

AFA Symposium

Introductory Remarks

General Bob Kehler
Commander, Air Force Space Command

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Moderator: (Introducing) the Commander of the Air Force Space and Missile System Center, Lieutenant General Mike Hamel.

[Applause].

The new commander by what, three weeks and counting, of the Air Force Space Command, General Bob Kehler.

[Applause].

His Vice Commander, Major General Tom Deppy.

[Applause].

The Commander of 14th Air Force, Major General, soon to be Lieutenant General Willy Shelton.

[Applause].

And General Hamel's Vice Commander of the Space and Missile Systems Center, Brigadier General Ellen Pawlikoski.

[Applause].

We also have several former Air Force space leaders with us today, and they're special people. Two former commanders of Air Force Space Command, General Don Katina and General Lance Lord.

[Applause].

Representing the officer and leaders of the Air Force Association from Knoxville, Tennessee is Vice Chairman of the Board for Field Operations, Joe Sutter. And from Sarasota, Florida, Vice Chairman of the Board for Aerospace Education, Sandy Schlitt.

[Applause].

As I said, we've got an exciting program for you today. We want to get right into that. It's my pleasure to introduce the President and Chief Executive Officer of the Air Force Association, the newest member to the AFA Staff. We're tremendously pleased to have him with us, Mike Dunn. Mike?

[Applause].

Mr. Dunn: Thanks Bob. Good morning, and thank you to all of us for joining us. This year the theme of our National Space Symposium is Space, our Heritage, our Future. Today we'll focus on Air Force heritage and future in space by hearing from Air Force leaders of yesterday, today and tomorrow.

As you all know, the 21st Century space provides a number of capabilities that are increasingly critical to not only military operations but the lives that our civilians and our country enjoys, and those around the world.

We have an impressive lineup of speakers today and a lot of ground to cover. We'll start out with the Commander of Air Force Space Command, General Bob Kehler. We'll take a short break to reconfigure the stage here, and then Lieutenant General Mike Hamel will introduce and moderate a heritage panel. Then we'll take a longer break and finally Brigadier General Ellen Pawlikoski will oversee a futures panel.

At 12:30 we'll convene next door in the International Ballroom for lunch and hear from General Chilton, the Commander of U.S. Strategic Command.

Now, the rules of engagement. First of all, anybody that has a cell phone, please turn them off. We're implementing for this conference a new rule for AFA. It's called the \$5 Rule. So anybody's phone goes off they're going to donate \$5 to AFA.

There is an exception to the rule. If you have a ring tone that sounds something like this, you're excepted -- [ring tone played Air Force theme]. [Laughter]. That's the only exception to the rule.

After each speaker makes their presentation, if there's time left we're going to have a question and answer session. We're going to ask that you write your questions down and we'll have the ROTC Detachments 40 and 60 representing Loyola, Marymount and USC respectively will be roaming up and down the aisles. So as a speaker goes on and you think of something, write it down and we'll collect them, then we'll feed them to the speaker.

The entire symposium is being audiotaped and we'll post our transcripts on the web site at www.afa.org.

That said, our first speaker is the commander of Air Force Space Command. He's responsible for the development, acquisition and operation of Air Force's space and missile systems. He oversees a global network of satellite command and control, communications, missile warning, and launch facilities, and he ensures combat readiness of America's intercontinental ballistic

missile force. He leads more than 39,000 space professionals who provide combat forces and capabilities to the North American Aerospace Defense Command and the U.S. Strategic Command. Prior to his assignment he served as the Deputy Commander of U.S. Strategic Command, and prior to that as the Director of the National Security Space Integration Office of the Under Secretary of the Air Force in the Pentagon. He has commanded at the squadron, group and wing levels. Please join me in welcoming to the stage the Commander of U.S. Space Command, General Bob Kehler.

[Applause].

General Kehler: Good morning everybody. It's always a little bit tough to get up and talk first thing in the morning, and I'm always afraid if I start down the road of mentioning people by name I'll miss somebody, so let me start this way. Joe, Mike, Dunn, Bob, Bill, Dave, Wayne. Thank you for inviting me. That covers about 75 percent of the audience. [Laughter].

The other thing I was tempted to start off with -- Did I miss somebody? [Laughter]. By the way, there's no heckling, so stop that.

I was tempted to stand up this morning and say that my writers are on strike. [Laughter]. That is absolutely not true. My writers do not go on strike. Let's see if they put a speech up here. Yep. You're out of luck. [Laughter].

It really is terrific to be here. I was spending a couple of minutes ahead of time trying as best I could to get around and see in particular the young officers, the young enlisted folks that are here, some of our younger government employees and government contractors. I think it's very important that you are all here today. It's very gratifying to me to walk around in a venue like this and introduce myself to second lieutenants, first lieutenants, and captains. Not that I don't love majors and above, but the future of our Air Force 20, 25, 30 years from now is sitting here wearing bars and railroad tracks. They're also sitting here wearing a fewer number of stripes than maybe some of the other folks you see around the room.

You do see a lot of folks here at this symposium this year, and there's a reason for that. We also hosted our Air Force Space Command Semi-Annual Commanders' Conference down at Fort McArthur earlier in the week. So I asked the bulk of the commanders, some had to go back for duty reasons, I asked the bulk of the commanders to stay and they did. I also asked their command senior enlisted leaders to stay, and they did as well. So specifically for you younger folks in the audience, let me offer a couple of suggestions. Actually, let me give you a homework assignment. Your homework assignment is to go find one of the more senior folks this morning and introduce yourself to

them. We're also very fortunate today, we have two of my predecessors here -- Generals Lance Lord and Don Katina. If you don't take a few minutes to come up and introduce yourself to them, you're missing a rare opportunity I think to really get the background from some folks who have been there and done that. So I would highly encourage you to get around this morning and spend some time introducing yourself and getting the real benefit out of coming to something like this and that is improving your network and your knowledge about how we do our business.

Yes, I've been in command of Air Force Space Command for a very short time. I took command, got the flag passed to me on the 24th of October and it has been a whirlwind since then. But I am glad I'm here because this has gone a long way, both our commanders' conference and then this symposium, to actually helping prepare me for this big job that I have, and what a job it is.

I tell everyone that I meet two things. One, I have the best job in the Air Force. Some disagree with that. Then I tell them I have the best view in the Air Force, and they agree with that. So I think one out of two is probably okay. [Laughter].

My staff and I are still trying to get to know one another, which proves to be a very interesting challenge for both of us. For example, about a week ago I was giving a 20 minute talk just like this and it lasted an hour. At the end I walked off and I said to my folks, hey, I asked you to give me a 20 minute speech, I presented this thing and it took me an hour. They said, sir, we gave you a 20 minute speech and two copies. [Laughter].

I said, you know, the third time I was giving the same thing, I was beginning to wonder. [Laughter]. They said, so were we. [Laughter]. So who knows?

We are getting used to one another a little bit. I will tell you, though, that I have a great sense of standing on the shoulders of giants. If you don't think so, yesterday we had an opportunity at SMC to spend a couple of minutes honoring General Benny Schriever who is not just a giant but a titan, with all pun intended, a titan in our business. And it was gratifying to me to see so many people turn out yesterday to honor General Schriever's memory, because in many cases, although we say that he is the Father of Air Force Space and Missiles, I think that General Schriever, given what he did for our country, still doesn't get the credit that he deserves for doing things that allowed us to get to other interesting places like the moon. So I think that any time we can honor General Schriever, that's terrific for us.

I can't think of a better platform for really the first time that I get to speak in a public setting about Air Force Space Command and how I am viewing the job at Air Force Space Command.

I'll tell you, I've got to start off every single time that I talk about this magnificent command, by talking about its magnificent people. I think we don't have to go any farther back than last Saturday night to see the success of this spectacular team with the first operational launch of a Delta 4 Heavy, carrying the last of the DSP satellites to orbit and doing so successfully. Fifty-four successful launches in a row, and multiple years now, more on this from General Hamel later, multiple years now of on-orbit successes. No one, and I mean no one, does a better job at operating on orbit than we do in the United States of America.

[Applause].

That's because we operate as a team. We operate as a military, government, industry team. It's been that way. We were reminded of that yesterday with General Schriever's dedication. It's always been that way. It must be that way in the future. In fact I would offer that that team has to get stronger given the challenges that we are facing. We also are still at some level living with the legacy of maybe a time period in our not too distant past where maybe that team didn't operate as strongly together as it needs to. So I commend you for your successes, but I challenge you as we look to the future and strengthening that team.

We're finishing up a great year of anniversaries. Sixty years as an Air Force, 25 years as Air Force Space Command. In the past 25 years the men and women of this wonderful command have deterred nuclear aggression. They have protected our homeland. They have helped to secure battlefield victories in Desert Storm, in the Balkans, in Operations Enduring Freedom and Iraqi Freedom, and in countless other ways have made our country safer and more secure.

There is no doubt in my mind that space capabilities have shaped the American way of warfare in the late 20th and early 21st Century, just as air power shaped the American way of warfare from the early 20th Century to the mid to late 20th Century. I think that's a remarkable achievement, and we should be very proud of that.

Space Forces operate in the ultimate high ground. Our space capabilities give military forces an enhanced ability to see, hear, act, and know quickly and maybe most importantly, on a global scale.

Space contributes immeasurably to how we deter, dissuade and defeat traditional and new threats. Historically our space capabilities have provided a tremendous strategic advantage, one that's magnified when properly integrated with terrestrial activities -- terrestrial activities on the ground, in the air, and on the sea. Space also provides a tactical advantage. It's

a force multiplier and it's a force enhancer.

We would not do precision strike the way we do it today without space capabilities. We would not do blue force tracking today without space capabilities. In many respects, space has been like that TV commercial. We don't make the product. We don't accomplish the strike, but we make the strike better. And I think that there is absolutely no dispute about that.

That's where we've been in space over the last 25 years of this Command's existence.

I'm going to benchmark that for a second. Now look 25 years back. I'm going to look at today for a few minutes. And then I'm going to look 25 years in the future and talk about what I think we need to do today to get ready for that time in the future. When you've been on active duty now for as long as I have, which doesn't even seem conceivable to me. Twenty-five years doesn't seem like a very long time. When I look back 25 years, I'd already been on active duty for a dozen years at that point in time. I'm not quite sure how that happened. One day I woke up, and here I was in terms of time. But I will tell you that 25 years is not very long when I am looking at you 2nd lieutenants and you young captains out here and where you are going to be 25 years from now and where the United States Air Force and its space capabilities need to be in 25 years.

What's the big difference between 25 years ago and today? I would tell you, my opinion, is that space today is embedded in combat operations.

Space contributes as a vital pillar to the Air Force's overall capabilities to provide global vigilance, global reach, and global power. We support global reach, global vigilance, and global power but more than that, we enable global reach, vigilance, and power in many, many ways. In some cases, we are global vigilance, global reach, and global power.

A wing that I had the privilege to command several years ago adopted at least for awhile, I'm not sure if it's still its motto today, but it had adopted for awhile the motto "We are the eyes of global vigilance." And I think that's exactly right. That's something that space provides. It doesn't do it by itself, but it in large part forms global vigilance for the United States of America.

Now it also is important that today I believe we have synchronized space with other forces. We've done that in a lot of ways. Mostly we've synchronized space forces today via two important relatively new activities. The first is General Shelton's operation at Vandenberg, what we are calling today the Joint Space Operations Center, which is, if you will, the global AOC for space forces and space affects. But they work very

closely to get that space capability forward with the forward deployed forces.

Generally speaking, if you're not getting a product from space directly in your hand, you're getting a product from space coordinated through the Joint Force Air Component Commander, who is also the space coordinating authority for the theater via the, in case of the CENTCOM theater, the Combined Air Operations Center at Al Udaid.

Terrific, terrific activities that go on there and related between what goes on at the reachback locations, at the JSPC, and what goes on in the forward locations, and we're doing that around the globe everyday.

We're doing that by also placing someone in those AOCs called the Director of Space Forces. A coordinating position, someone who is a space expert, someone who can stand up and say to the theater air boss here is what space can do for you. Here's how we need to bring it in and then embed it in the AOC staffs, not as a separate space cell, but now embedded throughout the AOC staffs are space professionals who are working side by side with their counterparts who operate in the air domain and their counterparts who operate the cyber domain.

Tremendous improvements in what we do to synchronize space today. But I would argue that is not integration. That is not integration the way we need to describe integration for the future. If you look at our command today we can look forward 25 years and we know what space capabilities look like 25 years from now. Those capabilities at some level are already in the future years' defense program, the FYDP. They're already laid into the program. In some cases, those capabilities are in the future force, the planning force, the programming force, and other places out there. We know what it looks like.

If you look 25 years back, you would say, heck, what did space bring in terms of capabilities 25 years ago? Well, it brought warning, it brought weather, it brought communications, it brought PNT, and the list goes on.

Today, 25 years later, because of what we laid in 25 years ago, we are bringing warning, communications, weather, etc cetera. It's the same capabilities. Do we do it better? Of course we do. Are platforms more capable? Of course they are. But essentially we are doing the same set of, presenting the same set of capabilities just as we did 25 years ago. We're doing better. But as I look 25 years to the future, I can already see the program that we have laid in missile warning, communications, weather, PNT. And you say to yourself, is that enough? And my contention is no. We're going to have to do something different as we look to the future.

What is that that we're going to have to do that's different in the future? I would offer that it's the I word. It's about integration.

We're also going to have to do something else that's different for the future. And that is we're going to have to protect those space capabilities.

We have a global military, therefore, we use space capabilities unlike anyone else. We use them to create, as I said in my opening remarks, the American way of warfare. What is that way of warfare? Well, that way of warfare strives mightily to accomplish its job with the fewest number of people forward, with the fewest number of casualties, certainly on the blue side, but also across the board with the fewest number casualties with the highest precision in the shortest amount of time.

Now we could argue doctrinally if that's really the definition of the American way of war but I would offer that my head says that's pretty much the American way of war. It's reachback. It's having global situational awareness. It is being able to, as I said, see, hear, and act on a global basis. That's the American way of warfare.

Therefore, as I look to the future, I say people have noticed; our adversaries -- real adversaries today, and potential adversaries for the future -- have noticed as well. So it is naive of us to think that that the space domain will not be challenged. We have seen early on that there are, in fact, challenges out there. We watched Iraqis during the early stages of operation Iraqi Freedom attempt to jam GPS.

We see the proliferation of GPS jamming equipment around the world. We watched the Chinese test an anti-satellite weapon. That's not the first time that's ever happened in world history, but certainly a recent example of what we need to be vigilant about and how we need to understand what our future might look like and how we have to address that.

So my strategic eye, when I sit here and look 25 years into the future, says that if we continue on the path that we are on, we will get improved capabilities. We will get those improved capabilities dealt within air, space, and cyber domains, which means that we will get them in air, space, and cyber stovepipes. Although stovepipe's a little harsh. Maybe "cylinders of excellence" would be a better way to describe that. [Laughter].

But we will not deliver truly integrated air, space, and cyber effects if we continue business as usual. And if we're not careful, we will also continue to have some vulnerabilities that must be addressed -- in our space segments, in our links, and on the ground.

So, what do we do? Let's start with an assertion here on my part. The objective is to make the sum of air, space, and cyber far greater than the pieces. Now I asked some of the younger folks today, what did you major in? And I got a lot of engineering, mathematics, physics, et cetera. So stick with me. For you math majors, just hang in there for a minute. I am proposing a new math model.

If air, space, and cyber capabilities each have a war fighting value of one -- you with me so far? Okay, they are all on their Blackberries going okay, let's see, new math. I would argue air plus space does not equal two. Are you with me? Okay. Air plus space equals 20, or maybe it equals 100 or maybe it equals 10,000, but it does not equal two. Air plus space plus cyber does not equal three. It's more like 100,000. Anyway, you getting the picture here.

So you finance guys, this is called compounding. Okay, why is this true? You can take one attribute that we share across the three Air Force war fighting domains and you can say let's take a look at this one attribute.

So let's take speed. We all three domains and the platforms in those domains have a common attribute, and it's called speed. Remember from the time that we were all little baby Airmen, everybody has told us about the attributes of air power. What is it that sets air power apart? What is it that makes air power what it is? Well, it's speed, range, lethality, flexibility, and all the things that we have learned that we have articulated in our doctrine, that we've learned freely, since Orville and Wilbur started to figure out how to warp wings in 1903.

So we understand what sets these domains apart is their capabilities in terms of attributes that the platforms that operate in them bring. It's a mouthful, but let me describe it this way. Let's talk about speed.

Again, scientifically derived, you math majors stick with me, my view is that from a speed standpoint, air can deliver effects in minutes to days. Space can deliver effects in seconds to minutes. Cyber can deliver effects in milliseconds. The objective is to make one plus one plus one equal 100,000. And the way to do that is to address integration. How do you really bring integrated cross-domain effects to bear in order to fight and win by creating the effects needed by the Joint Force Commanders? It sounds like a simple question, and it's something we've been struggling with mightily, even for the last 25 years. But that's the key, is bringing integrated effects when and where needed across the spectrum of time using just that one attribute. You can do the same thing for range. You can do the same thing for flexibility, et cetera, et cetera, et cetera. And if you just focus on the speed and you integrate properly, we will find

ourselves in a future condition where we are delivering integrated effects to a combatant commander or to a joint force commander at the timing and tempo of their choosing from milliseconds all the way out to days, just depending on what it is they need. That's the power of being able to develop three war fighting domains, operate in three war fighting domains, have expertise in those three war fighting domains inside the United States Air Force and then to integrate those war fighting domains.

Now, here's the good news. We've got a lot of the guys in the room here today who are supposed to do just that. Major General Mike Worden is here this morning, and if you haven't had a chance to meet him, he's the Commander of the Air Warfare Center at Nellis. And this, in large part, not exclusively, but in large part, this is his job. Why is that his job? Because in order to integrate we're going to have to do some things that we don't do today. This really isn't his job, but we have to start with integration architecture. That's all of our jobs here.

How frequently are we walking from SMC to ASC to ESC and saying, I really need to develop integrated architecture here. If I want to deliver ISR effects, how am I going to do that across the domains? That is a big challenge for us. That's where we need to go.

We've got to have data standards. Everybody has to be operating on the same sheet of music here. Everybody's got to be in the same playbook. And everybody's got to be developing and delivering the kind of capabilities that give us the opportunity to share data. This isn't just about sharing data between individuals. It's about sharing data among platforms.

Finally, we've got to have shared strategic planning, shared ConOps, shared doctrine, and shared tactics, techniques, and procedures. Now I think there is an opportunity for us to get at this in a big way today, and I can talk a little smack here because we already tried to do this, so I'm not out on a limb. But I think we need to get after this with even more intensity and that's in the area of ISR.

Operations and intelligence today become one word -- OpsIntel. You hear it all the time. It's see target, kill target if necessary. That's the kind of integration we're talking about across the domains that are allowing you to see the target, find the target, fix the target, figure out what that target's doing. Is it a target? Is it not a target? If you think that densely packed urban areas are tough above the surface in cities, go into the cyber domain for a minute. That's a densely packed urban area. We're going to have to be able to figure out how to wield our ISR capabilities together in order to create the effects that are needed by the folks who are out in the field at the tip of the spear in Joint Forces Command.

Now let me be a little bit provocative here. Maybe -- Some of you in this room will remember what we used to call AirLand Battle Doctrine. Something that the Air Force and the Army put their heads together many years ago, late '70s, early '80s, it's how we were going to fight the war, had it ever come during the Cold War in central Europe. It was about air and land operating together in an integrated application of combat power. So let's be provocative for a second. Maybe 25 years from now what we have is air, space, cyber doctrine. And what we figured out to do is how to wield all three of those domains together to create effect.

That's your challenge for the future. This isn't about developing programs and watching them march 25 years into the future. That's what we've done in the last 25 years. What we're going to have to do in the next 25 is something in addition to delivering those magnificent payloads that you all know how to deliver along with your industry partners.

So, where are we headed? I think we're headed in a great direction. I'm very comfortable with what I see in our command today. I'm very comfortable with the professionals that we see in our command today.

Aha -- somebody owed five bucks. [Laughter]. And I did not hear the Air Force song, by the way. Just for the record, I did not hear that. If that was my cell phone, throw it away. [Laughter]. It could be. I was looking for it when you were talking, and I thought I've got to get the Air Force thing up there and I couldn't find it. So if that's in my brief case, that's my aide's brief case. [Laughter].

So if you're going to fly, fight and win in air, space, and cyber space we have to continue to meld the three domains. Air Force Space Command's job is to organize, train and equip the space component of the United States Air Force. Space forces that will continue to deter nuclear aggression. Space forces that will win today's joint fight. Space forces that are protected and ready to operate in a contested domain. Space forces that can help defend U.S. and allied forces and interests.

A successful path for the future requires us to do a number of things. We're going to have to sustain our enduring missions and we're going to have to address these emerging missions, especially the protection mission. We're going to have to improve the strategic acquisition and delivery of space capabilities. We deliver great space capabilities, but, in my humble opinion it's taking us too long. We need to address that.

I think the ingredients are out there, by the way, that

would give us a strategic approach in how we might reduce that capability delivery time, and that's going to take all of us to put our heads together and think our way through it as we look 25 years into the future.

And finally, we're going to have to develop and retain space-experienced Airmen. And you notice I said space-experienced Airmen, because I do believe that I am first an Airman. I do believe in America's 21st Century Air Force flies, fights, and wins in three domains -- air, space, and cyber. So, we can't forget that integration across those domains is really about creating Airmen who can operate in those three domains, who can proudly call themselves Airmen while being experts in the space domain, space professionals who are able to understand the medium, the platforms that operate in it, and what you need to do to bring those capabilities to bear to create effect.

The Air Force has been entrusted with a national space mission, and we take that mission seriously, and we perform it with great success. As I said before, no one, no one operates better than we do. Airmen, with space experience, are at the core of America's space activities in Air Force Space Command, at the National Reconnaissance Office and in NASA. All you have to do is look across the broader team to find people wearing our uniform, working with their joint partners in a joint way to create the effects that are needed to fight and win.

So I'm delighted. I'm happy to be in command of this great organization. I'm happy to come to Los Angeles and give some remarks as an opening salvo, if you will, with all of you, to be in exchange with you as we look to the future. My job is to organize, train, and equip. That's what I am supposed to be doing. I don't do that by myself. It happens to be in my job title, but this is our responsibility. It's our responsibility inside the Air Force. It's our responsibility inside our command. It's our responsibility with our industry partners. It's our responsibility, together, with those in academia, those in the other parts of the government, and the list goes on and on and on. This is a team sport, from left to right. It isn't my command; it's our command. And I'm proud to be here with you.

Yogi Berra once said never make predictions, especially about the future. I think that makes a lot of sense. Everybody still awake? Yogi Berra once said never make predictions, especially about the future. There's supposed to be a laugh here. It says so in my script. [Laughter]. All right, this time that speechwriter goes on strike.

I'm not sure about what Yogi said, but I am sure that I think we have a good idea about what space is going to look like 25 years from now. Integrating them is really the big unknown. How we integrate those cross domains with other things into a joint fight that's getting more complicated by the day requires

greater participation from all of us and requires our very best talents, our very best thinking, and our very best efforts.

Thanks very, very much for giving me the opportunity to speak this morning. Thanks to the Air Force Association for sponsoring this very worthy event. Thanks to the local chapter, and Bob, Joe, Mike, all of you folks who have worked so hard to put this together. This doesn't happen by accident.

I'm going to hang around most of the day. I'm going to be very interested to hear about what our Combatant Commander has to say about this. He's the person that we are presenting forces to support. He's the user of those forces, and believe me, having just come from over there, his opinion counts. So we're very very interested in being locked at the hip with the combatant command as we support other combatant commands in the methods that I described earlier.

Thanks very much for your attention. Good luck to you. Don't forget, I gave you a homework assignment at the beginning here. Those of you that want to check out my new math, see my aide. He'll be around for the rest of the day.

Thanks very much, I look forward to your questions.

[Applause].

Moderator: Remember what we said. You've got cards at your places. If you've got a question, write them down. We'll ask our cadets to monitor the aisles and collect them.

I'm going to take the prerogative of the Chair and ask the first question.

General Kehler, there's a growing number of manmade objects being tracked in earth's orbit. Will this become a serious problem to satellites in the future? And how does China's destruction of a satellite affect or add to this problem?

General Kehler: Let me take the second part of the question first. We have publicly said that we are tracking slightly over 2,000 objects as a result of the Chinese test of the ASAT. That's a significant number, in my book. There's probably, in fact we know there are other objects that were resulting from that impact that we are not tracking. And you all know this. You don't have to have large objects collide with something at those velocities to have real problems. So as we look to the future I do think that there are some very significant issues we're going to have to address about on-orbit operations, about responsibilities across the international community regarding being good stewards, if you will, of the space environment. Safety of flight will demand that in the future. It's no

different than safety of flight demands those kinds of concerns in the air today.

So as I look to the future that's going to be very important for us to do what we believe is a critical important thing for us and that is to get better at space situational awareness. That's one of our top priorities in the command. It's going to remain one of our top priorities on my watch. And we just flat simply have got to get better about knowing what's up there, tracking what's up there, understanding the intent of things that are up there, and knowing those pieces in real time.

Moderator: Let me quickly follow up on that. The age of our satellites is increasingly getting older. Some birds are past their design life. Are you satisfied that we have programs and enough money to deal with these issues and to handle a potential catastrophic failure?

General Kehler: Someone told me the other day that some of our satellites are now old enough to vote. [Laughter]. Some will soon be old enough to drink. [Laughter]. Think about that for a minute. You can bracket --

Here's the good news. The good news is that many of our satellites have lasted beyond their design life. That's great news. Here's the bad news. Many of them have lasted beyond their design life. So we're finding ourselves in a situation here where, along with the rest of the Air Force, we are trying to recapitalize the entire suite of satellite capabilities that we are responsible for today.

We know that we need to continue to recapitalize. We're not going to do with less GPS. We're not going to do with less communications. We're not going to do with less missile warning. And so the challenge for us in a constrained budget environment is to figure out how do we make it happen. I think there are some very promising programs out there that we have begun. We see them beginning to bear fruit. We're about to get into the next generation.

We just launched a Wideband Global Satellite here several months ago that is performing well. I think that's the first of a future set. We're about to get to AEHF a year or so from now and General Hamel will talk about the details of these things. So I see the promise of the force modernization on the horizon here. We're flying the first of the SBIRS payloads and it's been spectacularly successful.

The question is the pace of modernization and the scope of modernization in the context of overall Air Force modernization. That's a balancing act we're going to have to continue to balance. And I know both the Chief and Secretary, when they were asked this question on the Hill several weeks ago, both said

their view was that the United States Air Force writ large needs to see budget increase as we go to the future.

Moderator: The next question is, there are a few areas where technology is more important than in space. It plays an ever increasingly important role. What's out there on the cutting board that you can tell us about that excites you for the future. Is there something out there that especially would produce a leap forward that we haven't thought about?

General Kehler: I think that ORS has that kind of promise. Let me explain that for just a second. ORS in my head, is not about operationally responsive space. It's about operationally responsive ISR. It's about operationally responsive communications. It's about operationally responsive fill the blank in yourself. Whatever it is that the Joint Force Commander needs. If we can develop ORS as a national strategic capability, then in my view we will have positioned ourselves to add what is a missing link to our capability to deliver capability today. If we can reduce the time, even to understand that those won't be the same robust capabilities as we are delivering with other larger platforms, this will still be an important position to us. I'm very excited about what I've seen in AFRL. I'm excited about what I see at the Naval Research Lab. We've launched a TACSAT here in the last year. We've learned a lot from watching the first of the TACSATs, and I think there's a promising, very promising area here for us to explore as we go down the road and work with industry to try to get to the plug and play concepts and other exciting things that will really give us a strategic capability to put smaller payloads on orbit quickly, at the request of the Joint Forces Commander.

Moderator: The next question is, it may sound simple but it could be more complex than you might imagine. How do you envision Air Force Space Command's partnership with the new Air Force Cyber Command?

General Kehler: I think that we're going to have to recognize that with three war fighting domains in our Air Force that all three of those have got to raise professionals and organize, train, and equip based upon the unique demands of the medium. And so initially I believe that in the cyber world, we're going to have to go through some of the same steps that we did in the space world, and that is we have to develop people, we have to pull people together who already have some expertise in the Air Force and we had folks in the Air Force with expertise today. We've got to pull them together. We've got to recognize that as a warfighting domain you organize, train, equip, and grow people who are knowledgeable about the domain, who know what it takes to operate there, and who are given the right tools and training and education to operate there.

But, then there's a point where you say I must integrate this. I think that Air Force Space Command as a major command of the Air Force, along with Air Combat Command, along with the Cyber Command, we're going to have to do a better job of working together to make sure that we are integrating the places that I mentioned before -- architecture, doctrine, training, standards, TTPs, all those places that will make a big difference for us. Investment. We've got to be sensible about how we think through, how to invest in those domains, and how to make all that complementary and then integrate it for effect

Moderator: This is the last question and it's one that is a little unusual, but it's one that kind of piqued my interest. What do we need to do to partner with commercial space? Do you see a CRAF type force in the future and what are we doing about it?

General Kehler: The partnership that we create with commercial space, I think, is critically important. If I neglected to mention commercial space before, I certainly didn't do that intentionally. I think that the partnership with commercial space as the years go on gets to be more and more and more critical. Look at where we are today. Just look at communications and where we are today with the percentages of the military-related communications carried by commercial providers. I think there's a model there as we look to the future, that we need to make sure that we are pulling the best pieces of that model and embracing those as we look to the future. I think that's an integration issue as well. I also believe that commercial space can provide us a great deal of assistance, support, energy, investment infusion, et cetera as we're looking at ORS. So I'm excited about our relationship with commercial. I think it needs to get stronger.

Moderator: General Kehler, on behalf of AFA and all of us here at the symposium, you've gotten us off to a great start and we want to thank you for your time and your leadership. Thank you.

General Kehler: Thanks.

[Applause].

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