

**General Robert C. Kehler  
Commander, Air Force Space Command**

**Air Warfare Symposium**

**18 February 2010**

**Moderator:** Our net speaker is Commander of Air Force Space Command. He is responsible for organizing, equipping, training and maintaining mission ready space and cyberspace forces and capabilities for North American Aerospace Defense Command, U.S. Strategic Command, and other combatant commanders around the world. Oversees Air Force network operations, manages a global network of satellite command, control, communication, missile warning and space launch facilities, and responsible for space systems development and acquisition.

Please welcome to our stage General Bob Kehler.

**General Kehler:** [Video shown].

[Applause].

Good afternoon, everybody. I love this job!

Thanks to the Air Force Association, Joe, for putting on another one of these great symposiums. And I really appreciate the opportunity to stand up and talk this afternoon to one of the issues that I think is really important for every single one of us here, and that is the theme of this year's symposium, and that's "Develop America's Airmen Today For Tomorrow." So let me say a few words about today and tomorrow.

One thing about being in the job now about two and a half years is, and I know this will disappoint some of you, is I've told all of my jokes. [Laughter]. So without anything else being said -- Yeah, they weren't very good anyway. [Laughter]. So I'm not going to go through a joke today because I think that the subject here about developing our airmen for today and tomorrow is pretty serious business.

What you saw in the video was a quick snapshot of what the professionals at our command do to support joint operations around the world. I hope it was not lost on you that in that video there were more shots of forces in the field than there were of space operators at consoles. That's because the measure of merit for all of our

activities at Air Force Space Command is our contribution to joint operations. The ability to deliver space and cyberspace capabilities depends on the contributions of our airmen, so one of our command's goals is to forge a battle-ready team by attracting, developing and retaining America's best.

Space and cyberspace capabilities shape how we deploy forces and how we employ them against adversaries. In short, I believe that our space and cyberspace capabilities enable the American way of warfare.

The joint forces in Afghanistan and Iraq are disbursed over large, desolate areas. They are often engaged in close combat with an elusive enemy. Yet those units have communications capabilities that link them to other forces and command centers hundreds if not thousands of miles away. Supplies can be airdropped from C-17s and steered to the ground using GPS guided and steerable precision airdrop system, known as JPADS. Air power and other supporting fires support our troops using GPS pinpoint accuracy to strike danger close, keep our troops safe, and avoid collateral damage and unintended casualties.

I was quoted in the video and I'll say it again. The team of airmen, civilians and contractors at Air Force Space Command wield space and cyberspace capabilities that allow the joint force to strike with precision, navigate with accuracy, communicate with certainty, see the battlefield with clarity, and network with assurance. Those are enormous contributions to our fight today, whether it's irregular warfare, where these capabilities allow very small and disbursed forces to operate like much larger forces with the power of much larger forces; to near peer competition where these capabilities are all about finding and killing targets; to things that we've seen in Haiti with humanitarian relief; and of course, crisis management; and what we call, with some affection around the Air Force, global vigilance -- our ability to see deep into denied areas every day to make sure that we are not suffering from either strategic or operational or tactical surprise.

Airmen are the core of America's space team, and I can tell you, we have come a very long way since the command's inception in 1982. Technology has advanced for sure, but more importantly, we are where we are today because of how we develop our airmen. So let's go back nine years.

In January of 2001 the Space Commission released a report on U.S. National Security Space Organization and Management, recognizing the U.S. as the world's most space

dependent nation. The report made numerous recommendations including how to transform U.S. military space capabilities, the need to advance our technology in this area, and how to shape the international and regulatory environment regarding space. A significant recommendation for the United States Air Force and Air Force Space Command was the recommendation to create and sustain a trained cadre of space professionals. So yesterday was somebody's tomorrow, if you think about it that way, and tie that to the theme of this conference.

The report stated, "As with air operations, the Air Force must take steps to create a culture within the service dedicated to developing new space system concepts, doctrine, and operational capabilities." The report went on to state that "The nation had to place a high priority on all of this," and it talked specifically about developing and sustaining a cadre of space professionals.

So we had direction to do a better job preparing our people for Air Force space responsibilities. We moved out and nine years later I can report that we have been very successful with deliberate development of space professionals and we are now using this model as the template for how we're going to develop our cyberspace professionals. And you see the fruits of that labor embodied, I think, in the video that I just showed.

The Air Force approach to space professional development consists of four elements. First, we clearly identify our space professionals - who they are, where they serve, and what they do. We define those professionals as not only the operators at the console, but also as the engineers, the acquisition officers, and the critical mission support experts like intelligence experts, communications experts, and soon weather experts who have a large role to play in the success of our space capabilities.

Second, with our partners at Air Education and Training Command, we normalized how we train. Just like pilots our space operators now go through an increasingly difficult progression, beginning with undergraduate space training, going to initial qualification training in a specific system, moving on to a unit where they get mission qualification training, check rides, and evaluations. The goal is to balance technical and tactical skill. A key feature of our training involves the Space Division at the Air Force Warfare Center at Nellis and the Advanced Space Operations School at Schreiber Air Force Base.

The third element is an improved career development process. We took a hard look at how our space people gain the required competencies to develop them from those who are focused in the technical and tactical area, to those who need to focus and become broader leaders in the United States Air Force. We developed career paths that were capability driven, competency based, and that required certification. We added a strong continuing education program with addition of the National Security Space Institute. We developed Space 200 and Space 300 level courses to provide career-long professional development. This year we moved the National Security Space Instituted under Air University where it belongs.

We've also worked very hard to add appropriate space and soon cyberspace subjects to professional military education by adding content to the curricula. We aligned with our partners in Air Education and Training Command. We adopted the same proven training techniques and practices used for other career fields. We took a "this is how it should be done" approach instead of a "this is how space does it" approach.

I've been fortunate to command two space wings. When I took command of the first one I used to say to my people, if 95 percent of the United States military speaks the universal language of joint warfighting, and five percent speak space, which part do you think will change? And they looked back at me and they said, "It shouldn't take them very long." [Laughter]. I said no, no. Let's go back. If 95 percent -- But we get it. We understand. It doesn't matter what you wear or what badges you have, if you want to be part of the fight it depends on what you bring. And if what you bring adds value, you can come in your pajamas if you want. I don't recommend that, by the way, for all you junior officers out there, but you could and no one would much care.

As a final element, we improved our space professional management process. From Air Force Space Command we determined what our requirements were and we adjusted our plans, our programs and our budgets to effectively develop our people. We worked with Headquarters Air Force, the National Reconnaissance Office, and the Air Force Personnel Center to refine our personnel management process, and gave to the Commander of Air Force Space Command the responsibility for proper management and execution of the entire enterprise.

Now we're not finished by any stretch of the imagination, but this deliberate process has a number of successful years of history now under its belt. Our space

professionals with absolutely no criticism of who has come before, our space professionals are better today than they have ever been. They are combat experienced professionals with a warrior ethos who have deployed forward, advising commanders and employing space capabilities in support of a myriad of combat, humanitarian support, and other operations. In fact at any given time there are about 1500 members of Air Force Space Command forward deployed into the CENTCOM AOR.

Putting the joint warfighter first is also the focus of our airmen who are deployed in place, who are in stateside locations on operations floors who understand that the space capabilities they wield have a direct impact on operations worldwide. We have space professionals stationed at the headquarters of other major commands, at the combatant commands, and in each of those places they're sharing their skills and they're learning about others.

That's today, and I would argue that that is why we are where we are today in terms of the success and understanding of how we are wielding our space capabilities, presenting those capabilities to the combatant commanders, and using them to shape the American way of warfare. But what about tomorrow?

Just as we've gotten the responsibility to deliberately develop rated professionals and space professionals in our Air Force, we now have the same responsibility to develop cyberspace professionals, and we intend to follow exactly the same course.

In our role as the lead Air Force major command for cyber, we will ensure deliberate development of a cyber force with the right education, training, experience, and certification. Operationalizing the cyberspace domain requires a diverse force with a mixture of skills and this same deep technical and tactical expertise to execute missions today and tomorrow. These airmen must also be armed with warrior ethos and be prepared to deploy forward or operate in place to accomplish the mission. We've got a great head start when we stood up 24<sup>th</sup> Air Force, declared its initial operational capability, and in part assigned to it our combat communications units that are in the States. Those people understand what it means to deploy forward and operate in an expeditionary way to bring their capability to the fight.

So we'll leverage them and their expertise and use that as a springboard to look at how else we will accomplish that same objective in cyberspace. We're going to begin by looking at how we select and bring cyberspace

professionals into the Air Force, and then how we train them once they get there. Again, we have partnered with our colleagues in Air Education and Training Command to develop a training path geared toward creating mission ready operators to support the joint fight, and we will partner with the other major commands and the combatants through Strategic Command and ultimately U.S. Cyber Command, to make sure we're meeting their needs for cyberspace capabilities and the people who can wield them.

We know the officer career field and enlisted cyber force members will need a combination of engineering sciences, systems analysis, programming, logic, languages and planning abilities. We also think natural aptitudes, how to think asymmetrically. How to speak asymmetrically. How to apply critical thinking, problem solving, gaming, intellectual curiosity and technical savvy to these very difficult problems. It may be in the future that security forces, skills, won't be the only place where we need criminologists.

Our partnership with AETC is vital to the success of the cyberspace professional development plan. This summer the first class will enter undergraduate cyber training at Keesler Air Force Base and will graduate as members of the new Cyberspace Operations career field for our officers. We are also working with Air University and the Air Force Cyberspace Technical Center of Excellence at AFET to establish Cyber 200 and 300 level courses as continuing education. For enlisted professionals we will need airmen with associated degrees in related fields or IT certifications along with demonstrated aptitude and ability for the cyberspace defense operations career field -- a new career field for our enlisted.

For the bulk of our enlisted accessions, the cyberspace support career field will be based on entrance qualification testing.

As with space, all these movements will take time, but as we go forward, we will begin many of the courses this year with more coming along as we move to future years and get the rest of the pieces put in place.

To retain these cyber professionals we're looking at a variety of tools to make sure we can not only attract the nation's best, but to keep the nation's best. What we know standing here today is that the people with this set of skills, this type of training, and the experiences that we plan on giving them will be rare and in very very high demand.

Now we know adjustments will need to happen along the way because we recognize like everyone else who is just getting into the cyber business, that there is probably more we don't know than what we do know. But as we enter this what we are doing, we are building a model that will parallel air and space and will give to us in cyberspace, we think, the same kind of professionals that we have and admire when an Air Force pilot walks in the room, or when an Air Force space operator walks in the room. So they'll have the proper academic preparation, they'll have the right credentials, they'll have the right training, the right education, and we'll give them the right experience to establish, extend, operate, defend and perform full spectrum operations on our networks. We'll also leverage training opportunities from our sister services, from elsewhere in government, from academia and from industry.

The end result for the joint team is that we will present Air Force capabilities that can fight and win in the three warfighting domains of air, space and cyberspace.

This is really an exciting time to be in the Air Force and to be part of moving our space capabilities forward and operationalizing cyberspace. I can't think of a better time that we have had more opportunity in front of us than what we have today in the United States Air Force. So we're very happy to have the support of the Air Force Association and every one of you in this room as we move forward on these endeavors.

I will tell you that this is a partnership. We all say that. It is truly a partnership. And I think as we move into cyberspace it is a unique partnership that we will need to develop with industry, with academia, with our sister services, with our combatant commanders and in turn, they will need to develop interesting relationships -- You listened to Gene Renuart talk today about how he has established interesting relationships to be able to do his missions with DHS and others, and I think we will see that same development occur regarding cyberspace.

So I thank you for inviting me to come and talk about these issues with you today, especially about how we plan to develop tomorrow's airmen for space and cyberspace. As always, this is another great symposium, and I wanted to thank you, Joe, your team and the AFA for inviting me to speak on this very important topic. Thanks very much.

**Question:** Thank you, General Kehler, I have of course very simple, easy questions for you. The comments you've made about the template and the ability to train the cadre

of space professionals moving into cyberspace professionals is enlightening.

Share with us then, sir, if you have, if you can about the size of the force we need, what's going on to determine that, and then when do we see the objective state? It's been nine years or so since that original study. What will happen in cyber?

**General Kehler:** Good questions. First of all, the issue about how much capacity we need for cyber is very much an open question. When we look at the size of the cyber force that exists in the Air Force today, we have built that cyber force around existing career fields, primarily around the communications, computer and information career field which in our enlisted force, by the way, is the second largest career field in the Air Force. We now count that inside our cyber activities.

The real question I think, Sandy, is what do we see as the needed capacity as we go forward. The combatant commanders are struggling with this, but at a minimum, we have been asked to look at a modest growth as we go through the Future Years Defense Program. Three to four hundred of various skill sets as an initial wedge, if you will, and that's what we're going to look at is that size of an addition to what is already a fairly substantial sized force.

We've also stood up organizationally, of course we stood up 24<sup>th</sup> Air Force and we've assigned three wings to 24<sup>th</sup> Air Force. One was an existing wing, the other two, we created a wing overhead structure in order to pull together these pieces that I mentioned. So there's a pretty sizeable commitment inside the Air Force already. We've also put a piece of the Air Force ISR agency in direct support of 24<sup>th</sup> Air Force. So we've tied an intelligence piece to this as well.

So how much bigger we need to get, it remains to be seen as U.S. Cyber stands up, as they begin to take on additional mission, we see that there is potential for growth. We see that what we want to do as an Air Force is we want to be very focused on defending our networks, first of all, and second, we want to make sure that we are doing complementary activities to those of our sister services. WE do not want to go out and duplicate what the other services have done. So all of these questions are in the mixture, all of these will drive our capacity as we look to the future. We expect some modest growth, and beyond that, I think we're going to have to wait for the joint team to initiate a pull on us and see where we go.

In the mean time, we do need to put in place the wherewithal to train, and my view is we do not have nine years to get this right. That's why we are using the existing Air Force model. The model that we've picked is recognizable to Steve Lorenz and his great group of professionals at AETC. We are in lock step with them. This would be recognizable. The method that we will use is recognizable to everybody in the Air Force.

**Moderator:** To follow up on that, sir, while many of our career fields are non-competitive with other services, or perhaps the private industry, some could say that cyber is the folks that go to that career field, we will be competitive with private industry as well. Do you see any special recruiting issues?

**General Kehler:** We see recruiting and retention issues, actually. But this is also not new for the Air Force. We've gone through this with pilots over the years. Pilots are a precious commodity for us. It takes us a while to train them and certainly maturity and experience is a big factor, so we, pilot retention has always been one of our ongoing issues. Space officer retention is also an issue for us and has been for quite some time. Many of you in industry who are sitting here know, many of you in industry used to wear this uniform and were in the space business, so you've made a cross-over here and we are mindful of that. Our young enlisted space operators are always recruited b industry. The same thing is going to happen with cyber, only it might even be more dramatic with cyber and so we are looking at some ways, some tools that we already have to retain people to make sure that we get a return on investment. At a minimum there will be an active duty service commitment that will go at the end of training for cyber people, no different than we put an active duty service commitment on the rest of our training requirements as well.

**Moderator:** General Kehler, I would be remiss if I didn't tell you AFA stands ready to help you with our Cyber Patriot activity, and we appreciate your comments today. Thank you very much for coming.

# # # #