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"Forgotten, But Not Gone ... Thinking About Air & Space Power"

I would thank my long and deep professional friend, John Shaud, for the gracious introduction. When I showed up at West Point in 1954 and was assigned to I-2, John Shaud had been assigned to I-2 two years ahead of me, and he has been one of my mentors, one of my leaders, one of my role models, and one of my highly respected associates ever since. Thank you for your very gracious remarks, and thanks, too, to all the members of the Air Force Association and friends that are here.

The last time I was on a formal AFA agenda was the convention in 1990, and before I got to the podium, I was rudely interrupted by a couple of my former acquaintances from Washington, so I'm pleased to be here this time.

And while my thoughts on airpower have matured somewhat, the vector is still pretty constant, and I'd like to talk to you about a couple of things that I see from a ten-year-old perspective.

How many of you are members of USAA? How many buy your insurance from USAA? Do you remember the annual report that came out in '91? It had a fold-out cover so there were three panels. It had a very beige tint to it. There were tens of thousands of largely infantrymen walking west in the desert. It was a great picture.

The title on that picture could, and should have been, "Air and Space Superiority." And I put that in contrast to the picture called, "The Highway of Death," which was available in various publications back in that time frame. That picture, "The Highway of Death," and Khaffi, is in the January 1999 issue of Air Force Magazine. "The Highway of Death" and the Khaffi picture should have a title called, "Air and Space Inferiority."

We're a group here, the Air Force Association, whose mission in life is to proclaim and celebrate air and space power, and we need to remember, and we need to tell stories like that in public. We need to encourage our friends and neighbors to go see "Saving Private Ryan."

"Saving Private Ryan" is a great story about airpower. It's the story about the absence of airpower in many cases, but it's a great example of what happens when airpower is not available, and there's a couple of seconds that shows what happens when it is.

Let me move on to what I'm supposed to talk about, which is not related to what the

program says I'm supposed to talk about. I'm supposed to talk about global engagement operations with 21st century aerospace forces.

This is a different Air Force than John Shaud and I were in. I remember the first chart that Mike Ryan put up yesterday that shows the Air Force Program and the trend and the vector on the Air Force Program.

I came into the United States Air Force in 1958: 1958 was the last year that the Air Force did not have enough money to buy fuel to fly out its program the last month or two of the fiscal year. It was the Eisenhower Administration. We were into more bang for the buck, we were into trying to balance the budget, and a number of things disruptive to military forces, similar to what's going on today, were going on.

In any event, from '58 until when I left the Air Force, the vector was just the opposite from what Mike Ryan showed you yesterday. The vector was so much in the opposite direction that when commanders heard a complaint from the troops, and said, "We're going to fix the dorm next year," they could be assured they were going to be able to fix it. Now it's entirely different--and I'm not walking in the shoes of the people that are there today--and there's a lot of things that I'm missing.

The vector was very healthy with the exception of a little dip when President Carter was president and another in '86-'87 as the programs leveled off and started to decline. As a matter of fact, John Shaud mentioned that I was Air Force PR for a while. It was 1987. We were working on the Six Year Defense Program. I guess that's '89 to '94.

In 1987, I had led a team that took \$100 billion out of the Air Force Program, and I got not one letter, or one phone call from any of the major commanders around the countryside, or any of their vice commanders, or any of the people in the middle of the staff--\$100 billion, at the level where we were at the time, was not an issue. And they were not bashful men, Duane Cassidy Pete Piotrowski, Bob Russ, that mix of individuals. This is a different Air Force, and there's a lot of different problems that guys with 10-year-old information are not up to.

I'm going to talk about the 21st century Air Force. I'm not going to spend a lot of time on global engagement operations. I'm not because the half-life of global engagement operations is not very many months. The next administration, whatever it is, is likely not to pick on engagement as its foreign policy buzz word, and so global engagement operations is on the right path. It's being handled well by a group of people that understands it and can manage it well.

Let me talk a nickel's worth about the 21st century aerospace force. One of our very successful industrial partners, in speaking of business organizations attempting to deal with a myriad of problems that they face, claims that--and I quote--"The single biggest problem dealing with today's environment, the single biggest problem, is staying with your previously successful business model one year too long." The leadership challenge in a big organization is getting out and keeping out in front.

So how should we think about the 21st century aerospace power in that light? Well, today the United States, as a nation, stands, flies, or orbits, in some regards, as the only aerospace power in the world. Yours is the only air force thinking about global engagement operations. In terms of the breadth and depth and the scope of its capabilities, there are no peers as we enter the 21st century.

And this is, I assert, an invaluable position for the United States to hold. It is a position for the United States to keep or lose as a matter of choice. No nation will seize this position from the United States. We can only lose it by policy choices, as the label says, made in the USA. No nation will drive the United States from its position of aerospace preeminence in the lifetime of anyone in this room. The only way for us to be surpassed is through ill-advised policy, ill-considered options, careless decisions, and half-baked and short-range thinking about air and space power.

Having said that, it's also my view that the golden age of air and space power has not yet arrived. We're only 95 years and a couple of weeks into the air age, and less than half that into the space age. The conceptual, technical, and operational progress that each of you has witnessed in your lifetime is extraordinary, and the potential for further development is virtually unlimited--virtually unlimited.

The limits in my view--and there are some--are primarily intellectual limits. They're not primarily economic, programmatic, political, or budgetary. The real limits on further progress in the development of aerospace power will be imposed and intensified by the failure of our thinking, and they will be expanded and broadened by the quality of our thinking, by hard, careful, creative, global, and non-parochial thinking.

I've long believed that airpower, spacepower, and now aerospace power, are more about thinking and about ideas than they are about technology or hardware or systems or platforms or programs. Aerospace power is a state of mind.

Aerospace power is about nontraditional applications of military and, yes, naval power to the problems of national security. Traditional applications of military power are largely linear, sequential, frontal, indirect, input-oriented, ponderous in deployment, costly in employment, self-sacrificing, and based on attrition, brute force attrition. That's an echo of what I heard somebody say yesterday, brute force attrition. We're not into brute force.

Airmen have been willing to seek out and accept new ways to achieve military and political objectives in nontraditional ways, to perform old tasks and to conceive of new tasks in the pursuit of the national interest.

The new ways depend on a willingness to pursue not only lessons from history, but also new scientific discoveries, and to accept the consequences of rigorous scientific and historical analyses. In some cases, the consequences led to new operational methods or new analytical tools, or new uses of knowledge, such as information warfare. In some cases, the consequences led to engineering applications that flow from scientific discovery, a term we frequently call "new technology." Technology, operational

methods, analytical tools, strategic planning, information processing, and decision-making are each intellectual undertakings. They do not depend on brute force. They depend on careful thinking.

Development of aerospace power has not been easy. The reality of world events, the pace of change, the evolution of technology demanded new and difficult choices. Many times, the choices challenged the conventional wisdom. They challenged the conventional order.

Conventional wisdom is not known for pushing the limits. Conventional wisdom is not known for advancing the flow of history. Conventional wisdom is not known for promoting the kinds of progress that you've witnessed in air and space in your lifetime. Conventional wisdom is known for promoting the status quo, for protecting rice bowls, for upholding traditional cultures. Conventional wisdom frequently supports cherished professional preferences, and even job security interests.

And yet for air and space men and women, careful thinking, the logic of national need, and the promise of improved capability for the nation regularly, if not easily, won the day. Escort fighters, strategic airlift, intercontinental ballistic missiles, unmanned aerial vehicles, and air and space equivalence, each were embraced after careful thinking and lively debate, because they offered significantly improved capability, because they build a central capacity for the nation.

There's a wonderful book, a short paperback. It's out of print now, but a determined individual could find it. It consists of a number of essays about the introduction of new ideas and new technology in business, industry, and the uniformed Services. *Men, Machines, and Modern Times* was written by the distinguished naval historian, Samuel Eliot Morrison. The book is worth a few minutes of your valuable time if you're interested in some historical perspective on the difficulty in getting large organizations or institutions to adapt to modern times, to adopt the new business model. In my view it's invaluable.

Railroads fought steel rails. Navies fought steam power and rifling in their gun barrels. Steel companies fought the oxygen Bessemer process. Armies fought rapid fire rifles. Ill-advised policy, ill-considered options, careless decision-making, over-emphasis on near term problems, and half-baked thinking regularly cost these institutions one or two decades of reduced capability before they accept new ideas, before they move on to new thinking, before they adopt the new business model.

Several of you in this room have been abused in the past by the story I'm about to tell, and those will be again, and some may be abused for the first time, but I'm going to tell it anyway.

Over the years when I would meet people, particularly in a civilian setting, one of the early questions that I'd get onto, "And what do you do?" If I happened to meet an officer with experience in the United States Army, invariably the answer would get down to, "I served my country in the Army," and sometimes, "and I've commanded a battalion," or a

"company in combat."

And if I happened to run into a naval officer and asked the same questions, I'd get a similar answer, and it would get down to "served my country," sometimes at sea, sometimes ashore.

If I happened to ask an individual who'd been a Marine--of course, no people were Marines, they all are Marines forever--I got a much more extensive answer, but it always included the idea about service to country and probably service to the Corps.

If I happened to ask a member of the United States Air Force, particularly an individual whom we call an operator, the reply I got turned early to hardware, "I'm a C-141 copilot," "I'm a GLCM (Ground Launched Cruise Missile)--do you remember GLCM? If you remember a C-7, you should remember GLCM. "I'm an F-16-C Block 42-B, X, Q officer," "I'm a launch control officer."

Now the point of this story is many people in leadership--and in senior leadership tracks for the aerospace forces of this nation think of themselves--thought of themselves in my time--in relationship to their equipment. They thought of themselves, in many cases, as heavy equipment operators, and it just irritated the hell out of them when I told them that.

They had an equipment orientation, rather than a national or a Service or an institutional orientation. Now they were very, very good at what they did--competent, professional, reliable, courageous. And I continue to be thrilled to be in the company of valiant men and women of the United States Air Force, heavy equipment operators or others, who regularly accept the risks and rigors of service life. And global engagement operations will be well managed and well effected by these men and women.

They are very good at what they do, very good at the here and now, at exploiting the capability inherent in the tools and equipment at their disposal.

Their linkages to the larger whole, to the longer term, however, were frequently invisible, and sometimes they were invisible to heavy equipment operators.

Even heavy equipment operators benefit from the vision and the coherence and the integration provided by a skilled architect, and one of the failures of my brief administration and one of the opportunities I never got to work on--but meant to--was an effort to shape and reshape the way air and space men and women view themselves, and then, of course, to grow a few more skilled architects.

This is a cultural issue. It affects the whole institution, and over a long period of time it will diminish the capacity of the institution to think about and to prepare for the longer term future.

In some regards the Air Force did address this situation. It had a plan and a program and a place to do longer range and deeper thinking about air and space power. In some

regards the Air Force functionalized its responsibility for forward thinking. It organized around the inclinations of heavy equipment operators. Of course, the organization may have contributed, however, to the larger problem.

The Air Force created and used Systems Command to institutionalize thinking about the future potential of air and space power. For some 40 years the Air Force depended on the linkages, the connections, the relationships that Systems Command created between the requirements of the operational Air Force and the skills and insights of industry, academia, and laboratories, tinkerers and cranks, internal and external.

This is not criticism of General George Babbitt and of the men and women of Air Force Materiel Command. It is an observation about the decades of success taken for granted and an observation about human nature.

Systems Command, in its heyday, had time horizons that were 15, 35, and 50 years into the future. Sure, there were day-to-day developmental efforts that required immediate attention, but the strategic focus of the organization as a whole was on thinking about the future exploitation of the aerospace medium for the conduct of more effective military operations. Material resources and intellectual clout sufficient to the task were organized and nurtured in this environment.

And one of the significant changes during the 1990s has been the apparent decline in the Air Force institutional structure for thinking about the future of air and space power, for thinking about vital aerospace contributions to the nation as a whole.

Our ability 10 years ago, by the way, was not perfect, but it was visible and it was vigorous. In my view, the impact of this change is apparent, but that's another whole speech, and I'm not going to cover it here today.

Well, what can we do about this situation? How do we start? Where are the work-arounds, however inadequate, that may be available? One place to start is on common ground. You Air Force Association members here today are on common ground, or perhaps I should better say, we're in the same orbit.

The Air Force Association provides a common orbit for thinking about issues of mutual concern. The people that come to this and to other AFA events have a common purpose. We, civilian and military, aspirant, retired, and veteran, come together here because we mean to support the preeminence of US aerospace power.

In many cases in the past, and even more so today, long range thinking about future capabilities, about advancing aerospace thinking, comes from industry represented here today. But a curious thing happened on the way to the 21st century. It, too, has had a disrupting effect, and I believe a continued effect on the development of air and space thinking.

A little over 20 years ago a new administration showed up in Washington. In its zeal for good government, it set up a series of strict new rules on ethical behavior for

government employees. Successive administrations have each worked hard at being holier than the previous one, and so the rules today have become even more rigid.

One result of that, after all the stuff rolled downhill, as it usually does, is that industry representatives are routinely being dissed by many in the Air Force, military and civilian--by many that desperately need the knowledge, the experience, the expertise, the historical perspective that can only come from industry.

Air Force officials in various grades act as though industry representatives have a serious communicable disease. A willingness to engage industry representatives in serious conversation and collaborative thinking about the future has, I believe, diminished rather than grown, and the United States is in danger of losing its grip on one of its principal lifelines.

Industry, in many cases, is where the long-range thinkers have roosted. Industry is the source of many of the innovations that heavy equipment operators love to exploit. I did. Industry is an essential element of aerospace power in the aerospace team. Industry is not the enemy. American aerospace industry is the best ally some of us in this room will ever have.

The military industrial complex has added to the United States security immeasurably. Industry is not a substitute for a well-defined, well-ordered process to develop operational requirements, but it can be a helpful resource, a helpful source of broad thinking about the limits of operational possibilities. And I think that the Air Force Association has an opportunity and a responsibility to facilitate broader and deeper communication on the future of aerospace power. And the Air Force has an opportunity and responsibility for reaching out to industry and to others to help grapple with the future.

Let me wind this up. I think that aerospace power is more about thinking and ideas, than about technology or hardware or systems or platforms. I do believe the golden age of airpower and space power has not yet arrived, and the potential for the future is virtually unlimited. I believe that the heavy equipment operator syndrome can and must be converted into a spirit of service. And I heard that from the stage this morning, "All warriors are created equal." There's been a shift in 10 years, and a very healthy shift, and I salute the Air Force leadership for bringing this about.

I believe there's a disconnect between the state of Air Force thinking and the promise of 21st century airpower. I believe the disconnect jeopardizes the continued pace of development in its contribution to the nation. I believe the Air Force needs to more fully exploit the available intellectual resources, wherever they are.

And so it seems to me that two courses of action suggest themselves. One is a forward-looking, forward-thinking, broadly engaged Air Force looking at mission inputs and operational outputs from the application of airpower. One is building on the notion of all warriors are created equal, rather than a cult of the warrior kind of concept that I saw in other places, in other times.

And secondly, a broad-based and determined effort to open and develop communications broadly and continuously between users in industry and all of those external resources to help think about the future. The future is what the Air Force is all about and has been all about. The future is about our children and our grandchildren, and aerospace power has an unlimited ability to influence that for the best.

I'm honored to be with you. Thank you very much for the invitation. I await your questions.