

== FLIGHT SURGEON PROFILES ==

Flying High:

An Interview with Col. (ret.) Royce Moser

Maj Douglas "X" Files, USAF, MC, FS
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Dr. Moser received his M.D. and M.P.H. degrees from Harvard, the latter as part of the Air Force RAM program. As the medical officer for Special Weapons Defense at NORAD, he developed expertise in nuclear, chemical and biological weapons, an interest he maintains to the present time. He commanded military hospitals in peacetime as well as in Vietnam during the war. In 1983-1985 he pursued a dual interest in education and administration, directing the Air Force's School of Aerospace Medicine with responsibility for 900 members and a multi-million dollar research budget. Although his career was well grounded, Dr. Moser was not - as a Flight Surgeon he logged over 2000 hours of flight time in 30 different aircraft.

Since his retirement from the Air Force in 1985, Dr. Moser has held a professorship in the Department of Family and Preventive Medicine at the University of Utah's School of Medicine. Here, he teaches courses on occupational medicine and health care administration, and he is known for his illustrative Dilbert examples. He has also published a well-recognized text on the management of occupational and environmental health and safety programs. He served as director of the Department's Rocky Mountain Center for Occupational and Environmental Health, one of 16 NIOSH Education and Research Centers nationally. With some prescience Dr. Moser published his article "Preparing for Expected Bioterrorism Attacks" four months before the anthrax scare in the autumn of 2001.

FL: How was it, Sir, that you became a Flight Surgeon?

RM: Like many of our colleagues, I was attracted to flying when I was still in high school. Originally I had intended to become an Air Force pilot but my vision did not meet the standards at that time. Instead, I followed my other plan: a career in medicine. As it happened by chance I received a scholarship to Harvard College where I majored in premed and then I was accepted to Harvard Medical School. This was despite the fact that I had pointed out during my interview that I knew Harvard preferred to train specialists or researchers, and I hoped to be a

general practitioner. Since I was from a small town in Missouri, I had intended to go to medical school at Washington University in St. Louis. At the time I was dating my wife-to-be. She was working as a nurse at Children's Hospital in Boston. We had both planned to move to St. Louis so that we could continue to date, but her mother balked at this. She preferred for us to be married if we were to move to a distant city together and we were not yet ready to get married. So I remained in Boston for medical school.



I was working as a respiratory physiology technician during my second year. I realized that much of the work in respiratory physiology was coming out of Dr. Ross McFarland's laboratory across the street in the School of Public Health so I visited him. He gave me information on the then relatively new field of aviation and aerospace medicine. He told me he would arrange for someone to come from the Surgeon General's office to speak to me more about a career in the Air Force. It turned out to be Dr. Charles (Chuck) Berry, who would later become the physician

for the first groups of astronauts. He was very enthusiastic about the field. Under the Berry plan (no relation to Dr. Chuck Berry) you either entered the Air Force after your internship or after completion of your residency. I completed my straight medical internship and decided I would try the Air Force. If I liked it I would stay and consider specializing in Aerospace Medicine. And I stayed 23 years.

FL: Can you comment on your experiences in Vietnam in 1970-1971?

RM: Of course the family separation was tough, and I deeply regretted losing some friends, but it was the most professionally rewarding time of my career. I used everything I had ever been taught: epidemiology, biostatistics, public health, food sanitation...In fact, one time I discovered that at the base exchange they were keeping hamburgers at 110 degrees for the lunchtime rush. I knew that this temperature was unsafe. When I mentioned it to them they responded that they lacked the equipment to keep them any warmer. I notified the wing

commander that I was shutting down the Base Exchange restaurant. Immediately one of the senior BX people flew in from Japan to meet with the wing commander and me. I still remember his comment: “Do you mean to tell me that just because our hamburgers may make a few people sick that you will shut down the facility?” The wing commander asked me to leave at this point so he could speak to the man alone. The Base Exchange remained closed until new equipment could be flown in that could store the hamburgers at higher temperatures.

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Another time we were advised that water rationing would begin at our location. This was due to a shortage of ferric chloride used to purify water. We would have to cut back on our drinking water and limit showers. I noted that this could set the stage for skin infections in the jungle climate. The pilots got soaked in sweat each time they flew and they needed showers. Since this would degrade mission effectiveness I advised the Chief of Civil Engineering that I would need to submit a special aerospace medicine report. I pointed out that, at that time, these reports got sent simultaneously to 7th AF, PACAF, USAFSAM, AFRL and the Office of the Surgeon General. Suddenly we got more ferric chloride and didn't have to ration water. You have to know how to use the bureaucracy.

Of course, the overall best part of being in Vietnam was supporting and flying with an outstanding group of crewmembers. They were so appreciative of what we tried to do to help them, and the camaraderie was something I will not forget. Always maintain focus on supporting the flyers and their families.

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FL: What Air Force aircraft have you flown in?

RM: My first flight was in a C-47 during the Cuban missile crisis. Later I flew in the KC-97 and the KC-135. I got 100 hours in the 4th-man seat of the B-47. The DCO, (Director of Combat Operations) didn't want to let Flight Surgeons fly in it. I pointed out, “That's fine, Sir, and I completely understand. However, I'll have to notify SAC (Strategic Air Command) that we are in violation of a SAC regulation that requires us to fly in UE aircraft and in deployments. When I showed him the regulation (which I had brought with me to the meeting), his comment was “Oh, Jeeze, Doc (or words to that effect), you've got me” so we got to fly B-47 missions. During the RAM I flew in the T-33 during medical officer flight familiarization training (MOFFT). I flew in the F-100 in Vietnam as well as in the C-130, the C-123, and helicopters. After I returned, I flew in the F-101, F-102, and F-106. All in all, I flew in about 30 different aircraft, including helicopters, and I greatly enjoyed the chance to “evaluate the psycho-physiological stressors and human factors aspects of the flight environment.”

FL: Do you feel that Flight Surgeons should fly in combat?

RM: Yes, I feel extremely strongly that Flight Surgeons should

fly with their unit, no matter what situation the unit is in. Obviously, you need to work with the DCO and squadron commander to schedule appropriate missions, but you cannot adequately do your job otherwise. When we returned from Vietnam there was a big expose in the media about doctors flying in combat. Jeff C. Davis (who effectively started the hyperbaric treatment unit at the School of Aerospace Medicine) and I put together a position paper supporting Flight Surgeons flying combat sorties. I got 144 combat hours in Vietnam and it made a great difference; I gained a lot of credibility with the pilots. I got 99.4 combat hours in the F-100 in Vietnam. I tried to get that extra 0.6 hours so I would have 100 but my flights kept getting cancelled. The Flight Surgeon needs rapport with the fliers he or she is serving. It's too difficult to achieve this without combat sorties. My combat flight hours paid off in many ways. For example, one evening in Vietnam a pilot told me his gold key had dropped out but his belt was still fastened. Everyone “knew” that the gold key wasn't supposed to come out while the seat belt was still fastened since this would defeat the low-altitude ejection capability. I checked a number of F-100s on the line and found that, with a slight twist of the latch, the key would drop out while the belt was still fastened in several aircraft. I told 7th Air Force and PACAF, and I initially was advised the problem had been corrected and those problem belts were now only used in simulators for egress training. I told them that out of 12 airplanes in my unit 7 had the problem. It later turned out that the second survival radio in the vest was pushing on the latch just enough so that as the pilot leaned forward to change channels the key could drop out. I would never have been aware of this problem if I were not flying combat missions and had I not gained the confidence of the pilots.

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Another example involved flyers aborting a number of “Combat Sky Spot” missions due to “hypoxia”. The mission required the pilots to fly a constant heading, altitude, and speed until weapons release, with controllers telling them if they deviated a few feet or knots. I had heard pilots' breathing increase as they attempted to stay within the parameters, and, since the oxygen and equipment always checked, it was obvious they were just hyperventilating. After a presentation at a flying safety meeting, the problem went away. The pilots believed me because I had flown with them and knew what was going on. The same credibility applied when we were having aircraft return with leaves and green smudges on their underside as they “pressed” to support ground troops. I was able to discuss the psychic stresses of flight with the crews because I had been in aircraft when we received urgent calls from the ground for support, and I knew how we wanted to do all we could to place ordnance where it was needed.

An unanticipated benefit of flying in combat was that I was able to use these and other experiences when I directed the AMP and RAM programs to illustrate how essential such flying was when Flight Surgeons support combat operations. Of all my decorations my Air Medals mean the most to me. They demonstrate that I was actively supporting the combat pilots.

FL: What are you proudest of during your tenure as commander of the School of Aerospace Medicine?

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RM: Overcoming stupidity was perhaps my biggest achievement. For example, right after I took command the Air Force heraldry office notified us that they were changing the school's crest. Someone had decided that all Air Force organization crests must contain the USAF eagle. So they intended to remove the lamp of knowledge and replace it with the eagle. I could not believe they wanted to do this. We raised a fuss and eventually they decided in our favor. We kept the lamp of knowledge. The justification we ended up using was that the School of Aerospace Medicine predated the formation of the Air Force in 1947. Thus, its existing crest was older than the Air Force.

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Sometimes bureaucrats want to make us more efficient, but they haven't worked in our settings. I have often resisted programs of this kind. It sometimes felt to me that they were saying, "If we could only get rid of the patients, the doctors and the nurses, we could really run this medical service!"

Another time we were notified that some of the school's research activities were being moved to another organization. At that time the school had a budget of \$31 million (excluding military salaries). I'm not a researcher and I've never had an original thought in my life. But I still felt it was essential to the school's mission to maintain a research arm. Eventually I was able to at least delay changes in the structure of the school.

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I gave the first briefing on the Agent Orange study to Congress, to the U.S. Air Force and to the national media. I didn't do the study – George Lathrop and his team did it – but I presented the results. I was pleased that we had a well-designed study in the face of all the political pressures involved. And more than 50% of the time I was quoted correctly on the front page of the Washington Post. I think that's pretty good. Our people had been working all night long sometimes to meet the deadlines that had been imposed on us. This created some interesting situations. One night a researcher was so tired he loaded a blank disc over the disc with the study data and we had to go back and recapture the information from the computer.

I was very pleased we could have the centrifuge updated to better support the fighter community with their G-LOC issues. The contractor wanted to supply only a lower G onset rate, but we stood firm and got the rate we wanted. School members were then able to devise a training program for all pilots of high performance fighters in an attempt to prevent G-LOC accidents.

Overall I was highly pleased to be able to work with the people I did while I was in the Air Force medical service. My work was often just to provide people with the resources they needed. They knew what they were doing. I was always impressed with the caliber and hard work of the people I served with – including, in particular, the NCOs. Air Force personnel will work inordinate numbers of hours to accomplish our missions, and it has been a pleasure for me to work with such dedicated individuals.

FL: What changes have you noted in aerospace medicine over the years?

RM: I'll start with one thing that hasn't changed: we support the fliers. Our whole raison d'être is to carry out the motto of the School of Aerospace Medicine: *Volanti subvenimus* (we support the flier). This will not change.

During my residency I wrote about the physiologic effects of the presence or absence of gravity. There was discussion at that time about whether humans could live in microgravity. For example, we wondered if people would regurgitate all their food. Now we know well that this is possible, and we are looking at long-duration space flights. Once I was involved in monitoring groups of people in chambers. We were studying whether or not people could work together in the confined spaces involved in space flight over a "prolonged" period of time of a few weeks. Now we are concerned about durations of years.

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Another thing that has changed is high-performance fighter physiology. We thought we knew about it back many years ago, but we didn't even know what high-performance was. We have learned much about pushing human tolerance and helping adaptation to difficult environments.

FL: Do you have any advice for today's Flight Surgeons?

RM: I'm always hesitant to give advice. I agree with Dr. David Jones (who spoke at the May 2004 Flight Surgeons' luncheon) that it is key to maintain your professional skills and be a good doctor. Crews rapidly recognize Flight Surgeons that are dedicated to medicine. This is reflected in the rapport and trust you develop with your unit. An essential aspect of your job is to fly with your unit on typical missions. Enjoy being a part of the best field of medicine and working with some of the most dedicated and professional people you will ever meet. Recognize that it is a real privilege to serve such people, and you will have opportunities and experiences that non-Flight Surgeons will never have.

Also, on a practical note, always follow your checklist. Once I was flying in a T-33 from Peterson Field in Colorado Springs to O'Hare. The pilot was the head of safety for our command. I was well versed in landing procedures in that jet after many flights. As I was strapping in the crew chief interrupted me with some minor question. We made the flight without difficulty, and just as we

were landing in Chicago we got an indicator light that the nose gear was not safe. The aircraft commander advised me that it was probably just a problem with the light but to be safe, he would land very gently to see if the gear would support us. However, if it seemed we had a problem, he would try to accelerate and get us to a safe altitude to eject. I assumed the ejection position as we made the approach. As it turned out the landing was uneventful and the gear held up fine. Before exiting the jet I reached in my pocket to retrieve the ejection seat pins and they weren't there. After being interrupted I had forgotten to pull and stow them. The pilot asked me, "Doc, are you alright?" and I responded, "I will be in a minute." When he learned of my error he remarked, "Gee, aren't you glad we didn't have to eject?"



Mentorship in action: Col Moser accompanying his nominee, Capt Pat O'Neal, as he is awarded the 1971 PACAF Flight Surgeon of the Year from Col Craig Nolen.

FL: Was your transition smooth or difficult from Air Force RAM to occupational medicine professor at the University of Utah?

RM: I have made the statement that aerospace medicine specialists can practice occupational medicine. With some field experience we can do well. I do not believe the reverse is true, however. Occupational medicine does not train its practitioners in G forces, hypoxia, or the other aspects of working in unusual environments.

I found the transition easy and enjoyable. The university setting is not that much different from the Air Force. I no longer have to wear a hat, I don't have to salute, and each morning I have to decide what clothes to wear. Other than that it is the same. The bureaucracy, politics and accomplishing the mission are the same, although the functions have different names. Administrative types always want you to meet their requirements but you have to focus on the real mission.

FL: Who are some of your professional heroes?

RM: There are so many...Ross McFarland I mentioned before. He was a quiet man with a spectacular mind. He pushed for the pressurization of commercial aircraft and he was kind of a "father of aviation medicine". Chuck Berry, Stan White and Bill Douglas

had accomplished so much and they were well recognized, but they were still interested in development of junior officers. They all took time to help me personally.

I once met Dr. Harry Armstrong. He made aerospace medicine a real specialty. Paul Campbell was a commander of USAFSAM and wrote a great text. Lt. Gen. George Schafer whom you interviewed last year was one of our great leaders. Bob Unger encouraged me and took a personal interest in my career while he was at the SAC surgeon's office and subsequently. General Jack Ord was commander of AMD while I was the school commander. He was the type of person you totally enjoyed working for. There are many others I have known who have been our true leaders. The opportunity to know and work with these individuals is one of the great benefits of this specialty.

FL: Can you describe the start of your involvement with the Aerospace Medical Association?

RM: This field is relatively small. You get to know many leaders and work with them. Professional organizations like AsMA are a great way to meet the leaders of aerospace medicine. It only has 3000 members and you can do as much or as little as you want. I got involved in a committee early on and I have established great friendships. My spouse has also made many great friends through AsMA.

I attended my first aerospace medicine meeting in New York in 1964 while in the residency. At that time the RAM MPH year was provided through AFIT and it was taught at Harvard, Johns Hopkins and Berkley. Dr. McFarland wanted us to meet people in the field so he strongly encouraged us to go. I called AFIT to request funding for the trip and the lieutenant colonel there refused to authorize it. I remember he asked me, "Captain, can't you read? Per AFIT directives, no funding is authorized for trips during the residency." The next morning I broke the bad news to Dr. McFarland that we would not be able to go. On my way out of his office I overheard him ask his secretary, "Jane, can you get Dick Bohannon on the line for me?" I remember thinking, "That's odd. I wonder why he wants to speak to the surgeon general." Well, at 5:30 that night my wife met me at the door as I returned from the library. She said, "A colonel from AFIT has been calling for you every 30 minutes all day long." Even though it was after hours I called his number, as he had asked, and he was very apologetic. "Dr. Moser, I have no idea why you were told that you couldn't go to the conference. Of course we will fund it. Please call Dr. McFarland tonight at home and explain that there was a misunderstanding."

Since that time, I have attended every meeting except when I was in Vietnam, and I have gained a great deal of professional and personal satisfaction from my participation in the organization.

Editor's Note: We continue to get positive feedback on "X"'s Flight Surgeon Profiles. "X" cellent work!