



Maj. Gen. Doug Raaberg, USAF (Ret.):

Well, good morning and welcome to our panel, the B-21: Delivering Deterrence, Differently. I'm Doug Raaberg, the executive vice president of the Air & Space Forces Association, and it's a pleasure to host you this morning. So let me start by saying there are really two reasons why we chose Delivering Deterrence, Differently as a theme for this panel. First, we wanted to stress that today's security environment is very different than the environment we experience for much of the last 30 years. The unprecedented array of threats our nation must now contend with extend across all theaters and operating domains that definitely includes space and cyberspace. Second, to deter these threats, we cannot continue business as usual planning and programs that incrementally improve our forces and capabilities. Instead, our military, our space force, our air force must develop a new generation of asymmetric capabilities that convince our adversaries, who by the way, are listening to the show right now that aggression will be a path to ruin and defeat not victory.

Enter the B-21. Please meet our distinguished panel that crosscuts the operational acquisition and defense industry communities to expand on this very theme. First I'd like to introduce Brigadier General Ty Neuman, the director of strategic plans, programs, and requirements for Air Force Global Strike Command. In this role, he is responsible for the funding and requirements for the modernization and recapitalization of US strategic nuclear forces, including the B-21. Let's give him a hand please.

And next is our newest director of the Air Force's Rapid Capabilities Office. Mr. Bill Bailey, by the way, if you go to his office, just call him Elvis, which is the program office for the B-21 and lead organization for developing other cutting edge capabilities for the Air Force. Mr. Bailey. Returning to the stage is a good friend and Northrop Grumman's corporate vice president and president of their aeronautics system sector, Mr. Tom Jones. Tom's not new to this game. He has had almost 30 years experience in the aerospace in defense industry and leads the B-21 program for Northrop Grumman. Please welcome Mr. Tom Jones.

To round this all out, the smartest guy on the stage amongst us all is Mark Gonzo Gunzinger. He is the director of future concepts and capability assessments at our Mitchell Institute at AFA. Gonzo has over 3000 hours in the B52 and served as a senior forest development planner on the air staff, the National Security Council staff and as a Deputy Assistant Secretary of Defense, please welcome Gonzo Gunzinger.

So gentlemen, welcome. Let's get into the fight here. I'm looking forward to your insights. I'd like to really start with you General Neuman. And Ty, you're clearly focused on building our deterrent force to the future. And as the rollout last December in Palmdale, the Secretary of Defense said, this is deterrence done right. Can you provide us some insights of why we need to deliver deterrence differently and the B-21's role and what's changed?

Brig. Gen. Ty Neuman:

Yeah, well thank you very much. It's great to be on the stage here at AFA. First time for me. I'm actually relatively new into the Global Strike requirements aspect of this, but I'm joining a fantastic team and you see it right here. So General Raaberg, I appreciate you bringing this team together with Tom and Elvis and Mr. Gunzinger here that are really focusing on deterrence differently. The B-21 is changing the dynamic of deterrence and the secretary says it very, very well. There's three things that are driving this. It's China, China and China. I mean it's that simple. We have to think about deterrence differently. We are in a multipolar world. We have to deliver capabilities different and we have to talk about deterrence a lot differently than we have in the past. The B-21 being the most advanced weapon system that we can deliver is going to do that.

It's going to change the dialogue, it's going to change the way we present forces. It's going to change the way we think about war fighting in such a way that the adversary is going to, it's going to be a cost



imposing measure on the adversary. One thing that's really important about the B-21 is its conventional capability, not just the nuclear side of it, but the conventional side of it. To this point in time with our legacy platforms, which have been outstanding, have been a deterrent force that's been very successful up until recently. The adversary has been able to study our tactics and how we employ those capabilities. The B-21 is a leap in that thinking. We're going to think differently about the employment of this airplane. It's not about force packaging, it's about providing complicated scenarios that the adversary has to plan for and plan against. It's a cost imposing strategy for them.

We're going to have a number of B-21s that is going to be very, very hard for adversaries to think about and where we're going to be coming from. So when I talk about that, the number gives us a capability to support our deterrence umbrella to our allies and partners. It gives us the ability to reach targets around the world in just a matter of hours. We can project not only the capability, but allows us to take weapons and develop weapons that our adversary is going to have to think differently about. And so that's the start off the conversation there. General Raaberg, I think there's a lot more that we can do with this. There's going to be a lot more discussion on this.

I do want to thank the Mitchell Institute first and foremost on the deterrence topic that we are bringing the conversation forward. We need more people to be talking about this. I'm a big advocate about bringing advocates as well as those that oppose the positions that we're in so we can actually have a really robust dialogue of what deterrence is going to be in the future. And so I look forward to the rest of the conversation here today and in the future. Thanks.

Maj. Gen. Doug Raaberg, USAF (Ret.):

That's awesome. Thanks, Ty. Bill, I'd like to turn attention on you because really, really like to get some better insights on the B-21 program. Obviously everybody's here to listen to you, but how has it been designed and really led differently that sets this program differently apart, almost revolutionary from other acquisition initiatives?

William D. Bailey:

Thank you for the question too. It's a great topic and for starters, I am really fired up to be back, especially as part of this program. I can wind my time back to showing up right prior to milestone B in the start of the engineering manufacturing development program. And while I was only gone for a few years, the team has made incredible progress. They are moving fast. They are working on how to be more efficient, how to be more effective, how to reduce costs. Across that short period of time they've evolved the program.

Now talking a little bit about at least the RCOs engagement on this topic, we were lucky enough to celebrate our 20th anniversary not that long ago and that's 20 years of expediting the fielding of critical capabilities to the war fighter.

And we get a lot of questions about like, well, how do you guys do this? What do you guys do? And there's a lot of questions about magic and secret sauce and stuff, and I think you guys have had answers on those. It frequently comes back to the workforce and the focus on the workforce. We're looking at skilled professionals from across a spectrum of specialties all applying their crafts who are empowered and directly accountable to the Air Force's senior leadership. We take that formula and a priority on teamwork, real collaboration, real teamwork regardless of specialty, all focused on mission success. And we take that and then we scale that when it comes to the B-21. General Richardson, I'm glad to see you. We had a chance to hear from you on Monday with regards to the teamwork that we have from AFMC. Also, General Bussiere, the team from Air Force Global Strike Command has a profound influence on the program.



We have pilots, we have maintainers, loggies, who are all supporting this program directly. They are in the environment, they're using the tools, they're evaluating these processes, giving us feedback on that. And I'm sure Tom's going to talk about the digital environment, so I won't step on that, but that feedback happens almost immediately. And so what you get out of this activity is our serious focus on delivering capability, a premium on teamwork there. And overall, that's my experience has been on this program throughout is what you're seeing on this program is a cross section of serious professionals from government and from industry who are bringing all that hard fought experience to bear on how to manage this program, how to aggressively identify risk, how to manage it, mitigate it, et cetera, so that we stay on pace and we deliver in a capacity that's being asked of us.

I think just yesterday I had a chance to listen to into Dr. LaPlante, General Cotton, General Bussiere about the importance of production, produce. You got this, Elvis? Yes sir, I do. And it is a real honor to be working on this program. Again, serious professionals all bringing that experience to bear. Thank you.

Maj. Gen. Doug Raaberg, USAF (Ret.):

So Bill, I don't want to put you on the spot, but I think there's an elephant in the room, so I just got to ask the question and since I have got two end users sitting up front here and they can't wait to get the B-21 in their hands. Okay, so when's first flight?

William D. Bailey:

That's pretty good. I thought it was going to be about Aaron Rogers. No, he's not coming back. Okay, so we're still on track for first flight this year. The aircraft is performing well. Now I'm a recovering tester, so I tend to be a little superstitious about things, but as it goes a very, it's a very exciting time on the program. We're very excited about first flight, but I want to share with you all just last week we were together as a team talking. We were certainly talking about first flight, but the team wanted to talk about the second flight, the 10th flight, the 20th flight. Are we ready for the 50th flight? When the next test jet is rolling off the line, do we have the personnel in place? Are they trained and ready to go?

Again, experienced professionals, we're looking downstream all the time. So certainly we're looking at the test program and how that fits into the work that's happening in design. We're also looking at what that means on the production, the production of the aircraft. The challenge here for us is stay focused. We need to be ready on day one to operate this aircraft And readiness, as I'm reminded by Global Strike it's not just the aircraft. We're talking about the tech orders that go with that. We talk about the logistics that support that, the training that the whole spectrum is going to need. So we certainly got our eye with regards to, hey, how to get to this next starting line on the program. We've encountered many starting lines on the program. Everything from contract award all the way through design review, complete. Now we're looking at another starting line, but again, these are experienced folks. They're looking at this and they're looking downstream at the same time. Thanks.

Maj. Gen. Doug Raaberg, USAF (Ret.):

Tom, any thoughts on first flight, especially as you're kind of lead on cost schedule performance at this point, prime contracting?

Thomas H. Jones:

Yeah. So we also get a lot of questions on that from shareholders and others and we had a pretty standard response up to date, which is it's going to be a data-driven event, which can sound kind of like just a fancy holding statement. Not to say much at all. I really do believe the way this team, government and contractors been approaching this has really been focused on... The end goal is not a first flight or



rollout. The end goal is getting planes on the ramp for our end user, which means we need to have the most efficient transition into a highly effective flight test campaign that we possibly can. And that means not cutting corners for what I'd call acquisition theatrics. We could have easily set a date and said we're going to fly some configuration of B-21 by this date.

But the question as Elvis pointed out is, but if we do that, will we have an aircraft that can make the second flight very soon after and the third flight and the fourth flight? So that's where the team's focus has been on. So it really has been a data-driven event. We've got a saying in our sector that goes way back to the beginning of the F-35 program. The plane is the boss. If you listen to it will tell you what it needs. Planes like to fly, we're listening to the plane, we're looking at the data and we're going to fly when we're ready. But to Elvis's point, we're on track for this year.

Maj. Gen. Doug Raaberg, USAF (Ret.):

Can I take you to a little bit higher strategic level since you're really representing the defense industrial base, especially with a lot of your subcontractors, a lot of the enterprise that you're working with, to develop the airplane digital design, open architecture. So how is the B-21 being designed and built differently?

Thomas H. Jones:

So there's a couple of things I'd like to hit there. First of all, I think the first person in our company to start saying the B-21 is the first six generation aircraft. And initially I got a lot of pushback on that from long time aircraft people going, Hey, we don't number generations of bombers. We do that for fighters. Yesterday there was a lot of talk before, during and after Secretary Kendall's talk about the concept of family of systems and how we fight going into the future. And if you think about fighting with combined families of systems and that being our path to success, you really have to look at all aircraft operating as six-gen. So what is six-gen? Well, number one, it's performance and if the Chinese really are listening to this, they're not going to hear anything about that from me other than what has already been stated by the users. But obviously we're the US, we're not a fast follower of technology, we're a leader so we're going to give you some good stuff, right?

Second is that ability to interconnect, to fight and a joint all domain command, family of systems environment. And then the last thing, which as an industrial person I find really interesting is the way the system is built, the innovation and more importantly the speed of innovation. We've got to get B-21s on ramp as soon as possible. There's a whole raft of other systems falling along that need that same fast introduction into the overall force structure. And I think some of the things we've done, so I think digital is a great example. So a lot of digital engineering, we've been focused on everything from very detailed modeling where we've seen some very good success. We've been able to take structural models and validate and test performance that's basically twice as good as industry standards and some of the structural performance characteristics there and we're able to predict that very accurately.

So that's a result of this digital model. We've been able to take the digital model all the way down into shop floor instructions. We've talked about the fact that we're using and we're now actually doing this really across our entire sector on many programs, but taking digital models, augmented reality onto the factory floor to improve efficiencies, to reduce time, to reduce rework, repair, things like that. So I think the digital model has brought a lot.

Something we don't talk about is or we don't talk about as much is there's also a lot of use of laboratories and integration labs and we talked I think last year at AFA or before about we have over 200,000 square feet of laboratory space at one of our facilities dedicated to this program. It's important to get the mix right because I don't think you can cost effectively do everything in a digital model and



capture everything you need to. So there's a fine blend of what risk you need to burn down with very good labs and what can you burn down. I think that's the area that the program team got right here. Another big thing we say T-1 like P-1, what does that mean? The jet that's going to fly this year is for all intents and purposes a production jet. It's got the LO coating, it's got the mission systems. It was built using factory processes. It was built with regular work orders by regular factory technicians, not engineers doing a bespoke first article. It was built with original tooling.

As a result of that, a traditional aircraft program that would build a flight sciences aircraft and then go forward and eventually get to that EMD program. And we're learning in parallel so we're able to, at the same time we're adapting elements of the aircraft design. We can adapt to tooling, we can adapt to processes, which means we're going to get to stable steady production rates faster on this program and again, get product to ramp.

And then I think kind of the final thing is the incorporation of sustainment, which I think we're going to talk about more later so I won't get into that and let some of the other panelists talk here. But I think the incorporation of sustainment concepts in the design phase has been really key and combining all those things together as Elvis said, we've had some good performance on this program. I think the team, and again it's the big government industrial team, I think has brought a level of credibility so that when we do run into those problems and tests, because what test is for, we have a credible team that can go out and solve those problems.

Maj. Gen. Doug Raaberg, USAF (Ret.):

Tom, I'll circle back to that topic about the sustainment of the weapon system itself. Gonzo, let's take it to 50,000 feet if you don't mind because now we need to talk about future bomber, forest design and structure. I'm just going to cut right to the chase, discuss the future bomber inventory objectives and as well as the kind of weapons our penetrating and standoff bombers will need in the conflict with the pacing threat because we all know we have to accelerate procurement or lose.

Col. Mark Gunzinger, USAF (Ret.):

Excellent question. So this is where I'm going to put my force planning hat back on for you. My first point is we need our bomber force more now than ever. The core of our national defense strategy is being able to deter China and if necessary defeat a fait accompli invasion of Taiwan or somewhere else in the South China Sea. To do that, we have to bring mass, we have to bring precision plus mass over long ranges to strike a first amphibious landing wave, service action groups and other targets that would be the core of China's offensive strategy. That means bombers, because only bombers can bring the range plus precision and mass need to do that. Our navy's going to be standing off too far for their carrier air wings to reach the battle space and generate enough sorties to be able to make a significant difference. So we need our bomber force now more than ever.

My second point is the bomber force is smaller than ever. In the Air Force's history we have 141 total tails out there and that's simply not enough. It's sized to the wars of the past and not the operating environment that we're in today. Now independent analysis say that we need a bomber force of at least 300 total bombers consisting of B-21s and B-52s, great aircraft used to fly.

General Goldfein said we needed around 225 total bomber force. That's a step in the right direction. The problem is the Air Force doesn't have the resources right now to build that force because it has a budget smaller than the Army and Navy's budget and has been true for the last 31 years. My third point is we need to grow the size of our bomber force as quickly as possible and that means the acquisition rate of the B-21 should be maximized. According to DOD's own unclassified report to Congress in aircraft inventory, it looks like the B-21 acquisition rate is going to top out around 10 per year sometime in the



2030s and that's half the rate that we planned to, max rate that we planned to buy our last four bomber models.

We need them as quickly as possible on their ramp to deter China, and a venture they might contemplate against Taiwan or elsewhere this decade, not sometime in the theoretical 2030, 2040 future. And our force is going to go down before it goes up. In 2033, that same report said our bomber force is going to be 133 total tails. It might actually be worse than that. Why? Again, the Air Force lacks the resources, the personnel and the dollars to be able to afford the B-21 ramp up and keep B-2s and B-1s in the forest. So it's going to have to trade off and the trade-offs means it's going to get worse before the size of our bomber force gets better.

My final point is munitions. The best, largest, most capable bomber force in the world will not be effective without the right munitions. We need new munitions that are size for the weapons base of B-21s that are size to maximize the number of targets per sortie our B-21s can strike over range, to maximize the number of targets per sortie our B-52s can strike as well because targets per sortie equates to time, which equates to a successful campaign that we need to wage. We have to halt and the defeat that fait accompli campaign of China and that it's going to require thousands of weapons on aim points in hundreds of hours. We've heard that number before. It's absolutely true. So I'll stop there.

Maj. Gen. Doug Raaberg, USAF (Ret.):

Gonzo, thank you. General Neuman, the Air Force Global Strike Command really represents the forest presenter of the future, especially with the B-21 in the inventory as it comes on board. So from an organized training and equip for the future, and since you are representing General Bussiere here to this morning really how is the command preparing for the B-21 of the future?

Brig. Gen. Ty Neuman:

Yeah, well first off, you heard from General Cotton yesterday, a USSTRATCOM commander. He sets the requirement for what we need to actually be able to do and from an organized trainer and equip perspective and Air Force Global Strike Command, we understand that we have to provide a capability to STRATCOM to conduct their mission all the way through the development and the delivery of the B-21. And so you heard General Bussiere talk about this yesterday he said, "Between the B-2 and the B-52. We do not plan on divesting any part of that legacy force until we have this capability proven and on the ramp." Tom just talked about and Elvis talked about the work that's being done inside of the program office to accelerate a lot of those things. So on my side of the house or the Global Strike side of the house, we're taking a look at every opportunity to lead turn those things.

We are integrating our operators and our maintainers and our logisticians and everything into the program wherever we can so we can learn early and often and help shape the direction of where we're going with the B-21. Where that is going to pay huge dividends for us is when we start getting our hands on the actual airplane and putting our operators in it. We will already have our procedures and our techniques already understood and developed so that we can just refine them based on what we learned from the airplane over the course of time. We're taking a hard look at our bed down structure.

If you've noticed our main operating base number one at Ellsworth Air Force Base. We have 38 projects there with over \$1.7 billion worth of effort going in there to sustain this airplane. That's a huge effort. It's a national effort that needs to take place to help support and make sure that our infrastructure alone is ready to bring on this new advanced capability, all the way from the hangers to the back shops, to housing our Airmen to literally all aspects of supporting that, our weapon generation facilities.

How are we going to manage and maintain our weapons for this new system? So we're taking a really hard look at that. We're starting breaking ground on that here soon at Ellsworth and we're also taking a





look at where else we're going to need those across the entire portfolio of the B-21. On the manning side, we're taking a hard look at how are we going to bring and train our operators. And so again, we're working with the program office to determine and find advanced training mechanisms and through the digital modeling that Tom and his team are doing, it's allowing us now to use virtual capabilities to train early, build those procedures and those checklists to go do things. And for the maintenance crowd that's in here today, this should be a really exciting story for you. The fact that we're thinking about your job and how you maintain this airplane now as we're developing the airplane to make it more of a daily flyer, that is huge.

We're actually taking into that all into consideration as far as how a maintainer accesses different panels and different components of the airplane, how we load the airplane from an operator perspective. How does the crew interact, how do they communicate, how do they get information? All of that is being done in parallel with the program office right now. All of that is going to make sure that we have an operational B-21 on day one when it hits the ramp at Ellsworth. And so I really applaud the effort that the program office here has allowed us to do that and I think it's going to set us up for huge success in the future. Thanks.

Maj. Gen. Doug Raaberg, USAF (Ret.):

I sense between you three, you represent the real true one team one fight. Having been the B-2 wing commander many years ago, maintaining and sustaining the platform in its stealth and its strike capability will always be a challenge, but I also sense a revolution in capability. So Bill, let me throw one at you real quick. I know General Richardson is equally interested in your answer, but how has it been built differently to really maintain and sustain both in peace time, but going to war is a different calculus in terms of that. So how's it done differently?

William D. Bailey:

Well, that's a great question. I talked about it a little bit earlier and you've heard from other people up here. When we talk about things like, hey, the integration of the war fighter into the design piece of this, everybody's like, sure don't you do that all the time. There's a certain enabler that goes along with it. I mentioned earlier the commitment of the leadership, the leadership being all in. It's not like we have a bunch of extra experts when it comes to this stuff. These career fields are taxed, but the commitment from the leadership to give us their best and then we put them in that environment where they can have direct influence into that. When we put a mockup together that's coming out of that digital environment that's using the actual drawings in order to create that mockup and then getting a chance to take that procedure with somebody who's had to do this kind of unit replacement thing on the flight line in MOPP gear or in the rain or at night or all three of those and have them give us unfettered feedback.

And I'd like to thank them for the unfettered feedback as to how that's going to change what we do to make it more realistic. When we talk about a daily flyer, we go, okay, those guys will tell us whether or not it's going to be a daily flyer for them. And when we talk about what it takes to provide that kind of deterrence in those numbers has been something that we've been working with not only Global Strike Command but also Northrop Grumman, right? What's it take for us as we look at how we design the architecture, how we design that digital environment. There's still more examples inside of there. One interesting point when we knew that technology discovery is a risk that every program exposes itself to no matter who you are, the commitment to go create that high fidelity environment has really paid off in a bunch of different areas.



For example, the software team has all the code we need to handle the flight test right now. So the opening round, and of course it's not fun to watch engineers smack talk, but between the software guys and the hardware guys, they're saying, would you please hurry up? We're done. It's an exciting time. And again, that's running as we are powering up the aircraft and doing those engine runs. All those systems working together, Hey look, if you've been in this business a while, that is a significant emotional event. So there are other ones as well as we took a look, I loved your example of the physical versus the virtual. We had a more seasoned professional who'll say, on the program, warn us about fuel and fuel systems and the complexity associated with that and some horror stories about what's it like to try to troubleshoot and fix a fuel system after you've built it and it's installed in the aircraft.

So we committed to go and build one physically again using the real drawings and to go ahead and test that and then bang that up against the model to take a look at where the valves were, where the sensors were to get it right. Subsequently, we went from fuel to engine run in less than five days. Now again, you're like, what's that? Hey, if you've been in the business that's usually measured in weeks if not more, less than five days. That's the kind of done differently type piece that's going on. That digital environment is helping us leverage that experience, make better calls, and get as far ahead of the game as possible. We know that there's always going to be discovery, but we're going to be ready, we're going to be ready to be able to respond to that quickly, get back in the saddle and keep making progress.

Maj. Gen. Doug Raaberg, USAF (Ret.):

And very quickly, Tom, I'm going to coin a new one. It's called live virtual and constructive Maintenance and sustainment. So expand on that real quickly from a Northrop Grumman perspective.

William D. Bailey:

Yeah, absolutely. So it starts in the design phase, right? So it starts by taking 30 plus years of experience and LO aircraft and what it takes to maintain them from B-2 to our experiences as a partner on F-35 with Lockheed X-47B and rolling that into the materials and the way we actually construct the aircraft. So I think it's... So did anyone hear any of that? Thank you. I was wondering if that mic was on.

Maj. Gen. Doug Raaberg, USAF (Ret.):

I didn't know either.

William D. Bailey:

Okay. So it starts with the design. We had tools like the highly immersive virtual environment where we're actually able to combine again, augmented reality, digital models with lower fidelity mockups and go in and actually see how hard with the design in this configuration is it to actually go out and do maintenance and do we need to make design changes. Once you've got that done, of course, bringing all those smart Airmen and airwomen onto the factory floor into the ground test center where you do swap out parts as it turns out in ground tests. So there again, you're going to see how you move those LRUs around. We have government software maintainers in our software factory working on the code so they understand how that code works when they need to take that over and go and maintain it. So we're integrated with the Air Force maintainers across the board.

And then finally, your live virtual constructive. So I talked about how we've taken the digital models from the engineering domain to the test to the factory floor and the factory floor is not very different than a maintenance flight line in terms of the operations you do. You're moving LRUs on and off, moving things around. So when we talked at AFA last year about partnering with the Air Force, creating a single





digital twin model that's shared with the Air Force when we talked about setting up a cloud environment which enables a faster, and I would say lower overhead setup of operating bases.

What that enables is what I would refer to as the flight line of the future. So we now have digital twins in the model, in the hands of operators that can use all those same tools of augmented reality and the digital truth of each digital twin to help them maintain things. And I think that is, I'm not an aircraft maintainer, but that seems pretty cool to me. I got to imagine that's going to be relatively revolutionary. So that's where I see it.

Maj. Gen. Doug Raaberg, USAF (Ret.):

Oh, thank you. We've got very, very limited time. So I'd like to kind of top off with you, Gonzo. This is really important. So how do you build a cost-effective nuclear triad that's going to take on at least two pure nuclear competitors, China and Russia?

Col. Mark Gunzinger, USAF (Ret.):

Yeah, we are in a multipolar world as everyone here has said, General Cotton and Admiral Richard before that has said that China isn't a nuclear breakout, a strategic breakout. They seek to achieve parity with our war headcount sometime in the mid 2030s. So now we have to deter China as well as Russia with a force, a nuclear force, a nuclear triads, a size for one peer nuclear adversary, and that is Russia. So we need to think about regrowing the size of our nuclear triad. In fact, I think we ought to do more than think about it. We actually ought to do that. So how can we do it then becomes the question? The first step is obvious fully fund nuclear modernization and 25 POM and the follow on POMs. Don't pull funding from nuclear monetization to pay other bills as we have in the past. We can't afford it. We can't afford it from a strategic or deterrence perspective.

The second step is well growing the size of the triad. Gosh, there's an option out there that might be the most cost-effective way of doing that. That is by growing the size of the bomber force, a nuclear capable bomber force. Why it's a two for one deal. We get conventional capabilities as well as nuclear. Conventional deterrence, nuclear deterrence, it makes sense. Plus our bombers are the most flexible arm of the triad to signal, to generate, to alert, to deploy, to disperse, to fly, and then return home because they're recallable, missiles are not. And they're also the most responsive because we can generate our bombers to alert much faster than we can in our nuke subs and our ICBMs. So I would make those two recommendations to really bolster our nuclear deterrence.

Maj. Gen. Doug Raaberg, USAF (Ret.):

So the last three gentlemen. Starting with General Neuman, probably 30-second burst bonus round last thoughts please.

Brig. Gen. Ty Neuman:

Well, first off, this is a really exciting time to be in the Air Force and in the deterrence community. The B-21 is just a capability. It's the Airmen and the people in this room that need to carry the message and be excited about this business. We have to continue talking about it both from a conventional perspective as well as from a strategic nuclear perspective. I really want to applaud the team here of changing the way that we're looking at doing business, the way that we're going to roll this airplane out, the way we're going to roll this capability out the way we're doing the TTPs, the tactics, techniques and procedures, and really encourage everyone to get ahold of this concept and think about how we are going to do war fighting differently in the future.



It makes a difference today that we start talking about it. It makes a difference in the way we fund it by showing the national will to get after this business. And it's telling our adversaries that today is not the day to come after the United States because we are going to continue to bring capabilities and we will fight and we will win if necessary. Thanks.

Maj. Gen. Doug Raaberg, USAF (Ret.):

Tom, thank you for a beautiful rollout last year for the B-21. I know you're anxious to see that baby fly. So final words.

Thomas H. Jones:

Yeah, rollout was great. It was a emotional event. It was inspiring. We hung out afterwards, took pictures with the workforce that putting it together and then went out and had a couple of our favorite beverages in celebration. But the next morning at 7:00 AM I was in with Doug Young and the whole program management team and hundreds of engineers and technicians on Saturday. The plane was in the test hangar and we were back to work. First flight is going to be an awesome event. Little lower profile, there'll be high-fives, they'll probably be sharing a beverages again that evening. My guess the next day we're going to be in and we're going to be figuring out how to get to second flight.

Maj. Gen. Doug Raaberg, USAF (Ret.):

Bill, would you bring us home please?

William D. Bailey:

Thank you. So I'd echo it, right, an exciting time and like I've mentioned before, what we're looking at here is some of the best, the best from industry, the best from the government all coming together to make progress on this program. This program is not a windup toy that you crank the spring on it, you drop the contract off and you come back in 10 years to go see how close did it end up? We haven't approached it that way. It needs to be actively managed. We need to look for opportunities to go faster, to be better as a team, to seize those opportunities on an ongoing basis. Progress every single day.

Like you said, first flight's going to be great. And then right after that we're going to be talking about the second, the third, we're going to be thinking about the next jet that rolls off. And for the adversary out there, this comes with a lot of experience, a lot of hard-earned experience that I don't think anybody's going to copy anytime soon. I appreciate the commitment from the team, I appreciate the commitment from the leadership to give me the best and we're getting after it. Thank you.

Maj. Gen. Doug Raaberg, USAF (Ret.):

And to our Guardians, warriors, industry partners in the audience, thank you for joining us today. This has been an incredible conversation and one that's going to continue. I do have to put in a nice shameless plug. If you haven't had an opportunity for the shop, AFA store down the hallway, I kind of like the bomber T-shirt. But also make sure you look carefully for the Space Force shirt itself. Let's give our panelists a big thank you for this. Gentlemen, thank you.