiation therapy. This resolved following a short course of steroids and antibiotics.

The pilot has remained disease-free since completing adjuvant radiation and chemotherapy. He remains asymptomatic and has been cleared to fly by his medical oncologist. Ongoing medical surveillance includes regularly scheduled chest CT scans.

Clinical Presentation

Figure 1. Chest X-ray, lateral view showing a large thymus (separated from the surrounding structures due to pre-operative pneumomediastinum; courtesy CardioThoracic Surgery Net).



Many patients presenting with thymoma are asymptomatic, and the tumor is discovered as an incidental finding on chest X-ray. One-third of patients will experience symptoms such as cough, chest pain, dysphagia, hoarseness, or superior vena cava syndrome related to tumor encroachment on mediastinal structures.²

Myasthenia Gravis, Immunodeficiency, and Other Associated Diseases

Although 30-50% of patients with thymoma are reportedly asymptomatic for local disease, an estimated 70% of patients will manifest other systemic illnesses— most notably, myasthenia gravis. As many as 50% of patients with thymoma have myasthenia gravis.

Conversely, about 15% of patients with myasthenia gravis have a thymoma.^{3,4,5} Other systemic diseases include autoimmune and paraneoplastic syndromes such as dermatomyositis, systemic lupus erythematosus, and the syndrome of inappropriate antidiuretic hormone secretion (SIADH). Pemphigus, Cushing syndrome, and pure red cell aplasia have also been reported.⁴

Thymoma has also been linked to immunodeficiency. Good syndrome (immunodeficiency with thymoma) affects both T and B lymphocytes, and approximately 10% of cases of hypogammaglobulinemia will have an associated thymoma.⁶ It is interesting to note that immunodeficiency may occur years after tumor resection.⁷ Consequently, evaluation of patients with thymoma should include a scrupulous history followed by appropriate testing. A complete blood count may reveal associated anemia, thrombocytopenia, or granulocytopenia; quantitative immunoglobulins may point to immune deficiency.

Imaging Studies

Imaging studies often include a chest radiograph and, indeed, over 30% of patients with thymoma are diagnosed as the result of an abnormal chest X-ray.⁴ Typical findings include mediastinal widening on PA views or retrosternal opacification on lateral views.

Computed tomography (CT) scan may delineate a mass further or detect smaller tumors not visualized on routine chest X-ray. While the differential diagnosis for a retrosternal, anterior mediastinal mass would include lymphoma, vascular lesions, and germ cell tumors, in fact, most enlarged thymus glands on CT scan represent thymoma. CT scan with intravenous contrast dye is the preferred imaging modality in order to show the relationship between the thymoma and surrounding vascular structures. The chest CT scan may also provide a surgical roadmap for tumor resection.²

Histopathology

Biopsy may be accomplished by fine needle aspiration (FNA) and/or core biopsy, thoracoscopy or limited anterior mediastinotomy (Chamberlain approach)

depending on clinical presentation. There is no clear histologic distinction between benign and malignant thymomas. The tendency for a thymoma to be malignant is determined by its invasiveness— thymomas can invade adjacent organs within the mediastinum as well as proximal vascular and lymphatic structures. Transdiaphragmatic or drop metastases may occur (3-6%). Distant metastases are rare. In the case of invasive thymoma, death usually occurs from cardiac tamponade or other cardiorespiratory complications.^{2,7, 8}

Staging

The most commonly accepted staging system for thymoma was proposed by Masaoka in 1981, and is largely based on clinical criteria and intraoperative findings.

Treatment

The treatment of choice for thymoma is complete surgical resection. Depending on the clinical stage, treatment may also include radiotherapy with or without chemotherapy. Adjuvant therapy has been shown to decrease the rate of tumor recurrence when complete excision is not possible. Various chemotherapeutic treatment protocols have been used. Thymectomy is considered a routine treatment of myasthenia gravis.^{4,5}

Thymoma has been associated with an increased risk for second malignancies, and this appears unrelated to thymectomy, radiation therapy, or a clinical history of myasthenia gravis. Because of this increased risk for second malignancies and the fact that thymoma can recur after a long intervals, lifelong surveillance is recommended. Measurement of interferon-alpha and interleukin-2 antibodies has been reported to be helpful in identifying patients with a thymoma recurrence.¹²

Aeromedical Disposition

Aeromedical concerns regarding malignant thymoma, like most malignancies, center on the potential for sudden incapacitation as the result of local intrathoracic disease, regional or distant metastases and/or effects of treatment. A pilot with a malignant mediastinal

Continued on page 12

THYMOMA from page 11

Table 1. Summary of Masaoka Staging System for Thymoma, Corresponding Therapy, and 5-Year Survival Rates^{10,11}

Stage	Definition	Treatment	Survival Rate 5-Year ¹
I	Encapsulated tumor with no gross or microscopic invasion	Complete surgical excision	89%-95%
II	Macroscopic invasion into the mediastinal fat or pleura or microscopic invasion into the capsule	Complete surgical excision and postoperative radiotherapy to decrease the incidence of local recurrence	Approx 86%
III	Macroscopic invasion into neighboring organs, i.e. pericardium, great vessels or lung	Complete surgical excision and postoperative radiotherapy to decrease the incidence of local recurrence	70%- 80%
IVa	Pleural or pericardial metastatic spread	Surgical debulking, radiotherapy, and chemotherapy	50%-60%
IVb	Lymphogenous or hematogenous metastasis	Surgical debulking, radiotherapy, and chemotherapy	

¹ American Cancer Society 2003

tumor is ineligible for medical certification under 14 CFR 113(b), 213 (b), 313 (b). However, 14 CFR part 67.401 provides authority for a special issuance medical certificate.¹³

Case Outcome

After FAA medical review and consultation, the pilot was granted a special issuance medical certificate to resume first-class aviation activities with the stipulation that he must furnish a current status update yearly. This update is to include imaging and any other studies deemed necessary to rule out metastasis. He must promptly report **any** adverse changes in his clinical course to the FAA and immediately suspend flying activity.

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QUICK FIX from page 1

certificates must be typed. No whiteout is allowed. With correction typewriters, it is acceptable to retype a few characters so long as the copy sent to the Aerospace Medical Certification Division is totally legible." Clearly, no pen and ink changes or corrections made other than with a correctible typewriter are permissible. If the finished medical certificate is not perfect, use replacement copies of FAA Form 8500-9, Medical Certificate, or FAA Form 8420-2, Medical Certificate and Student Pilot Certificate, to ensure they are flawless. Aviation medical examiners who issue certificates that contain obvious corrections risk their designations being terminated by their regional flight surgeon.

Dr. Jones manages the Aerospace Medical Education Division at the Civil Aerospace Medical Institute.

Awards for Excellence and Achievement

FAA Annual Awards Ceremony Recognizes Outstanding Accomplishments

By Mike Wayda

THE OFFICE OF AEROSPACE Medicine's (AAM's) eleventh annual awards program recognized outstanding employees to honor their contributions to aerospace medicine. The awards ceremony was held in Washington, DC.

AAM employees across the country nominated their associates for specific award categories. Nominations were also sought for a separate award, the "Friend of AAM," for which only individuals outside of the Office of Aerospace

Medicine organization are eligible. A national awards panel selected the winners in each category. Federal Air

Surgeon **Jon L. Jordan, MD**, (left) presented each award recipient with a special recognition plaque, and Deputy Federal Air Surgeon Dr. Fred Tilton was Master of Ceremonies.



OUTSTANDING MANAGER
Robert M. Shaffstall
Civil Aerospace Medical Institute



OUTSTANDING LEADERSHIP
Noal D. May, PhD
Civil Aerospace Medical Institute



OUTSTANDING INNOVATOR
Tuanb D. Diep
Civil Aerospace Medical Institute



OUTSTANDING TEAM
COMPLIANCE & ENFORCEMENT TEAM
Connie L. Ingram
Jeffrey M. Pratt
Washington Headquarters



ADMINISTRATIVE EXCELLENCE
Paula M. Harkins
Southwest Region
Lori J. Stormo
Civil Aerospace Medical Institute



THE WILLIAM E. COLLINS PUBLICATION AWARD



Russell J. Lewis, PhD
Elaine M. Pfeiderer
O. Veronika Prinzo, PhD
Civil Aerospace Medical Institute



AAM MISSION SUPPORT
Dennis V. Canfield, PhD
Michael E. Wayda
Civil Aerospace Medical Institute



OUTSTANDING CUSTOMER SERVICE
Jennifer G. Szatkowski
Southwest Region



FRIEND OF AAM
Dorothy B. Tharnish
Mike Monroney Aeronautical Center



FLIGHT SURGEON OF THE YEAR
Walter D. Davis, MD
Southern Region



INSPECTOR OF THE YEAR
Connie L. Holle
Washington Headquarters



REGIONAL EMPLOYEE OF THE YEAR
Kara M. Semer
Northwest Mountain
Jean D. Mack-Choyce
Southwest Region



AAM OFFICE OF THE YEAR

Medical Specialties Division, Washington Headquarters



FAA Receives Kudos From Turbulence Project Partner

By Robert Shaffstall

Year in and year out, whether there are airline crashes or not, scores of people are hurt, and others are killed, by in-flight turbulence. The National Aeronautics and Space Administration and the Federal Aviation Administration hope they will soon have sensing systems that could give 90 seconds' or two minutes' warning to an airline captain. But what could an airliner do with that amount of time? No one is really sure, because no one knows how long it takes to buckle in a planeload of passengers and crew, especially in the middle of serving a meal....

—New York Times, October 6, 2002

ATEAM CONSISTING of FAA, NASA, Airline, and union representatives developed and executed a research program to answer the question posed by Mathew L. Wald in the New York Times' article (see above excerpt). NASA engineers had developed technology in radar and lidar (light detection and ranging) systems that showed promise to detect clear-air turbulence. To continue engineering development of the system, NASA needed information on the warning time required by flight attendants to seat passengers and prepare the cabin for air turbulence.

The FAA Civil Aerospace Medical Institute (CAMI) was recognized for its support of NASA's weather accident prevention program. Mr. Ken Larcher, the CAMI research team leader for the combined NASA – FAA project, represented CAMI at the 2004 NASA Weather Accident Prevention Review meeting in early June 2004 to accept the award.

The study was generated as a combined effort of the two agencies, with NASA supplying the project manager technical support, funding, and overall coordination. The FAA supported the effort by supplying a principal investigator, technical and contract support, facilities, data collection, data analysis, and subjects.

Airline participants in the study included flight attendant crews from United, Delta, and US Airways. American and Jet Blue airlines supported the study with equipment and staff members. Two flight attendant unions (the American Association of Professional

OAM NEWS Office of Aerospace Medicine

Flight Attendants and the Association of Flight Attendants) supported the effort by providing planning and technical support. The study used 80 test subjects hired under a FAA contract with ALCOM Technologies.

The 747 AERF (Aircraft Environmental Research Facility) was used for the study. Data-gathering equipment (video and flight attendant lap belt instrumentation) was provided by the CAMI Biodynamics and Bioinformatics teams, and the Oklahoma Fire Department provided emergency medical service. Including the subjects, the team working on site at the CAMI 747 AERF totaled about 100 people.

Security requirements at the Mike Monroney Aeronautical Center required all subjects and most of the team members to be bused to the center and supplied with meals, shelter, and restroom facilities during the 10- to 12-hour days that were spent on the ramp at the 747 AERF.

The total operation of the project involved tremendous effort in planning, coordination, and logistics.

The team successfully combined the efforts of this entire group of dedicated people to conduct a study that used three airline flight attendant teams to evaluate three different operational scenarios using two different procedures to stow equipment and seat occupants (standard practice and emergency). In total, the study evaluated 18 test conditions in a three-day period.

The results provided clear definition for the time required to prepare the cabin

of a wide-body aircraft for clear-air turbulence and will provide the NASA engineers with the target data needed for further development of warning equipment. The study also found that significant differences existed between the procedures used by the airlines and concluded that a best practice review of procedures could benefit all airlines and improve passenger safety.

Equally important to the study results was the outstanding cooperative attitude generated within this team. The study required hard work and cooperation from a diverse group of people – and that is what happened.

Antuñano Elected AsMA President



MELCHOR J. ANTUÑANO, MD, MS, (above left) was recently elected president of the Aerospace Medical Association (AsMA) during their 75th annual scientific meeting held in Anchorage, Alaska. Dr. Antuñano heads the Federal Aviation Administration's Civil Aerospace Medical Institute in Oklahoma City.

He replaces David Schroeder, PhD, (above right) as president of the organization. Dr. Schroeder manages the Institute's Human Factors Research Division.

AsMA is the world's largest nonprofit professional organization in the fields of aviation, space, and environmental medicine. It unites more than 3,000 physicians (including aviation medical examiners and flight surgeons), flight nurses, aerospace physiologists, aerospace human factors specialists, psychologists, industrial hygienists, environmental health specialists, and other scientists located in 80 countries worldwide.



CAMI Director Melchor Antuñano, MD, (left) and Ken Larcher with NASA award.

CAMI Photographer Serving in Afganistan



DAVID DYER (above) is accustomed to “shooting” people, but he is not used to being shot at. The Civil Aerospace Medical Institute photographer is now stationed in Afganistan, serving his country with his Oklahoma Army National Guard unit.

He recently sent friends a photo from the war zone. He was wearing a CAMI hat, which he explains, is a fearsome hat. “The Taliban ran when I pulled this out and put it on. I was only 2 miles from the Pakistan border when this was taken.”

Explaining the circumstances of his dangerous mission, Sgt. Dyer said, “At the time the photo was taken, I was within spitting distance of the Pakistan border, right in the heart of bad guy country. I was with a group from the UN, State Department Embassy, the province governor, and the military— setting election sites and other duties. Our convoy did have 7 RPG rounds fired at it during a movement. No one was hurt, but I didn’t get a chance to shoot at the bad guys. Anyway, that is my lucky hat now, so it will go on any and all trips I have over here. Time is going by fairly fast as I stay so busy I don’t have time to think about it.”

FAA Mailman Retires



AFTER MORE THAN three decades of sorting and delivering mail, most of it concerning airman medical certification, **Joey Grant** is retiring from the Aerospace Medical Certification Division’s mailroom at the Civil Aerospace Medical Institute.

His supervisor, **Jerry Bowen**, estimates that over that period, Joey has opened roughly 12 million pieces of mail and made more than 14,000 distribution runs throughout the division. This is based on the average amount of mail handled each day from aviation medical examiners, pilots, consultants, and others who flood the division with vital

Alaskan Regional Flight Surgeon Retires



ROBERT W. RIGG, MD— *Bob* to his many friends and admirers, retired from the Federal Aviation Administration on June 3, 2004. Bob came to work for the FAA in 1976. Most of his government service was with the Office of Aerospace Medicine in the FAA Regional Office in Anchorage,

Continued on page 16

correspondence. Four full-time people handle the current correspondence flow.

One of Joey’s fellow workers, **Colleen Stricklen**, says Joey is “a hard worker, arrives early, and will do anything to get the task at hand accomplished. He is just a good person.” Those who know Joey say, “He’ll be missed.”

DID YOU KNOW...?

The Aerospace Medical Certification Division’s mailroom people process an average of 16,800 pieces of mail per week with about 1,750 medical certification applications per day.

In a typical calendar year, the Aerospace Medical Certification Division...

- **Receives more than 450,000 pilot medical applications cases and 77,000 general review cases**
- **Responds to 80,000 written inquiries**
- **Answers 134,000 telephone inquiries**

DR. RIGG from page 15

Bob and his wife, Karen, are moving to Grand Junction, Colo., where he plans to pursue a variety of personal and professional interests.

The FAA, the Office of Aerospace Medicine, and the people of Alaska will miss Bob's openness, friendly style, and warm greetings. We wish him the best of luck and fair skies.

—R. Mark Adams

New Alaskan Regional Flight Surgeon Reports for Duty

WILLIS M. SIMMONS, Jr., MD, is the new Regional Flight Surgeon for the Office of Aerospace Medicine in Anchorage, Alaska. Dr. Simmons reported for duty May 3, 2004, taking over from **Robert W. Rigg, MD**, who retired in June.

As the Regional Flight Surgeon in Alaska, Dr. Simmons is responsible for implementing Office of Aerospace Medicine safety programs in the Alaskan Region.

Dr. Simmons joins the FAA from the Kelsey-Seybold Clinic, Houston, Texas, where he provided medical services to NASA astronauts and contributed to the Longitudinal Study of Astronaut Health program. Dr. Simmons has more than 20 years of professional experience in Aerospace Medicine. He retired from active duty in 1994 as a Colonel with the U.S. Air Force.

At the time he retired from the Air Force, Dr. Simmons was the Commander, 3rd Aerospace Medicine Squadron, Elmendorf AFB, Alaska. For three years after retiring from the Air Force, Dr. Simmons practiced pediatric medicine in a private practice in Anchorage.

Dr. Simmons graduated from the U.S. Air Force Academy in 1971 and received his medical degree from the Tulane University School of Medicine in 1976. He completed an MPH in 1988 at the University of Texas Health Science Center – Houston School of Public Health. Dr. Simmons is licensed to practice medicine in Texas, Alaska,

and Florida and is board-certified in Pediatrics and Preventive Medicine (Aerospace Medicine).

Dr. Simmons is a pilot with over 1,000 flight hours and has been an FAA senior aviation medical examiner since 1999.

In welcoming Dr. Simmons, Federal Air Surgeon **Jon L. Jordan, MD**, commented that "Dr. Simmons is an outstanding addition to the Office of Aerospace Medicine and an excellent choice for Regional Flight Surgeon. I am certain he will have no difficulty carrying out the FAA's medical responsibilities in Alaska."

—R. Mark Adams

VISIT CAMI'S WEB SITE
www.cami.jccbi.gov

- Continuing medical education for aviation medical examiners
- Medical certification FAQs for pilots
- Pilot and air traveler safety information
- Physiological training and basic survival classes
- Locate names of aviation medical examiners

Aviation Medical Examiner Seminar Schedule

2004

- July 9-11 -----Denver, Colo. ----- AP/HF (2)
- August 6-8 -----McLean, Va. ----- OOE (2)
- September 13-17 ----Oklahoma City, Okla. ----- Basic (1)
- November 5-7-----Tampa/Ft. Lauderdale, Fla., area -- N/NP/N (2)
- November 15-19 ----Oklahoma City, Okla. ----- Basic (1)

2005

- January 21-23 -----Irvine, Calif. -----N/NP/P (2)
- February 4-6 -----Austin, Tex. -----Cardio (2)
(date is tentative)
- March 14-18-----Oklahoma City, Okla. ----- Basic (1)
- May 9 - 12 -----Kansas City, Mo. (AsMA) ----- OOE (3)
- June 13 - 17-----Oklahoma City, Okla. ----- Basic (1)
- July 15 - 17 -----Bellevue, Wash. -----N/NP/P (2)
- August 5 - 7-----Boston, Mass.-----Cardio (2)
- September 12 - 16---Oklahoma City, Okla. ----- Basic (1)
- November 18 - 20---Savannah, Ga. ----- AP/HF (2)
- December 5 - 9 -----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.