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Thanks, Joe, for that great introduction and thank you all for coming today. I am in the highly coveted right before happy hour slot. That's second only to the right after lunch slot for speakers. But I will tell you to speak to the folks at this symposium. I would take any slot and I appreciate all of you being here this afternoon. I've also been watching folks around the hotel, it's obvious some have found the hospitality suites, and in fact, I think most of them had found the hospitality suite here about an hour ago, but thanks to the Air Force Association. Thanks for a great technology exposition as always, and thanks for providing us an opportunity and a forum to talk about some things that are important to our Air Force.

So let me start by picking up on a theme that you heard from our Chief of Staff a little earlier today. Our airmen are the best that America has to offer. They're dedicated professionals who are exceeding our expectations every minute of every day, and I cannot tell you how proud I am of the 40,000 men and women who are active duty, total force, government civilians and contractors who are part of Air Force Space Command. Now I've been at the helm of Air Force Space Command for just about a year, doesn't seem possible to me but it was last October on the 24th when I actually assumed command of Air Force Space Command. My first impression then remains the same impression that I have today, and that is what a great team of people we have out there. I wake up every single day believing that I have the best job in the Air Force. Now some disagree with me on that because I think a lot of people think they have the best job in the Air Force, and then I counter with, I have the best view in the Air Force, and then all the argument stops. So one or the other I think I have the best job and the best view in the Air Force, if you want to argue with me about the job, come on out to my office and I'll show you the view, and I think maybe you'd be convinced about point No. 2.

Well, there are a lot of things going on in our Air Force, and there are a lot of things going on, of course in Air Force Space Command. You've all heard the old Chinese saying many, many times about, May you live in interesting times. And some of you who have heard me speak before have also heard me say there is a corollary that in Air Force Space Command and certainly the Air Force at large we don't get paid to live in interesting times, we get paid to deal with interesting times. So we have to retain our edge as the smartest, most capable space and missile force in the world in our command. We have to sustain our enduring missions as we address the challenges of a contested space domain, and as I stand here today talking to you, Air Force Space Command people are deterring nuclear aggression and make no mistake about it, nuclear deterrence remains at the foundation of our national defense and the deterrence

mission is this command's No. 1 priority.

As I stand here today, Air Force Space Command people are working to protect our space capabilities. As I stand here today, Air Force Space Command people are helping to defend US and allied forces, and as I stand here today, Air Force Space Command people are helping to win the joint fight against terrorists. A year ago when I took command I had three concerns on my mind. I certainly wasn't clairvoyant at the time but those three concerns remain my three concerns today, and at some level I think I walked in the door with a pretty clear understanding of where I was going to have to devote my time. So let me give you a quick update on where I see Air Force Space Command and those three concerns that I walked in the door with after one year. And let me remind you at the start what I remind people at our command every single day, we are engaged in two conflicts--the one we are fighting against global terrorists and the one that we are preventing. And that goes to the heart of deterrence, and why the nation has an Air Force to begin with, and an Air Force Space Command specifically, and an Air Force Space Command that is responsible for the land-based strategic deterrent.

You heard this morning the Air Force's priorities have changed. Our No. 1 priority is to reinvigorate the nuclear enterprise, and not unmindful of that priority today I will tell you that 12 months ago in October when I talked at my change-of-command speech, I said my first concern is to ensure we are good stewards of our land-based strategic deterrent. Acting Secretary Donley was recently echoing Secretary Gates words when he said, "There is no mission more sensitive than safeguarding our vital nuclear capabilities and maintaining nuclear deterrence." This is an important reminder for all of us, although today's ICBM force remains safe, secure, and capable, there are issues we must address. A number of initiatives are already underway, and more will be forthcoming as the Air Force completes its nuclear roadmap in the next few weeks. Within our command, and working with our partners in Air Combat Command and Air Force Mobility Command, we're already moving to revise our inspection process, to improve the sustainment of our deployed ICBM force, to finalize a specific ICBM career path for our officers and enlisted alike, and to revitalize our flight test activities. We're also focusing on accountability and leadership and we've just begun what we call in our command the year of leadership, where over the next 12 months we will undertake a number of activities to return to the basics of leadership that have served us so very, very well since our inception as a separate force.

Now you've heard the Chief's new guidance, where he uses the words precision and reliability as our goals. In the nuclear business, perfection is the standard, and when I say that to audiences, some people question me about that word, perfection. Some people think that perfection is not achievable. Some people think that the word perfection doesn't describe very well what it is we're trying to accomplish inside the land-based deterrent force. I think it describes it perfectly well, because I define

perfection. I define perfection as 100 percent compliance with the standards that go along with the nuclear force. We know what those standards are. Those standards have been in place in some cases for 50 years. We've not relaxed those standards in 50 years. In fact, in some cases the standards have become more stringent in the last 50 years, and so in my book perfection in the nuclear operations business means 100 percent compliance with the standards that are in place. Now we perform that mission with the highest levels of accountability and responsibilities. In many ways, we are acting to put responsibility back into the hands of our commanders. We're asking them to determine root causes when something goes wrong. We're asking them to determine corrective actions when something goes wrong, and we're putting in place once again an inspection process that works for them, not in opposition to them or in some cases around them. We're holding leadership at all levels accountable for mission success because what we know as American airmen is that leadership leads to mission success. Now there's a lot more to come in the steps that we are taking inside the nuclear enterprise and specifically inside the land-based strategic deterrent force, but we have not been waiting, and we have not been pausing as all of the panels and committees and commissions that have been looking at us help us with their recommendations.

None of this means that we have taken our eye off the space mission either. And so the second concern that I had when I walked into the job last year was to take steps to improve the protection of our space capabilities. It's clear to me that we can expect to be challenged in space. There are over 450 active foreign spacecraft in orbit today. We're expecting something over 600 in the next two or three years and from where I sit I see two categories of space users. There are those who are space faring and those that are space capable. Now let me explain. There are still only a handful of nations that can build and launch their own satellites. I would refer to them as space faring nations, like the old sea faring nations of years gone by. Those who could build ships and sail the seas and conduct their business over the seas were seafaring nations. Then there are all the other nations--organizations or individuals with a credit card today that can become space capable. That means that they get the benefit of space capabilities without the investment in having to become space faring. And in this category I would put those nations who are not space faring and there are many of them, but I would also put groups in there like al Qaeda. I would put organized crime in that kind of a group. I would put benign actors in that group--certainly fishermen, hunters, people that can go out and buy a GPS receiver, who can buy a satellite communications device, and who can use commercial intelligence, surveillance, and reconnaissance on their home computer I would argue are space capable. And all those things take is a credit card, something we're going to have to be thinking about very carefully as we go into the future.

Now about a week ago I was sitting with our new chief, and I told him I get the same question over and over. I get this question when I testify, I get this question when I get

out in public audiences like this, and the question always goes, actually there are two questions. First question is, are we too reliant on space? And the second question is, what happens if we lose space capabilities? And to the first, I say no we're not too reliant on space, much like our reliance on airpower, it shapes the way America fights. Space shapes the way America fights. And we must continue to have that kind of capability to continue to fight the way we do, which is really the answer to the second question--what happens if we lose it? Well I believe it creates a time warp in the opposite direction, you don't go forward in time, you go backwards in time. We get slower, our actions are less precise. Losing space would impact the way we get the mission done, just like it would impact the way we conduct our everyday life, and it would certainly have economic impacts far beyond the impact we would have had even five years ago. GPS for example today is embedded in so many places that I would offer not any of us knows where it is. And so if we lost GPS, not an easy thing to have happen, but if we lost GPS, I think the implications would be far ranging, much farther ranging than just a significant impact on military operations.

Now, one of the other biggest problems that we face today is a potential enemy's use of space; if you are space capable how are you using space? What is your intention behind the use of space capabilities, and I will tell you those kinds of questions are not easily answered nor are they very well understood for us--we're going to have to be very thoughtful as we go into the future. Is a potential enemy using space in a timely and an integrated fashion, in other words do they use it like we do? What are third parties doing to help some future enemy? What's the role of various consortiums as we look to the future, and is that good for our national security, or not good for our national security?

There are many, many questions as we look to the future here, as we are thinking about the protection of our space capabilities and ultimately the protection of the domain that we're going to have to be concerned about. There are a number of joint force commander concerns that we're aware of. What about potential enemy use of satellite communications? What about potential enemy use of ISR, what about potential enemy use of precise navigation and timing? What about launch? What about replenishment? And the questions go on and on and on. Now I believe that the evidence is clear--space won't become a contested domain, space is a contested domain. We have seen anti-satellite weapons demonstrated, we've seen GPS and satellite communications jammed. We see technology taking us in directions that make other counterspace capabilities very likely as we look to the future.

So in response to these and other concerns, Air Force Space Command and the National Reconnaissance Office have jointly established a space protection program. This program is focusing our combined efforts and providing decision-makers with strategic recommendations on how best to protect our space capabilities. One of the first orders of business was to deliver to Congress a strategy they requested of us last budget cycle,

and that was delivered on time and has been handed over to them as a roadmap that will lead us to the future on how we will protect our space capabilities. Now the space protection program is an enduring joint activity empowered to provide us with a range of informed options and recommendations on how best to preserve our space systems, and it's about collaborative efforts across both the defense and intelligence communities. They are to develop comprehensive vulnerability assessments, protection roadmaps, alternatives, and protection capstone requirements. It's essentially where intelligence assessments turn into engineering and architecture alternatives. This is fully consistent with our national space policy that directs the Department of Defense to develop capabilities, plans, and options to ensure our freedom of action in space.

We've also taken another big step over this last year to finalize a space situational awareness roadmap and an investment strategy that goes with it. Some of you who have heard me speak about this topic before know that I have been saying that the No. 1 priority to protect our space capabilities is to improve our space situational awareness, and in order to do that my opinion is that we should first make better use of the data that's available today. We can do better and we need to do better and we need to adjust our investment stream to do better in terms of using sensors and data that is available to us right now.

Now the Army has a great old saying, I use this sometimes when I'm speaking--"If the enemy is in range, so are you." And I think that applies as we think about space and space capabilities as we look to the future, and as we are mindful of the difficulty that we would have if our space capabilities were not available for national security or for our economic wellbeing.

Now, the third concern that I had a year ago when I took command was to work with industry and others to come up with a new strategy to develop capabilities and get those in the hands of the warfighters at the speed of need. Now how we've done business in the last 50 years is not going to suffice as we look forward. We have a lot of strategic ingredients, but no strategic recipe. We need space systems that adapt in the information age; we need space systems that take advantage of the infusion of technology at the speed of the information age. We need timelines that put those space capabilities in the hands of the users far sooner than before. We need more effective and focused investment. We need a more stable and sustainable industrial base. That's a tall order, and so six months or so ago I went to our strategic advisory group--that's an independent group that helps us through our toughest problems, and I asked them, and by the way this team possesses a pedigree unlike any other team that we have working for us, I asked them to roll up their sleeves and dig into this question about, how do we come up with a new strategic approach for deploying space capabilities sooner, and they came back with--we have looked at this and definitely we can tell you, it depends. And I said, thanks. But then I sat back and thought about what they did tell me, and what they

did tell me the more I thought about it was pretty profound. It's a tough problem to solve, there is no one answer, and they did tell me that in order to get on the right strategic pathway, you have to get on the right strategic start. Now that sounded so elementary I almost dismissed it out of hand.

But as it turns out, they're exactly right, because I will offer that what we've done wrong in the last 10 or 15 or more years is that we have not clearly articulated our requirements at the front end of these processes nor clearly and comprehensively looked at our alternatives and then matched those to a way forward that would take advantage of some of these strategic ingredients that we have laying on the table in front of us. We've got to have an improved, authoritative, coherent, and pervasive front end process that defines, decides, and provides mission capabilities, most importantly the commander of Air Force Space Command needs to set and control requirements. We've got to make sure that there's an effective interface between developmental planning and requirements. We have to understand the combatant commander's mission needs. We've got to understand what the acceptable alternatives are, and in this way we can provide credibility, accountability, there's that word again, technical readiness, force provider and warfighter assessment and buy-in at the start. A good front-end requirements process opens the door to strategic acquisition choices. It isn't just about a handful of very highly complicated multi-mission platforms that we launch every 10 or 15 years. There are other strategic choices for us to make.

Now, one of those choices that we can make is the block build approach, something that has gotten quite a bit of attention and in fact we recently awarded a contract for GPS III. We've awarded that contract with a block build approach. Now it's important for us to constrain the blocks, to things that are achievable with moderate risk, with mitigation, and with off-ramps, and I see that as my job. I've been asked that on the Hill recently. Say, General, you've got this GPS III block build approach, yes, we do. "What makes you think that this is going to be any different than anything else we've tried in the past? Doesn't it make it more likely, if you can infuse technology in these blocks that requirements will be out of control, and you will lose control of this process?" And the answer is, it depends. It could be, and so I've already taken steps between Air Force Space Command headquarters and SMC to make it crystal clear who's in charge of requirements as we go forward with our block builds for GPS, and that person's me.

Now we also need to use the block build approach as a positive way to accommodate potential growth. We can build capabilities as we go forward, through although I hate to say it spiral developments while we resist add-ons. We can take a page from the aviators where we have done block improves to the aircraft almost since the inception of the United States Air Force, as planned ways to infuse more capability into existing designs and existing airframes. It makes all the sense in the world.

Now block build isn't the only approach that we have, if we have a good front-end process and we understand our requirements and we have control of those requirements and they do in fact meet the warfighter's needs. Then we have other choices as well, maybe our acquisition comes in the form of commercial buys, maybe it comes in the form of partnerships with allies or coalition partners, maybe it comes in the way of innovating ways of using sensors and platforms together for other than their intended purposes, maybe it's ridesharing. The list really goes on. But the point is, understanding at the front-end and making a strategic choice, picking one of those ingredients and making that a recipe, is what our ISAG was telling us, and in fact, the more I thought about it, the more I understood that we needed to get busy at the front end of these processes. And in that way we are establishing the appropriate roles for what Air Force major commands do as opposed to what product centers do.

Now the other thing they told us was Air Force Space Command needs to do a better job driving technology development, and I believe that's true. In fact, this is the second year that we have gone to the Air Force Research Lab with a specific set of technology needs and we've written those down and we've handed those off to the lab, and we have said this is what we want you to go work on. And working with those great folks at the lab, we've made some adjustments in where we want the laboratory to go, and we've given the laboratory what they've always asked for from us, and that is a reason to go forth and work on the things they're working on. I am very encouraged by what I am seeing here, but it's going to require more work to make this a routine way of doing business. Air Force Space Command also needs to be a better player in the interagency, in the industrial base, with the national laboratories, and with international partnerships and cooperation we need to recognize and acknowledge that Air Force Space Command performs a nationally important mission, and we deserve and will demand the A-team from industry, from academia, from the national laboratories, and from every other place in the United States that is there to support us.

You heard General Schwartz say this morning about the need to do better in acquisition. Air Force Space Command is a hybrid command. We are the only command in the Air Force that has its own acquisition arm, and therefore, my responsibilities are different. And I understand what those responsibilities are, and I understand that there are some changes that have to be made in the relationship between my headquarters and our job as a major command, and headquarters in Los Angeles and the remarkable things that they do out there to acquire the space systems that we need. Tom Sheridan and I have this question and answer period all the time. I say to him, who's your customer, and he says, you are. And then we go through that, you know, who's your daddy, who's your customer, you are, who's your customer, you know and we wind up with high fives and running out of the room. So it's actually, it's pretty good, but it's not a very subtle way of reminding us what our lanes in the road are and how we should fit in those appropriate lanes in the road, and by the way, I think that says something about the maturity of the

space business inside the Air Force, that we are at that point having that conversation.

Now the launch business is an integral part of all of this, we're taking steps to try to do better in the way we are launching, not in terms of mission success, because we have had extraordinary mission success. Every time I get the chance I commend the people who do our launch and range activities--58 successful national security launches in a row, and we are delighted with that string of success. It didn't just happen. It happened because a very determined team understands what it takes to get that mission accomplished successfully, and that's a team that transcends the military, SMC, Air Force Space Command, the launch wings, the range activities, the mission assurance process that we are into with our FFRDC partners, and certainly last but not least, our industry partners, we could not do the space mission without that team. And so I believe we have much to offer as a model for the rest of the Air Force as we look to the future and how to be successful in this partnership way.

And so in sum, what they told me when I went and said I need a better strategic way forward for acquiring space capability and getting it into the hands of the warfighters and other users sooner, here's what they told me: a better front-end process that links requirements to warfighter needs and matches them to alternative acquisition strategies. It opens the door, it's almost a liberating kind of a feeling, and it's something that we need to go and pursue. Is this the final answer to a new strategic approach? No, it's not, but it is a start.

So let me conclude and then take some questions by just going back to a couple of basic points. In Air Force Space Command these days it is not business as usual. First of all, we're working the nuclear issues intensively. We know where the problems are, we have begun to fix them, and more is on the way. And one thing you can be certain of, the land-based strategic deterrent force remains capable today, and it's staffed with dedicated airmen who are committed to revitalizing the nuclear force. Second, from a bigger picture perspective, Air Force Space Command does perform a national and in some cases an internationally important mission. We're embedded in all phases of the joint team, and our space effects reach across the globe and impact the joint fight. We're supporting current joint operations in Iraq, Afghanistan, and around the globe. We're looking at modernizing and protecting our force. And as Secretary Donley has said, as leaders, our most urgent task is to steady this great institution, to restore its inner confidence, and rebuilt its external credibility. You need to know that the airmen of Air Force Space Command, along with airmen across our great Air Force, have risen to that challenge. We are American airmen--our mission is to fly, fight and win. We are faithful to a proud heritage, and in this task of restoring internal confidence and external credibility, we will not falter and we will not fail. Thank you so much for having me come this afternoon, and I'd be delighted to take your easy questions. (Laughter and applause)

## Q&A segment

**Q:** Thank you very much, General Kehler. You've covered an awful lot of ground today and it's very clear that you have an awful lot on your plate when we consider space systems and nuclear deterrence. I'm going to take the prerogative of the chair and ask the first question and if anyone has questions there are a couple of microphones in the center that I would ask you to approach and ask General Kehler if he something you would like him to respond to. The first has to do with recapitalization and we often talk about recapitalizing our aircraft systems and the need to do that and I think we all understand that very clearly. But, also that General McCaffrey recently visited your headquarters and many of us may have seen a report of his visit, and among the things he said was, space is severely underfunded. Would you care to comment on how we might need to recapitalize our space assets?

**A:** Well certainly recapitalization is a top concern of the entire Air Force, and one of the difficulties we have is when we discuss recapitalization in terms of either or--either you are recapitalizing air things or you are recapitalizing space things, when unfortunately, in our Air Force we don't have the luxury of that choice. And therefore the stress that we have has been between recapitalizing air things and recapitalizing space things, not one or the other. That's put some pressure on us, no question about it. I get asked this question a lot and I typically respond by saying, when I sit back and I look at the recapitalization of the entire Air Force, I would not trade where Air Force Space Command stands today with where I hear the concerns, for example, in the air part of the US Air Force.

When I look at the investment that we have made in space and I look at for example take MILSATCOM right now. We have just launched the first of six WGS platforms; we will launch within the next year the first advanced EHF platforms. We've got two SBIRS elliptical payloads on orbit and within the next year we'll put the first of the GO payloads on orbit. The EELV program is spectacularly successful and could there be another launch failure? Of course. The statistics show that there will be at some point in the future. But the team is using the EELVs in a tremendous ways, I'm very comfortable there. We've just ordered the contract for GPS, and so as I look across the portfolio I am not despairing. Having said that, I agree with General McCaffrey, we don't have all the money we need to recapitalize the force. We don't have all the money we need to recapitalize the Air Force across the board, and so there are some issues here. There are some tough issues that we've got to confront and we are confronting a number of those in the budget discussions that we have ongoing on right now. I believe we will make the right choices by the time we are all said and done. I always get a little nervous when we are discussing the ongoing budget process inside the building. I think all of you have seen that at one level or another in your careers; it's ugly, and you can't get in there too

soon because typically what is happening in the middle isn't what comes out on the other end.

So the short answer for me is, do we have enough money to recapitalize everything we want to do? No, we've got some tough choices to make. Are we in a unique position in the space portfolio inside the Air Force? No. The entire Air Force has got issues about recapitalization, that's something that has been vocally proclaimed by all the Air Force leadership and this is something we're going to have to work our way through as we go forward.

Q: General, you mentioned that there is a no doubt that, currently, it's not a question of whether our space assets will be at risk. They are at risk now, and we have to have some way of countering that, protecting them. What would you think is necessary to protect US military satellites and assets as well as civilian assets that if we didn't have them would cripple the economy? Would it be perhaps an expansion of missile defense systems to be tasked to take out, say, ground-based missiles directed anti-satellites against our assets?

A: Yes, good question. First thing we need to do is improve our situational awareness so that we understand what's happening with high confidence. And that's important for us. It's important for lots of reasons. Second, I'm not clear that the gravest threat that we face is to a kinetic kill anti-satellite weapon. I am more concerned at some level with some other things, like for example, cyber attacks. I think that there are some issues here just like there are in our personal computers and in our banking systems and everywhere else. I think that we've got to be very, very careful that we don't take our eye of all of the balls that are possible. So overfocusing on kinetic kill anti-satellite weapons does not seem like the right step forward to me, and oh by the way, this isn't necessarily about preserving satellites, per se, it's about preserving mission capability. And that's the approach that we're going to have to take, and that's what we've asked the space protection program people to do. In some cases, our satellites today, some satellites are pretty well protected. In some cases, we've had satellites that were actually designed to operate through nuclear warfare. And so at some level the question becomes what are they protected against? What are they not protected against, and then where do we have gaps and in what capabilities do we have gaps? That's what we're sorting our way through right now.

I think there are a number of things that we can look to to the future, but we've got to remember that protecting the capability is about protecting a ground segment, it's about protecting a space segment, it's about protecting a link that puts the two of them together. And ultimately in the hands of the user, many users don't care how they get the capability, whether it came from space or something else, they just care that they get the capability. So part of the answer here is also assured capability. Maybe the way to assure

a capability that we primarily get from space today is through some other means than space. So all of those factors need to be on the table, all of those need to be part of the solution, and I am very comfortable that we are beginning to put all of those pieces together. In some cases, protection is going to have to be engineered in, in some cases maybe the most effective thing we can do for protection is to work on warning gear of some kind. So I think this is not a one-size-fits-all, somebody described this to me the other day; it may be that out of the space protection effort and the engineering that we're doing, we will decide that every satellite needs sunglasses. And if so we will make sunglasses on satellites a capstone requirement, and we will go about getting at this that way. Maybe they need earmuffs or this is sort of, with a little more sophistication the thought process we've been going through, and what we know we need is some central place where we are doing those assessments, where we are taking in intelligence assessment at the left-hand side, and we are understanding our vulnerabilities at the left-hand side, and we are turning an analytic crank and we are coming out the other end with recommendations on things like technologies, engineering changes, capstone requirements, tactics techniques and procedures, etcetera, etcetera, etcetera.

Q: One of the questions that I have since I'm going to be commissioning here pretty soon, is what are the challenges that space officers will be having in the next five to 10 years in relation to the challenges that the Air Force is having in the space domain in the present day.

A: That's a good question, thanks. There are a lot of challenges that we're going to have as we look to the future. Here's the good news. You don't have to convince joint warfighters anymore about the value of space capabilities. Here's the bad news. You don't have to convince joint warfighters anymore about the value of space capabilities. And so the expectation that we will be there and we will be there under all circumstances at all times has gone up. That's not an unrealistic expectation on their part, but that places demands on us. So I think one thing is we've got to continue down the road that we've been on, which is demystify this business and put it in the hands of the joint team, just like every other joint tool that we have. And when you do that, I think that the demand that places on us is to become smarter and smarter and smarter parts of the joint team.

That gets into how we are developing space professionals, that gets into how we are assigning space professionals, etcetera. And by the way, the way the numbers work out today most of the young officers entering the space and missile business enter the missile business because of the numbers that are required on the crew force. And then that necks down fairly rapidly and when it does most of those young officers go elsewhere. We have been using that as a pool for space expertise and from there they go into a space track, and away they go. I happen to continue to favor that provided that there's an ICBM track that we are now reinvigorating to make sure that we've got that

expertise, because I think we get great value out of officers who begin that way, but we are being questioned about whether that is a prudent way to go forward, and so that's another demand that I think is gonna be placed on us as we look to the future is this whole notion of professional development and how we make professional development work. So those are the things that I think we've got coming that will be challenges.

The other challenges I believe are technical, not just tactical but technical. We have a lot of work to do to sort our way through how do we get faster, how do we infuse technology faster, how do we make ourselves take advantage of the information age instead of being stuck in the industrial age? And that's something that's going to challenge all of us I believe as we go to the future.

Q:General, thank you very much for taking our questions. Col. Steve Beck from the California National Guard. And my question was, as Air National Guard manpower may become readily available in the 2012 POM cycle as our old F-16 fleet retires, what sort of missions would you like the Air National Guard assume or become more involved in as we already have two units in our state that are involved in space and we value that mission very highly?

A: I'll say this the right way so that it doesn't come out the wrong way. We don't have a single mission that should exclude the Guard and Reserves. Let me say that the other way around because I probably said that the wrong way around. Every single mission that we have should include the Guard and Reserves, every single mission we have. It's perfect for the Guard and Reserves, perfect. Typically we are deployed in place, typically we require long-term skills and skill development. Typically we require that on a set of mission equipment that remains in one place for an extended period of time where longevity and experience makes a difference. And typically we have stress on young active duty people who sit in an operation center, either a satellite ops center or some other kind of mission center, and sit next to their partners from industry and elsewhere who quite honestly in some cases have more attractive jobs than they do. And so what I want to do is I want to give that young airmen, if they decide to go that direction, a reason and a way to keep a uniform on. So I just think that we have underexploited the total force in the space business. We are getting there, we are beginning to think about this more aggressively, but every single mission we have, in my view, can and should include the Total Force. If that wasn't clear enough I'll try to say that a different way.

Q:General Kehler, I got a two-part question, both parts dealing with the launch systems, the things that we use to put all our assets in orbit and enable the capabilities that we use across the board. The first one has to do with existing systems--where do you see the EELV program evolving in the near future? With the current launch rates and our focus and mission assurance and so on, so the first one has to do with our current capabilities. The second part of the question has to do with our future capabilities or technology. In

the onset of the ORS program there was a very strong or at least a somewhat strong aspect of it that looked at advanced launch systems, maybe begin to look at reusability and new technologies into our launch systems, that seems to have been put aside in today's world in ORS we're focusing on the assets and how we use them. So where do you see our current capabilities going today with EELV in the near future, and how are we going to invest in the future technologies, maybe look at reusability and some of the other aspects of it?

A: OK. Just let me start by saying, it's not about EELV it's about assured access to space. That's the issue, and EELV happens to be the way that we do that, and two different variants of EELV with variants within the variants has been the way we have done that. I'm not sure that that's what we're going to need to do for the future. We have been asked and when we were asked several years ago in one of the presidential policy documents to come back in Fiscal Year '10 and make some recommendations about what it takes to have assured access to space.

The idea was, that by the time we got to FY10, we were hoping that we would have a mixture of alternatives to choose from. For example, we have always thought, that first of all, EELV would have to be successful, and it is. Now, the statisticians will tell you that we still haven't flown enough to make them statistically unconcerned about EELV, but you've seen the success rate for EELV, and it's been spectacular. And I see no reason why that won't continue. So objective No. 1 was let's make sure we get the EELV program flying and get it flying successfully, and that's been achieved.

Then, objective No. 2 was let's encourage the development of commercial alternatives, because we would really like for industrial-based reasons and other reasons to encourage the growth of commercial launch activities. And in some cases, I mean we've seen, folks are trying, and I guess I'll just let it go at that--there are a number of folks out there who are involved in commercial activities and they are trying to get those commercial activities going and successful and within the limits that we're allowed we've been trying to help them as best we can and certainly foster the continued activity there so that we could get to a point here where nationally we've got choices for assured access, and maybe you don't need all of these variants. Maybe continuing two versions of EELV is prudent, and I don't know what the answer to this is yet, but maybe all the variants within both isn't necessary. Maybe there's a way to capitalize more on commercial as we go to the future, and all of those pieces we are trying to pull together as we are thinking our way through what does assured access look like in the future?

At one point in time, we had thought that assured access looked like two different factories with two different sets of launch pads with two different completely different providers where satellites were compatible on both, and several years ago we made the decision to go to one company. And so does that change the way we think about assured

access, or does that make us go back and reanalyze where those real choke points are, where the real choke points are. So I think, as I look at the future of assured access those are the kinds of things that begin to come to mind, and those are the questions that we are asking ourselves as we look to the future.

I think there are two other things, though--one is ORS and you talked about ORS. We have been trying to encourage both booster development and, you know, low-cost booster development, and low-cost front-end, but no question. Over the last couple of years as we've watched some of those booster efforts either be successful or go by the wayside, we have asked ourselves and we have certainly looked at focusing more on the satellite end of this, I think we can get to orbit in a responsive way. I think we've got some assets that we could use to get to orbit. That doesn't mean we're not trying to encourage that development, but we've got some assets that we can use. And then finally as you look to the future, one of my favorite people, of course, is the former undersecretary and acting secretary of the Air Force Teets, who spent his lifetime in that business, and who still says whenever he talks about this publicly--somewhere along the line, space needs the equivalent of the transition from piston engines to jet engines in the air. You need that kind of a transition to really do this fundamentally a different way, and so we're going to have to continue to watch where the technologies are, and try to encourage the development of those technologies, not rely on a set of miracles to happen to make that happen, but actually get to a technological place where that's feasible. So I think there are a lot of pieces to this.

By the way don't let the range part of this out, either. And we said some years ago that we would have GPS tracking on the ranges by FY11 and we're going to, so that's something I'm struggling with myself internally to have to go pay for, but we're going to figure out a way to do it, because we need to do business differently on the ranges, and we need to do a better, more effective, more efficient job on the ranges. So that's all a package of things that we got to do about access to space and assuring access to space. Gotta have access, I think there are a lot of open questions about how we're going to get there in the future.

Q: Sir, Col. Sean McClung, Air War College. Thank you to the Air Force Association for putting this microphone so far back. Great to be out of the line of fire. Sir I have a question--in the context of US Space Command's merger with US Strategic Command, US Strategic Command, in the external perception of a de-emphasis on space, what is your view, can you comment on the Schlesinger recommendation to make Air Force Space Command into AFSTRAT, and what are the implications that this has for space in the cue of the other emphasis areas that Strategic Command has?

A: OK, next question. So here's where we are on the Schlesinger panel. First of all, a great distinguished group of Americans with tremendous experience, and so we received

their report last week. I want to say that I got it, maybe on Friday. You heard both the Chief and the Secretary say that we are looking at it very carefully. We know we have a set of choices to make, and by the way, there are other panels with reports on the street right now. At least one of them is contrary in this regard to what it is the Schlesinger panel recommended, and so we will have to go sit down now and assess all of this and take a hard look at what the alternatives are that make sense for the future of the Air Force given the competing mission demands that we've got on ourselves here. And it's not that I'm ducking your question, it's just that there's not a better way to answer that until we actually now go and sit down with what Secretary Schlesinger has recommended, and what Mr. Young, on behalf of Senator Allard, has recommended, and both of those are laying there.

By the way the Defense Science Board has looked at this, others have looked at it. You can go back to the 2001 Space Commission. There is no shortage of opinions about what to do, and some of them are competitive opinions. So both the Chief and the Secretary were very clear--we will go look at this. We appreciate the work that was done, certainly by the Schlesinger panel. We respect the tremendous capability and experience that that panel brought to this issue, and now it's time for us to go and take a look at the nuclear summit that we're going to have later this week, and then as we work through the next couple of weeks come up with a way forward that addresses all of these and balances all the appropriate factors that we have to balance.

Q: Good afternoon, General. Jason Gross, ACSC. Two questions for you--what is the view of the role of missile defense in strategic deterrence, and the second question is, what do you see or how do you see Air Force Space Command's role in missile defense in the future?

A: Good question. Certainly there is a role for missile defense in strategic deterrence. Let me put my--year-and-a-half ago STRATCOM hat on for a second--and of course this current view of strategic deterrence in the United States is a combination of capabilities embodied in the new triad, where there's a strike component, where there's a defense component, and where there's an infrastructure component that's supportive of that, lashed together with ISR, C2, etcetera, etcetera. So I think we all acknowledge from the get-go that the old strategic deterrence, which was based on the nuclear triad of the three legs of the triad is only now a piece of the triad. It's a triad within the triad, and so the offense and defense piece are the critical elements today in our notion of strategic deterrence. So A--clearly defenses have a role to play, to include missile defense, both the limited missile defense that we've got nationwide, or the national limited missile defense that we have, to include theater missile defense, etcetera, along with a strike package. And the strike activities, that piece of the new triad, was not just nuclear--that was nuclear and conventional long-range strike. So that's the context I believe that we the Air Force have got to look at ourselves in, and when General Schwartz talks about

the responsibility of this Air Force to deter and dissuade before we get to defeat, that's the context at the strategic level that we're going to need to keep in mind.

What's the Air Force's role and Air Force Space Command's role in missile defense? To date, our command at Air Force Space Command has been involved really in the missile warning and in the sensor's piece of missile defense, and I believe that's where we're going to be for the foreseeable future. I see us providing ones and zeros to the defenders. That puts stresses on our sensor systems, but in one regard I believe it's helpful for us because that just makes sensors sensors, and at some level there are warning sensors, call them ISR collectors, and at the other end they're part of a fire control solution, if you will, and if you have sensors that can make that kind of switch without having to go through a lot of problem to get there, then I think we're beginning to get to the kind of data sharing place we want to go. So I think this as being helpful to us to be able to manipulate data the way we want to in the future. Thanks.

Q: Good afternoon, Sir. Major Jennifer Kolakowsky, I'm currently an ACSC student. I completely appreciate the need for perfection within our strategic enterprise. My question to you, Sir--I'd entertain some of your thoughts on how do we resolve the checklist mentality that we instill within our operators and then ask them to come and be innovative when they reach either leadership or staff positions?

A: I don't see those as being incompatible at all. What I see, though, is the need to understand what goes where. And what we remind people in the nuclear business, in particular, is the operative word in tech order is, order. It's not optional, and what I believe is that airmen, whether they are airmen in rank or airmen by definition, whether they're officers or not, I think they understand the parameters within which they can be innovative, and when you can be innovative and when you have got to stick with the processes and the procedures. It is incumbent on us, I think, to make sure we train that. It's incumbent on us to make sure that we understand where those boundaries are and where those limits are, and we don't want people to not have good ideas, but it's about executing with discipline. And we always have to execute with discipline.

There's one that we talk about at the club, there's something else that we do when we go out to the mission--and so, it's about process and procedures and discipline, and by the way, that's no different across Air Force missions. It doesn't matter, nuclear mission or not nuclear mission, we always execute with operational discipline. Fostering this innovative view is going to have to be done, and it's going to have to be done in the appropriate channels. It's not the place to have a lot of innovation in a missile launch control center.

Q: Sir, Major Nichols, Air Command and Staff College. I had a question about your space professional development, and whether or not the AFSC walls could be broken down

between transition, between different AFSCs, or if you see the drive back to the nuclear career path--is that actually going to build up those walls in between AFSCs.

A: Good question, and something we're going to have to be mindful about. A couple of things for space professional development just to set the stage; one thing that we need to keep in mind is, we've been trying to model space professional development after rated professional development, same kind of concepts, because what we know about the space part of our Air Force and what I suspect will be true about the cyber part of our Air Force is, you do not get the skill sets required to be successful in those parts of our Air Force at UPT. So we got to understand, and you heard General Schwartz talk about UASs this morning, and that's the same mindset about UASs. It's exactly the same principle, and that is we got to go take a hard look at these future activities that the Air Force is going to need to be involved with, and ask yourself what does it take to train people, educate people, and develop people to get into that kind of a piece of our Air Force and be effective, while at the same time preserving the notion that we are not developing functional experts in our Air Force, we're developing airmen that can fly, fight, and win in air, space, and cyberspace. So you've got to have this blend, and what we've been saying in space professional development is a blend of technical and tactical skills.

And the technical skills need to be, I would offer, in that area that you are becoming an expert in, whether it's flying an F-22 or flying a UAS or operating in cyberspace or flying GPS or DSP or SBIRS or anything else. That's a technical track that you are on, but there's also a tactical education that you are getting that cuts across all of those, so that at the top you're becoming airmen who can go fly, fight, and win in air, space, and cyberspace--not air or space or cyberspace, but in all three. And so that's the objective that we have here, we have looked at the space professional development in that light. What we've said to the Air Force A1 and others is, this is about modeling this like a rated officer track, or like a rated aircrew track. This is about developing technical and tactical expertise at every step along the way. Inside the space professional development, though, we've already opened up the number of AFSCs that we include as part of that space professional pool.

For example, (inaudible--1-4s?) where we recently went out and said, if you're in certain space jobs and you've got an intelligence AFSC, you need to be a space professional. We need to get you identified, so that some time in the future as you've gone back out through the Intel. business and come back in, we will be able to find you because you've got some space experience and expertise on you, which is why, by the way, we've granted the award of the space and missile badge, the basic career field badge for those who are beyond just 1-3s. Same thing for 6-2s and 6-3s, engineers and acquisition people; some of those people and what's unique about the way this occurs in the Air Force is that we find people at SMC, for example, who are 6-2s or 6-3s or in the NRO as 6-2s and 6-3s,

who meet every single definition to be a space operator. It doesn't matter that they're in some cases a 3-3, a communicator.

It doesn't matter. They are in working on a space system, flying it, operating it, manipulating it; it doesn't matter if you call it an acquisition or in operations, that's been part of the problem we've had about how Air Force Space Command headquarters and SMC fit together. It's different than ASC and it's different than ESC, so we've been mentally going through this, so who really are those space professionals, then, and how do we embrace them, and so far, I want to say there are five AFSCs that we will acknowledge as space professionals. They can advance in the space business while their own functional community keeps holding onto them. We've worked this out in a way that seems to be amenable to all the parties concerned, so I'm pretty encouraged that we're getting this right.

I've talked to Major General Bill Lord about this; I think we've got a model about how cyber ought to be working. I think we've plowed that ground. We've also put in place something called the National Security Space Institute, which stood up within Air Force Space Command several years ago. General Lorenze and I have agreed that the professional development piece of that is about to transfer to Air University. It will stay physically in Colorado Springs, at least for now, because that's where the expertise is and the instructors are, but it will become part of the Eaker College of Professional Development within Air University. I think that makes a lot of sense for us as we look to the future. We'll get into advanced weapon system training in Air Force Space Command just like General Corley does that, while at the same time we are also pressing and have stood down the Space Warfare Center, essentially transferred the warfare center pieces of that to the Air Force Warfare Center at Nellis, and then those that we couldn't send there will be in direct support, and so they're essentially working for General Hogge every day of the week when they come to work--it's just they're sitting in Colorado and he's sitting at Nellis. And so all of these things together, I think we've got a pretty good handle on this. It's a lot longer an answer than you probably were looking for but I think we've got a pretty good handle on this space professional development thing, and so far it might be five AFSCs, it might be six, it might be four.

Anyway, it's more than one and it's less than 10 and so somewhere in the middle of that is about a right, and we're looking at additional ones as well. The real issue for us is going to be, if you say that space and missiles need to remain together because neither one of them is a stand alone career field, neither one of them, then if you take it from there and say, therefore I got to use those people together somehow, then my head says, there are multiple career pathways inside that career field. One of them's nuclear, one of them might be force enhancement, one might be space control, one might be acquisition, one might be space support, and if we did it that way, then we've got a lot of people that enter at the same place, and might all do a tour in the ICBM business, but

then you are going to keep some number of them in the nuclear track, and they are going to grow up to be nuclear experts. Some will go into a space control track, etcetera, etcetera, etcetera. We can manage a career field that way. If you don't manage it that way I'm not sure how we manage them as a career field because they do not self sustain, and that's something that we talked to the Schlesinger panel about--I don't know that we really communicated well with that, but I know that Dr. Schlesinger when he was asked about it, said, that he thought that we had some pretty good ideas about how to manage this.

Q: Ladies and gentlemen I hope you would agree that we have exactly the right individual to be the leader of our ICBM and our space forces and the United States Air Force. Let's give General Kehler a round of applause for being here.

A: Thank you. Thank you.

END TEXT