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Fireside Chat with Secretary Ryan D. McCarthy and General James C. McConville

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BY

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I. Opening Remarks

Susanna Blume: Welcome everyone. Thank you so much for joining us today. I'm here at my virtual fireside. Again, new and improved, expanded. We are graced with the presence of the 24th Secretary of the Army, Ryan McCarthy and the 40th Chief of Staff of the Army, General James McConville. Thank you both so much for being here with us today.

Susanna Blume: The Secretary and the Chief and I are going to have a little chat about the defense strategy, about the Army's modernization priorities, about the President's budget request that just came out as well as the emerging Joint War Fighting Concept and we're going to save about 15 minutes at the end to take questions from the audience here. But first, I want to throw it over to the Secretary and the Chief to give a couple opening remarks and then we'll dive into our conversation. So with that, Secretary McCarthy.

Ryan McCarthy: Thank you, Susanna. This is the closest I'll get to Davos, Switzerland apparently. But no, it's a great opportunity to be here. Thank you. As we discussed in the green room, these are wonderful opportunities for us to try to talk about how we're trying to transform the Army. We're in year three of a very aggressive effort of transforming the Army and not only in how we train the force, how we modernize and ultimately, help our people reach their maximum potential.

Ryan McCarthy: So as I emphasized, the third year of a massive restructuring like we've not seen in over 40 years in the Army with creating an organization specifically to modernize the force, but staying against the fundamentals, readiness, modernization, and we use reform as a tool to finance our ambition and help us evolve.

Ryan McCarthy: So on the readiness standpoint, when you look back over three years ago, we had about two brigades of the highest levels of readiness. We're north of 25 today. Very proud of that. But one of the things that we've recognized is just with all of the changes and challenges we face in the world, the force projection is something you're going to see particular interest and focus with the leadership. So General Milley or McConville, Abe Abrams did a remarkable job getting us back to focus on getting tactical readiness in a great place. But now it's how do you take these units and project them very quickly worldwide.

Ryan McCarthy: We did that on New Year's Eve remarkably well. 82nd Airborne Division on a cold start, moved a brigade combat team and within hours had that first battalion on the ground. Literally took people out of New Year's Eve parties, a cold start. But at scale, moving heavy formations within days to get them on the ground with partners in Europe and East Asia is something we're really focused on.

- Ryan McCarthy: So we made some investments in the '21 budget and we'll continue to do that as we march across the FYDP so that we can improve that span time of getting boots on the ground quickly.
- Ryan McCarthy: The modernization effort, a massive restructuring over two years ago to bring all those stakeholders together under one roof, reducing the span time in decision making, but also bringing clarity in decisions, forging better relationships between the requirements community, acquisition, tasks, sustainment. So very proud of that. Very excited. A lot of prototypes because we've moved 80% of the funding against those six modernization priorities. That was about a little over two years ago.
- Ryan McCarthy: And between our night court efforts, which were the basically zero-base budgeting reviews, we've gone through our second evolution. We've got north of \$45 billion across the FYDP that we moved against these priorities. A lot of energy. You'll see about half of the procurement dollars against new capabilities by the middle of this FYDP. So a huge change within our enterprise, but that brings nothing but tough choices in '22 and '23. So if these prototypes are successful, that's where the choices would be made to bringing in LRIP tranches into the formation and to start to scale. So a big challenge is in front of us.
- Ryan McCarthy: We emphasize the word reform repeatedly. That helps us evolve as an institution. It helps us do a better job at managing every dollar we have. And the Chief says this all the time, "Dollars are like bullets" and he just pounds the commanders. About three or four years ago, we'd have obligations upwards of \$4 billion a year that would just go back to the Treasury. We're less than a billion today. We continue to get better there, but that's just been leadership. Him sitting in the conference room just pounding people on the screen and guess what? It's amazing how it works, right?
- Ryan McCarthy: So we've improved dramatically from that standpoint. Changing the operating model and doing a lot of things differently and that means we have to get out more and communicate and emphasize the things we're trying to do.
- Ryan McCarthy: I think the Chief would be great to talk more of the specifics with each of those initiatives.
- GEN James McConville: I agree with the Secretary. We have to be ready now. We saw that on New Year's Eve and we are, but we also have to invest in the future. And when I look at the Army over the last hundred years or so, we've had major transformations of about every 40 years. 1940 going to World War II, we transformed the Army for World War II. In 1980 when a lot of us came into the Army, we had a major transformation on how we did business and now we find ourselves in 2020 and we have to transform the Army.
- GEN James McConville: And really that's what we're going to do. And we're moving from an industrial age into the information age. And so we have to do things differently. And when we talk

about transformational change, we're looking for incremental improvements. We're looking for transformational changes. And if you take a look at what we're doing when it comes to modernization, that's exactly what we're getting after.

GEN James McConville:

And just one aside, when we talk about modernization, we're just not talking about new equipment. We're talking about a new way we're going to fight. We're talking about new organizations; we're talking about certainly monetization priorities. We're also talking about how we manage people in the 21st century. So we're excited about what's going in the Army and look forward to your questions.

II. Conversation

Susanna Blume:

All right. So I'm going to start this conversation where I always start these conversations and that's with the strategy, the defense strategy. Secretary Esper had what I will call a birthday party for the NDS at SAIS a couple of weeks ago. It just turned two. And in a way it certainly feels like the strategy is in the terrible twos, right? It's a very dynamic moment. There's a lot of change happening, which is always hard, but hopefully in the end, rewarding.

Susanna Blume:

And so I want to start off by asking both of you, how's the Army doing when it comes to being measured directly against NDS implementation and then General McConville also in your Joint Chief's hat, how's the Joint Force as a whole doing in achieving the goals and the priorities that were laid out in the NDS?

Ryan McCarthy:

So I'll try not to grade us too liberally, but really the proof's in the pudding. We've moved billions of dollars to develop new weapons systems. So I think the first [thing] is we put our money where our mouth is. The second standpoint is granted those weapons systems have to get through that modernization not holding they've got to get into the formation to truly be successful. Then if you look at, we put a very aggressive EDRE program in place, emergency deployment readiness exercise where we can do these in Europe and East Asia. The defender series exercise, we're doing one that's starting right now in Europe where we're going to put a division-size element on the continent. The following year we'll do one in East Asia. And with the Pacific Pathways exercises, we put a lot of funding and putting troops towards these exercises and to help strengthen partnerships and increase presence worldwide.

Ryan McCarthy:

To the Chief's points earlier, we're looking at our disposition for expeditionary capable bases in Southeast Asia. We just announced a CORE headquarters that we're going to have that'll be service retained, but the flag will be planted here in the States but it'll be specifically designated to operate in Europe. And we're looking with partner nations for where we would house that. So I think we're probably a solid B at this point, but a lot more work to do.

GEN James McConville:

And when you talk about the Joint Force, we're going to fight as a joint force. So it's very important that we share the same vision [about] how we're going to fight in the

future. And right now at the joint level developing the joint all-domain operations concept, JADO as they call it. And our contribution to that is multi-domain operations. So normally, we had air land battle that just recognized really two domains. Now we believe we'll be contested in all domains in the sea, in cyber, in space and we recognize that. We also recognize that there'll be a lot of cross-domain contributions to the Joint Force. And probably one of the best examples of this is long-range precision fires where we can envision us providing long-range precision fires to penetrate potential anti-access area denial capabilities that will enable either maritime or air forces maneuver in the joint fight.

Susanna Blume: I definitely want to come back to that concept, the joint all domain war-fighting concept. But first I want to dig a little bit deeper on the two principle priorities, the National Defense Strategy Strategic Competition with China and Russia. And so I'd like to start by asking how has the Army's view of its role in Asia changed or evolved as a result of the NDS? How are you thinking about what the Army's role in that conflict or potential conflict would look like?

Ryan McCarthy: We both ought to talk about this. I think of three ground wars in the last century. In Asia, we've always been in Asia. We have, how many people we have assigned to the INDOPACOM?

GEN James McConville: About 91,000.

Ryan McCarthy: Yeah, 91,000 people just assigned to that combatant command. We have been instrumental in deterrence for a long time there. You see much more emphasis over the last several years for the Pacific Pathways Exercise. When he and I were the under-vice team, we went out and spent about three days with Admiral Phil Davidson in INDOPACOM just in Hawaii going through the O plans. What do you need? We made the adjustments in the palm to invest against the capabilities that he needs to win. The EDRE program I highlighted. The Defender exercise that we're going to put in place. So we have always been and we've doubled down on that going forward and there's going to be no greater deterrence than boots on the ground training side-by-side with allies. So we're looking very hard at our disposition and the duration of forces west of the International Dateline and you're going to see a lot of moves associated with that over the next 18 months.

GEN James McConville: Well, the National Defense Strategy talks about great power competition, but great power competition does not necessarily mean great power conflict. And the way you avoid conflict is through strength. The way you avoid is really strong relationships with partners and allies in the region and working together. And that's really the strategy that we're pursuing.

Susanna Blume: On the capability side specifically, maybe we can talk a little bit about where long-range precision fires is headed and post INF what does that mean in Asia in terms of both deterrents and more fighting capability?

- Ryan McCarthy: Do you want to take that?
- GEN James McConville: Yeah, I think when you take a look at long-range precision fires, some have set up systems which we use the term anti-access area denial that may make it more difficult, if we ever got into a conflict with the ability to penetrate. And you want to have the ability to penetrate, whether that's with naval or air forces and what that allows us to do is divide that capability.
- Susanna Blume: I wonder if we could then turn to Russia and talk about kind of how the Army is thinking about that particular competition and also ask if we could dive a little bit deeper on the Defender exercise because I think that's a really exciting development, actually.
- Ryan McCarthy: Why don't you do that one?
- GEN James McConville: Yeah. As far as the same thing in Europe, we have a lot of partners and allies and NATO is a very, very strong relationship and again great power competition does not necessarily mean great power conflict. And again, standing together with our allies and partners showing strength and Defender 20 is an exercise that allows us to practice, rehearse our ability to bring forces into Europe and work very closely with our partners and that's what's going to happen over the next couple of months.
- Ryan McCarthy: I'm really excited about it. I mean the Chief's going to watch an airborne drop where you're going into Georgia and I'm going to go watch them unload armored vehicles out of a shipyard in Gdansk so you're going to be able to see us driving through cities and we're going to be alongside of them and then we're going to go out and do live-fire exercises. It's going to be a great opportunity, a very exciting spring, and you're going to have tens of thousands of Americans all over that continent dynamically deploying to different countries and conducting various exercises.
- GEN James McConville: Yeah. One of the key tenants of the National Defense Strategy is what we call Dynamic Force Employment. And the Secretary said, we saw that in Iraq with the 82nd Airborne Division, but it's also the ability to move multiple forces by multiple means, whether it's by planes, automobiles, trains and ships and that's what we intend to do.
- Susanna Blume: Yeah. So clearly a lot of progress there vis-a-vis the NDS. I wonder if you could give me a few comments on where does the work remain to be done? What's still on your to-do list when it comes to NDS implementation?
- Ryan McCarthy: Modernization is what keeps you up at night. The time. We're blessed with budget increases right now and just nailing these investments. So the Chief and I have maintained a role, even in our new jobs, of staying on top of this pretty regularly

more so than you would maybe historically. But we have such a massive investment and if we can get these prototypes to be successful, it'll make these decisions in '22 and '23 that much easier and you can reduce your risk. So that standpoint, it's really large.

Ryan McCarthy:

The readiness piece, it's something that we're remarkably proud of. We do very well. And it's something you can turn on very quickly. You have the most hardened and seasoned combat leaders in the history of the Republic running the Army. So if there's a place where I don't worry as much, it's because I know we've got them. But modernization is going to be tough.

GEN James McConville:

Yeah. We don't deter conflict with PowerPoint slides and we are moving along and we're very, very proud of our modernization priorities and they are moving along and we're getting close to prototypes and they're in the hands of soldiers, but to me success is when they're in the hands of a soldier in an operation unit. So it's nice we've got all these great programs going. We've got wonderful briefings and we are in the process of getting close to prototype. To me success is when all these modernization priorities we have are in the hands of soldiers and they're getting a chance to exercise.

Susanna Blume:

Yeah. Well, that's an excellent segue. Almost like we planned it, into kind of a stock taking on the big six modernization priorities. But before we get into the specific programs, I want to ask a little bit more broadly, what does modernization mean to the Army aside from the equipment, right? I mean obviously the new kit is a huge part of it, but what's the other piece?

Ryan McCarthy:

You should take that.

GEN James McConville:

I'll take that because we thought our way through this and again I talked a little about some of the older folks in the room, remember the 1980s. In the 1980s we came out with air land battle. It was a new way we were going to fight. And we came out with new units. Some of you remember Desert One where we developed our special operation units. The Ranger battalions came out. The 160th came out of there. Some of our Special Operation units came out of that. And our combat training centers, the way we were going to fight came out in the 1980s. We had the big five and we also went to the all-volunteer force.

GEN James McConville:

So that was a lot more than just the big five that modernized the Army. So you move forward to 2020 and you say, so what's new? Well, it starts with multi-domain operations. So we are moving from air-land battle to multi-domain operations. We're starting to stand up new units, multi-domain task forces. We're standing up the security force assistance brigades and we'll have five of those in the active and one in the regular Army. We're taking a hard look at information warfare, what that looks like so we can compete below the level of armed conflict. Where we had what we call dirt combat training centers, now we're going to train in virtual reality. We're

going to train in cyber ranges so that we can do those information operation things that we need to do.

- GEN James McConville: And then we talked about the big six. But the other thing we're spending a lot of time is on talent management. We recognize that we're in a war for talent and we had, in a lot of ways, industrial age personnel management systems and we believe we want to keep the best and brightest in the United States Army. We're going to have to compete for their talents and we're putting systems in place to do that. Most young people today do not want to be interchangeable parts in an industrial age system. They want to be recognized for their talents and that's what we're doing.
- Susanna Blume: Okay. Well, I think from there, let's step through the big modernization priorities and talk a little bit about each of them. Long-range precision fires, we talked a little bit about already, but I want to dive a little bit deeper into how has your thinking about the development of this capability changed post-INF and how does it contribute to kind of the joint fires problem specifically in the Asia Pacific? What does it look like in motion?
- Ryan McCarthy: I can talk a little about the programmatic. The Chief's probably better suited to talk about just the dynamics, South China Sea and others.
- Ryan McCarthy: We moved ahead for the full rate production for the Paladin PIM program, extended-range cannon artillery. We're excited about this. We've fired a wraparound twice the distance from 39 to north of 72 kilometers at in Yuma, hit with precision. We're excited about this. To be able to double tactical artillery that quickly. We know there's a lot of margin for growth there. So very excited about that program.
- Ryan McCarthy: Precision strike missile had a successful test in November. This is the ATACMs replacement. You'll have twice the volume and now that we're in a post-INF kind of world, you'll be able to go in the upwards of 600 kilometers. So we're extending the range of these long-range precision fires weapons systems at every echelon, which will give us greater ability to maneuver against potential adversaries in the future.
- Ryan McCarthy: The Hypersonics effort, Lieutenant General Neil Thurgood who the Chief handpicked for that job has been outstanding and has literally corralled the entire Department against this effort. We're finding economies of scale with the buys. They're sharing the information. We're doing this jointly within the test regime. He has collapsed the span time and the Army will be the first to field this capability. What's that early '23? Late '22? Fiscal '23. Yeah, and so the long-range precision fires program is number one. It's north of \$10 billion across the FYDP. We've put a lot of funding against that, but a lot of talent, to the Chief's point before. Some really talented folks, and industry has stepped up to the plate and they're swinging hard, so we're excited about that.
- Susanna Blume: Okay.

Ryan McCarthy: You want to talk about the deployment of the capability?

GEN James McConville: Well, I think when we take a look at how we would deploy that, that's what comes down to the multi-domain task force. The multi-domain task force will be an organization, and we don't know exactly what it's going to look like, but we know what it's going to be able to do. And what it's going to be able to do is have long-range precision effects. So it will be built around an organization that we've got to have an acronym and so it's called I2CEWS, but it'll do intelligence, it'll do information operations, it will do cyber, it'll do electronic warfare, it'll do space. And then it'll also have the capability to do long-range precision fires and whether that has hypersonic batteries or whether that has prism batteries that can sink ships, we will determine based on the mission requirements.

Susanna Blume: Right. Great. Next on the list is the next generation combat vehicle. And I want to talk a little bit about OMFV. Stumbled out of the gate, but what have you learned from that experience and how are you taking that forward?

Ryan McCarthy: His leadership here was tremendous. You should take this.

Gen James McConville: Yeah. I'll take this one because I think this is, people often talk, there's the old saying "You want to fail early." I don't think with that system we failed early. I think we learned early. And here's my point, and this is for a lot of the industry that we're working very closely with, we're going to do things differently in the Army. Many of you are familiar with our old industrial age linear processes where we developed large requirement documents over five to seven years and then we passed them over to our acquisition professionals and over the next five to seven years we tried to develop a system and then maybe 15, 20 years, we came out the other end after spending billions of dollars and we may have had what we wanted or we didn't have what we wanted.

GEN James McConville: So we are changing that process and you can see very shortly a list of characteristics coming out. And so we're actually moving away from the word "requirements" because it means so much to those in the business that it actually constrains innovation. So we are coming out with a list of characteristics that we want for this optionally manned fighting vehicle. We're going to be asking industry to come in with a design. Probably five other transaction authorities capability. And we're also going to ask industry to come in with technology that they think would fit in this design. And we're going to incentivize that.

GEN James McConville: And then once we get that back, we're going to take a look at the characteristics and say, "Hey, we need to define these a little better" so the characteristics will get a little sharper. And then we'll go to a detailed design and we'll down select from that and then we will go to a prototype design and then we will actually make sure that we can build it and out of the prototype, not until we've built the prototype will we get the requirements.

- GEN James McConville: And what we believe is then we'll know exactly what the trades are and we'll be able to proceed in a much quicker manner without spending a lot of money or without requiring industry to go after requirements that we didn't think we needed or that were un-obtainable.
- Susanna Blume: Yeah, I mean, I think it's a really interesting lesson learned here particularly is what you've just described as a process that has a lot more ability to iterate with industry and to tap into the engineering talent that exists in industry in order to solve the Army's problems. And so you're applying those lessons kind of across the board to some of these other programs as well or?
- GEN James McConville: Yes, we are. And again, this is learning. We are learning as we go through this because we have operators, we have acquisition professionals, we have industry and many of these people have been doing it a certain way for a long time, so they're going to have to change the way they do business. And leading change sometimes is hard if you're very comfortable with the process that seemed to work for all the players, other than the outcome. I'm more interested in the outcome than the process.
- Ryan McCarthy: The IVAS system has a very similar acquisition strategy and that's where-
- Susanna Blume: Can you remind everybody what that is?
- Ryan McCarthy: Oh, sorry, the Integrated Visual Augmentation System, which is in our soldier lethality portfolio. And it's basically where the gaming industry, so here's with my prop, I can do it here with my prop, right? So the gaming industry makes these goggles and you can play Call of Duty or something and you're in that kind of visual realities that you see kids playing video games. What we've done is you buy that commercial product, but you put an interface and then the interface, now we can control the applications that we put on the goggle. Synthetic training, day site, night site. We can put maps in there. We're looking at do you put in the common operating pictures so that four-man stack going through the door, you can see that bag out of Italian headquarters. That's the ambition behind this.
- Ryan McCarthy: But what's interesting about it is what we learned in the process, because we used the OTA or the transaction authority that was granted to us by the House and Senate Arms Services Committee was the speed of business. It allows you to get things on contract quickly to buy prototypes, to the chief's point, unleash the engineering talent of these great companies. And then we go through the problem set together. You have companies like Microsoft involved with this who would've historically helped us with email now are helping us with night vision or even more than just night vision, but synthetic training and others.

- Ryan McCarthy: But the point he's making is just the speed of business. They're not getting tied up for months and years to getting something on contract. And it gets them excited about it. That puts them in a position where their cash flows are stronger and now they're going to invest in their business instead of investing in contract experts so they can spend years back and forth of us moving paper.
- GEN James McConville: And that's the thing about transformational change by incremental improvements. I've used the phone as an example, how we went around with the phone and then all of a sudden, the iPhone came in and now we use it for maps and pictures and everything else.
- GEN James McConville: We're doing the same thing with our night vision goggles. The old folks here, we used to fly these PVS Fives that were full-face goggles and we got them a little better and then we wanted to put thermal in there so we're going down the route of improving on night vision capability, white phosphor, thermal and a night vision capable all together. And also we came in from the side with a whole new method of doing business and now it's just not a night sight. It's a whole new way of doing business.
- Susanna Blume: Based on a commercial technology-
- GEN James McConville: Based on gamers. It really came out of the gamers and they were doing different things. And that's what we're looking for, for innovation is all of a sudden, and we don't even know all the things we're going to be able to do. As you start to think about it, now you can see you get video on this thing. You can be in a vehicle from behind, you can be under armor and look through the walls. I mean there's just a whole bunch of things that's going to fundamentally change the way our combat soldiers do business.
- GEN James McConville: And those are the types of things we're looking for. And we're trying not to constrain industry with these very prescriptive requirements because they won't meet our requirements. We don't know exactly what we want. That's why we want to throw it out there. And that's exactly what happened here. We didn't even know Microsoft was in the business when this thing happened. Didn't even know.
- Ryan McCarthy: Yeah, well, the first time we went through it and we had convinced Secretary Mattis. We set up this shoot house in the courtyard of the Pentagon because we couldn't get him to go. So we went and looked at it a couple months early and we're looking at the synthetic training scenario and it was like dragons and a spaceship. And I remember I looked at him and said, "Oh God, we're going to get fired if we take this in front of Mattis," I said, "Oh my God." And my heart stopped. I looked at him, I was, "What have we done?"
- Ryan McCarthy: But you realize the speed of that industry. Within three or four months, they show up and it's a near-peer and you think you're in a city. And it was within a matter of

months of how fast they can move the software. And that, obviously, it worked out for us, but at the time, you think it was going to move real slow and it's remarkable, the engineering talent of some of these companies.

GEN James McConville: Yeah, the business was pretty smart. They built the mount site out at Camp Pendleton inside simulation. And so General Mattis, big Marine, been there a whole bunch of times and he got a chance to go through that with a near-peer. It wasn't a bad way to do business.

Susanna Blume: Yeah. It was an upgrade from the dragons.

GEN James McConville: Dragons. Yeah. The fantasy game was not going to impress General Mattis.

Susanna Blume: No, Probably not. I want to talk a little bit about the network which is another of the big six priorities. And the Air Force, it was a big talking point for them in their PB 21 rollout that they'd made a big investment on behalf of the Joint Force and these capabilities that, I think, most of us agree are going to be critical to what Chris Dougherty would describe as the New American Way of War, right? This idea of connecting any sensor to any shooter across the Joint Force.

Susanna Blume: How did the Army's investments, how do those investments fit together? Is my question. Because it's essentially a joint thing that has to happen here.

GEN James McConville: Yeah. First of all, all the joint chiefs support a joint command and control. We've got to have that. And as we take a look, each service has been approaching this problem set from, I guess, a different perspective because if you're on the ground, you have hundreds of thousands of uses that are on the edge that need access. But I think the secret is, and I've learned a lot more than I think I ever knew about it, it's all about data. It's about us all standardizing our data. It's about how we transport the data. It's how we store the data. It's how we secure the data. And we all have to understand this because we all talk about machine learning, artificial intelligence. We throw all those things around. But until you kind of deal with the data problem, you really don't have a system.

GEN James McConville: So what we're doing is we have an integrated battle command system, which is really tying our senses to shooters. We're working that. We have an integrated tactical network that is bringing the communications that our soldiers need to the edge. The Secretary has been all over the cloud and data standardization. So we're bringing all that together and we're working very closely with the Air Force and we hope to have an agreement around the April timeframe that brings this whole thing together so we can communicate in reality and not on PowerPoint slides with lightning bolts. That's what we have to work out.

Susanna Blume: Okay. Let's talk a little bit about air and missile defense. It seems like there's never enough to go around, right? It's one of those kind of chronically high demand, low

density assets. Also another one of the big six modernization priorities. And so I wonder if you can bring us up to date on where you are in that piece of the puzzle in terms of both capacity and improved capabilities?

GEN James McConville: Well, first, we are very, very proud of our air defenders. I mean they're all over the world right now. Just been out to visit them. They're in the Middle East, they're in Europe, they're in Korea and they're doing an incredible job. So really proud of them.

GEN James McConville: The future for air missile defense though, the way we see it is, it's really sensitive shooters. It's not just one sensor for one missile system. It's having multiple sensors that are integrated. And then you can pick the arrows so to speak from the quiver that you want to use.

GEN James McConville: So we are developing high energy lasers. We're doing things with microwaves, we're doing things with electronic warfare. We're doing things with missiles, we're doing things with guns. So what you don't want to do is, is you take a look at some of the problems sets that we see in the future that range from unmanned aerial systems or swarms. You don't want to be shooting Patriot missiles at small UASs. So you have to come up with solution sets to that.

GEN James McConville: And then on the far side you have hypersonic missiles that you've got to deal with. So what it really comes down to is a layered-type defense that picks the right weapon system at the right range and protects our forces the way we need to do that. But that's where we're going with that.

Susanna Blume: Okay.

Ryan McCarthy: Critical to successful missile defense portfolio will be a low earth orbit satellite architecture over top. Without it, we're not going to have the ability to queue with speed and be relevant in the future.

Susanna Blume: So at the risk of poking at a sensitive topic, is that capability going to move to Space Force or are we still kind of making a determination?

Ryan McCarthy: Well, with every merger, there's divestiture. So, I think, that we're in the process of helping stand that organization up. We'll clearly have a role, but we still have watercraft, we still have helicopters. So, I mean, even though we have a Navy and an Air Force after, the Army was stood up first, obviously. So I think that over time the assets will divest and go to the Space Force, but we've worked very hard to help them with that. We have relationships with the NRO and NGA where they're working with our intelligence folks as well as helping us look at how do we queue satellites and task satellites at lower echelons.

- Ryan McCarthy: We're going to be doing that as early as this Spring in the Defender Series exercise. So as the Chief talks about how we get to this multi-domain organization, a lot of it is the behaviors and now bringing that down to an echelon like a brigade combat team, having those leaders now looking at how do they task an asset is something we hadn't done before. But the partnerships have been wonderful with the intelligence community. But things will change over the next couple of years as Space Force matures.
- Susanna Blume: Yeah. I want to talk a little bit about how the Army is thinking about autonomy and I'll paraphrase my old boss, Bob Work who says, "That if in the future the first soldier through the door is a human, we've done something wrong." And so I want to kind of dig a little bit about how are you thinking about autonomy and autonomous systems as you develop new operational concepts, particularly in this multi-domain kind of environment?
- GEN James McConville: Well, I like the idea of a person in the loop, so to speak, but I agree with Bob Work on that as I don't think that any place there's a very dirty or dangerous job that we could put a robot or something autonomous, we've got to do that. We should not be clearing mine fields with soldiers. We've got to be doing that with robots. We should not be going through breaches with soldiers. If you're going into an integrated air defense network, we probably should do that with unmanned-type systems.
- GEN James McConville: But the interesting thing is I still think there's a need for soldiers or a person in the loop because you can't feel through, well, first of all, if they're completely autonomous, you really don't get a sense of what's going on. And the second thing is even those who've been involved in remote operations, probably the best civilian example is, if we were doing this by video teleconferences or VTC, this would be a very different kind of session here. So you can't feel the people, you can't look around, the person way back there is asleep. I'm just kidding. But you look around in the room, you get a sense of how you're coming across.
- GEN James McConville: So it's still a situation where we want to have that capability and we look at some systems like even with IVAS, the fact that you can see and project yourself into a vehicle, you can actually be in the lead vehicle, but not physically be there. If you take a look at Apache helicopter, we kind of do that in the Apache helicopter right now. You're in the back seat flying through a heads-up display unit, but the system is actually in front of you that's flying the aircraft. So why can't you move that to the lead vehicle and you can sit behind or the lead helicopter, those type things.
- GEN James McConville: So there's a lot of things we can do as we get this convergence of different types of technology that's going to fundamentally change the way we do business. And that's what we're looking for people to do. Start thinking about how do you do those type things differently? And you could be in the third vehicle, but for all intents and

purposes, because you're looking through a heads-up display, you think you're actually in the lead vehicle and you can help it out.

Susanna Blume: And the same could be true in the future vertical lift and the helicopter program.

GEN James McConville: Oh, absolutely. I see that same thing.

Susanna Blume: And there's potential for optionally-manned platforms in that space, too?

GEN James McConville: I look at optionally-manned and mentally-manned, because some of the things too is, I've been thinking, you get 35 rangers getting ready to go into this attack and you can put them in there. It'd be tough if they look up in the front of the helicopter and there's no one there. But that doesn't mean, but here's the deal. We're competing for pilots. So maybe you don't have three or four crew members up there. There's just one. And maybe that crew member is more just there if something goes wrong or something changes, they have the capability. But that's just the-

Susanna Blume: Well, and we might get used to it in the future as well, right? As driverless buses become a thing.

GEN James McConville: Right, but then you have options too. Maybe that aircraft that you're flying, you're going to do a very difficult mission where you have to get into place and maybe take something out or put cargo into that and you don't want to risk pilots. So if they shoot it down, you just lose the cargo. You don't lose the crew. So there's a lot of, when we talk about this and we talk about the characteristics that we want in these systems, we want to keep options open for the commanders and then we can start giving the industry an idea of, "Hey, can you do this?" And if they show we can do it and you start wiring it and creating a system so it's just a matter of, "Hey, we can do this with little software," that's what we want.

Susanna Blume: Yeah. So Secretary McCarthy, I want to come back to you as I wrap up here to talk about all of these things we've just discussed, dollar signs kind of flash in the background, right? And I want to hit a point that you made at the top but a little more directly because it's not intuitive for those of us who have not spent a lot of time with program. Army is, I think, done a really commendable job of moving resources to invest in these prototypes. But at some point the prototypes have to enter production in order to get to the soldier in the field. And that's where the big dollars happen. So can you talk a little bit about what that evolution is going to look like, when it's going to happen and how you're going to handle it?

Ryan McCarthy: Yeah, so if the perfect storm hits and everybody performs in the out years, to highlight the challenges, it's going to be ruthless prioritization and ultimately the Chief will get the senior commanders in there and we'll have to make some very hard choices of the weapons systems we need to scale and they may require even tiered nature with the units that would receive them. So it is something that we have

been in deep discussion about already right now to prepare the institution for this, which will really hit within the next 24 months.

Ryan McCarthy: And to your point, LRIP tranches that will start scaling across the 82nd and 101st. It'll be expensive and it'll be very challenging with the fiscal environment. But that's where divestiture of legacy systems, there will be nowhere else to go when you're 60% of combatant commanders requirements worldwide, 180,000 people deployed. Under this current demand, over half of our balance sheet is to finance what's going on in the world and we can't pull back because the world needs America's leadership. They need the U.S. Army forward. So we recognize that that's in front of us and we'll make those hard choices if these prototypes perform.

Susanna Blume: Okay. Well, on that cheerful note, I will turn it over to the audience for questions and if I could ask if you could just wait for the microphone to get to you and then let us know who you are and where you're from. We have microphones, right? Okay. Up here in the turtleneck, second row.

III. Audience Q&A

Harlan Ullman: I'm Harlan Ullman with The Atlantic Council and several other institutions. Thank you for a really interesting briefing. My question is, if you were in Beijing or Moscow and leaders of your army, how would you be looking at what America is doing and testing the weaknesses, how you would respond to what you both just described in very interesting terms?

Ryan McCarthy: Do you want to take that?

GEN James McConville: Yeah, I think, well, the way I would hope they would respond is the idea that great power competition is not great power conflict and we compete for the security of various regions in a non-kinetic type way. I think, what I'd like to do, at least from what I see is, is take off the table the idea that we're going to have a conflict. I think we're going to have what they call, endless or infinite competition. It's just going to happen by the nature of great powers. You're going to have people competing for resources. That's going to happen.

GEN James McConville: And what I think is really important is we take that off the table. They're going to take a look at the systems we're developing. If you look at what some have done, the strategy has been an anti-access era denial type capability. So some of the systems that we're developing are going to allow us to certainly deal with that and certainly give us some options and dilemmas that they're not going to have. So they're going to have to respond in some way to what we're doing to overcome, we look at them as options. They probably look at as dilemmas and the fact that we're operating in all five domains, they're going to have to do the same.

- Harlan Ullman: But if you read Gerasimov, he's got some pretty strong ideas about what Russia is doing and if you go back to 1999 and the PLA and the book that you read *Understanding Warfare*, the Chinese have been looking at disrupting our systems. If you read the Secretary of the Navy's cyber study from a year ago, basically it argued that all of our systems have been corrupted. All of them. So I think that Russia and China could be far more aggressive in combing our weaknesses. The real question is how are you red teaming to make sure that you're at least one step ahead?
- GEN James McConville: Well, what we've done is, and I don't want to get too far into it, but as far as simulation and experimentation, that's why we're shifting to multi-domain operations. That's why we're shifting to the modernization priorities because when we simulate an experiment with them, that's how we get the insights that we need to deal with some of these problem sets that we have. That's why we've got to transform and be transformational right now.
- Ryan McCarthy: If I could only add, Russia plays their hand very well considering how weak their industrial base and their supply chain is. The challenges they face every time we conduct these Defenders Series exercises expends tremendous resources and energy when they try to do their exercises in parallel. So they play their hand very well. They've made sound investments with their anti-access area denial type capabilities that you mentioned. We're making investments to strengthen our networks and to try to be on a defensive nature.
- Ryan McCarthy: But the cyberspace is almost a dynamic environment and it's as much about the authorities that we're granted and how we compete in that space as opposed to just playing defense and taking punches. And I'll just leave that at that.
- Ryan McCarthy: But from the Chinese standpoint, One Belt One Road is really designed to commoditize a quality of life for over a billion people. And without it, they're going to be hard pressed. They're having a hard enough time responding to a flu virus. So you're learning a lot about that government and its ability to respond right now as well.
- Ryan McCarthy: But a lot of it will come down to economics for the country of China.
- GEN James McConville: And as you know, the Chinese are undergoing a fairly serious transformation of their army. They basically had an army amassed, a very industrial size army. They're certainly going to school on what we're doing and in the process of transforming their army. And we've seen how they've operated over the last 20 or 30 years and we'll see how they continue to operate in the future.
- Susanna Blume: Sure. Here on the aisle.
- Jon Harper: Thank you. Jon Harper with National Defense Magazine. Can you give us an update on your thinking and plans for an Abrams replacement? What kind of capabilities

you're looking for there? When we might see a lot of RDT&E dollars going into that? And when you would actually hope to field that type of system to troops in the field?

Ryan McCarthy:

Do you want me to take that one? The Abrams is still the heavyweight champ in its class. We're focusing right now on the armored vehicle fleet because we are looking at how do you continue to have the capabilities necessary going forward. But that's further back in the queue and we're going to continue to upgrade that. We're going to bring in another brigade set here in this fiscal year budget over \$1 billion invested against the Abrams again this year. So right now we're just going to continue to upgrade the current fleet.

GEN James McConville:

Yeah, just a little more on that too is as far as the thought process. As you know, we are replacing the Bradley, but also part of the next generation combat vehicle is we're developing three prototypes for a lightweight, a medium weight and a heavyweight robotic combat vehicle. And what we're trying to see as we experiment with them with soldiers that will give us some insights on what it looks like in the future and then we'll be in a much better place to decide where we go with the Abrams and how that all plays out.

Maria Simpson:

Maria Simpson FDI Energy. I would like to hear a little more or just a little about the focus on propulsion and diversification of fuels. Fuel efficiency, transporting less fuel across the battlefield, fuel diversification would relate to being able to reach sources of other types of fuels that can be used. Not depending on just one type. But the dense propulsion end of things is of interest to me. Thank you.

Ryan McCarthy:

You want talk about the engine program? Start with the engine program.

GEN James McConville:

Yeah. I mean, one of the things that we're developing is an improved turbine engine program. But I would say that's probably more incremental along the lines because it's still going to burn fuel, but it's going to give us much more capability at much more efficiency. So that's part of the things we're doing.

GEN James McConville:

But there's also in the research development network looking at new ways of propulsion. So, and again, as we take a look at some of these vehicles that are going to be developed, the next generation combat vehicle, we haven't prescribed what will drive that. But the idea of how we reduce logistics is kind of one of the characteristics of that. And when you look at what we do to maintain the supply lines for our vehicles. So this 5,000-gallon tank is going along the road and those type things. So anything we can reduce fuel for propulsion can really help us out.

GEN James McConville:

The same thing with parts. If we can make parts forward, we're looking at adding manufacturing, we're looking at how we can do things differently there because we do want to reduce the amount of logistics we have to support our systems.

- Susanna Blume: I think we have time for two more, so here on the aisle.
- Patrick Tucker: Thanks Patrick Tucker from Defense One. On the long-range fires, as you begin the process of winnowing down into 2023 the solutions that are going to be most useful to you, are you talking to particularly partners in Asia? And are you finding among them a willingness or an eagerness to house potential long-range fires that range to China? And how would that influence your decision about what to pursue next? Is their enthusiasm for housing that sort of capability?
- Ryan McCarthy: So we haven't had specific conversations about what capabilities per se we would house in country X or Y. The Chief and I have both been to the region in the last 45 days. It's amazing how energetic they are for us to establish more robust, expeditionary basing to increase the size and scale of our exercises. More foreign military sales. So it's a tremendous energy. We've not had a specific discussion about that to date, but nothing but excitement.
- Ryan McCarthy: And the thing that most makes these conversations very easy for me is over 70% of the CHODS in the countries in Asia are army chiefs. Again, highlighting just how important the army is for that part of the world makes the conversations much easier. So a tremendous energy, a lot of conversations underway. But what you see from year-to-year across these Pacific Pathways exercises is just we've gone from three months, we're going to six-month deployments and we're going to more countries with consistency. Thailand bought 60 Strikers. They want to buy another 100 now. So the trends are all going in the right direction, so a lot's going to happen in the next couple of years.
- Susanna Blume: And last question right here on the aisle.
- Barbara Hoffman: Barbara Hoffman from Samsung. You talked about virtual reality, cyber training, security, speeds, infrastructure. Where does 5G fit into that infrastructure? Having been in DOD for 34 years and ran the joint service provider, I know the capacity and the limitations to a lot of our infrastructure, so how are you going to process that information, the data, secure it?
- Ryan McCarthy: This is one of the biggest challenges we're facing right now as a department and the providers that we're going to do business with are going to be ones that we can trust. And so there's a lot of energy related to that and we're trying to put some solutions forward. Just not in a position, really to discuss it at liberty where we're headed at this point.
- GEN James McConville: But we are experimenting with 5G right now.
- Ryan McCarthy: Yeah.

Susanna Blume: Okay. Everyone please join me in thanking the Secretary and the Chief for being so generous with their time today and please keep your seats until they depart. We'd be grateful for that. Thank you so much. Thank you.

Ryan McCarthy: Thank you.

Susanna Blume: Thank you so much.

GEN James McConville: Thank you.

