National Space Symposium
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I'm delighted to be here. What a thrill to be amongst so many professionals.

Quite frankly, that's the first time I'd seen the [NRO] movie as well. The staff thought we should show it because the talk I've prepared will go to a much larger portion of the audience. I've put together forty slides on file transfer protocols and my understanding is that most of you will take a lot of notes during that portion. This tape was just an introduction so that people like Bill Looney out there, who has the same level of knowledge about space that I do, would have something they might understand.

 In Marty's introduction, the original script said that this new Director brings a unique set of opportunities to the NRO instead of he has had operational experience, it said he doesn't know anything about space and that would have been true. Let me just start this morning by saying during thirty-seven years in the Air Force, I did a lot of interesting, fascinating things and I only touched at the very periphery of my career on the space business inside the Air Force and inside the National Defense organization. It wasn't until nine months ago today when I walked in to the front door of the NRO, and couldn't get in, that I began to realize what a remarkable team we have, not just in the National Reconnaissance Office but in the entire space infrastructure within our country. I'll talk a little bit more about how some of that's deteriorated over time and how we haven't kept up with things the way we should have but I've never seen in all of my professional career a more dedicated group of people who work harder at a set of problems that are more technically challenging than this group of people, whether it's military, civilian, or contractor. You're a great team of people doing things that most people in this country simply cannot comprehend and I applaud you for that. Thank you very much.

The big news here in Colorado Springs, I read in the paper, is that evidently one of the otters has escaped from the zoo up the hill and was last seen here on the Broadmoor campus. Last night I came back rather late from dinner and I met two fellows, Lance Lord and Mike Hamel, who had actually sighted the otter and they were out after it. I'm trying to be serious here, so if you'd just pay attention. I'm not sure if I really believed them because they both had lampshades on their heads. But none the less, there are a lot of important things going on around here in Colorado Springs and I'm delighted to be a part of that.

Thanks again for having me and I appreciate your patience. It's great to see such a large portion of American's and even some of our foreign space partner's community embrace this theme that you

have selected - this idea of space and cyberspace and the common ground that exists between them. I applaud again the space community, especially here in the U.S., for realizing that there's not only common ground but there's an incredible synergism between those two fields. In fact, I believe that one of the great engines of this world is the combination of space and cyberspace. There are very, very few things, unless you're just raising corn in Kansas on a very small patch of ground, that doesn't touch space or cyberspace. I applaud you for that. I, on the other hand, have had a different motive, when I was asked to come and serve in this job.

I was told that if I took the job they would name a star after me. I was deeply touched by that and it wasn't until watching late night television about two weeks ago that I realized for $39.95, I could have a star named after myself. But none the less, I remain committed and the reason that I do, I've discovered, and I didn't realize this, I'm only authorized to tell this to small crowds. We're the guys that can look over your shoulder and get your pin number when you're at the ATM. I now have a pocket full of those so if something goes wrong, I know exactly where my retirement plan is. What that serves to show you is this linkage between space and cyberspace. I think we, in the NRO, although we don't claim to own cyberspace, we don't claim to own space, we just like to operate in both environments. We've figured it out. I believe that there's an incredible common ground there. We, at the NRO, of course, simply cannot do our job without the power that cyberspace brings to our organization. It's not so much just the internet, it's the communications and computer network that we have that converts the ones and zeros that come down from space into usable intelligence for the warfighter, for our national security apparatus and those that do intelligence analysis in our country and in others.

When I arrived at the NRO a few months ago, I took an inventory and the first thing that I realized, as I said, was the quality of the people. Then I set out some goals and things that I wanted to do while I was there. If you'd give me the next slide, I'd like to talk about those goals and priorities for a couple of minutes. You can go to the next one. I established some priorities and things that I felt were imperative that if we, in the National Reconnaissance Office, didn't execute, then we, I believe, were on the road to becoming less than relevant in an incredibly important area in our country that needs attention.

The first priority is to execute the launches that we have scheduled on time and on budget and because of the classified nature of this business, I can't tell you what all those launches are. But we have several of them and probably the most aggressive launch schedule that this organization has undertaken in the last twenty-five years. There are a number of very large and very critical reconnaissance satellites that will go into orbit in the next year to a year and a half. We simply have to get those off and get them off on time. Now, we're going to do that at a time when the launch infrastructure is not what it used to be.

So, my second goal is to improve our launch business. Through a series of conscientious decisions; we, in this country, have downsized the industrial base in the launch business. We've downsized the number of locations from which we can launch. We've downsized the number of crews that take care of, and operate that equipment. We have literally no, or very little, backup capability in the launch business. So if something stalls, it doesn't just stall that particular program, in many cases, it stalls everything behind it because of the lack of backup capability or redundancy in the program. In addition to that, we have made a National decision to spend very little money on the development of new facilities or recapitalization of the ones that we have in place. We're not building new engines. We're not building new rocket cores. In fact, we're not even spending money to upgrade the ones that we have. So, over time, we have, through a whole series and host of what seemed to be, and I was there and watched them, at the time they appeared to be rational decisions to downsize this part of our infrastructure. In partnership with Bob Kehler and others in this business, we have undertaken some efforts to at least stabilize the decline, and, in some cases, try to improve our access to space through improving the business of launch.

My third goal is to improve our specific development or our investment in science and technology. As I looked around at the systems that we are now in the process of either about to launch or those that are in development, I saw, in many cases, where up to fifty or sixty percent of the technology that was being integrated into those vehicles had come from the science and technology program that had existed in the National Reconnaissance Office a half a decade ago. But over that half a decade, through a number of reductions and taxes and other things, that investment has slackened. That's the seed corn of the future. We just simply cannot allow that continued erosion in our science and technology base. When I submit my FY12 budget, it will have a roadmap to get us up to the level that we have historically been inside the National Reconnaissance Office in an investment in science and technology.

The fourth priority that I realized I needed to work on was the workforce itself. I said they are a great group of people but I want to emphasize again, the quality of people that are inside the National Reconnaissance Offices group of people. They're not only military and civilian but we have a large group of contactors who supplement, and in some cases, do some of the heavy lifting in number of our programs. Those people are the most dedicated, honorable, hard- working, diligent people that I've ever been around. I've had some experience in the Air Force with civilian workforces, and they were good experiences, but just after a few short days at the National Reconnaissance Office, I realized that I was walking amongst some of the giants in this business and so I just felt like I owed them something. Now there's a limited amount that I can do to personnel in the National Reconnaissance Office because, for the most part, I don't own them. Agencies that exist inside the national security apparatus of our country, own a good share of the people and the services own the other share. They have their own personnel system and promotion requirements and development ladders and so on that those employees have to climb.

They can't just simply go out and camp at the NRO and do interesting and exciting space things. They have to go back and be staff pukes or they have to go and do joint assignments or they have to go to schools or whatever if they want to get promoted or advanced in their careers and that's all logical and understandable. The limited amount that I can do I felt like I should invest in immediately. We have submitted an initiative, of course we don't know how it will work out, but it has been approved at least at the DNI level, the Director of National Intelligence level, and that is to begin a very small number of hires into the NRO workforce. I will run that small number of hires inside the Air Force and Navy personnel systems, but none the less, they will have a tag on their back that says they belong to me. And, for the first time in many, many years, when I go to call Bob Kehler and tell him, I would really like to keep this Colonel for another year and if you'll allow me to do that, I will send you an engineer to SMC for three years. I haven't had that option in the past. I think this is a good step forward.

The second initiative that we have begun with three of the best technical universities in the country and I'm not going to name them here because I don't want to start any brawls or fights, but we have an agreement with these institutions. We will offer graduating seniors a permanent position at the NRO where they will work for a year to a year and a half, depending on the schooling year ending and beginning; then we will direct them to a Master's Program. They will have a chance to nominate a Master's Program for us. The first four students we're going to get are going to Systems Engineering. They will go back to school and while they are at school, we will pay their salary, we will pay for their books, their tuition, give them a housing allowance. Then we will direct a thesis for them while they're at school. They will come back and owe us about six years. When I was in the Air Force, we had remarkable success with that program and what it does, we have found, in the past, it buys you, at about an eight or nine year point, a very dedicated, interested, energetic, engineer who now is ready to leave his field of expertise or the depth that he has gotten and now branch out and to be more diverse inside an organization. We're excited about that and are excited for our first class of four. The next year it will build to six a year and from then on it will be eight a year.

We're also working hard on our NRO University. I think we have a world-class acquisition school there and we're continuing to invest in that and put the right number of people in there.

I've been here nine months today and that's just not the time I've been in the National Reconnaissance Office, it's the amount of time I've been in the Space business. I like to tell people, Lance Lord has forgotten more about space than I'll ever know. I'm not even qualified to wear the badge, but I am amazed at how some simple principles of leadership and management have gone a long way when you are working with the world-class workforce that I'm able to work with. What I try to depict on this slide, in the most simple way I can, is that I'm not in the cyberspace business. Cyberspace, to me, is not an enabler, it's Job One. The ones and zeros that

come down from space, whether they're to be interpreted as ellipses on a map or maps or pictures or any other form of intelligence; regardless of what those ones and zeros are, without this infrastructure below it; which in many cases, you call Cyberspace, without that, all of what we do seems to me to be irrelevant.

The remarkable thing about what you see on the top is that for much of the last decade not much of that has changed. In fact, we have satellites inside our very aging constellation that are old enough to vote and some, that are still operating, are old enough to drink. We don't let them drink, but they are old enough to drink. My point is the ones and zeros are still the same. They started ten, twelve, fourteen or fifteen years ago and those ones and zeros haven't changed a bit. However, if you look at the product that we got ten years ago out of that stream of ones and zeros and compare it to the product that we have today, in many cases, it's an order of magnitude better in quality whether it's accuracy or clarity or timeliness. We are able to do more because we're empowered by what we have operating in cyberspace.

Let's go to the last slide and I'll zip through that and maybe have some time for questions. I put this chart up because if you look at the past, and sort of label those decades, we built the NRO in a series of stovepipes for very valid good reasons. Security required it. The systems had no need to be integrated because there was no way to integrate them. We didn't have computer technology that allowed us to integrate things. Our customers demanded products that were singular in nature. That's just the way we did business. We began, in the 80's, then to have the capability to process things better. In the 90's, even faster processing and better algorithms that allow us to have this order of magnitude improvement in the quality. Today, what we're being asked to do is ACT. A - access, I want to expand the access to the material that we bring down from space and we're able to do that now, even to under-privileged users. We're demonstrating today that we can take an image and in a matter of seconds transmit that image to under- privileged users around the world. We're not doing the analysis. If you want it to be analyzed by NGA or another organization, you will have to wait an hour or two hours if you're a high-priority customer but if you're not interested in analysis, you're interested in raw imagery, we now know how to do that and get it there quicker. Without that access and without expanded access, our military forces go into places they've never been before and expand from military bases to forward operating locations and other countries we never thought we'd be. That expanded access is very critical.

Next to A is C for Content. We've got to improve the content. We've got to figure out ways to take the ones and zeros that come down over here and combine them with the ones and zeros and combine them with a stream that comes down over here and provide, not just a picture or not just a geo-location, but a picture with a dot. Those that are going in to capture and kill want a picture with a dot. Those that are trying to put supplies in, want a picture with a dot. Those that are trying to deliver humanitarian aide, want a picture with a dot. They don't really care how you get that,

they simply want an improved content. They don't want a big ellipse. They don't want to know that they're in that town, they want to know what building they're in, and in many cases they want to know what corner of the building they're in.

AC and T – Timeliness. With an incredible stream of tens of gigabits per second coming down in many of those ten gigabyte pieces, there are one or two little bits of information. Our job is to ferret those out, screen them, and turn those things into actionable intelligence. All the data in the world just simply doesn't matter to a guy who must make a decision about whether he goes into a village or goes around it. Timeliness is of the essence. Access, Content, and Timeliness and I believe that with the marriage of space and cyberspace, the one that you embrace in this symposium and you embrace in your organizations, is the key that will get us the ability to have access, content and timeliness, and for that I thank you very much. Thank you for the opportunity to be here today. I think I have about five minutes if somebody wants to ask a question, I'd be delighted not to answer it.

Commentator – Sir, we actually do have some questions for you. Thank you to the audience members that submitted then via text. Unfortunately, we don't have enough time to get to all of your questions, so we'll go ahead and start with just a few.

Sir, one of the questions that we did receive – "Will the NRO offer any opportunities to the Reserve forces?"

General Carlson – That's great question and the answer is "Yes". I have a Reserve and National Guard Officer assigned to me. In the case of the Guard, I activated him for thirty days to run a program where we installed a corporate business process inside the organization. I guess because of my background, I want integrated answers. I want people not to tell me what they think, I want them to tell me what the organization thinks. That process wasn't as robust as I would have liked it and our National Guard Officer put that in place. We've now got a civilian in charge. I've got my Reserve Officer out at several units establishing partnerships with them. In fact, we have, inside our operations center, we routinely have about thirty percent of the staff there run by Reserve Officers so we have an active partnership with that. If some of you want the name of those contacts, I would be glad to give you those after the meeting here, if you want to work inside the NRO as a Guard, or Reserve Officer, or an Enlisted person.

Commentator - That's wonderful, sir. The next question that we have is: "Do you advocate a single government agency to manage the government's launch needs and capability development.

General Carlson – Only if it's me. I'm not advocating that. My understanding, from what the Secretary said last night, is that the Secretary believes the Air Forces should step up to that and

that's fine. I'm glad to partner with them. I have a great partnership, right now, with Air Force Space Command and Bob Kehler and I work very closely together on launch. I can make it work however the big people decide to do it.

Commentator: Now for the toughest question. The budgets have crested and the threat level remains high, historically, the budgets only declined when the threat was reduced, what does that mean for the NRO?

General Carlson: Well I think the sense is that the budgets are going to be tight. We have just come through, or are about to come through, we hope, an incredible time of economic downturn and I don't think it's fair for us in the defense intelligence business to believe that we should get an inappropriate share of the National wealth. We're going to have to work hard to make sure our highest priorities are funded and I believe we are going to see a level or maybe even slightly declining budgets in the next few years but we can work through that.

Commentator: Thank you very much.

General Carlson: You bet. It's great to be with you.