

“Transitioning to a Wartime Posture Against a Peer Competitor”

Maj. Gen. Heather Pringle:

Good morning. How are we doing today on day three of our symposium? Doing well? We have a great topic here today and we have great panelists. I want to say thanks for joining us today on an important topic, it's transitioning to a wartime posture against a peer competitor. I'm really honored to be here with some of the thought leaders in industry on this critical topic. As we've all heard throughout the week, we are at a pivotal moment in history. The DOD is very clear-eyed about our peer adversary, our peer competition, and the multi-domain threats that it poses. Our nation has responded by advancing the concept of integrated deterrents in our national defense strategy, but should deterrence fail, then what?

Maj. Gen. Heather Pringle:

In this hour, or 40 minutes, more closely to the target, we're going to talk about what it means for the Department of the Air Force to mobilize its forces at scale, to be ready with a wide range of information systems, facilities, and support, to deploy Airmen and Guardians to the fight, and most importantly, to win in air, in space, and in the cyber domains. In a word, this panel's all about readiness, the seventh and essential operational imperatives. With me today, we have experts from industry up here on this stage. Thank you all for joining me. First up, we have Andre McMillan, who's the Vice President of Sustainment Operations at Pratt & Whitney. Andre, if you would, please tell us a little more about you and your work.

Andre McMillan:

Thank you, General Pringle, and good morning, AFA. It's great to be with all of you and certainly, it's an honor to be on a panel. I lead all of our sustainment activities across all of our portfolio of military engines at Pratt & Whitney, so essentially, what that entails is that we're responsible for activating all of the bases, the ships, the depots around the world. We're also responsible for the customer support engineering to support all of our operators and maintainers in the field and in the depot. We also lead a team that's responsible for the support equipment, for the movement of material around the world, and to industrialize the repair network. I'll also share, I've been with Pratt & Whitney for 16 years, so I'm a 16-year industry partner, but also continue to serve as an Airman, 26 years as a mobilization assistant, and so it's great to be with you this morning.

Maj. Gen. Heather Pringle:

Thanks so much, Andre. Next up, to my left, we have Brian Morrison, Vice President/General Manager in Cyber Systems at General Dynamics Mission Systems. Brian, tell us about yourself.

Brian Morrison:

I'm delighted to be here. Thank you for having me, ma'am. I'm grateful to all of you for coming. I come to this from a little bit of a different perspective, I think, than many of you. I come here with a deep and abiding passion for security and how we can use security to render the fight against our adversaries unfair. I'm not interested in any fair fights and I know you all aren't either. I lead a business focused on cryptography and keys and information security throughout the department, but with a very heavy focus on the Department of the Air Force, and I'm delighted to talk to you today about readiness.

Maj. Gen. Heather Pringle:

Thanks so much, Brian. Last, and certainly not least, we have David Tweedie, General Manager of Advanced Products at GE Edison Works. David.

David Tweedie:

Thank you, General. I'm just happy to be here to represent GE, who's been a proud supplier of the US military for over 100 years now. From the first US jet engine in 1942 to the first three-stream adaptive cycle engine in 2022 and everything in the 80 years in between, just really proud with the partnership with the US military and the Air Force. Specifically within my portfolio, I have general manager responsibility for a variety of advanced fighter engine development programs at different phases that's really focused on bringing state-of-the-art technology into our product portfolio, both today and in the coming years to bring that capability to the war fighter. Again, just excited to be here.

Maj. Gen. Heather Pringle:

Thanks so much. Appreciate you being here. Thank you all. Brian, I'm going to start with you, and let's jump in. Talk about the context of readiness and really what it means, what does it mean to you, your company, or your technologies?

Brian Morrison:

I think through decades of the department, we've thought of readiness as are our Airmen trained, are our platforms maintained, do we have sufficient ordinance? Do we have sufficient JP-5? It was really a purely logistical question and that resonates, I think, with many of us, amateurs talk strategy, professionals talk logistics. But I think that in the world in which we live today, we need to think of readiness as maybe there's a step before all of that. Readiness has to include the security of our information, the security of our plans, the security of our orders, the security of our comm systems, because as we know, our peer competitors are going at that soft underbelly, so that to me is the central principle of readiness.

Brian Morrison:

If I made aircraft engines or a sustained aircraft, I might feel differently about it, but from where I sit, the key issue in readiness is left of launch. It is can we secure our information before conflict arises and then keep the security of that information during conflict? It's maybe a little bit of a different view of it than the logisticians in the room, than the engine manufacturers, than the maintainers in the room, but I think it is as essential as any other part of readiness I can think of. Does that answer the question, ma'am?

Maj. Gen. Heather Pringle:

Absolutely. As we're facing multi-domain threats, we have to think about readiness in a multi-domain way, so I think that makes perfect sense. It leads into my next question, which really, I'm going to target at Andre. You mentioned that you're a commissioned officer in the military and you've been in for a while, so times have changed, technologies have changed, and so can you tell us how has readiness changed from when you've started to maybe today?

Andre McMillian:

I think as you think about what's changed is the fact that we've changed our way of thinking from an industrial age mindset to more of an informational age mindset. What I mean by that is if you were to take a look at and view readiness through the lens of a system, it's not only the technology readiness

levels, it's the manufacturing readiness levels, but it's also the digital readiness levels that I think is incredibly important. If you look at, iPhone is a great example. iPhone was launched in 2007, here, as we sit, they've launched, in 16 years, 16 versions of an iPhone. There's been this desire to continue to have iterative technology insertion along the way. If you were to look at propulsion, we have done exactly that same in partnership with the Air Force, who really adopted this idea early on with the Engine Model Derivative Program.

Andre McMillian:

As we look at our history with the F100, that has had several iterations of improvements along the way, we've had the F119, likewise, that has done the same. Many people don't realize that the 119 was nicknamed the maintainers engine, and so it was already looking at logistics under attack, it was already thinking about a contested environment, and it was already thinking about how is an Airman going to be able to utilize and work within a hazmat suit, be able to use six common hand tools, remove and replace a line replaceable unit within 15 minutes and do it in a austere environment?

Andre McMillian:

We've taken that type of iterative design and technology and we've built that forward even to the 135. From a digital perspective, I'll share with you that the 135, in one single flight, will actually download usable and useful data than what an entire 119 was able to do in one year, and so as you think about how we accelerate change from that perspective, it's significant. We continue to do that, we have an engine core upgrade that we're working through now, and we're making sure that it's supportable across the sustainment network across the globe.

Maj. Gen. Heather Pringle:

Having that digital underpinning and adapting quickly to change is really what is making today's readiness different than the past, and so that's particularly important as we're looking at the scale of a pure competition and transitioning there, so really great words there. Speaking of pure competition, David, if we can, let's talk about China. They have this concept of military civil fusion, where industry looks and everything that they do, they bring those advantages to the military, including its readiness posture. Here in the United States we have a different model, open society, et cetera. Do you have any thoughts on how we might better benefit from what industry has to offer, even, as Andre just mentioned, those digital technologies that are out there?

David Tweedie:

When we look at what our competitors are doing with their system, I think we need to step back and look at what are the asymmetric advantages of our system? There's a couple that I'll bring up, one, the first one is competition. Our free market, private sector system, competition is a driver and it provides innovation, it provides affordability, and it provides responsiveness to the end user/customer. While the DOD is often the obtainer of bespoke capability and therefore has to often fund during the development phase, and so some of that upfront investment to ensure competition throughout the life cycle might be more upfront, downstream, time and time again, both in the commercial world and in the military world, the implementation of a competitive structure over the life cycle can bring those benefits of innovation, affordability, and responsiveness.

David Tweedie:

And then one step beyond that, I think with recent world events, both with COVID and the challenges in Ukraine, have highlighted resiliency in the supply chain. It's one of those things you never know how valuable it is until you lose it and I think that's something over the last three years, we've all collectively recognized how fragile we were in terms of supply chain resiliency. That's another intrinsic benefit to competition that's harder to quantify on a dollars and cents basis, but again, it's invaluable once you realize you don't have it. But then the second thing to bring up is our commercial aerospace industry in the United States. We're blessed it is the best in the world and it's actually the largest capital goods export market, which sets a very strong for the United States.

David Tweedie:

It sets a strong foundation for our economy, which is intrinsically beneficial to our country, but then that provides some technologies and capabilities that can be leveragable in, it provides an infrastructure, whether that's unique manufacturing capabilities, as well as industrial capacity. The commercial aerospace market is larger than the military aerospace market, so tapping into that brings that industrial benefit, as well as the workforce. We heard from Secretary Kendall that the Airmen are critical to the success of the department, of the Air Force. Well, our skilled workforce, both our engineers, our salaried and hourly manufacturing workforce, it's a tremendous asset to this country, so now how do you get more of those products into the Department of Defense space and how do you get more of those commercial players into the defense world? Just a couple thoughts, commercial off-the-shelf procurement is an obvious way to do that.

David Tweedie:

One thing we sometimes see is you start with something that's almost what you want that's commercially available. And then as you start applying unique requirements for our unique military needs, each of those individual requirement decisions in a vacuum might make sense, but in aggregate, you might have marched so far away from the original commercial off-the-shelf intent that you're giving up the cost and the economies of scale and what you're really after, and you drive more cost, higher qualification costs. Maybe just it doesn't work in all cases, but adjust the lens a little bit from how do I tailor the commercial off-the-shelf product to my unique military requirements, to maybe flip the script a little bit is can I tailor my military requirements to align with what the commercial world is producing and maybe live with not perfect technical requirements, but good enough technical requirements, but then give you that affordability and scale that you're looking for to provide readiness?

David Tweedie:

And then finally, IP. I think there's a great structure for commercial items. There's a great structure for bespoke items, but some of the players, if you're a small business with a very narrow, but very valuable IP, and that's the center of your business, when you put that at risk, you're risking your whole company. And then if you're a more large, commercial-oriented business wanting to get into the commercial world, how much of that are you willing to put at risk? In that in-between zone of pure commercial versus pure military, is there an IP structure that can get more players on the field? It's not a insurmountable barrier, but it's a speed bump that that might be preventing fully tapping into that asset we have.

Maj. Gen. Heather Pringle:

If I were to summarize what you were just helping us understand, intellectual property, the talent, the people that actually make it all happen, and then looking at the requirements in order to do it at scale,

are there ways that we can get good enough, min viable product, if you will? I really like all of that discussion. You also mentioned something that's near and dear to my heart, as a lab commander, we're constantly focused on what if we don't know what the threat is that's out there and we have to adapt to the unknown? COVID was the absolute perfect example. You rely on the talent to converge in a multidisciplinary way and solve that in new and different ways than what you might not have thought, and so that makes readiness a whole different aspect. Andre, I'm going to come back to you and see, have you learned anything? What did your company employ throughout the pandemic and are there lessons learned that we might apply to our readiness posture?

Andre McMillian:

Thank you for the question. I think if you look back over the last couple years, we've learned a very valuable lesson because the pandemic, clearly, was the great equalizer that affected every city, every county, every country, every continent, but it was at the same time, the natural force and function, in many respects, that actually brought us together when we needed to be together the most. I'll look at the lens of our partnership, specifically our public-private partnership, which we have down at Tinker Air Force Base. I'll share with you that during the last couple years, despite the fact that we had workforce disruption, despite the fact that we had supply chain disruptions and everything else that was going on, that location, across three engine series, the F119 that powers the F22, the F135, obviously, as well as the C-17 engine, in two years, they were able to increase their output year-over-year and it was the highest they actually had ever done and they did it during a pandemic.

Andre McMillian:

And then you would say, "Well, why is that?" I think in many respects, we were able to develop the right level of partnership that was required, we were able to move at the speed of trust, and we actually brought that same focus as we increased our capacity across the international sector. We actually have 36, 26 spaces, 10 ships, that we stood up within a couple years, that'll be 74. I had a team that actually built three test cells in three continents and still had to deal with quarantining for two weeks at a time in the countries that they were at, so it just shows you that despite the distractions and the disruptions that we have, that there's still a way to be able to partner together.

Andre McMillian:

I'll share one more that actually hits closer to home is obviously, General Pringle being the commander of the Air Force Research Lab, this year, we'll actually sign a data sharing teaming agreement with them, and it's in an effort to be able to support digital thread for sustainment. We decided to partner with them on how do we look at flight safety critical hardware and how do we actually utilize the data mesh that's there and accelerate it in a way that we can actually not only be able to come up with advanced repairs, but also maybe potentially look at different types of materials? This is all in an effort to be able to leverage sustainment and then more so leverage the network that we have across the globe to support our products.

Maj. Gen. Heather Pringle:

Thank you, Andre. As we become more involved and/or dependent or integrated in a digital way, we're going to have to start to think about, or well, hopefully we've thought in advance about securing that and our communication strategy and cybersecurity. Brian, this brings me to you and a question for you about what steps can we take to be better prepared, whether it's with our cybersecurity or our communication strategy for Airmen and Guardians?

Brian Morrison:

I think as an initial matter, what I worry about, and I think many of you worry about, is that we're coming off a couple of decades of conflict in which all of our comms were essentially secured, we were not competing with a peer, and I think most of us in the room believe the next conflict will be quite different from that. I worry that maybe we have lost some of the fire in the belly in worrying about how to keep those comms secure. Look, in every circumstance, whether it's your laptop at home or the iPhone in your pocket or the IFF system in your aircraft, in every circumstance, the first question is always about updates and patches. We have seen over time that most of the penetrations we've had have not been unbelievably sophisticated attacks, they've been known exploits or exploits of known vulnerabilities that we had the means and the knowledge to remediate.

Brian Morrison:

The first thing I think we all have to think about all the time is are we doing our, what I would call cyber hygiene? It's a funny turn of phrase, but I think it makes sense. Are we eating our vegetables, from an information security perspective? The second thing I think we need to keep in mind is that the United States Air Force and the United States Space Force has largely solved many of the most thorny problems of warfare for the past five centuries. We now can deliver a weapons system anywhere in the world within minutes with near 100% accuracy and near 100% lethality. That was unthinkable for most of human history and now, it's thunk, we can do it and we know we can do it.

Brian Morrison:

Unfortunately, our peer adversaries know we can do it, so they will, by necessity, pursue those asymmetric attacks, which have to be attacks on our information systems. What that requires us in turn to do is think like the enemy. I know there are no doubt planners and red teamers, probably in this very room, who make their living thinking like the enemy. We've got hundreds of pen testers in my business who think every day, how can we break what we're doing? We've got to think like the enemy and then we've got to devote the time, treasure, and attention to stay ahead of the obsolescence curve, particularly in my part of the world at General Dynamics Mission Systems, with codes and crypto.

Maj. Gen. Heather Pringle:

That's not just a military issue, it would also be one in industry, as well. Do you have any thoughts on that?

Brian Morrison:

David said something I loved, he said, "Our asymmetric advantage is our competition." I think that's a wonderful response to the sort of unity of effort you can get in a totalitarian country. I totally agree. I think our competition will allow us to respond to that unity of effort. The challenge is that, again, our enemy knows that we are more innovative, that our technologies develop faster, so they're stealing it left, right, and center, so that's the industrial base threat is how do we keep them from stealing our mittens, so to speak? You know they're trying, we know they're trying, and we see it every day, OSI warns us all the time, our own internal security departments warn us all the time. While I totally agree with David that our innovation can get us out of this box, we've also got to protect our innovation.

David Tweedie:

100 percent agree with that.

Maj. Gen. Heather Pringle:

Jump in, please don't be shy. It's a great topic. David, let's pull the thread a little bit more. How can industry be better prepared, whether it's in this area or, as we're talking about, this transitioning to a wartime posture? We are talking at scale and mass and speed, obviously, can't get there soon enough, so do you have any thoughts on that?

David Tweedie:

A few things we're working on at General Electric, we've been through a, as well as all of industry, a massive supply chain disruption through COVID. As we really try to get back to where we need to be to deliver for our customers, both commercial and military, we're really trying to attack with lean principles, really trying to drive waste out of the system and focus on SQDC, safety, quality, delivery, cost, in that order, because you've got to attack them in that order if you want to get to the ultimate result, and also, driving a culture of continuous improvement, kaizen is the lean term for that. That's both internally in our own shops, as well as in close partnership with a lot of our tier one suppliers, where we work collaboratively with them to go through week-long kaizen events and try to drive improvements. We've seen in our own shops up to a 70% improvement in turnaround time in our HPT blade manufacturing product lines, with some of our suppliers, we've seen a 30% improvement in throughput, and that's just making better use of the assets that you already have.

David Tweedie:

Another approach for us is strong synergies between our commercial technologies and our military technologies. For GE specifically, that's ceramic-based composites material systems that are lighter weight, more durable, higher performing, and additive manufacturing, 3D printing. We actually did a lot of pioneering technology work with the Air Force Research Laboratory on those technologies, but then our high-volume commercial products have industrialized those, gone through the regulatory hurdles, and are now flying millions of people every day on those technologies that then get fed back into our T901 turboshaft engine for the Army Future Attack Reconnaissance aircraft, as well as the XA100 that we worked in close partnership with the Air Force on, that that can revolutionize and maintain the air dominance function of the Air Force, so that's as we think of things.

David Tweedie:

And then just one specific example that caught our attention yesterday was Secretary Kendall talking about 1,000 CCA, collaborative combat aircraft, and we need to collectively, industry and the government, think through the problem we're being asked to solve is the Air Force can't afford the exquisite capability of the manned platforms and the volume required, so CCA is the solution, but if we do nothing more than just take off the systems that are there to support the pilot, I don't know that we're going to break the cost curve enough to get to the volume we'd like,. How do we think through, again, the requirements process through design qualification and even the whole sustainment approach, how do we rethink that collectively, as industry and government, to get to a true low-cost solution, not just a slightly lower cost solution? I don't have the answers, but that is some of the things we're trying to think about and want to partner with the Air Force on.

Maj. Gen. Heather Pringle:

Well, and it even brings up the other question of the dual-use technologies that meet military or civilian needs. Do you have any thoughts on that? Would that be a way to better break the cost curve?

David Tweedie:

Absolutely. It speaks right at the heart of are there commercially available alternatives that are good enough or close to good enough that, again, when you think about the industrial cap... But first of all, products that might already be developed, as well as industrial capacity that might already exist, that can be quickly repurposed as different customers have shifting needs over time.

Maj. Gen. Heather Pringle:

Go ahead, please, Andre.

Andre McMillian:

I'll add, and I think there's some similarities there with a blended business of having commercial and military. Many folks don't realize that 75% of our business is actually commercial, so we do think heavily about where do we leverage that technology to include the actual product? As you look at CCA, and the other topic that was brought up yesterday was this blended wing concept regarding the future tanker and what's the staple of commercial off-the-shelf products that we actually have and they're actually available, so it actually accelerates the time for insertion and then it also provides an opportunity to partner with their framers from an integration standpoint, so I think there's great benefits there from an affordable readiness perspective.

Maj. Gen. Heather Pringle:

Any thoughts in the cyber world, is it different?

Brian Morrison:

It is. I'll disagree with my friends just a tiny bit as it relates to my domain, which is different, admittedly, it's a different world. In the cybersecurity domain, the notion of just good enough, or almost good enough, to me, is a recipe for mission failure. In the cybersecurity domain specifically, the notion that we can get almost there with commercial crypto is obviously a non-starter for our most critical missions. Of course, there are missions in which you can rely on some commercial crypto because you've got short lifetime for the... Data security. Maybe somebody doesn't like what I'm saying, man.

Maj. Gen. Heather Pringle:

Well, or they really like it,

Brian Morrison:

Or they want me to get off the stage, I don't know.

Maj. Gen. Heather Pringle:

We have seven minutes.

Brian Morrison:

For our most crucial missions, though, we have to be dealing with gear that only, only the US military and its closest allies have. It's just our lives depend on it.

Maj. Gen. Heather Pringle:

Well, great thoughts and apparently, it was enlightening. Dun, dun, dun. As we wind down our discussion, let's finish with, so let's we've assume we've transitioned to this wartime posture, we've collected our capabilities at scale, our Airmen and Guardians are prepared and ready, so how do we continue to adapt while we're in the middle of fielding these challenges, addressing the threat, et cetera? That'll be the last question, then we'll go to closing comments. David, we'll start with you.

David Tweedie:

I think in two work streams, I think in the cold conflict of ongoing, as our capabilities evolve, our understanding of our competitors capabilities evolve. I just think the continued close partnership between industry and the military and understanding where those emerging needs are is the way to address that. And then I think in more of the hot conflict, it's about having the right products at the right time and that ability to surge capacity with very short notice, which I think we've all learned is harder than a lot of people anticipated. I think it's about being prepared and perhaps thinking different from a just in time approach that a lot of us, in both commercial and the military side, have migrated to, to what does a just in case posture look like and how do you set up yourself for that?

Maj. Gen. Heather Pringle:

I think that's a really good point, because we don't want to just only plan for up to day one and then wing it after that, we've got to be prepared day 2 to day 200. Any thoughts, Andre?

Andre McMillian:

I go back to yesterday, the Chief shared the quote from Italian Air Marshall Giulio Douhet and it certainly resonated with me, and it's a quote that I've shared with the team in previous times. Basically, it says, "Victory smiles upon those who anticipate the change in the character of war, not upon those who adapt themselves after the change occur." I think what we bring to the fight is our ability and our approach to be able to solve problems with our customer.

Andre McMillian:

As I think back to Francis Pratt and Amos Whitney history, a lot of people don't realize that they were integral in providing interchangeable parts during the Civil War, and so that's where the history's gone. And then in World War II, with the scale that was required for both the Navy and the Army Air Corps, we were able to provide that. Fast forward to even now, and much more, so we're able to leverage the power of Raytheon Technologies, which is our parent company, and clearly, there is a portfolio of technologies, but then I would also say there's 180,000 people that are working shoulder-to-shoulder with our customers. When you think about that and our ability to do things together and partner, I think it's going to be critical as we go forward to be able to adapt in a pure competitive environment.

Maj. Gen. Heather Pringle:

Thanks, Andre. Brian?

Brian Morrison:

I love what you said about partnership. I'll quibble with your premise a little bit, ma'am. The question was premised on the notion that we will one day move from a peacetime footing to a wartime footing. In my part of the world, ma'am, I believe we are there, and if there's one thing that really keeps me up at night, I believe we are in hot conflict today in the cyber domain, and I know many of you agree with me. If we are in hot conflict today, I assure you that those two or three peer adversaries are working

every day to break our codes, to get inside our sensors, to read our communications, to hear what we're saying to each other.

Brian Morrison:

If in fact we are in that hot conflict, and I'll ask you to believe me on that, what I worry about is that we are not having the urgency I think we need. Look, you can tell I'm a passionate person, you can tell that I jump out of bed every day to do what I do, but what I would love to see, from industry and government together, is that agility and urgency that we saw. There was a time, actually, when I was in Iraq, and I think you might have been there, too, at that moment, we were dealing with explosively formed projectile threats to the underbelly of the vehicles. Some of my people who would later be my colleagues at General Dynamics, I had never met them at the time, sat down with the two-star and the two-star said, "Look, soldiers are dying, we need an answer today."

Brian Morrison:

They sketched out a design for a different hull for the vehicles and they went back to the plant and they started working on it. There was no question about how am I going to get paid for this? Are the requirements lying flat? Do we have all the contract terms? It was urgency to mission, and then we'll let everything else sort out along the way. Everybody's got lawyers, everybody's got contracts, we've got to worry about them, but I would love for all of us together to get back to that moment of urgency, because I think we are in a hot war.

Maj. Gen. Heather Pringle:

There is no transition, is what you're saying. That's the whole title of this panel and I'm really glad you challenged that, because I think there's a lot of what you say, there's a lot of truth in that, and so the question is do we have our gloves off now or do we wait? Any final thoughts, David, closing remarks? We'll just come down the line.

David Tweedie:

Just thanks for the opportunity. We at GE, we are not at the pointy end of the spear, but we're really proud of what we do to support and bring in the most capable products to those men and women who are at the pointy end of the spear, because we don't want them going into a fair fight, we want it to be an unfair fight in their odds. We just are really proud of the small piece we do to make that possible.

Andre McMillian:

Thank you again for the opportunity. I'll really focus my comments on the folks that are given in uniform. Having come from the uniform and being in a position that served a customer I once was, I'll share with you that you probably don't realize that you need just as many people outside of uniform as you do inside a uniform to help you be successful. I would say I've taken that path and as I think about both David and Brian, on behalf of all of our industry partners out there, we truly are committed to one cause and one single mission. I think people need to understand it, they need to recognize it. Using the old African proverb, if you want to go fast, go alone, but if you want to go far, go together, and this pure competition will require us to go together.

Maj. Gen. Heather Pringle:

Long way to go. Brian?

Brian Morrison:

Again, thanks for having me. I think sometimes I tend towards scaring people with the vision of the cyber warfare that we're in today. I guess I'll leave you with some hopefulness, which is that I know the world is getting more dangerous. I've got a four-year-old at home, I worry about the world he's going to grow up in. At the same time, I am 100% certain that when the chips are down, our soldiers, sailors, Airmen, Marines, and Guardians are invariably the kind of people that rise to the challenge. I want you to know that I get up every day to provide you the tools to meet that challenge and I'm grateful that you are out there meeting that challenge for us, so thank you to all of you. Thank you, ma'am.

Maj. Gen. Heather Pringle:

Thank you all for being here. I'm sure when you walked in and we started talking about transitioning to a wartime posture and you have a lab commander and three industry panelists, you wondered how is this going to be helpful to me? But I think the team has demonstrated that there are a lot of great ideas and that together, we can make it happen, so would you please join me in a round of applause for our great panelists?