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REBUILDING THE ARSENAL OF DEMOCRACY: THE IMPERATIVE TO STRENGTHEN AMERICA'S DEFENSE INDUSTRIAL BASE AND WORKFORCE

Thursday, December 5, 2024

House of Representatives,

Select Committee on the Strategic Competition Between

the United States and the Chinese Communist Party,

Washington, D.C.

The committee met, pursuant to call, at 9:30 a.m., in Room 2176, Rayburn House Office Building, Hon. John Moolenaar [chairman of the committee] presiding.

Chairman Moolenaar. The Select Committee will come to order.

I would like to welcome everyone to the Select Committee's hearing entitled Rebuilding the Arsenal of Democracy, the Imperative to Strengthen America's Defense Industrial Base and Workforce. In lieu of a full statement, I would like to play a video that will highlight what I hope everyone will come away with today. That our defense industrial base lacks the capacity to deter and win a fight with the PRC, is unable to innovate quickly or at scale, and its supply chains are vulnerable to manipulation and economic coercion at the hands of the PRC.

Bold policy changes and significant resources are now needed to restore deterrents and prevent a fight with the PRC. Clerk will now play the video.

[Video shown.]

Chairman Moolenaar. I now recognize the Ranking Member Raja Krishnamoorthi for his opening statement.

[The statement of Chairman Moolenaar follows:]

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Mr. Krishnamoorthi. Thank you, Mr. Chair. Recent polling shows that a majority of voters think that there is at least a 50/50 chance of war with China happening within the next ten years. From the same study, we see that almost 80 percent of voters believe we should do everything we can in our power to prevent war with China. This finding cuts across party lines, Democrats, Republicans and Independents all believe the same.

This, I believe, is one of the primary missions of this particular committee that has been assigned to us, to prevent war with China while winning our strategic competition with the Chinese Communist Party or the CCP. But to prevent war and to win the competition, we have to be strong, and part of being strong is having a robust defense industrial base that deters aggression by our adversaries.

I want to show you a couple of visuals. One that shows U.S. defense spending immediately around the time of World War II and then another that shows our defense production since World War II. As you can see, coming out of World War I, our defense industrial base weakens and continued to be very weak throughout the entire interwar period between World War I and World War II. Nazi Germany and imperial Japan noticed. This picture here, this chart shows how we invited Pearl Harbor and the start of World War II.

Now, as you can see on my second chart, this pattern unfortunately repeats itself. The industrial base strengthened in World War II and then weakened again precipitously inviting yet another war, this time in Korea. Then again we see this pattern repeat. Our industrial base strengthened for Korea and then weakens, which invited increased support from the CCP and the Soviet Union for Communist insurgencies across southeast Asia and led us into the disastrous Vietnam war.

Folks, the lesson of this history is this. We cannot invest in our defense industrial

base only after a conflict begins. Dictators notice when our industrial base weakens. That is when bad things happen. A couple weeks ago our committee ran a simulation that showed we may be inviting aggression yet again this time in the Indo-Pacific because of the large gaps between the U.S. and China in our production capacity for key defense systems.

Related to this gap is that the U.S. defense industrial base currently relies on of all nations China for essential components and materials. One of these vulnerabilities is our supply of critical minerals which we need in order to produce modern weapon systems. Unfortunately, the CCP has a monopoly over many of these materials, as you can see here, including with gallium. We import 100 percent of our gallium from China. Antimony and germanium. Gallium and germanium are used for, among other things, infrared systems. Antimony is used to harden the lead in our ammunition and bullets.

Just two days ago, the CCP, maybe noticing this very chart, announced it was banning exports to the U.S. of you guessed it, gallium, antimony, and germanium, GAG. It makes me gag. These export controls are another reminder that dictators around the world are becoming more aggressive and they are probing the U.S. and our allies for our weaknesses. While our defense industries struggle to support Ukraine while deterring aggression in the Indo-Pacific, the CCP is pursuing what some have called the most extensive military buildup since World War II. And Vladimir Putin for his part has transformed Russia into a flat-out war economy.

Today's hearing is not about going to war. It is about preventing war from happening in the first place. History tells us we need a healthy defense industrial base now to deter aggression and make sure the world's dictators think again before dragging the U.S. and the world into yet another disastrous conflict.

Thank you, and I yield back.

[The statement of Mr. Krishnamoorthi follows:]

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Chairman Moolenaar. Thank you, Ranking Member Krishnamoorthi. And if any other member wishes to submit a statement for the record, without objection, those statements will be added to the record.

And I would like to begin by introducing our three witnesses today. Mr. Chris Brose is head of strategy at Anduril Industries and a senior fellow at the Carnegie Endowment for International Peace. He is a former staff director of the Senate Armed Services Committee under the late chairman John McCain.

Dr. William Greenwalt is a non-resident senior fellow at the American Enterprise Institute where he is an expert on the expansion of America's defense industrial base. Dr. Greenwalt is also a founder of the Silicon Valley defense group which seeks to harness American technological innovation to advance U.S. national security.

Ms. Halimah Najieb-Locke is vice president of Entanglement, Incorporated, a technology company focused on next generation computing and artificial intelligence. Until May of this year, she served as deputy assistant secretary of defense for industrial base resilience and was responsible for assessing the health of the defense industrial base and recommending changes to strengthen the defense industrial base capacity and resilient.

And with all that, I want to welcome all the witnesses and thank you for being here this morning, and Mr. Brose, you are now recognized for your opening remarks.

STATEMENTS OF CHRIS BROSE, CHIEF STRATEGY OFFICER, ANDURIL INDUSTRIES; WILLIAM GREENWALT, NONRESIDENT SENIOR FELLOW, AMERICAN ENTERPRISE INSTITUTE; AND HALIMAH NAJIEB-LOCKE, VICE PRESIDENT OF POLICY AND STRATEGY, ENTANGLEMENT, INC.

STATEMENT OF CHRIS BROSE

Mr. Brose. Thank you, Chairman Moolenaar, Ranking Member Krishnamoorthi, members of the committee. It is an honor to have this opportunity to appear before you today on this critically important topic.

America's defense industrial base, which has helped to deter war for decades, has failed to keep pace and adapt to the times. It is being left behind by evolving great power threats, technological innovations in areas such as low cost robotics and artificial intelligence, and a commercial manufacturing revolution that is enabling the hyper scale production of everything from self-driving cars to reusable rockets to intelligent devices of all kinds. We increasingly lack the industrial capacity, as the chairman said, to deter and if necessary fight and win a great power conflict.

Years of war games, including those overseen by this committee, suggests we would run out of critical munitions in less than one week of a war with China. This is not hard to believe after Ukraine expended a decades worth of U.S. produced tactical weapons in just the initial months of combat with Russia.

A great power conflict would be a war of production, attrition, and regeneration at scales that are nearly unfathomable to our defense industrial base. If such a conflict were to occur, we may be ready for day one, but we are utterly unprepared for day 30, let alone day 300.

America and our allies need to rebuild the arsenal of democracy, and that is achievable, but only if we adopt a fundamentally new approach to how we define, design, and produce military power.

I want to be really clear. I spent a decade on the Senate Armed Services Committee. I know better than most the amazing work that our industrial base does and the military advantage it affords us.

I spent years fighting largely successfully for additional funding for attack submarines, long-rang bombers, critical munitions, and all manner of other traditional military systems, and I stand by those decisions.

At the same time, we must acknowledge reality. Defense spending has been increasing for the better part of a decade, and yet the U.S. military and its industrial base has been shrinking. We have fewer submarines now than when I was in the Senate and we will have even fewer by the end of this decade.

Most of our combat aircraft are not mission capable and we are retiring them faster than we can replace them. Under no realistic budget projection will the Navy achieve its stated objective of 355 ships over the next 30 years. Meanwhile, China already has a battle fleet of 400 ships and counting. Our defense program is littered with broken programs that are years behind schedule and billions of dollars over budget. These are just facts.

Even greater increases in defense spending will not generate meaningfully more of the military systems we need. Certainly not in this decade. Our industrial base simply cannot scale to meet that challenge. This is as much the fault of government as industry.

For decades we could not imagine ever losing large numbers of weapons and platforms in combat, so we designed military capabilities that were effectively

irreplaceable. Forces so exquisite, so allegedly capable and survivable that they would never need to be mass produced. Our industrial base is struggling to produce these weapons in vehicles, because they were never designed to be mass producible.

So what is to be done? We should maintain our investments in many legacy military systems, because we just need more capacity. We should also increase defense spending for the same reason. But we should stop spending ever more money on the military we have.

Small numbers of exquisite expensive platforms and weapons that cannot be mass produced. Instead, we should ramp investments in entirely new types of military forces, vast numbers of lower cost hyper producible autonomous vehicles and weapons. I am not talking about quad copters and small tactical systems.

I am talking about large robotic ships, submarines, aircraft, ground vehicles in an order of magnitude increase and low cost weapons. Systems that have the range, pay load capacity, and other attributes to be relevant in a high-end fight against China.

If the Congress and the Department of Defense create these programs, America can rapidly grow the new industrial base in this country to produce them, because it is already happening. In just the past few years, Anduril, the company I work at, has begun to do this.

We are building autonomous fighter jets, robotic submarines the size of school buses, low cost cruise missiles, and other weapons. We are investing billions of dollars of private capital to terraform the industrial base, standing up large production facilities for launch defects in Georgia, autonomous maritime vehicles in Rhode Island, solid rocket motors in Mississippi, and soon we will announce the location of a multimillion square foot hyper scale production facility that we are calling arsenal one which will be capable of producing tens of thousands of autonomous vehicles and weapons per year.

The truth, perhaps uncomfortable, is there is nothing holding us back, not bureaucracy or the acquisition system or some other amorphous systemic problem. We have everything we need to win, both in our government and in industry.

We have the money, the people, the technology, the acquisition authorities, and everything else we need to make the rapid disruptive changes that are required to deter war and compete successfully with the Chinese communist party. Not in the far future, but now.

We are limited only by our will, our imagination, and our sense of urgency, and I want to thank this committee for bringing these vital qualities to this important debate.

[The statement of Mr. Brose follows:]

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Chairman Moolenaar. Thank you very much.

Dr. Greenwalt, you may proceed.

STATEMENT OF WILLIAM GREENWALT

Mr. Greenwalt. Thank you, Chairman Moolenaar and Ranking Member Krishnamoorthi and other distinguished members of the committee. I would like to thank you for the opportunity to testify this morning on the need to strengthen America's defense industrial base and workforce.

Restoring the arsenal of democracy is one of the most important tasks I think Congress and our nation can embark on in the coming years. Our industrial deterrence is based on production and the ability to innovate its scale. America needs to do both.

As the committee no doubt has seen in its recent war game, we have reached an inflection point. Our industrial deterrents is no longer credible. This is a far cry from the defense industrial base that facilitated our victory in World War II.

The reduction prowess of the arsenal democracy is well known, but it also may have been the most significant driver of innovation ever created. This model used in World War II and the early cold war was time constrained and based on a sense of urgency. It focused on competitive approaches rather than competitive contracts, and serial operationally deployed experimentation of new concepts and technologies, and I want to focus on operationally deployed.

That it looked like what we now expect from Silicon Valley is perhaps no surprise. It also depended on the bringing together of the defense and commercial industrial bases. This has been described in the U.S. as civil military integration and in China as military civil fusion.

The lesson that we have forgotten from this period is that the U.S. defense industrial base is only fully capable when it is integrated with the underlying commercial industrial base. Innovation and ideas flow both ways from defense to commercial and from commercial to defense. Solving extremely difficult national security problems drives underlying innovation and economic advances.

Beginning in the early 1960s, however, the ability to maintain the arsenal democracy approach was systematically destroyed. Processes and ideas put in place in the 1960s and 1970s gradually and incrementally, like barnacles on a wooden ship, undermined our defense industrial base and innovation system over the course of multiple decades.

Central planning, scientific management, and a great deal of hubris dissolved the links to the underlying commercial industrial base and then shattered the importance of time constraints to innovation.

Since we have been doing this now for so long, our current acquisition budgeting system seems normal and the right way to do things. It is not. The traditional acquisition system is seen decision time to start a program and set it on contract, rise from less than a year in the 1950s to closer to nine years today, while timing the initial operational capability or new innovation in the field has gone from additional four years to ten to 20 years. We will not win with this system.

The defense industrial base now looks like a return to the pre-World War II peace time arsenal model except that the arsenals are now privately run rather than government owned, but still highly regulated and controlled by the government. This model was inadequate in 1939. It is no better today as we contemplate competing against China.

Just as the run up to World War II, technology and expertise reside outside of the

arsenal system and we need to find out a better way to leverage the commercial marketplace.

A new improved and more advanced arsenal democracy waits to be created based on commercial technology advances in artificial intelligence, added and digital manufacturing, ubiquitous deployment of censors and autonomy.

This will not be an easy task to create as reforms of the last 30 years to leverage the commercial sector have proven difficult to achieve and been only marginally successful.

What is now required is no less than a complete restructuring of the processes, incentives, and culture behind the defense requirements acquisition, contracting, budgeting, and technology control systems. This will require shift in a time-based innovation approach that emulates the practices of the venture capital market of today or the defense program from the 1950s.

The first step that is needed is to restore a sense of urgency and time. The government must pivot to the mindset that we are now in an emergency, just as the committee is saying, and that we need to act like it.

It is important for Congress after understanding how we got here to act boldly and urgently to address the failings of the current system. This is a whole of nation effort that is much bigger than just immediately ramping up a few existing defense production lines, although that is vitally needed first -- it is a vitally needed first step, especially in ship building ammunitions.

To restore industrial deterrents, America must attempt to recreate the methods of our earlier success and then just as we did in World War II, combine them with new sources of innovation ideas emanating from the commercial sector. Only then will we have established a new arsenal democracy. Thank you.

[The statement of Mr. Greenwalt follows:]

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Chairman Moolenaar. Thank you very much.

Ms. Najieb-Locke, the floor is yours.

STATEMENT OF HALIMAH NAJIEB-LOCKE

Ms. Najieb-Locke. Good morning, Chairman, Ranking Member, and distinguished members of this committee. Thank you for the opportunity to testify on the importance of America's defense industrial base and its role as a part of our democratic arsenal in strategic competition with the People's Republic of China.

Today I am the vice president at a next generation computing and trusted intelligence organization, Entanglement, Inc., that works to democratize AI around the world and detect anomalies in our supply chains from incursions, from adversaries, but I am delighted to be here to talk about a passion of mine, the power of industrial mobilization as it relates to our arsenal.

In academic year 2012/13, that assessment on the industrial mobilization capabilities of the United States and the People's Republic of China done by the Eisenhower School of National Security showed that significant consolidation of defense suppliers at the prime and sub-tier level may result in a situation where the United States does not possess the infrastructure to increase defense production significantly in a rapid manner.

What was true in 2013 is true today, and we must rally to close the gaps in our manufacturing capacity. Challenges to the United States industrial mobilization include the relationship between current systems ending production with the development and fielding of new advance systems alongside the effect of a globalized lead system integrator model that forfeits sovereignty of manufacturing in favor of cost savings.

We must reverse this by investing significant resources towards the development of technology, but also the backbone infrastructure needed to produce and support structural transformation of our economy.

One key priority from my time in the Department of Defense alongside the deployment of capital to new interest to the market through the Defense Production Act and IBAS funds was to create and implement the DOD's first ever National Defense Industrial Strategy or the NDIS.

As we are here today to discuss rebuilding our arsenal, the NDIS lays out four strategic priorities to guide actions and resource prioritization needed to modernize our DIB both inside and outside of the government for the next three to five years, those being building resilient supply chains, improving workforce readiness, leveraging flexible acquisition strategies, and enabling economic deterrents.

I am honored to have been so privileged as to work alongside the career civilians that are experts in their fields, but we must further enable the DIB to continue to innovate at the rate and capacity needed by increasing investment in targeted areas from both the government and capital markets to retake our sovereignty in manufacturing for key areas of national security concern.

Part of the innovation we need to encourage is the use of operational technology for our manufacturing sector to upgrade capacity and avoid interruptions in production of military end items such as precision guided munitions, among others. There are many uses these key components and processing and transmitting large amounts of data quickly are using equipment like advanced radar systems, navigation systems, and weaponry, so the digital manufacturing base is a critical part of our arsenal.

We have an imperative before us to ensure a secure, robust, and modern supply chain with stockpiles of products to rely on in time of need. Mand that means

supporting the onshoring of key commercial manufacturing in national security sectors in the United States while shrinking the skills and innovation of the workforce to rebuild our arsenal.

The challenges we face in our supply chain did not happen overnight, nor will the solutions. We need to invest in our manufacturing prowess to create asymmetric advantages against adversaries by rapidly pivoting to digitally enabled production processes which allow dual use systems to accelerate the pace and scale of new technology development in integration.

One way of doing this is to dramatically increase the funding of our network of manufacturing U.S.A. institutes such as the MxD in Chicago, Illinois to the advantage of our collective manufacturing capacity building. This committee could call for the stand up of congressionally mandated panel or task force on the DIB to quickly study gaps and make recommendations for improvements in its existing infrastructure and authorities to enable industrial mobilization and warm basing at capacity to sustain activity in multiple domains both economically and militarily.

The idea of strategic asset and national security arsenal, and I am excited for what the future holds for the manufacturing and digital industries, and have no doubt that the same innovation that led the U.S. to create the first semiconductor chip will propel our digital transformation in manufacturing capabilities to unseen heights to the benefit of our democratic arsenal.

Thank you for providing me this opportunity, and I look forward to your questions.

[The statement of Ms. Najieb-Locke follows:]

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Chairman Moolenaar. Thank you, and I appreciate all of our witnesses, and now we are going to move to five minute rounds of questions, and I would like to begin with Dr. Greenwalt.

Our recent simulation exposed the crisis facing our defense industrial base and the urgent need to expand our capacity before it is too late. It seems clear, though, that our lack of prioritization of defense spending and decades of purchases of minimum sustaining rates of key munitions in particular, we have allowed the defense industrial base to atrophy almost to the point of no return.

What level of national effort will it take to turn this around and what kind of demand signal do Congress and the Pentagon need to provide industry to make this happen?

Mr. Greenwalt. Thank you, sir. A consistent one. I think that is the most important thing that we will learn in these type industrial base, particularly munitions, is that the budget line for munitions has been -- essentially been used as a bill payer for decades, and it has hollowed out the sub-tier of the munitions industry.

We need a long-term commitment in funds, and I am not going to say how much we are talking about, but I am just saying we need a long-term consistent commitment that industry can plan on, the government can plan on, the government arsenals can plan on, and that we can actually start putting in place the investments that are necessary to improve the sub-tier suppliers that are so important in the munitions industry.

Chairman Moolenaar. And then beyond boosting the demand signal, it seems to me that we need some emergency incentives much like we used prior to -- in prior crises like World War II and Korea to help industry expand rapidly. In your view, what are the most effective types of incentives Congress can provide to move this conversation past the theoretical level and get concrete pouring for more production lines as soon as

possible?

Mr. Greenwalt. I will give you a number of them. The first is I would look in the lessons of the NRAP program and SpaceX's Falcon 9 program. In other words, advance purchase agreements essentially incentivizing the innovation. Basically, if you build it, we will come. Multi-year type of procurements are -- would be necessary.

I would deregulate the process. There is a lot of compliance going on within the industry. Let's focus rather on solutions, on getting things done versus on complying with various rules and regulations. That may be nice to have, but are taking time to do.

I would look at indemnification. In other words, the -- essentially taking the insurance liability and sharing that with the government.

I would look at things like DPA funds, Defense Production Act funds, the IBAS funds which Halimah talked about, and I would also look at again in creating a stockpile of munitions, whether it is for foreign military sales or -- in other words, we draw down our existing stocks. We should create a different stock that we can build up to, and again, that is a demand incentivizer that will drive new investment.

The other thing I would say is that if we are talking about pouring new concrete and building new facilities, we have to probably look seriously at how environmental regulations play in this. And whether there is some type of emergency authority needed under the Defense Production Act, we really have to figure out a way to streamline that process if we actually want to compete against China.

Chairman Moolenaar. Thank you. Mr. Brose, by the end of the next Congress in 2027 when Xi Jinping has ordered the PLA to take on Taiwan, that will be here soon, and given that so many of our key defense systems take years if not decades to materialize, what do we need to be doing to MacGyver solutions to our defense industrial base challenges in order to surge deterrents now when we need it most?

Mr. Brose. Yeah. Thank you. And this, I think, builds on a lot of what Bill said, and I agree with him. I think the key thing that I would underscore here is getting way to the left of where we typically focus, which is on acquisition processes and spending.

We have to change the way we think about the requirements for military systems, and I tried to get this in my opening statement. We have defined military capability to be so exquisite, so incredibly difficult to produce that it is no wonder that it is something that our industrial base is struggling to produce.

We have to actually put into the requirements process the ability to be hyper producible, which will drive a series of different changes through industry in terms of utilization of commercial supply chains, utilization of more generalized labor, actually something where we can scale the production of these systems, whether they are weapons, whether they are autonomous vehicles.

We have to actually engineer that in on the front end, and there is no law or policy that prohibits us from doing that. It is a question of thinking differently.

I do not believe we will be able to meet the challenge that you mentioned in this decade by throwing more money at the military we have. I do believe that if we think about changing the way we define military power and design it on the front end, there is a litany of companies, there are investors lined up, there is industrial capacity untapped in this country to build those new military capabilities and get them fielded this decade and increase deterrents.

Chairman Moolenaar. Okay. Thank you.

And I will recognize ranking member Krishnamoorthi for five minutes of questions.

Mr. Krishnamoorthi. Thank you, Mr. Chair.

Mr. Brose, I want to draw your attention to this chart. Basically, here you see large gaps with China in producing everything from ships to ground launch intermediate

range missiles to submarines to drones. I got to say that I want to ask you, these systems are all critical for deterring a conflict in the Indo-Pacific. Wouldn't you agree?

Mr. Brose. I would.

Mr. Krishnamoorthi. I want to draw your attention to one of these gaps, mainly the gap in intermediate range missiles ground launched. We were prohibited from building these missiles for over 30 years through a treaty we signed with the Russians. These missiles are essential for deterrents because they can move and hide easily and hold an adversary at risk without using riskier ship and air launched platforms.

So while we were constrained by this treaty, Mr. Brose, the CCP built the world's largest arsenal of these particular types of missiles creating this huge missile gap. Isn't that right?

Mr. Brose. Yes, sir.

Mr. Krishnamoorthi. With these gaps in each of these areas, would you agree with me that we are inviting aggression by the CCP?

Mr. Brose. I would.

Mr. Krishnamoorthi. Let me turn your attention to another topic, and that is how do we overcome potentially these production gaps? This in my hand is an aluminum casting. It was made in Franklin Park, Illinois, not far from my home in Schaumburg, Illinois. It is called a heat sink, and actually these -- thousands of these are actually embedded in every tank, tank treads, to prevent them from overheating. Ms. Najieb-Locke, castings like this as well as forgings are used in over 90 percent of our key weapon systems, right?

Ms. Najieb-Locke. Correct.

Mr. Krishnamoorthi. Well, let's look at the state of the U.S. and Chinese casting industries. As you can see from this chart, it turns out China produces over five times

the number of these castings in the U.S. and now DOD says it actually relies on Chinese castings for some of their own weapon systems.

So Ms. Najieb-Locke, as a country, we have actively outsourced the entire production, almost the entire production of these castings and forgings to China and essentially invited this particular discrepancy, right?

Ms. Najieb-Locke. Correct.

Mr. Krishnamoorthi. I am going to make a provocative statement, Ms. Locke. Tell me what you think. But I think the DOD should consider buying all of its castings and forgings in the U.S., and here is why. Just last week, as I mentioned in my opening, we saw the CCP ban exports of critical minerals to the U.S. We can't allow a potential ban on exports of things like castings and forgings that could potentially cripple our defense production. Would you agree?

Ms. Najieb-Locke. I would agree with you, Member Krishnamoorthi, and I would say that in addition to making sure that we buy, we must make sure there is a supply of U.S. manufacturers in the castings and forging sector which means investing in what is often a capital intensive industry and pivoting the rare earths or the raw materials needed for these tools.

Some innovative companies like Darkhive and Maritime Operations Group are looking at new ways in which to use different materials to pivot that dependency on the PRC to other allied nations so that we can onshore that manufacturing capacity of casted and forged parts.

Mr. Krishnamoorthi. Very good. Let me turn to my final topic, and that is about continuing resolutions, Dr. Greenwalt, which we may be under until late March. Dr. Greenwalt, under CRs, DOD can't start new contracts or increase production of existing systems, right?

Mr. Greenwalt. That is correct.

Mr. Krishnamoorthi. Chairman Xi Jinping wants the PLA to be ready to initiate conflict by 2027 with regard to Taiwan. As a result, the Pentagon recently requested increases for various systems that strengthen our deterrents so that when January 1st, 2027, arrives and every day after Xi Jinping wakes up and says not today.

I want to show you this chart. It takes roughly two years to make many of the missiles that the Pentagon says it needs for our deterrents. As we can see here, if we had a budget now that is with no CR, that is the top bar, starting in January of 2025, DOD would get what it needs by 2027 and we would avoid getting into the danger zone.

But a CR until late March or March puts us in the middle of this danger zone if it takes two years to build many of these missile systems for deterrents. So, Dr. Greenwalt, it seems to me the people who want this situation are Chairman Xi and the CCP. Wouldn't you agree?

Mr. Greenwalt. Unless we can somehow put an anomaly in the CR.

Mr. Krishnamoorthi. Well, Mr. Chair, if we keep having CRs, we might as well call them CCP resolutions, not continuing resolutions. We should not be doing this. We must pass a budget now.

Thank you, and I yield back.

Chairman Moolenaar. Thank you.

Representative Newhouse.

Mr. Newhouse. Thank you, Mr. Chairman. Appreciate all of our witnesses this morning. Thank you for being with us.

Driving in to the hearing this morning, I was just kind of observing people walking on the street, driving to work or doing -- going about their day thinking about the subject matter of this morning's hearing.

Couldn't help but think that the American people are -- have been lulled into a false sense of security thinking probably not that we consciously do this, but we did it once, we can do it again kind of thing.

That the American ingenuity will always come out on top, and some of the things that we are hearing this morning would probably not support that kind of a sense of security.

One of my questions, facetiously, not to you guys, and I am not on those specific committees, maybe they are, but why aren't our military leaders making these same kinds of points and suggestions? They should be if they are not, and I appreciate you guys bringing them up this morning.

I have got lots of questions, but I am trying to narrow it down to some of the things that we can do in just a few minutes. Ms. Najieb-Locke, in your testimony, I know you are there somewhere.

Ms. Najieb-Locke. Yes, sir.

Mr. Newhouse. You highlight the four strategic priorities of the NDIS. One of your suggestions is to stand up a congressionally mandated panel or a task force to -- on the defense industrial base to study the gaps and make recommendations, et cetera, for improvements to our existing and more importantly our needed authorities to enable a mobilization of the kind of thing that we are looking at.

So given your background at DOD, I am sure you have given this lots of thought, could you share with us some of our conclusions, not including additional funding necessarily, but some of the specific authorities that may be needed for the DOD to help secure the kind of ecosystem that we are going to need in our industrial base.

Ms. Najieb-Locke. Thank you, Congressman. Absolutely. In my time at the department, I benefited from having a very flexible authority of the Defense Production

Act and IBAS in my purview, but I noted that those are emergency authorities.

And unfortunately, that does not help the industrial base when it is trying to think through the broader acquisition contract strategies and the lion's share of the department's budget undertakes. So advanced procurements are fantastic, but they are oftentimes used for long lead items.

If there were the ability to do things such as purchase commitments more broadly across the department, that might be an authority that actually benefits the industrial base in expanding the capacity and ability to mobilize, particularly at the sub-tier level, which is where we have the most shortfall.

Most of the companies that are suppliers must have commercial orders in order to stay alive. They cannot stay alive on defense spending alone. So because of that dual-use environment, we have to think about what are some authorities that allow us to place the order that then those companies can take to the capital markets, to the banks, to investors and say the Department of Defense is interested, I have a purchase commitment, this is why I need this investment, because this is capital intensive what we are talking about recapitalizing here.

Mr. Newhouse. Thank you. Recent news, and I am glad the ranking member brought this up, the GAG issue, which is very creative, but that is very concerning that China is going to ban exports of some of these critical minerals to the United States. That news also coupled with the report that half of the Navy's fleet of 32 amfibous warfare ships are in poor condition and not on track to meet their expected service life, there has been record spending at the Pentagon.

Any one of you can respond to this. How do you suggest that the Department of Defense shake off its cold wear era procurement and budgeting system and bring non-traditional defense vendors into the defense industrial ecosystem, some of the things

that you have talked about?

Mr. Brose. So I guess at the risk of being overly provocative, you know, the defense system that we have was put in place by Robert McNamara and it was an intentional effort to basically create a state run planning process, and a lot of what we are talking about here to me feels like we are trying to sort of optimize Soviet communism and save it, and the reality is we need to actually unleash American capitalism on national defense, and that is absolutely something that is doable.

It may not be doable right now on the timelines that we need for, you know, large classes of manned ships and very exquisite bombers and things that we also need, but it is absolutely achievable for the kinds of things that we are talking about here, very large autonomous systems, low cost weapons.

The bottom line answer that I would give you is if the department actually puts the requirements together in the right way and starts buying these kinds of systems that we all agree we need on a rapid timeline, a crazy thing will happen in a capitalist society.

Builders and investors will move in to build these systems on the timelines we need to deliver for our war fighters and our members of government. So I really do think it is as simple as that.

And it is a question of kind of getting back to that core idea and really starting to create markets for these types of capabilities again.

Mr. Greenwalt. And just to quickly add, Congress has given the department the authorities to do this, particularly with other transactions and type of contracting authority. So they can buy commercially and incentivize the commercial market in a way that Chris is talking about. It is at the margins right now.

Ms. Najieb-Locke. And to quickly add, if we can rebuild the acquisition workforce in the government, that would help unlock the use of these authorities,

because more people need to understand how to actually leverage these authorities to take advantage of them.

Mr. Newhouse. Thank you all very much. I appreciate your testimonies.

Chairman Moolenaar. Representative Castor.

Ms. Castor. Thank you, Chairman Moolenaar and Ranking Member Krishnamoorthi, for organizing this important hearing.

Thank you to our witnesses for being here today.

A resilient and modernized defense industrial base is absolutely vital to our national security, especially when it comes to deterrents of the Chinese communist party. I don't just hear this on Capitol Hill. I hear it back home in Tampa that is home to the United States Central Command and Special Operations Command. They are often -- and their partners are often pressing policymakers to do better here, and I am glad you raised the CR issue, because that is a great consternation for them. The stops and starts make no sense to them when they are just trying to focus on their missions.

I would like to dig in a little bit to critical minerals and supply chains. My friend and colleague Congressman Rob Wittman and I have led a working group part of this committee for the past few months. Since June our working group has held six meetings with experts across industry and government and academia on critical mineral imports notably from the PRC and how we are going to strengthen our supply chain.

Ms. Najieb-Locke, you have worked on the national defense industrial strategy. We have a national defense stockpile of -- that helps stockpile strategic and critical minerals.

How does DOD identify stockpiling requirements for critical minerals? What are the criteria for using and releasing critical minerals in the stockpile? Is it a physical reserve or does it allow DOD to use other tools to build up the resiliency as it relates to

minerals and components?

Ms. Najieb-Locke. Thank you, Congresswoman.

The natural defense stockpile is absolutely a critical resource, but it is a resource that, again, is identifying shortfalls in the commercial markets. And so the NDS only assesses through the experts that are there and the strategic materials sector of the defense logistics agency when the United States cannot reliably access that raw material needed.

Perhaps it is a specialty metal like titanium or tungsten needed for the naval industrial base. How we are going to then essentially prepurchase and work with the commercial markets and those providers that are there to ensure we have access to, through the production process, actually manipulate that raw material, but it is only to the end items of what we need from a purchase perspective. It is not to cover the larger economic needs.

And so is it physical? It is more so an effort that is in close tandem with the suppliers themselves, because they have the actual know how and capability of keeping both the raw material and the precursor chemicals needed to harden them for defense use at the appropriate temperatures and they have the warehousing footprint.

And in some cases the defense department does take it on physically, but it is more so a commercial exchange, and I do think that stockpiling is one authority that we have, but the reality is, as an expert told me, the rocks are where the rocks are, and so we have to work with allies to recapitalize their processing downstream and upstream of key materials that we know we need for our DIB and diversify the supply chain of who our OEMs, our lead integrators are buying from so that they are not vendor locked to only the cheapest source, which is oftentimes in the People's Republic of China. We have to switch from lowest priced technically buying to best value buying, and that ball is

resilience in our DIB.

Ms. Castor. What is going on now that the PRC has banned gallium, antimony, and geranium? What is going on at DOD now when it comes to the stockpile?

Ms. Najieb-Locke. So my understanding -- I left in May, but I know before we left there were strategic investments using Defense Production Act in all three of those materials, so Perpetua I know was one. Germanium and gallium were also invested in by -- I believe it was another mine that we invested in for lithium, and so all of these rare minerals were invested in, but only for, again, defense specific needs. That doesn't cover the commercial side.

And as you know note, these germanium, gallium, antimony, yes, they are relevant for our munitions, but they are also relevant for electrification, EVs, and so we are looking at the commercial markets. That is where the lion's share of the demand is. And so those investments are not going to be enough.

Ms. Castor. Thank you very much.

Chairman Moolenaar. Thank you.

Representative Dunn.

Mr. Dunn. Thank you very much, Mr. Chairman. I want to thank each of the witnesses for your testimony today. I think we all know It is incumbent upon us in Congress to optimize and revitalize America's defense industrial base and our workforce to maintain competitive military readiness.

We must not allow the PRC to continue to dominate production of all our critical industries and threaten our defense and posture. To address these defense industrial gaps domestic and allies, industrial policy shifts are necessary. We are well positioned, I believe, to leverage our relationships with these staunch allies to help close some of those gaps.

In addition, many of our allies in the Indo-Pacific specifically are well prepared and equipped to aid in maintenance and repair efforts of our ships and aircraft. I think it is worth exploring how these partnerships can be expanded.

We have heard through our work in this committee the PRC will stop at nothing to control critical industries through key economic and industrial policies, including IP theft, to carve out strategic advantage, and the members of this committee know that the PRC dominates industries that are critical to us and our allies for strategic policies and supplies. So it is imperative that we continue to work on this decoupling from China and working more with our allies.

In my particular district, we have facilities that are stepping up, I am proud to say. Earlier this year Nammo and Raytheon signed an agreement to expand dramatically production of critical solid rocket motors, and that was good news for everybody concerned, I think. Gives us a reliable source of those which are used so widely.

Last month it was -- as was noted earlier, we had an interactive simulation of CSIS on the state of our industrial base, and the revelations were indeed alarming. You have seen Raja, the ranking member, put up 300 Chinese ships for every one ship America makes. That is astounding. The diminishing capacity of our defense industrial base, especially the shipyards, makes us vulnerable. I look forward to continuing to work on this.

Mr. Brose, it is clear that our military is overly reliant on small numbers of these exquisite systems as you named that our industrial base simply cannot build or replace in relevant scales and speeds to deal with the conflict. What measures are we necessary -- is there any way to replace exquisite systems, or are we just strictly going completely to these lower cost very capable attributal systems?

Mr. Brose. Thank you, sir. I am in favor of continuing the investments in large

ships and large aircraft. I mean, we need those systems. They are incredibly capable. They are important for the force design and what it needs to do.

What I would submit to you is I am not confident based on a lot of empirical evidence and lived experience that we are going to be able to build up the relevant capacity of those types of systems on a timeline that is relevant.

And I say that because it took us, as I think we have talked about this morning, it took us a few decades to get into the mess that we are in, and I don't think we are going to get out of it in a couple of budget cycles. I think that the only thing that will allow us to build up the capacity at an affordable price to generate deterrents when we need it, which is now, is really ramping the kinds of investments that we need in these larger autonomous systems, lower cost weapons.

And again, I believe that it is possible because Anduril is doing it. You know, in two to three years, we have gone from a completely flat start to being on the cusp of mass producing extra large autonomous undersea vehicles with the Australian Navy.

We are doing the same thing with the U.S. Air Force and collaborative combat aircraft, which are essentially robotic fighter jets. This is achievable. This isn't science fiction.

The industrial base, a different kind of industrial base is ready, willing, able, and funded to build these kinds of systems if the demand signal comes from the government that that is what we want and we want more of it now.

Mr. Dunn. Thank you for doing that. Let me say thank you also for your book. I enjoyed reading it.

Mr. Brose. Thank you,

Mr. Dunn. Dr. Greenwalt, in a conflict with China, the tyranny of distance is a major challenge to us. The U.S. does not have the necessary infrastructure capabilities

to build war service and maintain our ships over in the far Pacific, but I think our allies can help. Can you comment on some of those potential opportunities.

Mr. Greenwalt. No. I think as we ponder this problem in many ways, not just the INDOPACOM theater, we need to be looking at how can we better leverage our allies.

Is it just the math? The math in population, the math in the ability to defense budgets, bringing them together is what is going to allow us to compete with China faster. So absolutely, the allied forces, the allied capabilities in Australia, in Korea, in Japan, we need to better leverage those. We need to look at maintenance facilities.

We need to look at coal production of whether it is munitions in Australia or ship building in Korea. We need to get numbers as fast as we can. I agree with Chris it is going to take us decades to get there, but we need to start now and we need to start thinking in a different way, because we need to get the numbers up, and I think that is really important.

What that is going to require is changes in the way we do export controls, the changes in the way we cooperate with our allies, all the processes that keep us -- that limit the time to do that. We need to overcome some of those and then do that very quickly.

Mr. Dunn. Thank you for your answers. My time is expired, but I want to say I hope all of this panel will feel free to reach out to -- I know all members of the committee everywhere on both sides would love to hear your ideas going forward. So never hesitate to pick up the phone.

Thank you. Yield back.

Chairman Moolenaar. Thank you.

Representative Auchincloss.

Mr. Auchincloss. I appreciate the thoughtful testimony both written and orally.

Mr. Brose, Amen, capitalism over central planning. Your written testimony talks about the arsenal operating system, this 5 million square foot plant that you are, it sounds like, devising though not yet built. There is going to be version one will be in the United States. Can you take a minute and just tell us more about that.

Mr. Brose. Yeah. Thank you, sir. The short version of the long story is over the past few years, we have been looking hard at this question of production knowing that we needed to move into really large scale production across all the systems that we are working in, autonomous vehicles, weapons, and the like.

I think what we concluded is there is not a magic technology that is going to save us. There is not some phenomenal process that is allowing us or going to allow us to do this differently.

It is what I said earlier. We have to get this right on the front end at the level of design. We have to build weapons that are designed to be mass producible, because if we don't, we can't fix that problem on the back end.

I think what we are trying to do with arsenal is realize that in order to move fast, in order to very quickly reallocate capital workforce materials, machines to surge demand when it is needed, to spin up new products when called for, you really do need centralization.

You need to be able to bring this effectively under one roof where you can really get the kind of benefits of hyper scale, and that is the kind of core thesis behind arsenal, which we will be announcing probably in January.

Mr. Auchincloss. It is a big programmable factory.

Mr. Brose. Yes.

Mr. Auchincloss. I saw a version of this with Hadrian when I visited in L.A. Am I thinking in the right vein?

Mr. Brose. That is a key piece of what we will doing beyond -- in addition to other things. That is exactly right.

Mr. Auchincloss. You want to build it in Massachusetts? We will talk.

Mr. Brose. We are actively working in Massachusetts and building large diameter UUVs and a lot of other things. It is very exciting. Thank you.

Mr. Auchincloss. Ms. Najieb-Locke, I have voted against every single defense budget since I have been in Congress, not because I don't want a bigger military or a stronger military. I do. I am just so frustrated with how the DOD procures things and I wanted to send a message as a member of Congress.

In particular, I focused on FAR Part 10, which is functionally a mandate for the DOD to procure based on performance and to try to lead into the commercial sector rather than exquisitely build from their own specs.

Can you talk at all about whether, you or the other two, how FAR Part 10 might be part of the solution here for what you are describing?

RPTR SINKFIELD

EDTR HUMKE

[10:32 a.m.]

Ms. Najieb-Locke. Absolutely. Thank you very much, Congressman. You know, I do think that the lack of procuring commercial items is a bit of a chicken and an egg issue because we have very unique needs. And oftentimes the requirements in a military operation do not match commercial requirements. But that is at the end item.

When it comes to the component, I do think that past performance is a block for a new interest to the DIB. I do think that oftentimes they don't know how to navigate the maze that is the acquisition patchwork system because it is intended to ensure that there is not fraud, waste, and abuse. Right?

And so the question is really, to my mind, given the budgets are truly to sustain the force that we have -- and today we have identified that the force that we have is not enough, and a conflict, and we need to build more. How do we actually create other buying opportunities and unshackle the department to use commercial buying practices like the Federal Acquisition Streamlining Act entailed, FASA. Right? So how do we do that?

Mr. Auchincloss. And for performance, and not for time. And we don't want fee for service contracts. Right? We want contracts based on outcomes and performance.

Dr. Greenwalt, sometimes we can build it. Sometimes we can buy it. We don't have to do everything on our own. That is great part of having allies. Recently, the Biden administration announced the creation of the Icebreaker Collaboration Effort or the ICE Pact.

Briefly, should we be buying these icebreakers from Finland?

Mr. Greenwalt. I think we should be buying from wherever except the Communist Chinese.

Mr. Auchincloss. Yeah. The Fins are really good at building them. We are awful at building them.

Mr. Greenwalt. You know, the whole issue on buy America is important. We need the capabilities here in the United States to do a lot of things. But if we have solid allies who can produce capability and technology faster and cheaper than us, we should start buying from them.

Mr. Auchincloss. Yes.

Mr. Greenwalt. And then potentially transition some of those. But in something like an icebreaker, by the time we transition that, we have already brought them.

Mr. Auchincloss. Final question, just really a yes or no. Do any of you three think that will have a better defense industrial base if the United States cuts our basic research funding through the National Science Foundation, through the NHS, or through the Department of Defense?

Ms. Najieb-Locke. No.

Mr. Greenwalt. That is a no.

Mr. Brose. No.

Mr. Auchincloss. Thank you.

Mr. Moolenaar. All right. Thank you. Representative Steel.

Mrs. Steel. Thank you, Mr. Chairman. And thank you ranking member. And thank you to all the witnesses coming out today.

This is really important issues that, you know, we are really discussing. You know, we have to really stand up to China. But to do that, that strong democratic

alliances in the Indo-Pacific are the key to protecting the United States and our allies. This friendship helped deter the CCP from using military force in the coming years. The U.S. and Japan alliance is the key for security in the Indo-Pacific region. And cooperation with other allies is crucial to maintaining step-up ability in addressing shared challenges.

So by working together, the United States, Japan, and other allies can pull their resources and capabilities in enhancing their overall military strength and ability to respond to crisis, especially for South Korea that, you know, has the largest shipyard in the world. In Hyundai shipbuilding, they can actually go head to head with Chinese and making ships quickly at low cost and modern with the modern techniques.

But we have regulation right now that you cannot buy Navy ships from other country that, you know, we really have to release that. And then we have strong alliance, along with the cooperation with other allies, like Australia, serves as a part against potential aggression from CCP and North Korea.

The United States must lead, but working in lockstep with our partners, our mission can have intended success. Congress must address supply chain security and resiliency in the U.S. defense industrial base. But we are not alone on this. We must continue our relationship with our allies in the region and work together. I think this is really important.

So Dr. Greenwalt, if we are to build a roadmap to deterrence, how important is it to work our allies, and what role does rethinking the supply chain is distant roadmap.

Mr. Greenwalt. I think it is extremely important. I think that is the only way we are going to win this competition. And if we bring together not only our Nato allies, but our allies in the Far East and try to solve these problems not just politically and economically, but militarily.

And that is going to require a lot of different thinking in the way we have done it

in the past. And that could mean that if we don't have the capabilities to build our ships or our weapons or whatever, or that scaled number, that we should be looking to our allies as well, as our allies look to us. And the trade in weapon systems, it benefits both sides. We need to figure out who has the comparative advantage to produce at scale immediately.

I mean, we have done this on a peacetime basis, and that is fine. But we are approaching the crisis time where we need to actually kick up and figure out how can we all bring our capabilities to the table and create the ability to deter China rather quickly.

Mrs. Steel. So could you give us, like what kind of barriers that, you know, we have to remove? You already said that about the naval ships, that why we really have to remove that so we can start bringing one since we can't really build that here as fast as what China does.

Mr. Greenwalt. You would need waivers to existing law as far as shipbuilding goes. You need waivers to existing laws as far as maintenance of those ships. We would need to transfer various technologies and information under the International Traffic and Armed Regulations to do something like that. All of these factors require time and a lot of focus and thought ahead of time.

We would also have to look at specifications and qualifications of sources and a whole bunch of different things that go into building our weapons systems. So, yeah, there is a lot there.

Mrs. Steel. How are you going to handle communication open -- like right now like we are talking about China. And we try to stand up to China, but some of the countries like South Korea has been very quiet about it because they trade problems.

So you know what, we have been talking to -- how are we going to have -- you know, Japan and other countries, China's aggression, then how are we going to have

more communication open with other countries that really has a problem to, you know, those countries have problem to actually open the ideas that how are they going to work? Those are our allies, and they have to work with us. But you know what, they are not really aggressive they are coming out. How are we going to stop that and then we can open the communication?

Mr. Greenwalt. Well, we have a lot of agreements in place on reciprocal agreements on various procurement and standards and qualifications. We have this ability to work -- to sit down and work with our allies. And so we just need to like put them on to the next level and start having these discussions and see where that goes. So it is -- we have the ability to do this, we just haven't had the compelling urgency to have these type of discussions.

Mrs. Steel. Thank you.

Ms. Najieb-Locke. If I may add, I am in total agreement with what Dr. Greenwalt just said. We also have the ability to enter into a security of supply arrangements which allows us to in time of need in ramp where there is an ally that is in our supply chain that perhaps there is, you know, an order going to another source, we can raise our hands and work government to government and say, please deliver that to us before other sources. And so that increases both the understanding of need as well as channels of communication.

Mrs. Steel. Thank you so much. Mr. Chairman, I yield back.

Mr. Moolenaar. Representative Brown.

Ms. Brown. Thank you, Mr. Chairman. Our industrial base and its workforce are critical to our national security, economic competitiveness, and world standing. I would like to address a significant issue affecting the defense industrial base -- its labor shortage.

While some leaders on the other side of the aisle would like to deport millions of hardworking essential workers from our country, industrial work, technology, manufacturing, and labor-intensive positions of all kinds remain significantly understaffed. This should be a concern for all of us.

The traditional idea of who can fill these positions, including specialized manufacturing and technology roles no longer fits the modern 21st century workforce. Having a diverse and expanded workforce is vital for fostering innovation and creativity. Individuals from different backgrounds bring unique perspectives and ideas. It also helps us to meet the needs of a global and varied customer base enhancing competitiveness on the global stage.

As I have said before, one of our greatest assets and strengths as a country and something that sets us apart from places like the CCP is our diversity and willingness to embrace it.

We need the defense industrial base workforce to reflect and look like the rest of the country. According to the Bureau of Labor Statistics, only 5.6 percent of mechanic supervisors are Black. Only 6.2 of mechanical engineers are Black. Only 5 percent of chemical engineers are Black. And the pattern continues despite Black Americans making up around 14 percent of the country.

Although these statistics are disappointing, they present tremendous opportunity and untapped potential to enhance our industrial base, alleviate the labor shortage, infuse new ideas and talent.

So to any of our witnesses, can you speak to ways Congress can be effective and in recruiting new kinds of workers to the industrial base, particularly individuals and younger generations?

Ms. Najieb-Locke. I would love to answer that question, Congresswoman.

Thank you, Mr. Chairman. I do think increasing access to apprenticeship programs and internship programs at the middle school and high school level is going to be critical to diversifying our workforce. We know we have an aging workforce when it comes to manufacturing skills, and so we have to take initiatives, such as the National Imperative for Industrial Skills that the DOD has through the IBAS program to really work with the institutes and the Labor Department to identify communities that have latent talent that is just untapped; and then training them on the needs, matching prime contractors that have a shortage with those students so that they get familiar with each other, but also to change and destigmatize the manufacturing workforce in the younger generation.

These are very new, cool, factory floors like where it is being stood up at the arsenal, right, where you are looking at some of our industrial base. They are using additive and advanced manufacturing and subtractive manufacturing to really do exciting things. They are using virtual reality to help with the tooling and precision needed.

And so if we can expose the younger generalization to what the current-day manufacturing floor looks like, they might actually envision a career. And then how do we use apprenticeship programs to ease the funding line so that they can go to trade schools. Right?

My father was a contract painter. That is why I went to law school to be a procurement attorney because I grew up bidding on contracts with him. And that good, honest work is what is going to rebuild our economy.

Ms. Brown. Thank you. Anyone else?

Mr. Brose. I want to add a brief point. I completely agree that when we look at the challenges of our defense industrial base, we have designed weapons in military systems that require such high degrees of specialized labor and workforce kind of across all limits of the supply chain. And then we wonder why we, you know, struggling to

build these things at the scales we need because we don't have the workforce, and the lack of the workforce makes the problem of building harder.

So it is sort of continuing on a theme that I am hitting this morning. A lot of our focus is on actually solving this problem on the front end so that you can design systems that can be mass manufactured and assembled by the broadest amount of people available. So you can start tapping into commercial automotive workforces and other parts of our workforce here in the United States and start bringing them into the industrial base in ways where they can immediately start contributing.

I just don't see another way around solving this problem other than designing systems that can be produced by the largest segment of the American citizen.

Ms. Brown. And if I may squeeze in one question. What are some of the examples of innovative successful strategies from the private sector in recruitment and retainment for diverse hardworking people of all backgrounds? And if they could submit that for the record, I would appreciate it. My time has expired. So thank you.

Chairman Moolenaar. Thank you, and without objection.

Representative Hinson.

Ms. Hinson. Thank you, Mr. Chairman. Good morning. For the past three decades, we know that the DOD has been able to utilize FAR 12 as a procurement contracting tool for commercial contracting to quickly and affordably buy those commercially available products. That is critical. It helps to reduce red tape, enables more nontraditional suppliers to partner with DOD, preserve suppliers' IP and operations, delivers those innovative technology to the warfighter faster where it is supposed to, all while also saving taxpayer dollars, and spreading those costs across a broader market.

However, we know that that usage has really declined due to increasing bureaucracy. All of that red tape, it once accounted for nearly 20 percent of DOD

procurement. That has significantly dropped. It is harder, and it is costlier for businesses in the private sector to be able to engage with the DOD. Much of why we are having this conversation here today.

Over the past couple of years, I have been leading on an initiative to simplify the FAR 12 adoption through the NDAA process, but progress is a little slow there. While our adversaries are, as we have also heard today, rapidly modernizing their defense capabilities, and they are streamlining their procurement processes.

So my first we today, Dr. Greenwalt, how can this committee really help the DOD expand commercial contracting to be able to support our domestic workforce and our supply chain? So what should Congress be doing here?

Mr. Greenwalt. So I have to kind of go back to when I was a staffer working for Chris and Senator McCain. It was so difficult to do what you are trying to do that we essentially started focusing on let's take another pathway and do other transactions. Because then you could actually sit down and negotiate the type of clauses that are relevant in the commercial marketplace. That is probably the emergency way to go.

We need to take FAR 12 and take all of the clauses that aren't relevant anymore to a commercial contracting and get rid of them. We also need to distinguish between what is a commercial item. The department really doesn't have a problem buying commercial water. Okay. You know, commercial off the shelf. That is easy. I can price this. I know what it is. It gets really hard when you start modifying things. And it even gets harder when you have companies like Anduril who are essentially creating military capabilities in a commercial way. And, frankly, Congress has been trying to push on the department to create military capabilities in a commercial way. And that is included in the FAR 12 well.

But the department has a hard time distinguishing between all of those and really

wants to -- it just can't essentially streamline doing something on this side of the projector. So that is why we do it with other transactions.

Ms. Hinson. But it sounds like you know what we need do. So I look forward to talking with you a little bit more.

Mr. Greenwalt. I would be happy so sit down at any time.

Ms. Hinson. Yeah, I mean at this point we need to talk about the roadmap, right? Even if it tough and it is hard, we are at a juncture, a critical juncture where we need to be having those conversations about, yes, maybe we need to circumvent and do some of these other things right now. But we need to reform these processes because otherwise we won't be nimble, we won't be able to work with the private sector going forward.

And I actually -- you talk about scale and being able to produce, I actually got to tour Anduril's facility, and I got to wear the VR headset. And I felt like I was in one of my son's video games, right. And that is fitting for Mr. Luckey and what he does obviously. But I was able to see that UUV in person, this school bus-sized thing step into it, see what the compartments look like.

So, Mr. Brose, how can we better align as we having this discussion policy resources to accelerate production like what you have been able to do and ensure that we continue to maintain leadership in developing these critical systems? I would argue the private sector is doing this very, very well.

Mr. Brose. Thank you, and thank you for your interest and support. I want to build on the conversation you were just having because I think in the Department of Defense, there is a presumption that things that they want to buy are inherently defense unique and not commercial. And they sort of start from that premise and then sort of argue themselves maybe or get dragged into, okay, I guess I can concede that this could

be a commercial item.

I would argue we have to flip that on its head and start from the premise of is it possible to make this in a commercial way? Is it possible to buy this in a commercial way? And then only sort of under duress concede that okay maybe this is such a high-risk militarily unique capability that I can't use a commercial contracting vehicle.

As you know better than anyone, passing legislation is hard. Conducting oversight is easier. So in addition to what you are doing, I would offer actually forcing the department to come up and explain how they are using and whether they are using the authorities that you and other Members of Congress have been giving them for a series of years would also be a great place to start. There are authorities that they have at their disposal -- any of which were written by Dr. Greenwalt, additional ones being written by you -- that would allow them to do all the things that we are talking about here today. And question isn't necessarily always that we need additional authorities. It is that they actually have to be called to account to use the authorities and abide by the laws that Congress is providing. And I think that would go a long way to start getting into some specific cases where we do believe commercial contracting would apply, systems could be built, designed, manufactured, and bought in commercial ways. And we shouldn't just jump to the conclusion that it is a defense unique system, so it has got to go completely down the cost-type model with all of the problems that that entails.

Ms. Hinson. Well, certainly, as a member of the Appropriations Committee, they all come to us, and they want their checks. So that is a great place for us to ask a lot of those questions and make sure that they were executing on the will of Congress.

So I appreciate your testimony and your answers today. Thank you so much. I yield back, Mr. Chair.

Chairman Moolenaar. Thank you. Representative Stevens.

Ms. Stevens. Well, thank you, Mr. Chair. I have to say these testimonies are phenomenal, and they are more than just bedside reading. I mean, it is talk under the pillow and wakeup as this is the mission.

Look, we are professional talkers in this body. I mean, we move things, we write the bills, we discover things. But at the end of the day, the executive action that needs to take place here is really quite profound.

And, Ms. Najieb-Locke, I don't know if you know this, but I worked at MxD before I was in Congress. And at the time it was the Digital Manufacturing Design Innovation Institute. So I deeply appreciate your mention of manufacturing USA, and both you and Dr. Greenwalt mentioning digital manufacturing.

And as I think about how we are at the precipice of new government, we are wrapping up this year, we have got a lot of government changes under way, and yet we look at continuity in government.

And MxD Manufacturing USA is one of those entities that has actually existed now for three Presidential administrations. They just celebrated, you know, through the whole manufacturing USA network 10 years of existence since RAMI the legislation was written.

But we know that this new administration's coming in, and they are talking about efficiency. And there is this Department of Efficiency. I am just sort of observing it. But I am wondering if you guys have some recommendations for the Efficiency Department. You know, and I know we are all touching on. But it is an effort to really think about the blue sky of these agencies and how we can really achieve the goals of our defense industrial base.

We know we are doing this better than other countries. You know, we took a visit to Japan, and they are just starting this conversation between capital markets,

defense, and manufacturing.

I come from Michigan. We have got an incredible automotive base there. And we know that autos is linked to defense, and that is phenomenal.

But, Dr. Greenwalt, when I look at the title of your testimony that we are falling behind, we have got to be -- and, look, Mr. Brose, I also understand this is decades in the making, and it is decades to dig out of it. But we can't be in this place.

So is it something that we can push on with efficiency? Are there models? Can we enhance the work, Ms. Najieb-Locke, of these manufacturing USA institutes? We know we have got these incredible public private partnerships that exist between Department of Defense and these corporate folks and the universities. And I am looking at that, and I am thinking, yeah, but why don't we advance that for production? COVID was a wakeup on this.

So, you know, I know I am throwing a lot out at your guys. But it is a major topic, and we need leadership. And any thoughts that you have for this incoming efficiency effort, I think we would love to hear.

Ms. Najieb-Locke. Thank you, Congresswoman. And I did not know, but I am lucky that I chose MxD. I was impressed. I attended their 10-year anniversary, and I do think the consortium-based approach is what is important here. I do think to be more efficient actually funding those entities that are on the ground, understanding their communities, what their capabilities are, and how best to tease out an increasing capacity is going to be important.

And so I think if this austere body could be more comfortable with pots of money that are not defined, that would actually help to use these flexible acquisition authorities more concretely.

I do remember in my time at the department, there were oftentimes

appropriations that came down that answered the question before we had the chance to solicit insight. And so how do we break that dichotomy so that actually there is an ability to give funding to new entrants that perhaps we don't know exist from market research?

Ms. Stevens. Yes, and flexibility is the solution to bureaucracy in some respects. You know, we saw this at MxD too.

Dr. Greenwalt, do you want to share?

Mr. Greenwalt. I think using the competitive commercial marketplace is key. Using the type of authorities that we have been talking about and whether it is other transactions or our FAR part 12 authorities are critical.

I think just going to how do we incentivize innovation, your discussion, your mention of the pandemic? The other transaction's model that was used to create Falcon 9 also created the COVID-19 vaccine. And so if you look at the tools that are out there, how do you incentivize the industrial base to do whatever it is you want them to do? We can do this. We have tools. We have the ability to do this. We just end up deferring to a lot of other different pathways.

I think the focus of commercial contracting is the way doing it and getting industrial base on speed dial.

Ms. Stevens. And, Mr. Brose, I really appreciated your description of exquisiteness versus construction capabilities. Is this what it comes down to? Is it the stockpile, is it volume, or is it more so capability?

Mr. Brose. Let me just make sure that you don't leave with the misperception that I think that it is going to take us decades to dig out, and that is the only solution. I think to the contrary, I don't believe that is a viable option for us, because the timelines are so constrained.

But maybe just to answer with the form of, you know, kind of an anecdote. When I look at the defense industrial base, sort of here is the challenge, right. We talk about a shortfall in critical munitions. One of I believe the munition that has been called out by this committee is the Joint Air-to-Surface Standoff Munition, JASSM-ER. Awesome weapon.

You know, I tried to increase funding for it when I was in the Congress. I think that we are producing about 530 per year, around $1.3 million a copy. Down the street from us in California is a Tesla facility that is producing four to 5,000 vehicles per week, around $37,000 a week.

So a JASSM-ER is an amazing capability, but I cannot believe that it is more technologically sophisticated than a self-driving vehicle that drives human life around in it.

So my point in saying all of this is if we think differently about the types of weapons that we are trying to build, the types of vehicles that we are trying to build. We have the industrial base in this country. We have the technological know-how. We have the workforce and the people. We certainly have the money to actually begin solving this munition shortfall this decade rather than, you know, throwing more money at programs that are not delivering and hoping that sometime in the 2030s or 2040s we will actually have the capacity we need to deter conflict.

Ms. Stevens. And we have the unmovable allies.

Mr. Chairman, you have been more than generous. Thank you. I yield back.

Chairman Moolenaar. Thank you.

Representative Gimenez.

Mr. Gimenez. Thank you, Mr. Chairman. I look at it and said, and we have identified the enemy, and the enemy is us. And I look to the example of NASA and the

space program where we can't get the Orion space capsule into space until at least next year. They have been under development for I don't know how many years. And Space X is grabbing boosters out of the sky.

So how do we -- I mean, I am criticizing NASA for its inability to do what it has to do; get us to the Moon. I think if I asked, you know, Mr. Musk, can you get us to Moon? I would probably get us there next year. Just because they get us to the Moon. Because we don't tell him exactly how to get us to the Moon? Right?

So where is it in the Pentagon where it all bogs down? There has got to be the place. Right? Even if you have a change agent at the top and trying to drive it through, where is it that you would identify as here is the problem at the Pentagon? They just don't get it. Is it because of they are afraid to fail, which I think is big one to, or they are -- there is resistance to change, which happens at other every organization, or they are trying to protect their jobs, or is it combination of all three? Where is it in the Pentagon that this thing just stops?

Ms. Najieb-Locke. I will put my neck out there.

Mr. Gimenez. Okay.

Ms. Najieb-Locke. I think it is a confluence of things. I actually think it is a lack of coordination because there is just not enough acquisition workforce to understand what the market looks like and to compare and contrast and try and get economies of scale for buying, which then would free up perhaps some dollars to acquire more commercial items.

I do think that without a knowledgeable workforce, it is not -- you have to relearn the rules, right? You have retrain that workforce. And, unfortunately, without civilians there, there is, of course, the military that does rotate through an acquisition core like at Wright Pat Base in Ohio. But they have different mission sets, and they move

throughout the country. And so you lose that knowledge, and someone has to start the program over again.

I know my company entanglement has had that start-stop where the person that is their main interlocutor moved on to another office, and so they have to start the conversation again, and that sometimes is difficult.

Mr. Gimenez. Would it be easier to simplify, say like, I want to sink Chinese ships? Show me how to sink Chinese ships. I want to penetrate Chinese air defenses, you know, companies. Could you come up with something? Instead of trying to tell the company what it is that I want to -- and how I want to penetrate Chinese air defenses that may be there are completely different ways that the folk that we have at the Pentagon haven't even thought it?

Because who in NASA would ever think, hey, it would be a good idea to grab that booster out of the air with chopsticks. Do you think anybody would ever put that in a requirement? No. Hey, we would like to actually land the booster. Nobody in NASA would ever think about that, right? So maybe the same thing happens at the Pentagon. All right. But they don't -- but how are they sinking Russian ships in the Black Sea? Well, they are using those little drones, okay? And they are sinking mult-million dollar, you know, Russian ships where these, you know, things that cost, you know, tens of thousands of dollars. So is that a problem at the Pentagon?

Mr. Greenwalt. I think it is a huge problem. And, frankly, it is how we used to do things. I think there is a misreading of history going on. That is the way the Department of Defense used to approach problems in the 1950s. All right. And geared on to give me a broad, general statements, and we will compete a bunch of different alternatives. Not con to contract, but alternatives way of doing exactly that. And we got away from that. When, as Chris talked about McNamara coming in, we

centralized. We went to -- we adopted the Soviet system in our management structure in the Department of Defense. And because of that, we now think -- and because we won the Cold War -- remember that? We still -- we actually -- that there is a thought that these processes actually work. They don't work anywhere else in the world except competing against the one-time Soviet Union in the 1980s when it was falling apart. That is when we won.

Mr. Gimenez. Sure, if you may indulge me a couple, a minute or so? Okay. So what do the Chinese do? How do they procure the system? They do develop exquisite systems. They do. Okay. But are they much more apt to say, hey, we want something that sinks American ships. Go out and, you know, tell me what you got that sinks American ships. We want things that penetrate American air defenses. We want to knock down Americans and planes. Should me what you -- or are they more centralized? Or they just have a bigger industrial base than we do, and they can produce those exquisite systems much faster with much greater quantity than we. Are they falling into the same trap, or are they thinking somehow differently?

Mr. Greenwalt. My fear is that they have not gone to school on us and are adopting our 1950s approach to buying weapons system, and essentially doing serial operational prototyping, bringing out testing, bringing out in the field, seeing if it works, going back, making the changes, and redeploying. And then using their manufacturing skills to ramp up when necessary.

Mr. Gimenez. I know he has indulged me. One more thing. If it is so obvious to us in this room, why isn't it obvious to the people in the Pentagon?

Mr. Brose. I certainly can't speak for the people in the Pentagon. But what I think I have seen is that it is obvious to many of them. And I they are as frustrated as all of us sitting here today. And that I think is kind of the root of the problem, right, is that

we have designed a structure in terms of our -- you know, as my old boss used to say -- our militarily industrial congressional complex. It is almost purpose built to evade accountability.

What you said is exactly the way we should be doing it, right. It is what President Eisenhower did when he wanted to develop an intercontinental ballistic missile. He put his finger in General Shriever's chest and said, I want to put a warhead on a weapon that can go on to the other side of the planet and hit Russian targets. And you have a few years to do it. And we did it.

I think we need a similar approach now where we start getting away from all of the detritus that we have created for decades, the legacy of the PPE process, the reams of legislation that oftentimes make the problems worse, not better, and go back to accountability the way you are talking about it, which is human to human.

Oversight and executive branch, here are the things that we want to be true. We want them to be true in this decade, not in the next decade, but like in this electoral cycle. We will give you the money to do it, we will share the risk, we will give you support, but we will hold you accountable. And if you fail to deliver, we will look for people who can.

I think we are kind of at that level of seriousness now, or at least that is what we need. It is how we had solved these problems in the past. And I can't come up with a better way of solving the problems that we have in front of us. And I would love to see us get back to doing that.

Mr. Gimenez. Thank you, Mr. Chairman. Thank you for indulging me.

Chairman Moolenaar. Thank you. Representative LaHood.

Mr. LaHood. Well, thank you, Mr. Chairman. Thank you for having this hearing today. Again, I want to thank our witnesses for your valuable testimony here today.

And, obviously, the title of today's hearing: Rebuilding the Arsenal of Democracy: The Imperative to Strengthen America's Defense Industrial Base and Workforce, I think is important.

And if I look at the last 2 years that this committee has been assembled and the work that we have been engaged in, I don't know how you win strategic competition again the Communist Chinese Party.

You know, I think about democracy which is in the title of the hearing today. And we look at the rapid growth of China, particularly, in the national security space. And for them, elections don't get in the way, human rights don't get in the way. You know the Democratic principles that we have here don't get in the way of what they warrant to do. And that is frustrating in many ways to see the subsidization of the Communist Chinese Party in many different sectors.

That is not the way we operate. We operate on freedom market principles. We operate on elections. And as we see, elections have consequences. Things change over every 4 years or 2 years. And so, you know, we have this yin and yang of policy directions that happen in the United States, and that is what we have to deal with. I wouldn't change it for anything.

But as we think about how do we as policymakers help make it easier to adapt and change and revise the way we do things to make our government more efficient, more effective, more accountable, particularly in the national security space. And that is really what we are talking about today.

And I look at the advancements that China has made modernizing their armed forces. Whether it is artificial intelligence, hypersonic missiles, sophisticated cyber capabilities and what they have been able to do over the last 20 years. And it has remarkable in terms of how they have been able to scale that up.

And these are -- almost all of these advancements that they have made are designed to undermine the U.S. influence and dominance, particularly, in the key regions of the Indo-Pacific region. And their strategies really through military civil fusion allows the CCP to reroute private sector technology for military purposes. And so China cannot only expand its capabilities but accelerate its defense innovation as well.

So as I think about how should we look at things differently. And that is part of why we are here today.

Maybe, Mr. Brose, I will start with you. We look at the defense industrial base here in this country, and there is lots of innovation and technologies that have come out of there that have been applicable in the Federal Government -- GPS, the internet, innovations in medical technology, really have their roots in defense-related research.

And so how do we as policymakers look at investing in sectors that strengthen our economy and do all the things that we want to do -- create jobs?

As we look at economic incentives, I serve on the Ways and Means Committee. We are always looking for tax incentives. We don't subsidize industries, but tax incentives, tax credits to do those thing.

In your view, what economic incentives, such as tax base approaches, grant programs, or private sector partnerships would be most impactful to expanding the defense industrial base capacity and stimulate innovation in the near term?

Mr. Brose. It is a great question, and probably beyond my area of expertise to be able to give you kind of specifics on the tax side of things. What I would submit is I think there is a lot you can do before you even start to get into the tax incentive challenge, right, where I think a lot of the theme that we have been talking about here today is you actually the government beginning to put its money where its mouth is in terms of solving the kinds of problems, procuring the kinds of capabilities on a timeline that is relevant,

essentially creating the incentives, the demand signal for a different kind of industry that is willing and able to step in and deliver these kinds of capabilities on a rapid timeline.

I believe a lot of interesting things start happening downstream of that demand signal. You start to see companies that are now capable of stepping in and succeeding; that are capable of raising private capital to fuel their own growth, their workforce expansion, their development of new technologies, their own research and development. And that makes them more capable partners to then go do the next challenging thing that the government asks of them.

So I think there is a lot here in terms of aligning the incentives to make better use of the phenomenal people technology, you know, capital and other phenomenal assets that we have here in the United States before we have to start getting into, you know, kind of changes to government policy that sort of pulled them in that direction.

Mr. LaHood. Thank you. Dr. Greenwalt.

Mr. Greenwalt. I think if we are going to look at tax expenditures, you probably would be looking at R & D tax credits. I think you would be looking at the amount of money that the venture capital world is putting into defense. And perhaps there should be a tax expenditure there.

And then I think I would look at retooling. You know, one of the most interesting things about the arsenal democracy was that America retooled while working on defense. And it retooled commercially as well as for defense purposes.

And so the idea of allowing, subsidizing the retooling of America, so to speak, for defense would have a massive potential -- particularly in digital manufacturing, and so on -- a massive potential for spillover in other parts of the economy.

Ms. Najieb-Locke. And if I can just add, Congressman, I totally agree with that idea. If we can potentially set up GOCOs, Government-Owned Contracted Operated

facilities that allow more digital type of companies, more software-based companies to enter into the defense market, that might increase competition. And as we know competition in our market is how we breed excellence. It is that innovation in America that is often replicated but never duplicated.

Mr. LaHood. Yeah, thank you. I am over my time. Thank you, Mr. Chairman.

Chairman Moolenaar. Thank you. And I want to thank all of our witnesses. What an important discussion. And I appreciate your contribution to the hearing today.

Questions for the record are due one week from today. And without objection, the committee hearing is adjourned.

[Whereupon, at 11:15 a.m., the committee was adjourned.]