

General Timothy M. Ray
Commander, Global Strike Command

Project for Media and National Security
George Washington University

Defense Writers Group

29 January 2019

DWG: We do have a more than capacity full house here today, so thank you everybody for joining us, and thank you most of all to our guest today. General Timothy M. Ray is the Commander of Air Force Global Strike Command out of Barksdale Air Force Base in Louisiana. We appreciate you making the time to meet with us as well, sir. General, do you want to take a moment at the top to lay the ground rules?

General Ray: You understand the ground rules. If I can't talk to it, I won't. I can talk to a wide range of topics. I'm kind of chuckling here, I sit here at the table and the GW Hatchet is the name of it, so you kind of sit down with a table full of reporters and it says Hatchet. [Laughter].

We happened to be in town to speak at a hypersonics convention, and if you look at my bio, you know I have zero technical capabilities or any of that background, so I'm going to kind of talk to that as a warfighter.

A little bit about where I came from. My last three jobs I think really helped me posture well for the job I'm in now. I was in AQP back when I was a two star, and then my three star jobs was the Commander of 3rd Air Force which day to day meant you took care of the Air Force forces and the operational duties in Europe and Africa. And later to become the Deputy at European Command. So I was there for a year and a half, working through the transition of what was in peacetime an engagement command, through a command that had to deal with the great power competition. So I got to see a lot of things that were going on throughout the region in the Med, in the Middle East as we dealt with Turkey and Israel and certainly the Russian dimension of how

Professional Word Processing & Transcribing
(801) 556-7255

Ray - 4/17/19

that played after the Crimea and Eastern Ukraine invasion. That challenge right there shaped the entire theater, and to be as part of that, to think about strategically the shift away from what is a counterterrorism focused world that we lived in for over 15 years to really put your mind around the idea of great power competition again.

RNMS, NDS, NSS, all called these out. I think it's an important context for us to think about coming out of that conflict and then turning our hand to what, in my opinion, and where I've taken our command, is to build what our nation needs most -- the right long-range precision strike force that's safe, secure, reliable, effective and affordable. I'm going to talk about affordability right now.

My view is we can't spend our way out of this. We're going to have to be really smart about how we do business. There are some pretty standard and proven techniques for being affordable, and with stable requirements, competitive environment for source selection to, I believe now, in this age to leverage digital engineering as much as you can. I'll talk about the implications of that for the GPSD as we go.

I believe you have to have the ability to get stable, good enough technology on the ramp or in the field as soon as you can, and build in block upgrades so that you can begin to modify and you don't expand necessarily the requirements in fielding. So if you've designed in a modularity or an easy rapid adaptability, then you give yourself a more affordable dimension.

On the tech base line, it's got to be one of the paramount elements. And that lets you do a lot of things. One of the biggest deliverables is to drive a competitive environment in the sustainment dimension, because the big price tag of all those weapon systems does really play in the sustainment dimension.

So what we've seen in particular with the GBSB is one of my favorites, I've actually had to ask people to come look at this. Dr. Roper would believe that this is the best acquisition program

Ray - 4/17/19

in the Air Force. The quality of the thinking, the leveraging of digital modeling and engineering. Typically by this stage you would be on your second design cycle, left of this milestone. We're past nine with both contenders, and the insights are incredible.

So while you may see a slight change in the service cost position here based on the infrastructure, my prediction is that when we do get into source selection and that does have an impact on the prices, you'll see the service cost position come down. Our estimates are in the billions of savings over the life span of the weapon based on the insight. So between the acquisition and the deal that we have from the competitive environment, from our ability to drive sustainment, the value proposition that I'm looking at right now is a two-thirds reduction in the number of times we have to go and open the site. There's two-thirds reduction in the number of times we have to go and put convoys on the road. Our ability now to rapidly modernize.

So one of the push-backs in the CDD discussion was hey, we want improved accuracy. Our point is, we meet the accuracy that we need. Let's get it in the field and now that we have this block upgrade capability -- we value the ability to work with the Navy on commonality. So why not create an environment where we can be in the field, be on the job, and then coming in with more rapidly upgradeable capabilities to give us the accuracy or the reliability that we need.

I believe the reliability will be significantly better. The number of times we go out won't be system driven, it will be more of a requirement to deal with basically the business end, so not the missile system itself.

That is part and parcel to how we're approaching everything. B-21, LRSO, you can see the results of the helicopter that we just purchased. Same formula. Stable requirements, competitive environment, owning the tech baseline. \$1.7 billion less in the contract for the helicopter alone.

Ray - 4/17/19

I think you can hear steadily our Secretary and our Assistant Secretary for Acquisition drive to get years out of the acquisition cycle right now. Last count, and that was last month, there's 78 years taken out of the acquisition dimension of what we have here. So this is about affordability.

I believe that gives us a lot more capability going down the road. And when I consider how that plays for us, it gives us a lot more options. It gives us I think what the nation needs most.

I am focused a lot on a different operational mentality in the command, to think about the great power competition. You can see recently in the media the Bomber Task Force that was employed in Europe. You can probably think through the, through my resume, it probably had a little bit to do with the design of that when I was in Europe, both as the 3rd Air Force Commander and as the Deputy at EUCOM. They asked me, do you want a steady bomber force here all the time? I said absolutely not. Why would I do that? Why wouldn't I create the ability to bring significant combat capability to the theater at a time and place of our choosing that was very beneficial to our allies and very beneficial to the regional stability. And then bring it home. So we're really happy at every level about how well that played. That was about a 350 person deployment led by a lieutenant colonel. Normally you'd see that done by a colonel, but I think it's indicative of where we're going as the Air Force to push that leadership to a lower level and to make sure we're focusing on our squadron. So we were very pleased with that, and I think that signals a little bit more of the dynamic approach that we're going to take.

So I'll stop there and then take your questions. Maybe that gives you some food for thought.

DWG: You talked a little bit about GBSD, but your entire nuclear enterprise is in need of some sort of recapitalization right now. You've got the B-21, you've got LRSO, NC3. When you look across all of these aspects of your systems, what are you most

Ray - 4/17/19

comfortable with right now? And what needs additional attention?

General Ray: Let me give you a slight twist to that conversation. Two dimensions of that.

First, I'm now the Air Component Commander for Strategic Command. In the past, Strategic Command has done that mission by itself without an air component, a maritime component like in a classic EUCOM or PACOM dimension. So now I am the guy who can look at the operational requirements of how I would conduct that mission real time and so that gives me a sense of how I will balance risk, operationally and strategically. Then I can come back in and from an acquisition and sustainment mindset how then I would optimize that portfolio.

One of the things I'm very pleased with in the short term is we've made some policy changes about how we pursue maintenance on the Minuteman III. We're working a little less and getting better results. But there's a clear sunset to that.

I bring that point up to say when I think about my mission, it's about the current triad and the future triad. Because my way of describing this is you can't let go of something until you have a hold of something else. So the strategic risk, the operational risk, recapitalizing every leg is difficult. So if there's any kind of slip in any of the other legs, we need to be able to shift and pick up that capacity. So you really are pressurized by the delayed modernization to go get this right and well.

The program I am most pleased with from an acquisition standpoint is the GBS. I gave you the value proposition. Dr. Roper will tell you it's the best acquisition program that we have. My sense of affordability, and I don't want to throw my Navy brethren under the bus, but if you go and look at the CSBA numbers, all of the Air Force contributions to the triad are significantly cheaper. So we started talking about the cheaper investment for modernization, the cruise missile and the ICBM are much more affordable in terms of how that's going.

Ray - 4/17/19

I do worry, I'm a big fan of submarines and the triad. So let me be on the record there, that we need a triad. And we can talk about how you manage a triad in the broader sense here in a minute, but I believe we've got to be really smart about doing what we know how to do.

An ICBM is not complex technology. When you talk to the experts like a Bill LaPlante or a Larry Welch. I've got some of the Defense Science Board folks coming in and looking at the digital engineering. That is a revolutionary approach to acquisition. Those insights, when you have competitors who are neck and neck in every attribute in their performance and it matches your data, it gives you great confidence to know that the designs are on track and you're going to be able to do this. So I think that's my comfort level there. But I'm very pleased with all the major ACAT programs.

DWG: Bob Burns, then John.

DWG: My question is fairly narrow compared to that, but the issue of drone intrusions over ICBM fields. I've lost track of whether you got the full authorities you were looking for on that, and how you're dealing with that problem.

General Ray: Let me start off by saying I gave guidance to those in the missile field that if you have a threat then you take action. We have rules of engagement that I think give us the latitude, but there's always gray zones. At the end of the day I'll take my thumping from the FAA or somebody else in the name of protecting the most lethal things that we have.

DWG: -- an issue with the FAA?

General Ray: You always have concerns about transmitters and what not. We're in a good place, but rules of engagement can be complicated. So we gave pretty clear guidance, when in doubt do what you need to do to preserve the sanctity of those weapons and the people that are taking care of them.

Ray - 4/17/19

We have good capabilities now with MEDUSA and [Duke]. Those are being fielded with upgrades in capabilities that will be added. I'm watching really closely what other capabilities are out there, and I don't think it's played fully, but the ownership of that is now with Ms. Lord for all things DoD and counter UAS.

So I'm very pleased with our efforts. We've begun programs to use our on UASes. Very mindful of all the security challenges. We're teaming with the Air Force Academy who has a great research program on the use of UASes. I went and spent time with some of the defenders at F.E. Warren. And as I'm sitting at the table, I'd be like where you are, in comes this small drone and just flies and it parks right there on my plate, and it flies away. But the idea of using these unmanned capabilities in tactical scenarios like active shooters, all the way up to defending convoys. So it's a much more full-fledge effort on our part to do counter as well as to bring in our own capabilities.

DWG: John, then Oriana.

DWG: Good morning, General. John Tirpak, Air Force Magazine.

Before we got the NDS, I think it as about three or four years ago, the B-21 started development, then almost two years ago we had the bomber vector. Now we're in essentially a Cold War footing with two adversaries instead of one.

What changes or modifications do you see for bomber vector or the idea for B-21 now that we're in that situation? Do you anticipate, for example, that some of the B-21 force will be dedicated to nuclear alert as opposed to being available for nuclear and conventional? And potentially delay or not do the B-1 and B-2 retirements in the early '30s?

General Ray: You've read General Deptula's writings there. Let me step back for the good of the audience. It's a very good question about the bomber road map.

First of all, it is the product of an evolutionary process of, as

Ray - 4/17/19

he says, pre-NDS. So you had two commands that owned two bombers and now you have one command with all four bombers and now you have the NDS.

What that process led you to was a plan that said a minimum of 100 B-21s and 75 B-52s. Now we have the Air Force [We Need Study] the 1064 that was asked for by Congress. We have, CSBA is required to give an input. And certainly MITRE is being asked to give an input.

When I look at those particular dimensions, every indication is that the bomber force needs to grow. So what you're starting from is a programmatically derived basically footprint, pre-NDS. Then you need to be able to morph that to the right particular dimensions.

The size of the bomber force is predicated by the conventional conflict. So when I think of a B-21, its predominant purpose is conventional. The B-52 is predominantly conventional. And then we manage the size of the nuclear element based on the treaty limitations.

So right now we have 66 deployed B-52s and B2s, and that's where we manage that piece inside of a broader 700 and 800.

My perspective now is in light of that, and I agree philosophically with the need to grow, we don't enjoy the sanctuary that we did, so our ability to project power I think just grows more important. Every indication is the Air Force will be the forefront of any conflict, of any dimension, so grow in that capacity.

My job is, right now I see as to keep as many options on the table as I possibly can. Right? So the real decisions about the change in the bomber footprint, those are actually going to happen well after my time. So whoever gets the table slap with the bomber, what the bomber plan is. So I have a road map, but we confuse that with numbers. My road map is keep as many options open as I can so that when we hit these decision points

Ray - 4/17/19

we're going to be well informed and we can do the right thing with the size of the force.

We're under-invested, in my opinion, in hypersonics. We're under-invested in counter-space. We're under-invested in a counter-maritime dimension as the bomber force. So all those pieces and parts now I think play big in the NDS world we're talking about. And so my job now is to make sure I can do as much as I possibly can. So with the B-2, with the B-1, the B-52 and the B-21. And to be able to continue to open up the conversation about smarter, better, faster, cheaper ways to close some of these gaps that I see that are growing.

DWG: Do you need to make any decisions now or in the near future about whether you will have that option to push the B-1 and B-2 further out?

General Ray: We're working very hard. We over-extended the B-1 in CENTCOM. Normally you would commit that any bomber or any modern combat aircraft at about 40 percent of the airplanes that were in your possession as the force, not what the depot possesses. We're probably approaching 65-70 percent commit rate over, well over a decade. So the wear and tear on the crews, the maintainers, and certainly the airplane. That was my cause for asking for us to get out of the CENTCOM flights so we could turn, as the SecDef said, to the high end conflict that we need to prepare for. So I know there's going to be a great deal of investment that's required in time and energy.

I don't believe the fixes and the repairs are going to be as expensive as was once believed. I think we've got the right folks asking the right questions for the B-1. Boeing is deeply engaged. I'm encouraged by those people coming to the table to drive those structural repairs and what not. But I think the real decision for how many B-1s you keep, that's in the early 2030s. So my job is to set the table for that to be a reality, to do that as affordably and effectively as I can, to drive the cost of sustaining the B-21 down where I can, and then certainly to do a great job at bedding down the B-21s.

Ray - 4/17/19

I shouldn't come to Congress or the Secretary or the American people and say the answer to this is just simply print me 250 B-21s. We need a minimum of 100, but the decision to make that kind of move is in the out years. You're not going to know the real price tag until the '24, '25 time frame.

I'm confident that those numbers are going to be very favorable because is s KPP, as you know, and I think the CDAR was very favorable for the B-21. Again, just making sure we keep our options and our investments wise to let ourselves have a good place to make a decision in the '23, '24, '25 time frame.

DWG: Oriana and then Patrick.

DWG: Oriana Pawlyk with Military.com.

Speaking of the B-1, I know you recently stood down the fleet again for the drogue chute issue and the ejection system. I was hoping you could give us an update on where the stand-down is, how many have been inspected, how many are left to be inspected, and what investigators have found so far about that issue.

General Ray: When I looked at the drogue chute issue, and just so everybody understands, the drogue chute that we're talking about here rights the ejection seat when it departs, and then as the ejection sequence progresses, then it separates the individual from the seat and they can parachute.

I didn't like what I saw with some of the drogue chute configurations and what I would consider, you know, a third event in a year. My immediate concern was for the safety of the crews, and I reached out to them directly through command channels and certainly emails to all of them and said basically, I don't care how bad the readiness is, your personal safety is far more important. And I've asked for help and I've gotten great help to go look at those aircraft.

The Time Compliance Tech Order, the TCTO, once those maintenance

Ray - 4/17/19

steps are complete, the aircraft can then be declared to fly. That was a blessing, that I looked at that documentation yesterday and approved it.

Right now, based on what we find as we go, a typical aircraft will take seven to ten days to inspect. And to give a very, very thorough scrub of the egress system. It's not a young airplane, so the wear and tear on it is part of the things we find. We're not finding any major additional significant system issues. Maybe a little maintenance issue here or there, or maybe a part that needs to be replaced. But no deep concerns about the viability of the egress system.

The same egress system is in other aircraft and we're sharing that particular information. When we inspect these, we have team mates from Air Combat Command who are experts on the seat. So we have more people involved in this than just the Global Strike maintainers. It's going to take the depot personnel and the program office and other commands. So it's a really good team effort to go get this thing right and to restore the confidence. Every aircraft needs to be inspected, so there's no shortcuts on that.

I think when you do the math, it's about three airplanes a week at Dyess and about two a week at Ellsworth. So this is going to be a slow and steady process, but there's really only one standard.

DWG: And a quick follow-up, can you talk about the necessity for a recent contract, a \$14 billion contract, that was awarded to Boeing for upgrades and modernization to the B-1s and the B-52s?

General Ray: We have a lot going on and we can talk off-line about each of those little programs. Not little, but when we think about the targeting pod, we think about the IBS, the Integrated Balance Stations on the B-1 that connect, we've got a lot of work to do for NC3, the radar modernization, the reengining effort. That's a little just outside of us.

Ray - 4/17/19

But when we think about what it's going to take to keep these old airplanes going, we're happy with that. I'm really happy out of all of this the great relationship and the discussions at the general officer level between the acquisition community and the sustainment community and our command. All of those folks are great team mates, and we're talking about how do you shift, really, from where you are to the future? There's probably smarter behaviors when you talk about flying a 1960 airplane to the 2050 time frame. So how do you sensor the airplane to get better sense for how the wear and tear is going? How do you digitize the models for the parts that may not be made anymore? How do you schedule the right reviews and make sure that the sources of supply are sound?

I think all that's not just responding to this particular incident, but taking a next look at what we need to become in the future.

DWG: Patrick Malone and then Tony.

DWG: Thanks. I wanted to ask you again about the triad, and the bomber link in the triad in particular. Most of the wargaming going on right now inside the Pentagon suggests that the current bombers would have a lot of difficulty delivering gravity bombs [inside China]. And the biggest concern when it comes to a near peer is the ability for the bomber leg to do its job when it comes to the triad. Do you have confidence that in the conflict, or potential conflict with a near peer adversary that the bomber leg would be able to deliver on its responsibilities when it relates to the triad? And do you believe that the B-21 will be able to pick up on or improve that ability when it comes to the service?

General Ray: I do. I thin what's not playing in the conversation, there's clearly the role of the cruise missile. There's a couple of dimensions to that.

First of all is the fact that you complicate the enemy's defenses. And the cruise missile that we have in play, the ALCM

Ray - 4/17/19

right now, was meant to be a ten-year weapon. Now it's a 30-some-odd year old weapon. And the LRSO is, I've seen it from both competitors, a very good product, but it gives us the survivability and the accuracy and the responsiveness.

So as that comes into the conversation, I believe that solidifies the goodness of that air-breathing leg.

There's another dimension that we don't hit enough of. Let me just step back on the triad. There's a lot of conversation about cutting the triad. The best military mind of our generation, General Mattis, Secretary Mattis, questioned it, and what he came back to it is, I can't solve the deterrent reducing from the triad.

When you think of the triad, you have to understand the context of that conversation. If I wanted to, I could draw a small circle and convince myself I'm the tallest, most handsome, most athletic, the most brilliant guy in the room, but it's not real.

So my point is this. The triad lives in the context of the Chinese triad; it lives in the context of the Russian triad; and it lives in the context of the minds of all of our allies. We promise extended deterrence with a goal of counterproliferation, and that's a very important dimension. So when we start talking about what changes in our triad happened, it has to be done in the context of that and it has to make the world a safer place. And you can't just pick and choose your context.

So that said, when I think of an extended deterrence dimension, our allies will probably be more ready to say that a bomber with a cruise missile is a better signal of extended deterrence than a submarine or ICBM in the fields of Minot.

DWG: So I understand, when [viewing] on that global scale, what you're saying is that even if let's say one of the components is even particularly effective against one of the near peers, that because it's that global scale you need to consider the viability of that weapon to [even know] the context. I don't want to mis-

Ray - 4/17/19

summarize, but --

General Ray: I think the point has to be the value of the triad is that if there is some kind of change, you could pick up the load. But I would tell you, the GBSD, the B-21, the LRSO and certainly the SLBM are all very, very good capabilities for the future.

When it comes to being viable, I'm very pleased with the survivability considerations on the LRSO, the capabilities and the responsiveness to it, the legs, and certainly it makes the B-52 and the B-21 very capable.

If you just play with a legacy fleet you're going to have a limitation, and so that's a big driver for some of the modernization that has to happen.

DWG: Tony, then Dmitry.

DWG: The B-2. Twenty years ago it flew its first missions against the [inaudible] and air defenses. Twenty years later you're having problems with the defensive management systems being developed by Northrop. On the continuum of I am pleased with to I am not pleased with, where does that system stand right now? And what's the latest on its various milestone delays?

General Ray: My last trip to go visit Northrop was with Dr. Roper, so we had a good conversation. The current B2 DMS, the language and the very clear message from Northrop was it's firm fixed, so they eat it. So they eat the price of this. There's no more money to the Air Force.

I'm not the expert on the software development dimension but I'll tell you, the conversation is how to do that better and how to bring the talent in. There's a change in the strategy so you have to wait and see how that comes to play. If you want to have deeper detail about where that is, I have a great deal of faith in Dr. Roper. He's a colleague and an ally, somebody I've worked with a good bit over the past few years. And if you want a

Ray - 4/17/19

deeper sense of their ability to do that, I think --

DWG: At one point, what's your sense right now? Are you pleased or not pleased with the way the program is going?

General Ray: I'm pleased with the conversation, where it's going.

DWG: IOC? What is the definition, is that the eight planes or is that, is RA the same as AFC or do they have a different milestone?

General Ray: We'll have to talk about that off-line.

DWG: Fair enough, thanks.

DWG: Dmitry, then Vivian.

DWG: General, I wanted to go back to something you mentioned at the top, that bomber task force that has just returned from Europe, the six B-52s. Is that how it's going to be from now on, regular deployment of larger bomber task force, strategic bomber task force, to Europe? Is that something the Russians should take into account from now on?

General Ray: The world should take into account, because we're not just going to go to Europe. We're going to go to Central Command, we're going to go to the Pacific, we're going to go to lots of places.

DWG: And what is the reason for that?

General Ray: It's called dynamic force employment. I go back to the extended deterrence question is one of those conversations, but the ability to bring long-range precision strike into any theater to support our allies. And the promotion of stability is something that we need to do. So we spent 15-plus years dealing with counter-DEO challenges. We do see regional competition, global competition, so our ability to project that power anywhere

Ray - 4/17/19

on the planet along with our allies is something we need to be very good at.

DWG: And what about Guam, deploying strategic bombers to Guam as part of the maximum pressure campaign on North Korea? Is that going to continue as well despite the fact that the talks are still -- there is a dialogue. Including at the very top level. So is that something that you're still planning to do, to deploy bombers to Guam?

General Ray: We're going to go to lots of places. I'm talking with the Commander of PACAF about how we do more along those lines. When you review all the insights from the bomber task force to Europe, that was very well received by allies, by our joint partners. So the ability to go do that in the Pacific, to go do that in Central Command in support of those regional leaders is something we need to be able to do on a regular basis.

DWG: Vivian, and then Wes.

DWG: You touched on this in a couple of questions in some ways, but I wanted to ask you how you are working with Congress right now as they begin their markups and everything? How are you working to convince people like Adam Smith and other skeptics that the triad is still viable, that the GBSD component especially, that it's not a new topic, but what new arguments are you bringing to the table here to try and convince him and others?

General Ray: I was working with staff members on the HASC both at the committee level and then the subcommittee level for strategic forces. The GBSD, like I said, the value proposition is considerable. The digital engineering is letting us realize tens of billions in savings.

So my pledge to them, and I've talked to some of the staffers in the past, we can't spend our way out of this but we do need to make very smart investments. So I laid out the value proposition of modularity, the ability to rapidly upgrade the capabilities

Ray - 4/17/19

over time. When I bring a mod that the Navy comes up with ,my integration bill with the Minuteman III is very difficult. The new system will be very simple. So two-thirds less convoys, two-thirds less times you expose the site, 10-15 percent in terms of manpower savings, different command and control construct. So the thing that's the same is the locations and the idea, but how we're going to do that I think stands apart from how the Navy is approaching the problem. And I go back to the affordability. When you consider the LRSO price tag and the GBSD price tag, over that period of time they're going to see the numbers considerably less.

So that's my pledge, is to stick with that formula for acquisition.

I'm very pleased to have had that year and a half in acquisition to be able to learn from people like Paul [Gmisky] and Bill LaPlante and Bill Roper and what not about how to do that. So we're doing I think a really good job of managing the requirements to create a very competitive environment. So when industry competes in their strong suit, then the price comes down.

DWG: What about the argument for less ICBMs overall?

General Ray: I come back into the conversation of you can't pick a context. The context is given to you. If you're really serious about making the world a safer place, if there is something that happens it has to have a commensurate set of behaviors on the part of the Chinese, the Russians and in the minds of our allies.

What you won't find is a very public discussion about nuclear matters in Europe. The NPR, when it went through all the European capitals, there was not a big public debate. So you can't assess the European media and get the sense of how those governments are, they're not the same. But when the APR came out, it had been through all those capitals and they agreed with it. There was no pushback.

Ray - 4/17/19

Any nuclear event that happens, it's the most horrible event in man's history. What we do and what we don't do is going to happen in the capitals of all our allies. We can't leave them to work it out on their own. So there's a broader need to consider the extended deterrence, the counterproliferation dimension and the collective security of the planet. We believe, my best military advice is that we need to remain in a verifiable and enforceable -- these are the two words that are important -- verifiable and enforceable arms control regime.

Now whether you call that New START or whatever you call it, those are the attributes that have to be there. And it has to be something that plays across the entire spectrum of the Chinese, the Russians and our allies. That's the context that has to play.

DWG: Wes, and then Jim.

DWG: Can you talk a little bit about the role of the bombers were fulfilling in CENTCOM? Particularly in Afghanistan as well as OIR and how that's being, how that gap being filled?

General Ray: The gap is actually reducing in terms of what's required now, so a lot of what we were doing was in support of the ground forces in the fight against ISIS, and now you know their status.

I engaged directly with the CFAC, the Air Component Commander over there, and we talked about where we were going with the bomber fleet and what I needed to do and how that mission there was not going to allow me to prepare for the IM conflict based on the pace that we're keeping.

There's lots of ways to do CAS. I remember back in the early 2000s where the debate about whether or not a bomber could do CAS. I think we've dismissed that. Now it's almost why aren't you doing more CAS? Because of the targeting pods and the range and the flexibility and the payload, it made us a really big

Ray - 4/17/19

help. But now Afghanistan is the primary focus, so our ability to cover that with different resources is not a really difficult measure.

DWG: Jim?

DWG: I imagine you travel around and get to talk to your crew missile leaders and maintainers and all of that. And for a generation they have been doing essentially a close [inaudible] mission. It was changed to great power type things. What do the air crew, what do the missileers, what do the maintainers tell you about this shift? And how are they accomplishing that shift to a two great power --

General Ray: Let me talk about my role as the Air Component Commander and the ability to look more dynamically at how we posture the ICBM force. With some policy changes and changing a few priorities, we're able to do more effective posturing with more efficient work. That was greatly received by the maintenance and the defenders. The operators have not seen that up close and personal because it doesn't play out on them.

My sense is that we're going to have to continue to do things beyond these big acquisition programs because the things that the crew members, maintainers, and all those people touch every day isn't fundamentally different. So all the good is coming and so in their current context.

So I'm looking at some more innovative methods to get after some of those things. We've done some good work where the B-1 maintainers built their own oil [cart] for three or four hundred dollars and it's infinitely more functional than whatever they had been given from the beginning. So how we do more of that to really engage, that part where the crew members are touching it.

We've just finished the concept for force development called [Vicadays] that highlights the need for us to consider operating in a contested domain. So when I think about the ICBM fields, small UASes, and other, I think about bomber bases and the

Ray - 4/17/19

ability to produce electrical power, air conditioning, running your networks, defending the key pieces of it. Certainly the bomber task force that we just did.

The crew members and the maintainers got off the airplane and they were just pumped. It was a very exciting time for them because it built their readiness, it was a very good use of them.

So we're beginning this process of transforming, to building the long range precision strike force that our country needs and getting us this understanding. Not being in CENTCOM is one of those things that helps us now really focus on the high end [content]. That's going to take a number of years to really get the tide turned. We've got to get to the ejection seat and that backlog. But what we did for 15 years you can't turn in 15 months.

DWG: I imagine there are lessons that you've gotten from the last 15 years that you can still apply to the great power competition.

General Ray: To a degree, yes. But to get people to understand what matters the most. So the long range precision strike standoff is going to be a hallmark, and then you work your way in. The ability to move dynamically, to be able to sustain and operate in a contested environment. It doesn't matter about the close-in fight if you can't get to it, so that's the focus now.

DWG: We're about to go to round two, but to give everybody a moment to formulate a second question I'll go ahead and go first.

The B-52 deployment that just came back from Europe, what sort of feedback did you get from the allies, from the presence there? And did you get any feedback from the Russians?

General Ray: We spent a lot of time, my time in Europe we began to really look closely at media sentiments and we looked very closely at who's saying what and for how long. There was a pretty good scrub of that. There's a lot of good tools to

Ray - 4/17/19

understand what's happening. I'm not going to go into those details.

But the beauty of what we're doing for those is the before, during and after dynamic approach to that atmospheric. Our ability to dynamically adjust what we do when we're there is part of the skill set. Knowing what things we may want to entertain, and then to be able to assess the situation real time and make a decision about what to do, whether to dial up or dial down. So it's a dynamic approach.

So that part right there we link with a lot of NATO and allied exercises, which was a big driver for that. All that feedback was fantastic.

Certainly the local feedback, I have some friends and contacts in the UK, in the MOD and the RAF, and rave reviews. I spent some time trading a few notes with the attaché in London, and they were thrilled with this. But if you want to get a deeper sense, USAFE and EUCOM could probably give you more feedback on that.

DWG: Marcus?

DWG: I just wanted to go back to the very beginning. I believe you said the [inaudible] from the new ICBM was going to go up. I heard you say also about the less maintenance and stuff like that.

General Ray: I think what you'll see in the short term is an adjustment based on infrastructure. So infrastructure of the current is the lynch pin for the --

DWG: The siloes?

General Ray: Right . Siloes, et cetera. I don't think that will take a big shift. But then in the milestone late next year, once we get the competitive selection, then I think the service cost position will give you a big indication.

Ray - 4/17/19

DWG: And to the point of the siloes, I visited a few of them with General Weinstein before he left, and I didn't really get a good answer out of him, but how do you go about updating a silo to all this new NC3 and everything else that you want to put in it, and keeping everything the level of alert that you have now among that equipment that's almost 100 years, close to it, different in age.

General Ray: I won't quote you on 100 years, but there's some probably fielded life in the ICBM fields that ages you in dog years, so maybe that's the perspective. It's a tough environment.

We go back to Peacekeeper. We're studying the time lines that it took to replace. Some of those time lines per location were very quick, less than 30 days. Obviously your first siloes that we transition is a learning, and that's part of the competitive bid process for both of the competitors who are going to walk us through their concept for how we're going to do that.

We don't have all those details because that's something that we've asked them to design into it. I think it's all very doable. The ability to come in and rebuild those things, like I said, it's been proven that we could do that fairly quickly based on the Peacekeeper and Minuteman transition.

DWG: There aren't going to be new siloes, correct?

General Ray: The siloes are the same. So imagine the requirements to make sure none of that piece changes. The command and control dimensions, the security, the access, all those pieces will be different.

DWG: John, then Tony.

DWG: A couple of quick ones on the LRSO. It's plain they have a fairly long gestation period relative to some of the other systems you're bringing in. Can you talk about why that is? How pleased you are with the progress of it? And what sense you get

Ray - 4/17/19

from Congress that seems to be the most controversial of the strategic programs, and whether they're coming around to full-fledged support.

General Ray: I think no matter what happens, we're going to have to stay engaged. We have a lot of help from Congress. Not every voice is indicative of every other voice in Congress, so we have some good relationships for the LRSO.

One of the things that I believe is really wise about the process is you've taken what is in the TMRR phase, you're actually doing EMD types of activities. So what you're doing is you're driving the two competitors to mate the warhead with DOE as part of the competitive process. So that integration in a non-competitive environment is probably not in our best interest. You don't have any motivation.

We're seeing now very, very good dialogue between the two primes and DOE, and we're very pleased with the progress and then back and forth and how they're doing that.

What it lets you do then is to get very deep into the flight test dimension. The reliability parts of this I think are one of the bigger drivers for the entire system. I'm very pleased with the survivability considerations.

So the flight test regime is probably the one where you don't want to be worried about integrating the warhead, so I think bringing it left like we did was a very smart. The program manager's doing a really good job, and we're seeing all the right behavior.

So do you have the ability to shrink it? The question would become one of test points and reliability in the flight test phase, but we'll be flying missiles early in the EMD phase which is a big part of the program.

DWG: At this point is it anticipated there will be a conventional version of that weapon? Or strictly nuclear?

Ray - 4/17/19

General Ray: We're too early to have that. I go back to an earlier comment. We're under-invested in a lot of things in the bomber force. We're going to have a conversation about longer and more precise standoff capabilities. I'm going to speak at the Hypersonics Convention later today. I believe what we see is attributes of the LRSO would make the very good foundations for a conventional cruise missile in the future. That is not a commitment to go down that path, but I'll tell you, the ability to think about the future and what it would take to make a great longer-range conventional cruise missile, that thinking's in play right now.

DWG: Tony and Valerie.

DWG: Another B-2 question. This is [inaudible]. The facelift that it's going to be getting in the 2020 budget and beyond to increase its ability to carry penetrating weapons, can you talk a little bit about that? That was mentioned cryptically in some of your testimony. This is, I guess, beyond the massive ordnance penetrator.

General Ray: And going down a 5,000 pound, not the 30,000 pound but a 5,000 pound JDAM-like penetrating weapon. So the details of that, beyond that, would get classified.

DWG: Why do you need it?

General Ray: There's a lot of people digging right? In the world of long range precision strike defending it with missiles is a little more expensive than burying it so there's a lot of hardened, deeply buried challenges that are growing throughout the world.

DWG: How many would it carry? [Inaudible] 80 of the 250 pounders --

General Ray: I don't know that yet.

Ray - 4/17/19

DWG: It would be more than one, right?

General Ray: Absolutely. There's only two MOPS on a B-2 right now. I don't know where the fin and nose configurations are, how much space, but it would be far more than one or two.

DWG: So it's a 5000 pound JDAM missile. That's interesting. Okay.

DWG: Valerie?

DWG: I know you said you don't need to decide on the exact program of record [inaudible] until further out until the [2030s] but are there talks or studies going on right now about increasing the buy rate once you do potentially start firing them, I guess somewhere in the mid-2020s? And is the industrial capacity to do that there?

General Ray: I would tell you yes, and I'm sure you wouldn't be satisfied with just that answer.

DWG: Could you expand on that? [Laughter].

General Ray: Yes, we know the capacity of industry. Yes, we know the rates that they can maintain. You become, you think more about rate per year to get to your fleet size earlier and the savings that gives you. And to build out the fleet faster is cheaper, but of course like anything you pay more up front. So what you really need to key on is what the actuals are going to be. So when we fly in '21, we'll be in the LRIP dimension. You'll have a good number of airplanes. You'll know when you go to that production decision what the fixed price actuals are going to be. So until you get through that, you're not going to have the calculations.

So my advice to the Chief and the Secretary is build yourself as much capacity to make that decision in the '24 time frame, knowing what the fiscal realities are, knowing what the world's looking like.

Ray - 4/17/19

The plan does get us through a minimum of 100 but if you do anything between now and '24, you're gambling.

DWG: Are you pleased with the progress that you're seeing from Northrop in the short term in terms of meeting their schedule and doing the budget or under budget? You guys talk about B-21 as being like the shiny acquisition program and you've kind of pushed the GBSD, so is there --

General Ray: Let me be very clear. We have learned from F-35 and B-2 on the B-21. And I would say possibly the helicopter acquisition, the LRSO acquisition program, the GBSD and the B-21 are all very strong acquisition programs. I'll give credit to those before me in the acquisition realm that built that.

The learning from B-2 is significant in terms of the practices. I can't go into those details. The learning from the F-35. So for us, now we're talking about managing the algorithms for conditions-based maintenance in the B-21 before we ever build it. We're talking about digital models and talking about 3D printing things to validate [means] practices. Do things work, do the totals work, do the concepts work?

There's a lot of work to do on the bed down. The joke out there is there's like three truths now -- death, taxes, and that no fighter/maintainer will ever name his kid Alice because of the [demand] system. So we're very mindful of that challenge.

That was my message very clearly getting in, is that we're going to do this really smart and well. So when you're thinking about condition's based maintenance and managing algorithms in 2019 for an airplane, that's six or seven years away. I think that's indicative of the thinking that's going on.

DWG: Did you say you guys are going to move to LRIP around '21?

General Ray: No, no. You'll have your aircraft built and you'll be in a test, and then I'll have to send you back to the RCO guys

Ray - 4/17/19

to look at the exact places. But you can see that we should be on the back half of that in about '25.

DWG: Bob, final question.

DWG: Earlier you mentioned that you thought the U.S. should stay in a verifiable and enforceable arms control regime. I'm wondering if you think it would be wise to extend the New START Treaty, which as you know expires in less than two years.

General Ray: I'm going to repeat, it's in our best interest to stay in a verifiable and enforceable arms control regime. The question about whether we stay in it or not is, I don't think that's the right question. Is the agreement you have, the Russians violated the INF, period, dot, end of conversation. If you think you can get the other people on the other side of the table to work with you in this conversation in a verifiable and enforceable regime and work with you, that's in the world's best interest.

So whether you call that New START Treaty or not, that's not my call. But that's the behavior that has to happen.

DWG: But so far in the context of just that treaty, which is different than INF of course, do you believe that it has been enforceable and verifiable?

General Ray: We have enjoyed, I think, good stability there. But I will tell you that the Chinese and the Russians have modernized to a great extent. There's a lot of new capacity there in terms of the Russian and the Chinese capabilities. We're still sitting on an ancient Minuteman III and a B-23 that's pretty cool, but it's old. And the bomber and the Ohio Class. We're behind in the modernization and recapitalization.

DWG: Do you think [inaudible] be part of that kind of regime though?

General Ray: I think if we're interested in world stability and

Ray - 4/17/19

staying out of an arms race in the nuclear dimension you need to be able to think about how you create the world as a safer place. You have to think about it in this context. Obviously New START Treaty doesn't include the Chinese. But if you think about whatever we do, it has to command an equal or commensurate move around the world to create a safer place. It's not in our best interest to get in a nuclear arms race.

DWG: You're not willing to say yes or no on a New START extension?

General Ray: It's not my place.

DWG: I'm just wondering your opinion. You --

General Ray: My best military advice is to stay in an arms control agreement that is verifiable and enforceable for the good of the country and for the good of the world.

DWG: Stay in refers to a deal with the Russians. Several deals. But the Chinese was the other part of the question. Would you like to see an arms control agreement with the Chinese that would create the same kind of stability?

General Ray: I think it's in our best interest to make sure we're all heading in the right direction and you can't do that unilaterally. You have to be able to consider the balance of those capabilities and really what it means in the eyes of your allies. So are we heading in the right direction? That's the question.

DWG: With that, we are out of time. Thank you, General Ray, for coming to join us. We appreciate it, and we'd love to have you back.

DWG: Sir, this was terrific and I do hope we can do it again next year. I think everyone here would appreciate that.

#

Ray - 4/17/19

Professional Word Processing & Transcribing
(801) 556-7255