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Before the

COMMITTEE ON  
ARMED SERVICES

**UNITED STATES SENATE**

HEARING TO RECEIVE TESTIMONY ON  
THE HEALTH OF THE DEFENSE INDUSTRIAL BASE

Tuesday, April 26, 2022

Washington, D.C.

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1 HEARING TO RECEIVE TESTIMONY ON  
2 THE HEALTH OF THE DEFENSE INDUSTRIAL BASE

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4 Tuesday, April 26, 2022

5  
6 U.S. Senate  
7 Committee on Armed Services  
8 Washington, D.C.  
9

10 The committee met, pursuant to notice, at 9:30 a.m. in  
11 Room SD-G50, Dirksen Senate Office Building, Hon. Jack Reed,  
12 chairman of the committee, presiding.

13 Committee Members Present: Senators Reed [presiding],  
14 Gillibrand, Blumenthal, Hirono, Kaine, King, Manchin, Rosen,  
15 Kelly, Inhofe, Wicker, Rounds, Ernst, Tillis, Scott,  
16 Blackburn, Hawley, and Tuberville.

1           OPENING STATEMENT OF HON. JACK REED, U.S. SENATOR FROM  
2 RHODE ISLAND

3           Chairman Reed: Good morning. The committee meets  
4 today to receive testimony on the health of the defense  
5 industrial base. I would like to welcome our distinguished  
6 witnesses and I thank them for joining us.

7           Ms. Ellen Lord is the former Under Secretary of Defense  
8 for Acquisition and Sustainment. She has more than 30 years  
9 of experience in the defense industry, including serving as  
10 President and CEO of Textron Systems, Inc., and as a senior  
11 advisor to several defense policy research institutions.

12          Mr. David Berteau is the President and CEO of the  
13 Professional Services Council. He served during the Obama  
14 administration as Assistant Secretary of Defense for  
15 Logistics and Materiel Readiness, and previously as Senior  
16 Vice President and Director at the Center for Strategic and  
17 International Studies.

18          We are grateful to have such accomplished experts with  
19 us to discuss this important problem.

20          The United States industrial base is core to our  
21 national security. America's capacity for technological  
22 innovation and manufacturing has ensured that our military  
23 is the finest in the world, with benefits felt well beyond  
24 the military sphere. From the internet to GPS to the  
25 microelectronics in our phones and computers, many of the

1 technologies gained from investments in our defense  
2 industrial base regularly contribute to our broader national  
3 well-being.

4 This industrial advantage, however, is not a given. It  
5 must be nurtured and maintained through careful investments  
6 and strong leadership from both the public and private  
7 sector. The urgency around this issue has never been  
8 clearer. As Russia continues its onslaught against Ukraine  
9 and China calculates extensive geostrategic ambitions, we  
10 have to make sure our defense industrial base is able to  
11 adapt, scale, and outpace our competitors in the 21st  
12 century.

13 With that in mind there are a number of challenges for  
14 the health of our industry. To begin, I am concerned by the  
15 impact of the long-term trend in consolidation of private  
16 companies participating in defense research, development,  
17 and acquisition, especially since the Cold War drawdown in  
18 the 1990s. Competition within the defense industry is vital  
19 to fostering innovation, delivering products and services in  
20 a timely and efficient manner, and keeping costs in check.

21 However, in the last three decades the defense sector  
22 has consolidated substantially, transitioning from 51  
23 aerospace and defense prime contractors down to just 5.  
24 That has unintended consequences on costs, barriers to entry  
25 for new companies, displacement of established technologies

1 with new, innovative capabilities, and the overall buying  
2 power of the Federal Government. I am interested in the  
3 witnesses' thoughts on how we can better address the factors  
4 affecting consolidation, including tensions over data rights  
5 and intellectual property, and how to better leverage small  
6 business programs to grow the overall pool of providers in  
7 the industrial base.

8 Further, the COVID-19 pandemic has exposed the brutal  
9 nature of international supply chains. It is clear that we  
10 need to protect our domestic supply of critical components,  
11 such as microelectronics, that may be interrupted in times  
12 of emergency. I understand the Defense Department plans to  
13 take steps to ensure supply chain resilience for several  
14 priority sectors, including casting and forgings, missiles  
15 and munitions, energy storage and batteries, strategic and  
16 critical materials, and microelectronics. I would ask our  
17 witnesses to share what steps they think the Department  
18 should take to protect these sectors and encourage a  
19 domestic supply of critical components.

20 More broadly, the procurement and acquisition practice  
21 of the Department of Defense and the Federal Government are  
22 often convoluted, poorly communicated, and burdened with  
23 inertia that makes contracting with private industry far too  
24 difficult. As America confronts threats around the globe  
25 that are evolving at unprecedented speeds, we must find a

1 way to better identify our defense needs, communicate them,  
2 and deliver them in a timely manner. This is being tested  
3 right now as we work to backfill our stockpiles following  
4 the enormous transfer of weapons to Ukraine. The lack of  
5 responsive and rapidly scalable production capacity for  
6 consumable systems like Stinger and Javelin missiles  
7 highlights issues with our planning factors and  
8 manufacturing flexibility for long-lead items needed in  
9 short order, with little to no advanced warning. I would  
10 ask for our witnesses thoughts on how we might overcome  
11 these challenges.

12 Finally, a highly skilled workforce is necessary for  
13 designing, engineering, and employing the game-changing  
14 technologies of the future. As we seek to keep pace with  
15 our strategic competitors, it is imperative that we invest  
16 in facilities, training, and education to support our  
17 defense industrial base workforce. I hope our witnesses  
18 will discuss what steps the Department could take to ensure  
19 that people who pursue STEM education and careers want to  
20 work in areas that support the defense industrial base.

21 Thank you again to our witnesses. I look forward to  
22 your testimonies. Now let me recognize the ranking member,  
23 Senator Inhofe.

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1           STATEMENT OF HON. JAMES INHOFE, U.S. SENATOR FROM  
2 OKLAHOMA

3           Senator Inhofe: Thank you, Mr. Chairman. I appreciate  
4 your explaining some of the COVID activities. I happen to  
5 be enjoying the after-effects of COVID right now at about 80  
6 percent, so be forgiving. And I really want to join you in  
7 welcoming our guests, both of whom I do know. However, I  
8 know Ellen Lord better, and we have worked on a lot of  
9 things in the past, so I feel very good about what we are  
10 doing today.

11           I know our members have a lot of questions so I have a  
12 brief opening statement, and I have a longer version I will  
13 be submitting for the record. This hearing is very timely,  
14 and I join the chairman in welcoming both witnesses.

15           Last month we received the classified version of the  
16 Biden administration's new 2022 NDS, which we continue to  
17 analyze. However, I do believe the new strategy does expand  
18 our understanding of the scope of the threat of the Chinese  
19 Communist Party and what will be required to maintain  
20 deterrence against them.

21           The problem does not seem to be one of strategy but  
22 rather providing the full budget needed to implement it.  
23 The budget simply does not deliver the real growth our  
24 military needs, especially with the historic inflation that  
25 we are experiencing. Which brings me to today's hearing. I

1 am hoping to better understand what our defense industrial  
2 base is seeing and dealing with and how we can help them,  
3 whether through legislative authorities or additional  
4 funding.

5 We have two great witnesses, as I have already said,  
6 and I am looking forward to hearing from them.

7 Thank you, Mr. Chairman.

8 Chairman Reed: Thank you, Senator Inhofe, and we  
9 appreciate your continued leadership despite your still  
10 recovering. I very much appreciate it.

11 Let me now recognize Secretary Lord, please. And you  
12 might want to pull that microphone as close as you can.

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1 STATEMENT OF THE HONORABLE ELLEN M. LORD, FORMER UNDER  
2 SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT

3 Ms. Lord: Chairman Reed, Ranking Member Inhofe, and  
4 members of the committee, thank you for the opportunity to  
5 discuss the health of the defense industrial base.

6 I represent myself here today with my perspective  
7 informed by 33 years working in a variety of leadership  
8 positions within a global, multi-industry conglomerate, and  
9 3 1/2 years serving as a political appointee reporting to  
10 the Secretary of Defense, in addition to my current  
11 activities, which include serving on the boards of a  
12 publicly traded company, a venture capital-owned company,  
13 and a privately held company, advising a wide range of  
14 companies from new space to emerging biotech, and  
15 participating as a senior fellow at Johns Hopkins Applied  
16 Physics Lab.

17 My engagements focus on the intersection of national  
18 security and industry. I believe our national security and  
19 economic security are tightly coupled. Our collective  
20 experience as a nation during the onset and peak of COVID-19  
21 demonstrated that we need to understand the provenance of  
22 our supply chains, the necessity of being able to surge  
23 manufacturing of critical products and delivering services,  
24 and to apply our technical innovation potential to mortal  
25 threats.

1 Industry and government successfully partnered during  
2 the pandemic to collectively battle a virus, because both  
3 shared a common understanding of the threat, the steps  
4 needed to survive individually and collectively, and the  
5 need for speed. We were willing to take risk. Today we, as  
6 a nation, fear near-peer strategic competitors with enormous  
7 ambitions that have been clearly articulated over the past  
8 decade and are now being acted upon, with Russia's invasion  
9 of Ukraine the most recent example.

10 Our ability to deter aggression that violates our  
11 country's values and principles requires a strong  
12 government-industry partnership. It is a choice for a  
13 company to do business with DoD. It is a choice for an  
14 individual to work for a defense contractor. It is a choice  
15 for a startup to focus on applying their emerging  
16 technologies to national security challenges. It is a  
17 choice for individual investors or fund managers to risk  
18 their money on a Department of Defense contractor. In order  
19 for business to survive and flourish there must be a clear  
20 demand signal and a fast pace of predictable development,  
21 production, and sustainment.

22 Technology innovation is now predominantly driven by  
23 the commercial sector, and DoD must accelerate its adoption  
24 of business practices that enable rapid testing and fielding  
25 of new capability. Many authorities that have been provided

1 by recent NDAAAs have been translated to policy and  
2 implementation guidance by the Department. These  
3 authorities need to be exercised so that the acquisition  
4 process moves at the speed of relevance. It requires  
5 leadership, from both Congress and DoD, to ensure that the  
6 DoD workforce embraces the imperative to conduct business in  
7 a manner that encourages patriotic individuals and companies  
8 to participate in our national security ecosystem, versus  
9 driving them away through frustration over slow decision-  
10 making and acquisition ambiguity.

11 Appropriations must allow flexibility to adjust to  
12 technical innovations with reprogramming that meets our  
13 warfighting needs, not only of our nation but of our allies  
14 and partners. Disruptive market conditions, such as  
15 inflation, must be dealt with at the top-line budget level  
16 instead of slogging through the bureaucracy of each contract  
17 being adjusted by individual contracting officers at each  
18 geographic location.

19 Our Ukraine experience has shown how we can hope to  
20 carry our policy, to provide specific munitions to support,  
21 and then realize that we have not provided funding to keep  
22 manufacturing lines hot and supply chains intact, and will  
23 therefore have significant delays in shipping desired  
24 quantities of specific weapons systems. We have an  
25 opportunity to regenerate our capacity and throughput by

1 leveraging our national manufacturing capability, but by  
2 also modifying our releasability and exportability  
3 regulations to allow our National Technological Industrial  
4 Base, NTIB, partners to establish indigenous capability to  
5 produce critical munitions and guided weapons.

6 We should use the data published in the 13806  
7 Industrial Base Report in 2018, to identify sole-source  
8 supplies of critical supply chain items to begin to build  
9 our supply chain resilience.

10 I am hopeful that the Executive and Legislative  
11 branches can partner now to not only maintain our current  
12 defense industrial base but also to rapidly implement  
13 requirements and acquisition practices that allow us, as a  
14 nation, to move at the speed of relevance and smartly  
15 embrace risk.

16 I will submit this statement for the record, and I look  
17 forward to your questions.

18 [The prepared statement of Ms. Lord follows:]

19 [COMMITTEE INSERT]

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1 Chairman Reed: Thank you very much, Secretary Lord.

2 Since a quorum is now present I ask the committee to  
3 consider a list of 1,652 pending military nominations. All  
4 of these nominations have been before the committee the  
5 required length of time.

6 Is there a motion to favorably report the list of 1,652  
7 pending military nominations to the Senate?

8 Voice: So moved.

9 Chairman Reed: Is there a second?

10 Voice: Second.

11 Chairman Reed: All in favor, say aye.

12 [Chorus of ayes.]

13 Chairman Reed: The motion carries. Thank you very  
14 much.

15 Now let me recognize Secretary Berteau.

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1           STATEMENT OF DAVID J. BERTEAU, PRESIDENT AND CHIEF  
2 EXECUTIVE OFFICER, PROFESSIONAL SERVICES COUNCIL

3           Mr. Berteau: Thank you very much, Mr. Chairman and  
4 Senator Inhofe, and thanks to all the members for being  
5 here.

6           I really want to commend this committee for tackling  
7 this issue so early in the process where you would have time  
8 to really develop your thinking and I think reflect it not  
9 only as you develop the fiscal year 2023 NDAA but perhaps  
10 dealing with some issues that may not even be able to wait  
11 that long. So I really want to commend you for doing that.

12           I appear before you today, obviously, as the President  
13 and CEO of a trade association, the Professional Services  
14 Council, but more importantly, what I say here today is my  
15 own opinion, not necessarily representative of my  
16 organization, and it draws on a little more than four  
17 decades of experience in this business, both inside the  
18 Pentagon, with industry, and as you mentioned, at a think  
19 tank and in academia.

20           I have a lot in my written statement. I would like to  
21 ask that it be submitted for the record.

22           Chairman Reed: Without objection.

23           Mr. Berteau: I did omit one preposition, which I would  
24 like to insert before it goes into the record. I happen to  
25 be an English major and I should catch my own errors, but I

1 did not do it in time there.

2 The points that I would like to make right now, though,  
3 and then get to your questions, to me, my experience tells  
4 me there are a few key elements of that partnership that  
5 Secretary Lord mentioned between government and industry  
6 that is so vital to our success, not only now but in the  
7 future. And I would just like to highlight those for a  
8 moment.

9 The first, to me, is that companies and their workers  
10 -- and I did not realize this when I was first in the  
11 Pentagon -- are as committed to national security and to  
12 support DoD missions as the folks inside the business are as  
13 well, the civilians and military themselves. And, of  
14 course, many of them came from that. And it is that mission  
15 commitment that I see drives those companies every day.

16 Now that is a very important key element, but there is  
17 a second key element, and that is they live in a world that  
18 is governed by the economic laws of supply and demand. You  
19 mentioned, for example, we have gone from 51 major prime  
20 manufacturers in defense down to 5. We are actually moving  
21 back up to 6 or 7 now, I think, which is one of the  
22 sometimes potential benefits of consolidation. But the  
23 reality is that is driven as much by how much DoD is buying  
24 as it is by what the companies need to do, from a business  
25 point of view. And in the end, you know, the size and

1 economic vitality of the industry is determined by how much  
2 DoD buys.

3 Another key element, I think, is the timelines. For a  
4 company to bid and win work with DoD, whether it is in  
5 products, major weapons systems, or in the 50 percent of  
6 defense contracts that goes into services, which includes  
7 RDT&E and it includes all the sustainment and support  
8 necessary to keep those systems going, the timelines can be  
9 3 to 4 years long. In order to be successful, the company  
10 has to predict what DoD is going to need, what they are  
11 putting in their budget now, before it comes to Congress,  
12 what comes out of Congress, and then ultimately what gets  
13 apportioned and allocated out of OMB and through the  
14 Comptroller down to the programs. So they have to predict  
15 what that is going to be, they have to invest in that years  
16 in advance, and then they have to maintain that investment  
17 until such time as the contract is awarded.

18 This is lengthy. It is hard enough even if the rest of  
19 it were easy. But the rest of it is not because it is hard  
20 to do business with the Federal Government. The Federal  
21 Government legitimately has a lot of additional requirements  
22 with which companies have to comply, that the commercial  
23 world, that you mentioned, that does all the innovation,  
24 does not necessarily have to meet. And so that is an added  
25 layer. Those are some of the key elements, if you will. My

1 statement goes into more detail on that. It also talks a  
2 bit about the DoD competition report that was issued a  
3 couple of months ago.

4 I also close out with some comments on the impacts of  
5 Ukraine, where I think we have a lot of lessons that -- you  
6 know, the Army likes to talk about lessons learned, but we  
7 used to also say they are actually just lessons documented,  
8 not necessarily learned, because we seem to come back and  
9 learn them over and over again. And I think we are  
10 gathering a lot of lessons out of Ukraine but we have yet to  
11 implement those. My statement offers that DoD is moving  
12 more slowly than it should be on everything from  
13 replenishment as well as implementing some of those key  
14 lessons learned, including the importance of logistics and  
15 sustainment to deterrence going forward.

16 There is also a significant impact of inflation, and I  
17 would suggest to you that we cannot really wait for the  
18 fiscal year 2023 budget to be fixed to address that. I  
19 actually do not know what inflation is going to be a year  
20 from now, but we do know what it is right now, and we have  
21 companies operating with 5 or 6 percent margin on their  
22 contracts and 8 or 10 percent growth in wages, and over the  
23 long run that is not going to be sustainable, so we have to  
24 figure out some ways to address that.

25 And then, finally, the impacts of COVID-19 seem to be

1 regularizing, but there is still some enormous impacts, not  
2 only on supply chain but also on the workforce. So  
3 inclusion, I have got a number of recommendations in my  
4 statement. I am happy to go over those. And I think the  
5 timing of this hearing is really tremendous, and I commend  
6 you and the entire committee for doing this.

7 Thank you, sir.

8 [The prepared statement of Mr. Berteau follows:]

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1 Chairman Reed: Thank you very much, Mr. Secretary.  
2 Thank you both for excellent testimony, and, you know, I  
3 concur. We have, I think, neglected our industrial base.  
4 We assumed it would always be there, and we are now  
5 discovering it is not quite there because of many different  
6 factors.

7 And just to give you an opportunity again, both of you,  
8 to highlight what you think are some of the most critical  
9 problems and steps that we should take, and I will start  
10 with Secretary Lord.

11 Ms. Lord: I think the most urgent issue we have right  
12 now is the rising inflation numbers. This has impact today.  
13 It is going to have more impact tomorrow. What does it  
14 mean? It means that fixed-price contracts will not be  
15 completed as they were bid because there was not the  
16 assumption that there would be 8, 9, 10, 11, you know,  
17 percent inflation, and rising. It is not only labor costs,  
18 it is material costs. I would like to submit for the record  
19 some data I have from a variety of companies, talking about  
20 price increases for materials.

21 There are also enormous cost increases in  
22 transportation. So this is putting not only fixed-price  
23 contracts at risk but it also impacts cost-plus contracts  
24 because everything is more expensive and we are not going to  
25 be able to get everything done.

1           Now that is for existing contracts. What happens when  
2 industry is trying to negotiate with DoD for forward-looking  
3 contracts? It is both in the government's and industry's  
4 best interest to have multi-year contracts. However, how  
5 can you negotiate a 3- or 5-year contract when you do not  
6 understand what inflation is going to do and when there has  
7 not been a mechanism for quickly addressing cost growth?

8           Equitable adjustment clauses and so forth have fallen  
9 out of a lot of contracts because we have not seen  
10 inflation, but requests for equitable adjustment take an  
11 enormous amount of time and effort to gather data for,  
12 through all the different levels of the supply chain, and  
13 then work through the Department.

14           So I personally think the most significant thing  
15 Congress could do is to authorize and appropriate increases  
16 to the 2022 budget right now to make up for inflation so  
17 that we are not continuing to impact readiness and  
18 modernization, and then think very hard about what to do in  
19 2023. If you leave it to individual contract officers to do  
20 this we will not get it done in time, before we see a  
21 downward spiral in our capability.

22           Chairman Reed: Thank you. Secretary Berteau?

23           Mr. Berteau: Thank you, Senator. I would echo the  
24 importance of inflation and the ability to cover costs for  
25 inflation, but it is also important to look at what the root

1 causes are, and half of this inflation is in the workforce.  
2 It is not actually the fault of the government that there  
3 are not enough workers to go around to fill the needs that  
4 are there.

5 I did a brief informal survey of our member companies  
6 before appearing before you today, and there are tens of  
7 thousands of vacant jobs that they have under contract  
8 today, committed to perform, and they cannot either recruit  
9 or retain or, in many cases, get timely clearance for  
10 workers to be able to get into those jobs. This is not so  
11 much about a loss of money, although, of course, they  
12 probably care about that, but from my perspective it is work  
13 not being done that does need to be done.

14 We saw the impact of COVID here, as well, where you had  
15 a lot of the intelligence agencies went into a 50 percent  
16 on, 50 percent off. I asked them, for example, "Okay, so if  
17 you are actually getting all the work done with only 50  
18 percent of the people" -- because we had to be at least six  
19 feet apart, right, and the SCIFs are not built for that, I  
20 said -- "either something is not getting done or you did not  
21 need all those people in the first place. Which is it?"  
22 And, of course, they said, "Neither. We do need all those  
23 people, and the work still is getting done." That may be  
24 true in the short term but it is not sustainable over the  
25 long term.

1 I think, though, that there is an underlying element  
2 that really comes into play. Everything just takes us so  
3 long, and the threat from China does not give us the luxury  
4 of time. Ten years ago, I delivered a report to this  
5 committee on the pivot to Asia, and what we said in that  
6 report was we have got 8 to 10 years to stay ahead. Well,  
7 those 10 years are gone, Senator, and we did not use them  
8 very well in that regard. It takes us today 3 years to do  
9 what China can do in 3 days, in terms of deciding,  
10 resourcing, and getting started on something that needs to  
11 be done, particularly bringing new technology into play.  
12 Those, I think, are the critical aspects that we need to  
13 address.

14 Chairman Reed: Thank you. Just a follow-up question,  
15 Mr. Berteau, because I have heard the same thing from  
16 businesses all over my state of Rhode Island. They just  
17 cannot get the people. Did your members indicate what they  
18 think the reason is?

19 Mr. Berteau: We actually just completed, or we are  
20 finishing up this morning, our annual conference. We were  
21 at the Greenbrier in West Virginia, and I drove back. I  
22 have got my water bottle still with me here. It is a great  
23 attraction to come to this room from the Greenbrier, I must  
24 say.

25 Senator Manchin: Good decision.

1 Chairman Reed: Senator Manchin is now doing  
2 handstands.

3 Mr. Berteau: But we had a panel on this yesterday on  
4 what is being done, and we actually had experts from the  
5 Society of Human Resource Management, from academics who are  
6 researching this as well. There are so many tools available  
7 to us now and we are trying them all. Whether we are making  
8 a dent in it or not it is too hard to tell.

9 We are seeing a very interesting trend, though, that  
10 the academics reported yesterday, of what I would call  
11 transition remorse, so the Great Resignation, when people  
12 left for more money, or perhaps the ability to work from  
13 home when they did not before. Six months later we are  
14 starting to see maybe there is more to the job than just  
15 working from home and getting paid more. Maybe actually the  
16 mission matters, contributing something. Whether this is  
17 has a long-term benefit for us is too soon to tell, but  
18 there is hope there.

19 Chairman Reed: Thank you very much, both of you.

20 Let me now recognize Senator Inhofe.

21 Senator Inhofe: Thank you, Mr. Chairman, and I think  
22 we covered that pretty well, and Mrs. Lord, in terms of the  
23 inflation and the effect that it has. And a lot of people  
24 do not really understand that. Is there anything after the  
25 comments that were made by Mr. Berteau that you would want

1 to add on that particular issue?

2 Ms. Lord: I would just quickly say, Senator, that I  
3 think we have two huge challenges. One is embracing risk  
4 and the other is moving more quickly. So there are an  
5 enormous number of authorities that the Congress has given  
6 DoD over the past 5 years or so to more rapidly acquire, to  
7 get capability downrange into warfighters' hands. Those  
8 have been translated to both policy and implementation  
9 guidance.

10 However, it takes strong leadership to encourage the  
11 Department to use those to be able to move more quickly. So  
12 the tools are there, but I believe the leadership is  
13 required to hold the Department accountable for showing how  
14 they are using other transactional authorities, middle tier  
15 of acquisition and these other things.

16 Senator Inhofe: Okay. That is good. One of my major  
17 concerns is key munitions. I would ask you, Ms. Lord, how  
18 has the experience of supplying munitions to Ukraine  
19 highlighted about our munitions supply chain. And can you  
20 specifically explain the challenges of Stinger missile  
21 production and what more should be done to shore up this  
22 production line, and what other investments in our munitions  
23 industrial base are warranted to ensure this does not happen  
24 again?

25 Ms. Lord: Thank you, Senator. The Stinger, which is a

1 ground-to-air-launched missile, shoulder-launched, which we  
2 have sent, probably given public domain information, a  
3 quarter of our stocks to Ukraine on, is an issue where we  
4 cannot, within the next couple of years, produce more  
5 because we have a problem with the government not paying to  
6 maintain production capacity. When that happens, you have  
7 test equipment become obsolete and not work. You have  
8 supply chains with links broken in them. And especially if  
9 we had key elements of that supply chain supplied by now  
10 adversarial countries we have to reconstitute that.

11 We have a challenge in proactively planning to be able  
12 to produce these key weapons. Even with the Javelin, which  
13 we do have a hot production line right now, we are still 5  
14 years out to probably developing all the munitions we need.

15 So I think the real issue here is how do we make sure  
16 that we have a resilient supply chain to be able to produce  
17 the munitions we need, as a nation and also for our partners  
18 and allies.

19 There are a couple of answers to that, and one, I would  
20 say, is to begin to think about our releasability and  
21 exportability regulations. We have been very, very  
22 conservative with what we allow our closest allies to  
23 receive, in terms of technical information and manufacturing  
24 capability. We know that we do not have enough munitions.  
25 They end up being the bill payer, usually. And we could

1 look at countries like Australia that have capacity, that  
2 have throughput, that have the budget to develop indigenous  
3 capability, and work more closely with them to make sure we  
4 have the munitions we need and our allies and partners do as  
5 well.

6 Senator Inhofe: Do you think that we might be  
7 criticized for maybe holding too much from some of our  
8 allies?

9 Ms. Lord: Absolutely. General Hyten, retired General  
10 Hyten and I used to co-chair quite a few committees, and we  
11 would lament this. I think there has to be a demand signal  
12 from Congress to not only DoD but State Department, to say  
13 that we need to be a little bit more pragmatic about the  
14 three, four levels of technology innovation behind where we  
15 are now, that we are still not exporting. Huge opportunity  
16 there to make up some of these shortfalls, leveraging  
17 others' manufacturing capability.

18 Senator Inhofe: That is good. Very good. Thank you,  
19 Mr. Chairman.

20 Chairman Reed: Thank you, Senator Inhofe.

21 Senator Gillibrand, please.

22 Senator Gillibrand: Thank you, Mr. Chairman. Does DoD  
23 still intend to implement the Cybersecurity Maturity Model  
24 Certification 2.0 requirements next year, and are you  
25 receiving feedback from the companies in the defense

1 industrial base addressing whether the CMMC 2.0 will aid  
2 their cybersecurity posture?

3 Mr. Berteau: Let me take that first, Senator, and then  
4 Ms. Lord. We were collaborators on 1.0 from opposite sides  
5 of the table, but now we both sit over here.

6 DoD is moving forward. The requirements are in the  
7 early stages of the rulemaking process, and so we anticipate  
8 a revised Defense Federal Acquisition Supplement to come  
9 out. We have heard various estimates that it could be as  
10 early as late this spring or as late as a year from now.  
11 One of the problems or concerns that we have raised from the  
12 beginning is the threat is not waiting for this  
13 implementation, if you will, and every day that threat  
14 grows.

15 I do think, though, that an important element that is  
16 missing from here -- and there is a National Institute of  
17 Standards and Technology standard, 800-171, which is the  
18 basis of that cybersecurity regulation -- that almost every  
19 company I know and participates in the defense business  
20 today at the prime contractor level, whether large, medium,  
21 or small, is already investing and has a plan on record for  
22 compliance with and meeting those standards. The real  
23 question is, do those standards go far enough in order to  
24 protect us against the evolving threat, and nobody really  
25 knows the answer to that.

1           In the meantime, of course, there is an existing  
2 regulation, but its use has been suspended. It is not being  
3 incorporated in the contracts. But many companies are  
4 already complying with that. What we do not know is what is  
5 the next standard we are going to have to comply with, what  
6 is the timeline in which the flag will go down and you have  
7 got to be in compliance, and what can you do now to be ready  
8 for that when you do not know what it is you are going to  
9 have to meet, what standard you are going to have to meet.

10           So there is still a lot of ambiguity there, but a lot  
11 of people are moving forward anyway.

12           Senator Gillibrand: Thank you. What aspects of the  
13 Federal Government's contracting process do you recommend  
14 adapting to better facilitate rapid acquisition and emerging  
15 technologies, and do you believe that certain defense  
16 programs should be excluded from the Federal acquisition  
17 regulations altogether? And related, over the past few  
18 years, DoD has used other transaction authority contracts or  
19 OTAs to develop prototypes with industry for emerging  
20 technologies to speed the acquisition process, and how has  
21 this contracting method been received by the DIB, and should  
22 we expand the use of this authority?

23           And then final and related, I just returned from a trip  
24 to India and Nepal, and these countries would love to  
25 acquire U.S.-produced helicopters and other weaponry. And

1 the challenges is that it just takes too long. And so it is  
2 so cumbersome to create any acquisition fluidity with these  
3 countries, that it is easier to buy from Russia, or not in  
4 those cases, but China. And so I think we have to  
5 understand that our cumbersome nature in acquisition is  
6 highly problematic from the way we project power worldwide,  
7 but also so that our warfighters can have the most lethal  
8 and most effective technology possible.

9 So you can answer those questions in whichever order  
10 you think is best.

11 Ms. Lord: I think that is target-rich, Senator. So  
12 let me begin here by saying that Congress has written law  
13 that allows DoD to go fast, and that has been translated  
14 into policy and implementation guidance, meaning there are  
15 procedures there. Where we have lagged is making sure that  
16 we actually train the acquisition workforce on how to use  
17 these and that we encourage what I call creative compliance.  
18 We have a very risk-averse workforce that is extremely  
19 concerned about media attention or congressional hearings  
20 pointing out when things did not go well. This is leading  
21 to a group that does not want to do anything other than what  
22 there is precedent for before.

23 So I think we need to encourage and train to use  
24 things, as you talk about, the other transaction authority.  
25 That is huge, because you do not have a key requirement

1 there. You just sort of say what you need, and you can move  
2 quickly. I think we need to give the entirety of the  
3 budgets for OTAs right up front and let people move fast.  
4 That is how the Defense Innovation Unit does, and they have  
5 been able to work very well with commercial entities.

6 I see we are out of time here, but I will take that for  
7 the record because I think there are many more things we  
8 could do.

9 Mr. Berteau: Mr. Chair, if I could add just one thing.  
10 I know we are over time.

11 Chairman Reed: Go ahead, sir.

12 Mr. Berteau: Senator, I think that it is important  
13 from our perspective to acknowledge that speed does matter a  
14 lot here, but we need to be able to do it not just for a few  
15 but for everything. And other transactions is very useful  
16 as far as it goes, but if you can do it for some you really  
17 need to be able to do it for all.

18 This committee, in the fiscal year 2018 NDAA, put in  
19 statute for a DoD to define and measure how long it takes,  
20 what is the procurement lead time. One of PSC's initiatives  
21 for this year is we think you ought to take a look at how  
22 well they are doing, because we think they are actually  
23 losing ground since you required them to do that, rather  
24 than gaining ground. I think the spotlight of illumination  
25 will help speed things up as well.

1 Chairman Reed: Thank you, Senator Gillibrand.

2 Senator Wicker, please.

3 Senator Wicker: Thank you, Mr. Chairman. Secretary  
4 Lord, do you have anything you would like to add to the  
5 answer to Senator Gillibrand's question with regard to what  
6 industry is asking us for, with regard to technologies being  
7 too hard to develop, taking too long, and costing too much  
8 to procure?

9 Ms. Lord: Thank you, Senator. Yes, I would. I  
10 actually spent all day Saturday in Cambridge, Massachusetts,  
11 with a number of Harvard Business School and Kennedy School  
12 and MIT grad students, and a handful of private equity  
13 firms, talking about putting resources, money, into emerging  
14 technologies at new companies. And the biggest concern  
15 there is that manufacturing contracts are not being handed  
16 out quickly enough. We have a long process of going through  
17 cooperative research and development agreements, some very  
18 small, small business contracts. But we just need to get  
19 out there and start putting things on contract. We can do  
20 that through the middle tier of acquisition as well as using  
21 OTAs. And I think that the Congress demanding metrics, as  
22 David was saying, will drive that behavior.

23 Right now, with not as many politicals in the seats at  
24 DoD, we do not have a strong demand signal to modernize our  
25 practices, and we are not training people to utilize them.

1 I think it is very, very important for a virtuous business  
2 cycle here and to get these new developments fielded,  
3 because capital markets are going to play out. There is  
4 going to be consolidation. What is not happening is the new  
5 companies coming up quickly and gaining speed to cross that  
6 valley of death from a few prototypes to actual fielded  
7 solutions.

8 So middle tier of acquisition, for instance, just to  
9 explain that, says if you have a commercial capability or a  
10 fielded military system, that just through an incremental  
11 investment could really give us a step function change in  
12 capability, then we do not have to go through the Joint  
13 Staff's requirements process that can take up to 2 years.  
14 What we can do is get the leaders of military services, the  
15 Secretaries, or the leaders of agencies to document that  
16 they do have that requirement, and then we can move out on  
17 middle tier of acquisition very quickly.

18 So that is one that I think, during your posture  
19 hearings this spring, that you might want to ask the  
20 services and agencies about.

21 Senator Wicker: Okay. Let me shift to what we are  
22 trying to do to help the Ukrainians, and I will ask both of  
23 you this. How are we doing replenishing our own supplies  
24 with those of our allies, and how long can we keep this up,  
25 providing weapons at the current rate? Secretary Lord, you

1 go first, and then we will take Mr. Berteau.

2 Ms. Lord: I think that we are rapidly -- we are using  
3 what we have that we can give away, and the trouble is that  
4 we have a 2- to 5-year lag to bring those stocks back. We  
5 have that because we have not invested, as a nation, in the  
6 infrastructure, the equipment, and the tooling to have the  
7 capacity and throughput. And if you are in industry, if you  
8 do not have a clear and consistent demand signal, you cannot  
9 justify the capital investment without a certain return. So  
10 no board of directors is going to okay that.

11 So I think one of the tools that Congress has, that was  
12 used to great effect during COVID, is the Defense Production  
13 Act Title III. So if you could provide the funds to get  
14 over that barrier, to overcome that activation energy, if  
15 you will, for the infrastructure -- for buildings, for  
16 equipment, for tooling -- then we could more rapidly come  
17 back.

18 Senator Wicker: Mr. Berteau, that sounds like a real  
19 problem for our efforts to help our friends in Ukraine win  
20 this war.

21 Mr. Berteau: It is definitely a problem, and I think  
22 we have yet to see a single contract in place to start that  
23 replenishment. Discussions are going on, but there is no  
24 definition of what the requirement is yet, because we still  
25 do not know how far we are going to draw down. We are

1 drawing down, I have seen, in some cases, as much as a third  
2 of our available stocks -- that means not forward deployed  
3 but available for that -- in less than 2 months. If we are  
4 one-third down in less than 2 months, and we keep that rate  
5 up, that is only 6 months.

6 There is no way a contract is going to deliver  
7 replacements in less than that time, even if we started  
8 today. We are behind, and you guys should push them to  
9 hurry up.

10 Ms. Lord: If I may, I will say the Army has a UFR over  
11 here, UFR Number 24, that is looking at doing exactly this.

12 Senator Wicker: Thank you, Mr. Chairman.

13 Chairman Reed: Thank you, Senator Wicker.

14 Senator Blumenthal, please.

15 Senator Blumenthal: Thank you, Mr. Chairman. I  
16 suggested to the Secretary of Defense just about 2 weeks  
17 ago, before our recess. He sat in the place you are now  
18 that we should, in fact, invoke the Defense Production Act.  
19 And he said that it would be under consideration. I think  
20 we have lost the luxury of time here. The closet is bare.  
21 Just to give you one example, the United States military has  
22 probably dispensed about one-third of its Javelin anti-tank  
23 missiles to Ukraine, one-third of our supply given to them.  
24 To ramp up from the U.S. military's current buy of about  
25 1,000 missiles per year to maximum production of the

1 Javelins would take about 1 year, and replenishing U.S.  
2 stocks of those weapons would require 32 months.

3 Unless the President invokes the Defense Production  
4 Act, to prioritize deliveries of components to the  
5 manufacturer, to give that demand signal, we will run out of  
6 these key arms, not only Javelin missiles but Stinger  
7 missiles. We are now providing Howitzers and armed  
8 personnel carriers. The cupboard is empty, or it will be  
9 very, very shortly, unless the President invokes the Defense  
10 Production Act to provide that demand signal on an expedited  
11 basis.

12 The Secretary of Defense has warned that we are in for  
13 a long fight. The Chairman of the Joint Chiefs of Staff,  
14 sitting where you are now, said it will be a long slog. But  
15 the decisions we make now will determine the outcome,  
16 because these weapons will not magically appear, for us, for  
17 our allies, or Ukraine. We need to replenish the stocks of  
18 our allies as well as our own, and provide more for Ukraine.

19 So I think the challenge is extraordinarily daunting,  
20 and it requires this kind of major commitment. So I would  
21 like to know, Ms. Lord, whether you think right now we  
22 should invoke the Defense Production Act.

23 Ms. Lord: There are a few different titles in the  
24 Defense Production Act. Title I talks about D0 ratings and  
25 DX ratings. Everything that the Defense Department puts on

1 contract basically gets a DO rating that brings it ahead of  
2 any other commercial item. The most critical items get DX  
3 ratings, which pull those items in front of the other  
4 defense goods. So often some of our long-lead nuclear  
5 materials and so forth, go there.

6 Frankly, we have overused this to the point where it is  
7 becoming less meaningful, because if everything has a DX  
8 rating, nothing does, and the challenge is that we have not  
9 funded, over the years, industry to maintain the supply  
10 chains to get even 50-cent diodes sometimes. It is not big-  
11 dollar items. There just is not the manufacturing capacity  
12 there.

13 So I think DX ratings need to be used judiciously, but  
14 I think DPA Title III, which allows the Department to move  
15 money to industry to actually make the capital investments  
16 or train the workforce or develop the supply chain is where  
17 you can really move the needle on this issue. So again --

18 Senator Blumenthal: If I can just interrupt, because I  
19 am going to be out of time, moving the needle requires  
20 moving the money. It is a question of investing the  
21 resources. To its great credit, the Navy's fiscal year 2023  
22 budget requests over \$750 million to invest in the submarine  
23 industrial base and train the workforce. I have been urging  
24 for years that we need to make this investment. Twenty, 30  
25 million dollars is what we have included in past budgets.

1 Seven hundred fifty million marks a major leap forward, and  
2 it is desperately needed to train and retain our engineering  
3 and shipyard workforce.

4 But if we were to devote the kind of resources that we  
5 did to COVID, or earlier, in our major conflicts -- World  
6 War II, the Korean War -- moving the needle requires moving  
7 money and making the investment. Would you agree?

8 Ms. Lord: Absolutely.

9 Senator Blumenthal: Thank you. Thank you, Mr.  
10 Chairman.

11 Mr. Berteau: Mr. Chairman, if I could add one thing.

12 Chairman Reed: Of course, sir.

13 Mr. Berteau: I think your key point there, it is  
14 important to stress we need to start now, even if we are not  
15 going to finish now. And there are two key signals here.  
16 One is to the supply chain, not just to the prime  
17 manufacturer. The other is to the workforce, because as I  
18 mentioned, there are a lot of gaps in that workforce. They  
19 will not come back. They will not sign up unless they see  
20 the long-term possibility of the commitment there. So the  
21 faster we get started, the faster we will get the supply  
22 chain in place and start rebuilding the workforce to be able  
23 to do the work, even if it does not necessarily accelerate  
24 the endpoint. You have got to start now.

25 Chairman Reed: Thank you very much.

1 Senator Ernst, please.

2 Senator Ernst: Yes. Thank you, Mr. Chair, and thank  
3 you both for coming in front of the committee today. This  
4 has been a very, very good and necessary discussion.

5 Ms. Lord, I would like to start with you, please. You  
6 brought up the middle-tier acquisition as well as the valley  
7 of death, and I would like to dive a little bit more into  
8 that, because as you said, the middle tier of acquisition  
9 was brought online to help rapidly develop some of the  
10 prototypes within an acquisition program and deliver those  
11 combat capabilities to the warfighter much faster.

12 So how should the Department direct employment of the  
13 middle-tier acquisition strategy, especially when it comes  
14 to our combatant commanders? And are those COCOMs, are they  
15 using this tool effectively right now, in your view?

16 Ms. Lord: Thank you for the question. COCOMs do not  
17 have acquisition authority. They generate the demand  
18 signal. They are the ones, obviously, in their AORs that  
19 understand what is required. They must go back to the  
20 military services and work through them. And I think what  
21 we are seeing right now is leadership of the military  
22 services perhaps are not totally aware of all of the  
23 mechanisms they have to very rapidly acquire, and they need  
24 to exercise those authorities they have.

25 So I think a better-informed COCOM can go and speak to

1 a service and ask specifically for what they need and how to  
2 go about and get it, and that gets back to the issue of  
3 training the workforce. And I think that is one area where  
4 the committee could help by asking the Department what they  
5 are doing to train the workforce and what they are doing in  
6 terms of keeping metrics to look at the utilization of MTAs  
7 and how that has helped to rapidly field.

8 Senator Ernst: Good. No, and I appreciate that,  
9 because then that was going to be my question. How can the  
10 COCOMs, those commanders, then leverage the middle-tier  
11 acquisition? So just having effectively trained people at  
12 the service branch level, you think, and just knowing how to  
13 ask the right question from the COCOM perspective. Is that  
14 correct then?

15 Ms. Lord: Yes. I think it is being a smart customer,  
16 if you will. You do not only tell your supplier what you  
17 need but how you need to get it, and then hold them  
18 accountable for that. And again, middle tier of acquisition  
19 is somewhat a new muscle that is being exercised in the  
20 Department, and it takes a number of reps and sets for that  
21 to be comfortable, and to do it over and over. And human  
22 nature being what it is, unless leadership is demanding that  
23 that new muscle be used, it probably will not be.

24 Senator Ernst: So that is an area that we really need  
25 to work on then, because it is a tool, and existing tool

1 already, that we have available to us, for rapid fielding.

2 And you brought up the valley of death as well. So as  
3 you are talking about training and the professionals that  
4 need to have the appropriate training, do you believe that  
5 the acquisition professionals that we have at DoD are  
6 effectively trained to utilize that middle tier of  
7 acquisition and make sure that new technologies that are  
8 being developed do not die in that valley of death?

9 Ms. Lord: No. I believe that there is enormous  
10 opportunity to look at lessons learned, as we talked about  
11 before, and get experiential learning from those PEOs that  
12 really did use middle tier of acquisition, and for those  
13 users, the warfighters that benefitted from that. And I  
14 think we need to communicate, communicate, communicate about  
15 how effective it was, and do a little bit of what we started  
16 a few years ago at the Defense Acquisition University, where  
17 we licensed TED talks, and we had TEDx talks, and we had  
18 actual warfighters and PEOs stand up and say they problem  
19 they had and how they solved it, in very meaningful,  
20 realistic ways, versus having people on transmit mode only,  
21 with PowerPoints, you know, drilling people to sleep,  
22 basically, at Fort Belvoir.

23 We need to get this experiential learning and really  
24 require people to apply that learning in a meaningful way,  
25 and then go back and see how the user benefitted from that.

1           Senator Ernst: Thank you. And I will yield back just  
2 the little bit of time that I have left, but I think that is  
3 an important point, is that we provide lots of different  
4 authorities across the board. But unless that user knows  
5 how to access and utilize those types of authorities we are  
6 not any further ahead. So thank you very much.

7           Mr. Berteau: If I could add something to that, just  
8 briefly.

9           Chairman Reed: Yes, sir.

10          Mr. Berteau: I think, Senator, you have got a very  
11 important point there. There are success stories. Rarely  
12 do those success stories get a hearing before this  
13 committee. I know, from my experience, the times I have  
14 been brought up over the 40 years to praise me for good work  
15 are much fewer than the times I have been brought up to  
16 criticize me for having bought something we did not need,  
17 that it turned out we did.

18          But there is a real good example of that. The Army has  
19 just issued its contract for, I think they call it the Squad  
20 Attack Weapon. Mr. Chairman, I think we used to call it a  
21 rifle. And they used the middle-tier acquisition authority  
22 to do it, and they are really proud of the fact that it only  
23 took them 2 years from requirement to contract award. Now 2  
24 years is way too long for many of the things we are looking  
25 at, but it is a remarkable set of progress.

1 I would urge this committee to look for opportunities  
2 to illuminate and praise successes where people are actually  
3 implementing it well, and give them the credit for doing  
4 that. It would go a long way to helping others do that and  
5 take the risks to do it themselves.

6 Chairman Reed: Thank you, sir.

7 With that let me recognize Senator Hirono, please.

8 Senator Hirono: Thank you, Mr. Chairman. We have  
9 covered a lot of ground, I think, in this hearing, and  
10 frankly the DoD acquisition process has been a challenge, an  
11 ongoing challenge in all the years that I have served on  
12 this committee, and I think it is going to continue to be an  
13 ongoing challenge with workforce issues and supply chain  
14 issues and now with the war in Ukraine, replenishing our  
15 munitions supply.

16 So listening to the two of you, what one or two things  
17 do you think that we need to do immediately in order to  
18 address whatever, in your view, would be the major  
19 acquisition issue that we should deal with?

20 Secretary Lord, you can start.

21 Ms. Lord: I think, Senator, it all comes down to  
22 speed, and I think if you were in a business and you had  
23 these kinds of concerns you would have monthly  
24 accountability as to what the targets were to reach and what  
25 your deviation from that target was, and why. So I think

1 you might want to look, given the conflicts in the Ukraine,  
2 what are the top 10 weapon systems that you are concerned  
3 about, understand current inventories, understand what it is  
4 going to take to ramp up production, what the top three  
5 inhibitors to that are, and then just follow that to  
6 understand progress and what tools are being used to solve  
7 that.

8 Mr. Berteau: Senator, if I could --

9 Senator Hirono: Go ahead.

10 Mr. Berteau: There are two things, I think, in  
11 addition to speed, although speed is vital here in today's  
12 environment. One is to focus on results and outcomes rather  
13 than inputs. So much of our acquisition process is only  
14 focused on inputs -- labor categories, labor hours, costs  
15 from the front end -- rather than are you going to get the  
16 results you need.

17 This is not easy, because defining results you are  
18 looking for is hard, especially if you are looking at new  
19 technology and what it is going to bring to you. We will  
20 see an example of a contract that says, I know you are going  
21 to develop something, you, the commercial world, that I am  
22 going to need 3 years from now. How much is it going to  
23 cost me today to buy it 3 years from now? We cannot answer  
24 that question, obviously.

25 The second thing is in addition to focusing on outcomes

1 is to, in fact, encourage people to take risks, and actually  
2 not punish them when they have gambled a little bit. One of  
3 our CEOs said to me, "I do not need to go to the casino to  
4 gamble. I gamble every time I submit a proposal, because I  
5 do not know what is going to happen, and I do not know  
6 whether I am going to make money or lose money on it." We  
7 need to have a place where it is okay to take risks.

8 Senator Hirono: Frankly, I think that is a big order  
9 to encourage risk-taking, because we have set up systems --  
10 and I would say particularly in the acquisition space --  
11 that is intended also to -- well, it is to make sure that we  
12 are not overspending, and yet we see, in just about every  
13 platform, that there are delays. In building our ships, for  
14 example, major delays. So on that, easier said than done,  
15 and even regarding speed.

16 Secretary Lord, I liked the idea that we should just be  
17 very specific about what are the top 10 weapon systems that  
18 we need to replenish, and maybe identify the issues and get  
19 going with that, because at least that is something  
20 specific. The entire acquisition system is not intended to  
21 provide speed.

22 By the way, we created the Office of Cost Assessment  
23 and Program Evaluation. Mr. Berteau, maybe this is yet  
24 another entity that focuses more on inputs rather than on  
25 outcomes. But what is CAPE's role, if any, in the

1 acquisition process? Are they not supposed to analyze  
2 whether a system is needed, whether a ship is needed, make  
3 the input analysis and provide guidance on what should be  
4 done?

5 Mr. Berteau: They are supposed to do that. This is  
6 actually another success story that I think would benefit  
7 from some illumination. Since we took the old Office of  
8 Program Assessment and Evaluation and made it the director  
9 of CAPE, one of the requirements has been that their cost  
10 estimates, the independent cost estimate that they do for a  
11 weapon system before it goes into even low-grade initial  
12 production or into full production, is, in fact, the  
13 baseline that DoD will use unless the services can prove  
14 they have got something better. In almost every case, CAPE  
15 comes in higher. In almost every case, that is what ends up  
16 in the budget. And in almost every case, it is closer to  
17 the reality than what the optimistic projection was.

18 This has been a huge success story, because it has led,  
19 over the last decade, to a lot less under-funding. You got  
20 the benefit of this during your time as A&S and AT&L before  
21 that. It is a big success story, but it needs the  
22 reinforcement from this committee with budget requests, so  
23 that you recognize the validity of those independent cost  
24 estimates as well.

25 The one place where they are short is in sustainment

1 costs. That is where 70 percent of the cost occurs, and we  
2 still do not pay much attention to that at the upfront, and  
3 yet that is what eats us alive once a system is delivered  
4 and fielded.

5 Senator Hirono: I think that is interesting that you  
6 consider CAPE to be a success story. Would you agree with  
7 that, Secretary Lord?

8 Ms. Lord: I think for what they do they are. It is  
9 necessary but not sufficient. And where we have issues is  
10 the fact that when you do development, it is called  
11 "development" because it is not totally predictable. And  
12 what we do is we do not allow reprogramming and line items  
13 to be moved around in a portfolio approach, so we get very  
14 caught up, I think, in funding things that are perhaps not  
15 as critical now as they were when we passed the budget. So  
16 I think that lack of flexibility during the execution phase  
17 is particularly problematical.

18 But I think there are, in addition to keeping the  
19 metrics, some easy things that could be done tomorrow that  
20 would really help our readiness and even help out in the  
21 Ukraine. So I know we are out of time, but if we have the  
22 opportunity with another question that would be great to  
23 talk about.

24 Mr. Berteau: Senator, let me be clear. Their success  
25 is on the CA, the cost assessment end. They are not nearly

1 as good at the point that you raised also in your question,  
2 the program evaluation, what are the options. That has  
3 actually gone down, but the cost analysis has gone up.

4 Senator Hirono: Thank you.

5 Chairman Reed: Thank you, Senator Hirono.

6 Senator Tuberville, please.

7 Senator Tuberville: Thank you, Mr. Chairman. Thank  
8 you very much for being here today.

9 You know, I am a big believer in the power of  
10 innovation from small and medium-sized businesses. You  
11 know, a few weeks ago a constituent of mine contacted me to  
12 share his support for my priority to help employee-owned  
13 companies, called ESOPs. We all know that. This individual  
14 was a proud employee of a small business that was bought by  
15 one of the five prime defense contractors. He shared that  
16 following the sale the company's rates to the government  
17 tripled, the company's mentality shifted from ingenuity and  
18 vision to big paychecks and a woke agenda, which distracted  
19 the employees from their mission of supporting the  
20 warfighter.

21 Unfortunately, this is not an isolated situation. In  
22 last year's NDAA, I championed a provision to extend small  
23 business benefits to 100 percent ESOPs, which would give  
24 them more runway to become medium-sized businesses and  
25 compete with the giants of the industry.

1 Both of you, can you share with me your thoughts on  
2 that effort and any other ideas you have for helping small  
3 businesses, defense contractors?

4 Ms. Lord: I do not think that small business  
5 contractors have the time to go through our traditional,  
6 formal DoD processes, so that is where these OTAs and middle  
7 tier of acquisition can be utilized. And I think the reason  
8 that many of them end up being acquired is because they  
9 cannot have a virtuous business cycle through getting enough  
10 to grow themselves. So what I would say is we need to put  
11 more focus on making sure we are flowing dollars quickly to  
12 small, innovative businesses, because that is where 95  
13 percent of our innovation comes from. So we have to hold  
14 the Department accountable for handing out those contracts  
15 and then definitizing them and moving the money, because  
16 often a contract will be announced but then there is this  
17 huge pause before the money flows.

18 Mr. Berteau: Senator, we hear this same story, not  
19 necessarily just from ESOPs, although I have worked for a  
20 couple of ESOPs in my life and they have a very interesting  
21 dynamic of motivating and rewarding employees. So I think  
22 there is some positive benefit there. But I think that the  
23 story that you hear is not unique.

24 There are two things that I think would be useful for  
25 this committee to spend its time on this year. One is the

1 reauthorization of the Small Business Innovation Research  
2 authority that has expired. I do not know whether DoD has  
3 submitted a legislative proposal to extend that, but I think  
4 there is an opportunity for you to improve that act and  
5 particularly focus on something that has come up, that you  
6 mentioned earlier, which is the migration of a good idea  
7 into actually using it, which would benefit many in that  
8 regard.

9 PSC was actually instrumental in the first passage of  
10 that act. I was in the Department at that time so I did not  
11 give them any credit for it at all, but they deserved a lot  
12 of credit for doing it. That is one thing that you can do.

13 The second, I think, is a much more difficult thing,  
14 which is what happens inside the contracts. And I think  
15 there it depends on the incentives that you give to the  
16 programs and the contracting officers. And again, from my  
17 perspective, if you are focusing on outcomes, you are going  
18 to focus a whole lot less on what the rate ought to be and  
19 what the return is, and getting the results in place. If  
20 you start rewarding companies for delivering results as  
21 opposed to effort you are going to have a big, positive  
22 result in that.

23 Senator Tuberville: How can the DoD provide small  
24 businesses with the necessary insight and cybersecurity  
25 support to successfully contribute to our national security?

1 Small businesses -- they do not have the money that these  
2 big corporations have for cybersecurity.

3 Ms. Lord: I think there are a couple of ways we could  
4 go about that. One, there are some resources inside of the  
5 Department to help and mentor on that. What is a minimal,  
6 viable cybersecurity posture, if you will? And secondly, I  
7 think that is one of the ways that small companies can  
8 partner with larger companies, with a mentor protegee type  
9 arrangement, which actually benefits not only the small  
10 company but the large company.

11 So I think there are mechanisms to do it, and we need  
12 to look at how that would really benefit the small  
13 companies.

14 Mr. Berteau: There are two cybersecurity options, one  
15 of which Ms. Lord started during her time there, which is  
16 can DoD provide the framework -- the servers, the security  
17 structure -- so that a small business can operate without  
18 having to own it themselves? Of course, part of the problem  
19 is you give up some of your privacy if you are participating  
20 in a government-operated. The second is whether or not  
21 large contractors can provide that structure for their small  
22 business subcontractors. So they do not actually have to  
23 buy the small business. You can actually subcontract with  
24 the small business. Those are both very good ideas and  
25 worth pursuing.

1           Part of the problem, though, is the government  
2 employees do not get credit for small business jobs that are  
3 subcontractors. They only get credit in their annual  
4 performance review for small business dollars that are  
5 primes. And I think what we ought to do is figure out a way  
6 to give -- because a small business job is a small business  
7 job, and innovation can come as a subcontractor as well as a  
8 prime contractor. I would like to see something that  
9 rewards the government for all those small business jobs,  
10 not just some of them.

11           Senator Tuberville: One more quick question. In the  
12 past 2 months, the U.S. sent more Stinger missiles to  
13 Ukraine than we have manufactured in the last 20 years. The  
14 Stinger program is in its eighth restart. I will repeat.  
15 Eight times we have restarted this program. This missile  
16 has not been modernized in 30 years. What mistakes have we  
17 made and mismanaged in this munitions program? Just real  
18 quick.

19           Ms. Lord: We have not kept a hot production line. It  
20 is the lumpy nature of the funding.

21           Mr. Berteau: I think we do have a path now to upgrade  
22 the Stinger. I believe it will be here in something like  
23 2026 or 2027. I would suggest that our mistake was we  
24 should have done that 8 years ago.

25           Senator Tuberville: Thank you, Mr. Chairman.

1 Chairman Reed: Thank you, Senator Tuberville.

2 Senator King, please.

3 Senator King: Thank you, Mr. Chair, and thanks to both  
4 of you for your extraordinary service to the country.

5 Both of you touched on this, I think, in your opening  
6 statement, but we have not heard much about it since, and  
7 that is workforce. I had occasion to talk to the leadership  
8 of -- we have two major defense facilities in Maine, the  
9 Portsmouth Naval Shipyard, which, by the way, is in Maine,  
10 and Bath Iron Works. Both of them are having serious  
11 workforce problems, as are virtually every business in the  
12 country. One commentator said, "We have a demographic  
13 asteroid heading for us, and we are not adequately taking  
14 account of it."

15 What worries me is that the obvious solution is  
16 immigration. Every legal path to coming into this country  
17 is drastically down -- green cards, visas, refugees, asylees  
18 -- and right now we have 11 million empty jobs in the  
19 country. There are 6 million unemployed people. So that  
20 means if every single unemployed person took a job we would  
21 still have a shortfall of 5 million jobs.

22 It seems to me -- and I understand the politics of  
23 immigration. It has been difficult in this country for 150  
24 years, but we ought to be able to figure out how many people  
25 do we need to avoid this demographic disaster and keep our

1 industries, the defense industry being one of them,  
2 operating, and figure out a rational immigration policy to  
3 match the need to the supply.

4 Secretary Lord, do you agree with me that we have got a  
5 serious workforce problem, and the fertility rate is not  
6 going to solve it. We need to have new people.

7 Ms. Lord: Senator King, I absolutely agree with you,  
8 and I think the whole issue of clearances and allowing  
9 people to come in and work on defense items is an area ripe  
10 for the application of some of our emerging technologies. I  
11 think it would be fantastic to see Congress put something in  
12 the next NDAA about applying artificial intelligence and  
13 machine learning to looking at the data and getting at this.  
14 Perhaps that way we could not only forward the state of the  
15 technology through applying it but also apply it to a real-  
16 world problem that, frankly, we are swamped by the data and  
17 the numbers to deal with.

18 Senator King: We should realize that the fact that we  
19 are a country that people want to come to is an advantage.  
20 There are countries where they have to lock their people in  
21 to keep them from leaving. People from around the world  
22 want to come here, and given the demographic changes that  
23 are coming upon us, which is a lower birth rate, the low  
24 replacement, if we do not have people coming from somewhere  
25 else we are sunk.

1 Ms. Lord: Well, a good place to start might be with  
2 colleges and universities, undergraduate and graduate  
3 programs, where yes, we do have some bad actors from  
4 adversarial competitor nations. However, we send an  
5 incredible amount of intellectual capital out of this  
6 country at the end of many of those degrees.

7 Senator King: I completely agree, but I hope that this  
8 is something that the Congress can come to, and I would  
9 suggest a way to approach it is to say, okay, how many legal  
10 immigrants do we need and what is a rational system in order  
11 to ensure that we have that continuous flow in order to  
12 support. Because our industrial base, if they cannot hire  
13 people, they are not going to be able to build the ships and  
14 the airplanes and what we need.

15 Mr. Berteau: Senator, may I make one suggestion on  
16 that?

17 Senator King: Please.

18 Mr. Berteau: It is a supply and demand issue, and you  
19 have tried to address it at the accurate level, and I think  
20 that is essential. We are not going to solve this problem  
21 by people our age continuing to work longer and longer. But  
22 I also think that there are some immediate tasks that this  
23 committee and the Congress should look at with respect,  
24 particularly, to the defense industrial base workforce.

25 We have a number of provisions that we have developed

1 at PSC with some of our sister associations. We will be  
2 providing them to the Congress shortly, to fix this. But  
3 the most important thing is for the costs that companies  
4 need to incur to hire and retain the workers they have now,  
5 needs to be covered in their contracts, and right now, in  
6 many cases, it is not.

7 Senator King: Absolutely. But one of the reasons that  
8 we have got the problem is, again, supply and demand. If  
9 there are not enough workers you have got to pay them more,  
10 and that is going to throw the economics out of whack.

11 One quick question on a different subject. It seems to  
12 me that with the industrial base, one of the important  
13 things is not necessarily what the government buys but how  
14 it buys it. For example, multi-year procurement. Secretary  
15 Lord, I believe that multi-year procurement is something  
16 that the government, that we can do around here, that would  
17 vastly support and encourage investment and maintain the  
18 industrial base. I think you used the term "lumpy." I love  
19 that term. If we do things in a lumpy way, industry cannot  
20 respond because you cannot turn these large facilities off  
21 and on.

22 Ms. Lord: That is correct. And, in fact, if there is  
23 a multi-year contract it drives certainty. It allows the  
24 industry partner to put their internal research and  
25 development as well as capital investments into the area in

1 which the government is buying. It allows employees to say  
2 this is a good place to work because I know that the job  
3 will be here for at least 5 years, or whatever it might be,  
4 with options. It also saves the government an enormous  
5 amount of money because the cost and time to renegotiate  
6 these contracts is non-trivial. You want to get all the  
7 terms and conditions up front and then have options there.

8 But there is going to be less and less inclination to  
9 do those multi-years if inflation is running rampant and no  
10 one knows how to predict it and industry cannot recoup  
11 losses they might have.

12 Senator King: And industry is not going to make those  
13 investments that they need to make in the capital unless  
14 they have some assured stream of income.

15 Ms. Lord: Correct.

16 Senator King: Thank you. Thank you, Mr. Chairman.

17 Chairman Reed: Thank you, Senator King.

18 Senator Blackburn, please.

19 Senator Blackburn: Thank you, Mr. Chairman.

20 Ms. Lord, I want to ask you about the vaccine mandate  
21 and the effect that that had when it was extended to our  
22 government contractors, and the impact that that had. You  
23 know, Senator King is asking about workforce, and I know  
24 with the government contractors people could not test  
25 weekly. That was not an option. It was just you get the

1 shot or you are going to lose your job. And we have time-  
2 sensitive programs, like the Columbia-class submarine. So  
3 talk a little bit about that vaccine mandate and that  
4 impact.

5 Ms. Lord: Certainly. I think when it came out, the  
6 vaccine mandate, there was a short-term benefit because  
7 people came back to work. However, I think long-term it is  
8 problematical because for many different reasons some people  
9 do not want to be vaccinated. It also puts an incredible  
10 burden on the employer to monitor who is vaccinated, who is  
11 not, why they are not, is that an acceptable reason. This  
12 is all overhead that these companies did not plan on.

13 Senator Blackburn: And it disadvantages many of our  
14 specialty vendors who are small businesses. Correct?

15 Ms. Lord: Absolutely. It puts this huge, bureaucratic  
16 burden, which is one more reason, as I said in my opening  
17 statement, people have choices, investors have choices,  
18 companies have choices whether or not to work in national  
19 security. The vaccine mandate is one thing that nudged a  
20 few people out the door and kept many, many from entering.

21 Senator Blackburn: And I know recently Deputy  
22 Secretary Hicks had voiced concern about the diminishment of  
23 small businesses that were competing. And we need them for  
24 innovation, especially as we look at the realm of  
25 cybersecurity. Is that correct?

1 Ms. Lord: We absolutely do, and we have to make it  
2 easy and accessible for them to become part of our defense  
3 industrial base, and with many of the things we do in  
4 government one size does not fit all.

5 Senator Blackburn: I think you are so right on that.  
6 And, of course, in Tennessee we have Arnold Engineering,  
7 which is Air Force. We have Fort Campbell, which Army. You  
8 also have your Special Ops forces there. Down at Millington  
9 we have the Naval Air Station. We have Oak Ridge, one of  
10 our national labs.

11 So this one-size-fits-all vaccine mandate has really  
12 complicated the environment for some of our most innovative  
13 companies who can solve some of the issues that we have,  
14 especially when you need to avail yourselves of technology  
15 in order to move into hypersonics, to provide the  
16 protections, and to have that competitive environment.

17 So talk to me. As you respond, bring in the DIB, and  
18 talk to me about what is being done there to foster that  
19 competitive environment.

20 Ms. Lord: I agree that we have a challenge, and I  
21 think a big part of this is being agile and quick to adapt.  
22 So using your vaccine mandate example, perhaps that was the  
23 right thing at one time, but you have to look at the  
24 environment around you and adapt to that. And I think we  
25 have to be more adaptive with the defense industrial base.

1 Because companies are not going to be here to supply our  
2 warfighters with the kit they need downrange and the  
3 services they need if they cannot make sufficient margin to  
4 be able to reinvest in research and development and capital  
5 investment and so forth.

6 Especially the emerging technology companies that have  
7 choices in terms of what they can do. They could go work on  
8 commercial items. But thankfully many of them want to deal  
9 with national security items. We have to make sure that we  
10 get them on contract quickly and we check out what they  
11 have. We get it out in the field and see what works and  
12 what does not.

13 Senator Blackburn: Well, and I think that that is  
14 vitally important to do.

15 I want to ask you this. I think it was Senator  
16 Gillibrand that talked earlier about the cumbersome process  
17 for acquisitions. How many purchasing agents, procurement  
18 agents, acquisition personnel do you have, and have you been  
19 able to pull them into kind of a standard, best practice  
20 operating procedure that has seemed to elude the DoD?

21 Ms. Lord: Yeah. So obviously there are tens of  
22 thousands of them. I have been out of the DoD for over a  
23 year so I do not know the exact number. However, I will say  
24 we have pockets of excellence, whether it be the Rapid  
25 Capabilities Offices or DIU or other people. They do not

1 have special authorities. What they have are the best and  
2 the brightest, a clear communication path to leadership, and  
3 the ability to move quickly. And what we have to do is  
4 scale that across DoD.

5 Senator Blackburn: I am over time. I have got some  
6 questions I will submit for the record. Thank you.

7 Thank you, Mr. Chairman.

8 Chairman Reed: Thank you, Senator.

9 Let me now recognize Senator Kelly, please.

10 Senator Kelly: Thank you, Mr. Chairman. Ms. Lord, as  
11 a former Under Secretary of Defense for Acquisition and  
12 Sustainment you understand how vital semiconductor  
13 production is to our military capability to respond to many  
14 of the global threats that we face. Semiconductors are  
15 essential to a wide range of national defense systems, yet  
16 semiconductor manufacturing capacity located in the U.S. has  
17 dropped from a high of about 40 percent in the 1990s to less  
18 than 13 percent today, while China is investing heavily to  
19 try to dominate this industry. And we also have the added  
20 complexity of China's interest in, at some point,  
21 repatriating or bringing back Taiwan and what that would  
22 mean to semiconductor capacity.

23 That is why last year I negotiated and helped pass a  
24 \$52 billion plan to boost semiconductor manufacturing  
25 production here in the U.S., including in my home state of

1 Arizona. This plan passed both the House and the Senate,  
2 and hopefully we are going to get this, the differences in  
3 the legislation, resolved through conference negotiations,  
4 and get this across the finish line soon. It is vitally  
5 important to our national security.

6 In your view, how does the semiconductor shortage  
7 contribute to the global challenges we face, and what more  
8 can be done to overcome the problems associated with a  
9 global semiconductor shortage?

10 Ms. Lord: The global semiconductor shortage has  
11 enormous ramifications for the Department of Defense,  
12 because almost everything produced uses them. First of all,  
13 we have to make sure that our systems are secure. In other  
14 words, they are not calling China or somewhere else with  
15 information.

16 But the real challenge here is that most of the  
17 intellectual property for these semiconductors actually  
18 originates in the U.S., but for a variety of reasons -- some  
19 of them environmental laws, some of them labor laws, some of  
20 them cost competitiveness of final units -- we have  
21 offshored, over time, to the point where we are no longer in  
22 control of those supply chains, even the most fundamental,  
23 lower-level items such as the rare earth elements. We can  
24 get them out of the ground but to date they are very dirty  
25 processes to make them usable. And they go in not only

1 semiconductors but lots of other things.

2       So we, as a nation, need to prioritize those  
3 manufacturing processes that give us the key elements.  
4 Unless we really take the legislation and look at the  
5 industrial base and invest in it to get the infrastructure,  
6 the equipment, the tooling, and training the workforce, we  
7 are not going to be able to control our destinies here. And  
8 there is more to be done than one companies can just do and  
9 justify in its business cycle.

10       So I am not a big fan of government getting very  
11 involved in industry, but I believe this is a national  
12 emergency, and this is a place where we need to make that  
13 investment to be able to control our destiny.

14       Senator Kelly: I agree, and, you know, inexplicably it  
15 is not just the manufacturing. In the case of  
16 semiconductors we manufacture here we often send them  
17 overseas, China, to test them.

18       Ms. Lord: Yeah, test and evaluation as well as  
19 packaging. Two very important parts of that chain. And you  
20 are absolutely correct. Those test systems are highly  
21 engineered, complex systems.

22       Senator Kelly: Well, I just recently returned from a  
23 meeting with our partners in Europe and Asia, speaking  
24 directly with international leaders in Germany and other  
25 countries. This underscored the opportunity we have to

1 rebuild our global supply chains and strengthen our security  
2 partnerships in the process.

3         So Ms. Lord, one of the countries that I visited was  
4 India, which I understand you have some expertise as you are  
5 the Vice Chair of the U.S.-India Business Council. From my  
6 recent discussions I believe there is a willingness to  
7 strengthen U.S.-India security in industry partnerships.  
8 What thoughts do you have on how we can accomplish that, and  
9 do you agree this will also benefit U.S. strategic interests  
10 at a time when Russia is looking to shore up their own ties  
11 with India?

12         Ms. Lord: India has enormous opportunities but also  
13 enormous challenges. We have never been able to get the  
14 overarching security agreements with India that we would  
15 hope. We have challenges with things like the S-400 being  
16 on contract, and so forth. And additionally, the challenge  
17 of doing business, I can tell you, in India, is enormous  
18 because of the offset requirements there, to be able to  
19 provide local business.

20         So enormous potential, but I would say the opportunity  
21 and the challenge is to work with the Indian government to  
22 streamline policies and procedures, make them consistent so  
23 that it is a predictable venue for U.S. business and U.S.  
24 government to invest in.

25         Senator Kelly: I agree, and, you know, the opportunity

1 we have there is enormous right now. And their ties to the  
2 Russian government, Russian military through their Russian  
3 hardware that they have purchased, two-thirds of the Indian  
4 military force consists of Russian hardware, which, as a lot  
5 of us expected, did not perform well on the battlefield. So  
6 this is an opportunity for us to build some ties through the  
7 sale of some of our military equipment, which I would like  
8 to see.

9 So thank you. I am over time, so my apologies, Mr.  
10 Chairman. I do have some other questions I want to submit  
11 for the record.

12 Chairman Reed: Thank you, Senator Kelly. Senator  
13 Hawley, please.

14 Senator Hawley: Thank you, Mr. Chairman. Thanks to  
15 both the witnesses for being here.

16 Mr. Berteau, if I could just start with you. Some of  
17 our country's largest service firms, including Deloitte,  
18 McKinsey, I think, others, maintain a very significant  
19 presence in China, even as they are pursuing and executing  
20 contracts with the Department of Defense. Should we be  
21 concerned about that?

22 Mr. Berteau: The upfront optics of that are obviously  
23 not very attractive at all, and so the real operative  
24 question is what are the protections in place that we need  
25 to have in order to preserve any risk from coming out of

1 that. In the case of some of these companies, they are  
2 actually a foreign-owned company, in that they have a full,  
3 dedicated protection against foreign ownership control and  
4 interest. The policies are there. The procedures are  
5 there. The structures are there. The execution and  
6 implementation is what has to be monitored very, very  
7 carefully in that regard.

8 Partnership companies like those present challenges to  
9 us across the board. I do believe that DoD has the national  
10 security procedures and processes in place, and structures.  
11 It is the execution and monitoring that becomes absolutely  
12 critical in that regard. We have firewalls. We have to  
13 make sure they are clear and high. I know you wrestle with  
14 those every day internally.

15 Senator Hawley: Should it be a conflict of interest  
16 for a company like Deloitte, let us say, or McKinsey, to do  
17 work for the Chinese government and/or its proxies while  
18 also doing work for the Department of Defense?

19 Mr. Berteau: We have looked at the legislation that  
20 has been introduced in this body on that regard and we think  
21 there are some very serious concerns that do need to be  
22 addressed there. But we also need to make sure that  
23 American can still get the capability and competence of the  
24 workers we need as well. So it is that balancing act that  
25 becomes critical there. I am not sure if it is directly a

1 conflict of interest. There is definitely a conflict, there  
2 is definitely interest, but there may be a better way of  
3 getting at it.

4 Senator Hawley: Yeah. Well, this is pretty  
5 concerning, I would say. Let me just ask you. I mean, you  
6 are the head of the Professional Services Council. What  
7 advice would you give to companies like Deloitte that are  
8 doing business in China, including with the Chinese  
9 government and its proxies, despite the threat that  
10 government, its proxies, and the Chinese Communist Party  
11 pose to this nation?

12 Mr. Berteau: We are actually looking, and we are  
13 working on a white paper of what it is that those companies  
14 need to do better in order to bring the kind of comfort that  
15 you need to have out of that. I do not have something ready  
16 to deliver to you today, but we will be happy to take that.

17 Senator Hawley: Yeah. Fair enough. Thank you.

18 Ms. Lord, let me ask you about the Stingers issue,  
19 which Senator Tuberville raised a little bit ago.  
20 Obviously, Stingers are in high demand in Ukraine. They may  
21 well be in high demand in Taiwan. We need, of course, to  
22 maintain a robust supply ourselves. You said that you think  
23 one of the problems here is we have not kept a hot  
24 production line. What do we need to do now to accelerate  
25 production of the Stingers, and other similar capabilities

1 that we are going to need for frontline states like Ukraine  
2 and Taiwan but that we are also going to need for ourselves,  
3 all at the same time?

4 Ms. Lord: In order to have production you need  
5 facilities, equipment, tooling, material, and a workforce.  
6 So what we need to do is incentivize industry to do that  
7 through long-term contracts that allow them to make those  
8 investments, and a reasonable return on that investment, so  
9 that they will stay in business. So long-term, clear demand  
10 signals, along with, if we really need to get this jump-  
11 started I would say some DPA Title III-type investment to  
12 stand up lines, train the workforce, and get the supply  
13 chain going.

14 Senator Hawley: How much of it, in your opinion and in  
15 your experience, is about incentivizing industry versus  
16 overcoming hurdles within our own acquisitions bureaucracy?  
17 Can you speak to that?

18 Ms. Lord: Oh, I think that it is a Venn diagram that  
19 is very -- well, there is a huge amount of overlap, and I  
20 think, again, we have an acquisition system that can do  
21 these things quickly. We are not incentivizing our  
22 workforce to do that. To David's point earlier, how often  
23 does this committee have a hearing calling out and trying to  
24 understand all the fantastic applications of other  
25 transaction authorities and middle tier of acquisition, what

1 that did to speed up the acquisition process, what that did  
2 to help the user downrange? We need to communicate the art  
3 of the possible and then encourage it, versus admiring the  
4 problem.

5 Senator Hawley: My concern on this, to be clear where  
6 I am coming from here, it is not just related to the  
7 Stingers. I understand we are also having production issues  
8 with the LRASMs and other advanced munitions we are going to  
9 need if we are in an environment, and I think we are, where  
10 deterrence is the name of the game, and deterrence by denial  
11 --

12 Ms. Lord: Absolutely.

13 Senator Hawley: -- both in the Indo-Pacific, also  
14 going forward in Europe. We have got to be able to deter  
15 our near-peer competitors, and in the case of China,  
16 frankly, our peer competitors. And in order to do that our  
17 competitors -- our enemies, frankly, our opponents -- have  
18 got to believe and got to know that we have the kind of  
19 capabilities that we are going to need, and we can supply  
20 our partners and allies with the capabilities they are going  
21 to need in short order.

22 So to me, getting this right is vital to being able to  
23 execute deterrence by denial, which we have got to do going  
24 forward.

25 Ms. Lord: Exactly. And one of the things that we need

1 to consider is when you go down those various weapon  
2 systems, three, four, five, six levels down to supply chain,  
3 you find all of a sudden the family tree does not branch  
4 anymore and that you have some critical semiconductor  
5 components and so forth. So it gets back to some of these  
6 fundamentals that Senator Kelly was asking about as well.  
7 We have got to fix the fundamentals.

8 Senator Hawley: I have got a few more questions for  
9 each of you, which I will submit for the record. Thanks so  
10 much for being here.

11 Thank you, Mr. Chairman.

12 Chairman Reed: Thank you, Senator Hawley.

13 Senator Manchin, please.

14 Senator Manchin: Thank you, Mr. Chairman. Thanks to  
15 both of you for your service and thank you for being here  
16 today.

17 Let me start on just a couple of things. I know it has  
18 been talked about as far as supply chains and all of that.  
19 This war that we are supplying most of the armament that  
20 they are needing to defend themselves in Ukraine, if it  
21 continues for any period of time, say a year or longer, how  
22 does that threaten our security?

23 Ms. Lord: It is a huge threat to our security. I  
24 think you can go back to the supply chain report we did in  
25 2018, in responding to an Executive order, where we called

1 out all of these areas of our defense industrial base where  
2 we either had very fragile supply chains, we were single  
3 sourced, or we were dependent on an overseas, unfriendly  
4 nation.

5 So I think, frankly, this is our Sputnik moment here  
6 with Ukraine, relative to our capacity and throughput to  
7 generate what we need in terms of weapons systems.

8 Senator Manchin: Are they looking down the road right  
9 now? Are you all looking down the road, knowing that we  
10 have to resupply ourselves for what we are basically sending  
11 over to Ukraine?

12 Ms. Lord: I think that is clear within the Department,  
13 but --

14 Senator Manchin: Has that acquisition started yet? Is  
15 there any acquisition going on right now to replace  
16 immediately?

17 Ms. Lord: I am not inside the Department anymore. I  
18 am outside the Department. However, there is a bit of  
19 activity. The Army has a UFR up here on the Hill about  
20 Stingers. There is a bunch of activity, but it takes money.  
21 There is only so much reprogramming, redirecting.

22 Senator Manchin: I am thinking the money we are  
23 sending, the goods we are sending over would be resupplied.

24 Mr. Berteau: Senator, about a week and a half ago the  
25 Defense Department posted what is called a RFI, request for

1 information, soliciting input from companies. I think it is  
2 due May 6th, so it is a very rapid turnaround, with respect  
3 to Ukraine. What it does not address, though, is something  
4 that you hinted at. We are not only sending equipment to  
5 Ukraine, we are oftentimes replacing equipment that other  
6 countries are sending to Ukraine. In many cases they are  
7 sending them Russian equipment, and we are replacing them  
8 with American equipment. That is part of the demand as  
9 well. I do not believe it is covered in the RFI. So we  
10 have only made the baby steps here.

11 Senator Manchin: I am trying to find out also, are the  
12 countries that are basically supporting, NATO allies, the  
13 same as we are in Ukraine right now? Are we responsible to  
14 send that to them and replace it free of charge, or are they  
15 buying it?

16 Mr. Berteau: In many cases those are still being  
17 negotiated.

18 Senator Manchin: Okay. If I can ask you also about,  
19 when you have contractors, first of all, from cyber, most of  
20 our hacks come from the bottom up. So let us say that we  
21 have a major contractor, one of the big boys -- I will not  
22 name any names but the big ones. They are pretty much  
23 hardened. But the subs that they have are not as hardened.  
24 And a lot of the subs do not want to be tied to the main  
25 because then the main will do what they are going to do and

1 knock them out of the contract.

2       So it is a real dilemma that we are in right now, and  
3 the back door of hacking, this back door, has been prolific.  
4 So do you all have any thoughts on that? And with that I  
5 would ask you all because my time is running out here very  
6 quickly, commercial markets. Okay. If there is a  
7 contractor in the commercial market and they are priced in  
8 the commercial market, and then they also are providing  
9 almost the same services in the industrial, for our defense,  
10 how come they do not make those prices available to us? Why  
11 is it a whole other pricing system and we never call them on  
12 it?

13       Ms. Lord: Well, to answer the second question, we may  
14 sometimes buy the same products but our cybersecurity  
15 requirements, our physical hardening requirements, might be  
16 different. So although it looks the same it might not be.

17       I will say that quite often industry tries to get  
18 commercial pricing because it is easier for them just to go  
19 off of a price list. But often the Department's regulations  
20 require a cost-based assessment, building up from the cost,  
21 and the exercise of going through that to demonstrate why  
22 everything costs what it does costs money, puts a wrapper of  
23 overhead and G&A on it.

24       Senator Manchin: I mean, we just put so much red tape  
25 involved in this, trying to secure something, and people are

1 just so absolutely aghast at us continuing to throw money  
2 away. I mean, that is where you have got the toilet seats  
3 and the hammers and all those. Remember all the comparisons  
4 they used for years and years?

5 Ms. Lord: That comes back to training the workforce.  
6 We have the authorities. Congress provided them to DoD. We  
7 have translated those into policy and implementation  
8 guidance or procedures. We need to train the workforce to  
9 use those and then hold the workforce accountable. And that  
10 needs to happen at DoD senior levels as well as here.

11 Mr. Berteau: And part of that training, Senator, is we  
12 frequently, in DoD, will say we want to commercial but we  
13 would like you to tweak it just a little bit so we can use  
14 it. And, of course, when you have got a production line of  
15 a million a month and DoD is only going to buy 100, there is  
16 no benefit in that tweaking.

17 Senator Manchin: Is President Dwight Eisenhower's  
18 statement still true today -- beware of the industrial  
19 complex?

20 Mr. Berteau: You know, the original draft of that  
21 actually said beware of the military congressional  
22 industrial process.

23 Senator Manchin: Oh, congressional.

24 Mr. Berteau: They took the congressional out of it,  
25 but it is still worth paying attention to.

1 Senator Manchin: He had it right, did he not? Thank  
2 you. Thank you, Mr. Chairman.

3 Chairman Reed: Thank you, Senator Manchin.

4 Senator Rounds, please.

5 Senator Rounds: Thank you, Mr. Chairman. First let me  
6 begin by just thanking both of you for your continued  
7 service to the nation, both within the DoD and within the  
8 private sector. And Ms. Lord, I want to thank you for  
9 working so closely with me in 2020, to execute the Defense  
10 Production Act authorities in response to the worst days of  
11 COVID-19. I think we made a difference.

12 To both of you, I would like to ask a question about  
13 what I see is a very disturbing trend of consolidation  
14 within the defense industrial base over the last 20 to 30  
15 years. This results in less competition, which slows  
16 innovation, decreases performance, and impacts pricing so  
17 that the government and the American people do not get the  
18 best bang for the buck. Specifically, 90 percent of  
19 missiles that DoD purchases come from three companies.  
20 Fixed-wing aircraft are provided by three companies, down  
21 from eight. And satellite contractors are down to four,  
22 also from a previous high of eight.

23 The pandemic and recent supply chain disruptions have  
24 had particular impacts on small and mid-sized businesses  
25 that DoD relies on. My question is, what can we do to

1 increase competition and encourage small and mid-sized  
2 businesses who often are at the cutting edge of innovation,  
3 to compete to provide with us for the best and strongest  
4 national defense that we can possibly afford?

5 Ms. Lord: Senator, I will quickly answer that and then  
6 pass it along to David. It all comes down to predictable  
7 procurement. If you do not have a clear demand cycle, and  
8 you do not know what is being purchased over the next 5  
9 years, you cannot invest your resources, whether that be  
10 your plant, your equipment, your tooling, your people, in  
11 something where you do not know what the return is. And  
12 because there has been such an erratic demand cycle and  
13 purchasing cycle, companies start to go out of business or  
14 they put themselves up for sale.

15 So the most critical thing that the government could do  
16 is be very clear about how much of what is going to be  
17 procured over multiple years, and then have long-term,  
18 multi-year contracts.

19 Senator Rounds: Mr. Berteau?

20 Mr. Berteau: Senator, you have raised some absolutely  
21 great points, and we have been wrestling with this for a  
22 long time. Let us look first at the question of is there  
23 enough demand to support the supply. Your missiles were a  
24 great example. A big part of the reason why there are only  
25 three companies delivering on that 90 percent is we are not

1 buying enough missiles to keep more companies in business,  
2 from a production line point of view.

3 I actually think that part of the answer to the concern  
4 that has been raised across the board of replenishment here  
5 is that we do need to buy more, and if you buy enough you  
6 will get more competition.

7 The second thing is that oftentimes the requirements  
8 are so specific that only one or two companies are going to  
9 be able to meet the requirements. So if we expand the  
10 flexibility of the requirements so more companies can bid,  
11 then it will go forward.

12 The third is that about half of what DoD spends its  
13 contract dollars on is not products. It is services. That  
14 sounds pretty straightforward, but the reality is that the  
15 migration of technical capability that the government needs,  
16 they buy a lot more today as a service that they used to buy  
17 as a product. Two big examples are access to space. When  
18 the govt no longer owns the launch vehicles it is the  
19 private sector that is providing it. So you are just buying  
20 the launch as a service. But we still maintain a mentality  
21 as if we are buying a product. Software. I cannot remember  
22 the last time I actually held software in my hand, and it is  
23 a floppy disk, and I am not even sure I have a machine that  
24 could read it if I did. So we are really just buying it as  
25 a service. But our procedures still are as if it is a

1 product, so we are not taking advantage of that.

2 The third is that for small businesses, in particular,  
3 we put these contracts out where every small business has to  
4 be on this government-wide contract because that is where  
5 the work is flowing, but we often put so many on there that  
6 there is not enough work that flows through to keep them,  
7 and give them even the return to make the money back that  
8 they spent on putting the bid in place. So we need to  
9 rationalize our supply and demand in order to get forward  
10 there. And it is really across the board. It is not just a  
11 few big companies at the top.

12 Senator Rounds: Does the Federal Government or the  
13 Department of Defense have the capability to assist small  
14 contractors in their need to be at their best with regard to  
15 cybersecurity issues? Today it seems like our larger  
16 contractors, we can hold them accountable, but the smaller  
17 contractors, in many cases, may have excellent capabilities  
18 specific to a particular product but do not have the  
19 capabilities in-house to take care of their cyber protection  
20 needs.

21 Would it help if we established a process to assist  
22 them in their cybersecurity needs?

23 Mr. Berteau: Well, there are two ways to do that, and  
24 it is really critically. So you have really got a dilemma  
25 there. You want the companies you do business with to be

1 secure against cyberattack, and that is not just in America  
2 but around the world as they go forward. At the same time,  
3 you do not want to burden them with the costs that, in fact,  
4 it puts them out of business in order to do that. And we  
5 hear this from our member companies all the time.

6 So there are two ways to get at that. One is, in fact,  
7 for the government to provide some type of support. It  
8 might be the computer servers that you are operating on, so  
9 that you can have your systems in place, and the government  
10 is part of that protection. The problem is this is a huge  
11 cost for the government, and frankly, I am not optimistic  
12 that the government can do this more effectively than the  
13 companies themselves can.

14 The second is for that to be a reimbursable cost. So,  
15 in fact, for the companies to incur it, right now if they  
16 spend that money -- I have got a small company, maybe \$20  
17 million a year, it is costing them \$100,000 to put the  
18 cybersecurity in place. All that does is increase their  
19 rates -- and this is overhead. This is not direct charge --  
20 it increases their rates to the point where they are not  
21 competitive in winning a contract. So boy, talk about a  
22 beggar's choice here, right?

23 So if the government actually could figure out a way to  
24 cover those costs to maintain the competition and get the  
25 security we need, that would be a big plus.

1           Senator Rounds: I think we agree it is a problem, but  
2 I am not sure that we have resolved it with the appropriate  
3 answer yet.

4           Mr. Berteau: And as I mentioned before, the threat  
5 keeps increasing every single day.

6           Ms. Lord: This is an area where the industrial policy  
7 team at DoD could probably more clearly articulate the  
8 avenues to be followed.

9           Mr. Berteau: What DoD has done is they have migrated  
10 the responsibility from your old shop to now the CIO, the  
11 chief information officer shop. Sometimes reorganization  
12 does not speed up results.

13          Senator Rounds: Thank you. Thank you, Mr. Chairman.

14          Chairman Reed: Thank you, Senator Rounds.

15          Senator Kaine, please.

16          Senator Kaine: Thank you, Mr. Chair, and thanks to the  
17 witnesses. Really important hearing, and my colleagues have  
18 asked a number of really good questions.

19          Secretary Lord, I want to start with you, because you  
20 talked about the need to scale up things that are working.  
21 You mentioned DIU, and I wanted to ask about the Defense  
22 Innovation Unit. DIU has had some real success. They have  
23 brought 100 new vendors to the DoD. They have facilitated  
24 more than \$3.7 billion in contracts.

25          It would seem that DIU would fit very closely with

1 President Biden's recently released report on safeguarding  
2 our national security by promoting competition in the  
3 defense industrial base. That has five key recommendations,  
4 and one is increasing new entrants and increasing  
5 opportunities for small businesses. But in my examination  
6 of DIU, and I have visited the Silicon Valley operation, I  
7 do not really think the Department or service leadership are  
8 really pushing investment in that venue.

9 And you could talk about other authorities. I think  
10 both of you mentioned the other transaction authorities that  
11 we have provided.

12 So if what we want to do is promote innovation and  
13 speed, and if we have credible venues that have proven their  
14 ability to do that, why are we not using them more? How do  
15 we scale up use of these innovation acquisition strategies?

16 Ms. Lord: My opinion is, one, we do not reward  
17 individuals or groups for using these different authorities  
18 to innovate and move quickly, and secondly, we do not do a  
19 particularly good job of training the individuals who need  
20 to use these methodologies, as well as their leadership,  
21 about the art of the possible. So again, if it is not being  
22 required it might not be paid attention to.

23 So I think this is one of those issues that need to be  
24 unpacked, so to speak, so it is very clear that secretaries  
25 of the services, leaders of agencies, have an expectation

1 that a certain amount of their procurements will go through  
2 these methods, and then measure what the progress is being  
3 made, how fast it is. Because it is just not getting things  
4 on contract. It is bringing it over the finish line and  
5 then making sure it moves on to a sustainable situation.

6 Senator Kaine: Mr. Berteau, do you want to add to  
7 that? How can we take existing strategies that can lead to  
8 innovation and speed and actually make them work? We do not  
9 need to create new paths. We just sometimes need to use the  
10 ones that we have in a more effective way.

11 Mr. Berteau: I am going to try not to get too wonky  
12 here, but you are a man with whom I can get wonky  
13 occasionally. I just had a discussion with a contracting  
14 officer yesterday that just floored me. The core of the  
15 Federal acquisition regulation and contracts, the one that  
16 is burdened with the most regulations and the most  
17 processes, is Part 15, and that is the standard, do  
18 everything by the book, all the way through.

19 This contracting officer said to me -- I said, "Why  
20 aren't you using," and I mentioned another part that has a  
21 lot more flexibility. And he said, "I am more comfortable  
22 with the one that tells me everything I need to do and I do  
23 not have to make any decisions on my own."

24 Senator Kaine: Wow. Wow.

25 Mr. Berteau: And so the point I made earlier, if we do

1 not actually promote people taking a risk but actually  
2 evaluate and promote them, give them credit for it, that is  
3 the only way we are going to get out of it.

4 Ms. Lord: I call it creative compliance. You do not  
5 want all of these acquisition officers to be a pilot, or  
6 pilots. You want them to check off every single thing on  
7 the checklist. You want your acquisition professionals to  
8 look at the art of the possible, do just enough to be  
9 compliant, but move on. And I do not think we are rewarding  
10 that behavior.

11 Senator Kaine: See, that is very, very important.

12 Mr. Berteau: If those people get promoted, the rest of  
13 the group will notice it, and they will start doing it.

14 Senator Kaine: When I was governor of Virginia, my  
15 Highway Department folks, they kind of felt like they could  
16 never get in trouble for not making a decision, and the only  
17 way they would ever get in trouble was making a decision,  
18 and that became a pathology that I think is not unique to  
19 the Virginia Highway Department.

20 Protecting the U.S. defense industrial base is not just  
21 a DoD responsibility. So the Department of Commerce has a  
22 Bureau of Industry and Security, and here is their mission  
23 statement. They are responsible for, quote, "advancing U.S.  
24 national security, foreign policy, and economic objectives,  
25 by ensuring an effective export control and treaty

1 compliance system and by promoting continued U.S. leadership  
2 in strategic technologies."

3       Based on your opinion, do the DoD and Commerce work  
4 together in a good fashion on this? Because I am not so  
5 much aware of what Commerce is doing in this space, but they  
6 may be able to be helpful for the DoD.

7       Ms. Lord: Yeah, I am not sure Commerce is well staffed  
8 in that area with individuals with significant backgrounds.  
9 I will tell you that while I was at DoD we took one of their  
10 standout, stellar civilian employees, Michael Vaccaro, and  
11 brought him over to Industrial Policy at DoD for many  
12 reasons, but one was to have that reach-back and  
13 interagency. But I will tell you, Commerce, DoD, and State  
14 really need to work together to make sure that we become  
15 much more contemporary with our releasability and  
16 exportability standards. We need to work with nations like  
17 Australia to help us help ourselves in terms of our  
18 strategic competitions.

19       Senator Kaine: Thank you. I am over time and I see  
20 Senator Scott chomping at the bit over there.

21       Mr. Berteau: I have some good news on that point,  
22 though, on the BIS, if I may indulge myself on that,  
23 Senator.

24       Senator Kaine: Go ahead.

25       Mr. Berteau: The U.S. Senate, just last month,

1 confirmed a long-time defense expert as the Under Secretary  
2 of Commerce over at BIS, Alan Estevez. You are going to  
3 have a much better time having that work together going  
4 forward. But I do not expect immediate results tomorrow.

5 Chairman Reed: Thank you, Senator Kaine.

6 Senator Scott, please.

7 Senator Scott: I think Senator Kaine probably had the  
8 exact same experience when he was governor. You have all  
9 these examples where people -- how we bought stuff made no  
10 sense. So let me give you a story. We have hurricanes in  
11 Florida, so we have pre-landfall contracts with the people  
12 who do debris pickup. And whether the Federal Government  
13 should be paying part of it, they pay 75 percent of it,  
14 minimum, and as much as 90 percent.

15 The local contracts were \$7, \$8.50 a cubic yard. Guess  
16 what the Corps of Engineers was?

17 Mr. Berteau: Triple.

18 Senator Scott: \$72.

19 Mr. Berteau: Ten times.

20 Senator Scott: It is even better. The same company.

21 So just think about it. Let us say the number is \$200  
22 billion that you are buying. How much money, if we actually  
23 bought like the private sector bought, could we save? How  
24 much money is there out there? How much could we save? If  
25 we did like a company like Textron or how you guys buy

1 things, or anybody, a normal private company?

2 Ms. Lord: It is probably going to be at least 50  
3 percent, but we have done it to ourselves with all the  
4 bureaucratic regulations we have. So I think what we need  
5 to do is shift away from all of the very cumbersome  
6 regulations we have for nuclear reactors and think about  
7 when we are buying a shoulder-launched missile, what the  
8 difference is, and use only those regulations we need. And  
9 we need to recognize those individuals who use that creative  
10 compliance in hearings like this to call out the fact that  
11 that is the behavior everyone wants to see.

12 Mr. Berteau: Senator, I was part of a Defense Science  
13 Board study that looked at that exactly question back in the  
14 1990s, and we concluded, and I think the analysis was  
15 arithmetically pretty accurate, that it was in the range of  
16 30 to 35 percent. Then I had the privilege of trying to  
17 translate that into what people would actually have to do to  
18 achieve that money, and the number one thing people had to  
19 do was get rid of government bureaucrats. As you know, in  
20 your experience as governor, this is not the easiest thing  
21 to do. And so that is where we ran aground very, very  
22 quickly. I actually got subpoenaed and hauled up before the  
23 U.S. Congress because I was going to get rid of four of  
24 those bureaucrats.

25 Senator Scott: So did either of you ever come and say

1 -- let us say it would be a minimum of the numbers you have  
2 got, 30 percent, so \$200 billion? That is \$60 billion that  
3 we can be spending on something else. Did you ever come in  
4 front of us and say, "I need this" and Congress did not give  
5 it to you?

6 Mr. Berteau: I have actually had pretty good success  
7 -- it was a long time ago -- in coming before Congress, and  
8 they did let us do it. When we consolidated the Defense  
9 Commissary Agencies in 1990, we ended up saving about 30  
10 percent of the overhead of that operation in the space of 2  
11 or 3 years.

12 But here is the problem -- that is a one-time savings.  
13 It is gone. And then you have still got to maintain the  
14 momentum.

15 Ms. Lord: I think also Congress has given the  
16 Department many authorities. They have been translated  
17 through policy and implementation guidance. What we have  
18 not demanded, if you will, is that those new processes and  
19 procedures be utilized as much as possible, and hold the  
20 teams accountable for using them. It is much safer -- you  
21 are not going to get in trouble if you do it the same old  
22 way you have always done it. And so there is a culture  
23 shift that has to happen, by rewarding those who are doing  
24 things in the streamlined ways that they can.

25 Senator Scott: Were you able to do that when you were

1 there?

2 Ms. Lord: In small pockets we were able to do it in a  
3 number of areas, but frankly, it took certain personalities  
4 who were personally invested in it. I am not sure that the  
5 senior leadership, other than myself, in the Department  
6 really understood the differences in the different  
7 mechanisms and knew enough to hold their teams accountable.

8 Senator Scott: Have you ever outsourced a whole bunch?  
9 I mean, in the private sector I used to -- I am a business  
10 guy -- if I could outsource the whole operation, if it was  
11 not a core function, I mean, why did I do it, right? So if  
12 it is not a core function of government -- the core function  
13 of, I think, the military is to be able to be a lethal  
14 military, not to be the best buyer of anything.

15 Ms. Lord: Right. So I think some really great  
16 examples of outsourcing and using contemporary contracting  
17 practices are launched as a service. That has been  
18 incredibly successful. ISR is a service, with contractor-  
19 operated, contractor-owned systems. However, there is a  
20 fear factor there about giving that away. And so that is  
21 the cultural issue.

22 In this day and age, we were just saying earlier, we  
23 buy many things as a service. It is a far more efficient  
24 way to do it and will save us money. But that is very  
25 foreign to a lot of DoD, and they have got to get

1 comfortable with it.

2 Senator Scott: Thank you.

3 Chairman Reed: Thank you, Senator Scott.

4 Senator Rosen, please.

5 Senator Rosen: Thank you, Chairman Reed, Ranking  
6 Member Inhofe -- I know he is not here -- but it is a really  
7 important hearing, and it has been really interesting to  
8 hear both of you speak on so many topics. I appreciate your  
9 work and you being here.

10 And I want to focus a little bit on the  
11 microelectronics shortage, because there are a lot of  
12 defense businesses in my state of Nevada. They have  
13 discussed with me their challenges with the supply shortage  
14 of microelectronics. Such shortages not only affect the  
15 U.S. computer, numerically controlled CNC manufacturing  
16 base, which provides machine tools to all major sectors of  
17 the U.S. economy, but also impacts U.S. national security  
18 and economic interests overall.

19 And so while DoD has established a Department-wide  
20 supply chain resiliency working group to address these  
21 systemic barriers limiting microelectronics supply chain,  
22 several of my Nevada delegation colleagues and I recently  
23 sent a letter to the Administration urging them to take a  
24 more aggressive approach to resolving the CNC manufacturing  
25 base crisis, because that is absolutely critical.

1           So can both of you speak to how the CNC manufacturing  
2 base crisis is affecting the rest of the defense industry,  
3 what steps the Federal Government should do to increase and  
4 stabilize the supply of microelectronics available to the  
5 CNC manufacturing base? Secretary Lord, we can begin with  
6 you.

7           Ms. Lord: Thank you, Senator. The primary issue is  
8 that over decades we have outsourced our microelectronics or  
9 semiconductor industry. Why did we do that? One was  
10 environmental reasons. Another was cost of labor. Another  
11 was cost of materials. The travesty is most of the  
12 intellectual property that goes into that is developed here,  
13 yet we have devices made offshore, even some made here and  
14 tested and packaged offshore.

15           So we are at the point where we do not have the  
16 industrial capacity and throughput, and it takes an enormous  
17 investment to get that capacity and throughput. So what I  
18 believe we are going to need to see are appropriations. We  
19 need to see money that is going to allow industry to invest,  
20 whether those are long-term contracts or potentially even  
21 DPA Title III investments.

22           This is a problem that did not happen overnight. It  
23 happened over a long time. And for industry to be able to  
24 get the supply it needs, the trusted supply it needs, we  
25 have to reestablish that supply chain, but businesses are

1 not going to reestablish themselves unless they can make a  
2 profit and be an ongoing concern. David?

3 Mr. Berteau: Senator, I have a long history with this.  
4 Senator Kelly earlier mentioned that we went from a high of  
5 40 percent of microelectronics domestic capacity in the  
6 1990s down to what it was today. It was not 40 percent in  
7 the 1980s. It was in the low 30s. We had a program called  
8 Simatek [phonetic] -- I ran the funding to support that --  
9 that invested in the technology capabilities to bring the  
10 broader industry along.

11 The problem is DoD is such a small part of that. You  
12 see that from your folks as well. In 2004 and 2005, I ran  
13 the study for the National Academies on printed circuit  
14 boards, which is a subset of that. And we concluded two  
15 important things, and one of them is exactly yours. One is  
16 DoD will have to spend more money, and you are going to have  
17 to make them do that, because left to their own devices that  
18 money will go somewhere else. It is not important enough  
19 because we do not buy enough.

20 The second is because we are always one or two  
21 generations behind, we are not drawing from the latest  
22 technology, so we have to figure out how to do two things --  
23 get what we need and sustain innovation. And I think there  
24 is a huge technical challenge of mapping the generational  
25 gap that we have, because it takes us so long to buy

1 anything, with the technical capabilities we need to sustain  
2 and support.

3 So it is not only money for what we need today, it is  
4 money for what we need tomorrow. There is nobody in charge  
5 of doing that.

6 Senator Rosen: Well, and I would argue with the war in  
7 Ukraine going on, we are talking about backfilling the  
8 supplies that we have already sent, having those CNC  
9 microelectronics it is important because all those things  
10 are made, machined that way, with those computer numerical  
11 control.

12 Mr. Berteau: Yeah. The one thing we do not really  
13 build into our budget is the cost of not doing it.

14 Senator Rosen: That is right.

15 Mr. Berteau: Right, because that cost is a future  
16 cost. The cost today is what we need to invest. You just  
17 need to keep reinforcing that.

18 Senator Rosen: Thank you. I would also like to take  
19 -- oh, can I finish my question? I am the last one here.  
20 Thank you. Senator Rounds talked about cybersecurity needs,  
21 and I just want to talk about -- it is not just enough to  
22 talk about the needs. We have to talk about the people who  
23 actually do the work.

24 Last year, in last year's Senate NDAA, as reported out  
25 of this committee, it included my Civilian Cybersecurity

1 Reserve Act. It is bipartisan legislation I introduced with  
2 Senator Blackburn to create a civilian cyber reserve that  
3 ensures additional cyber capacity at greatest times of need,  
4 just like we have other reserves. So they are people who  
5 work, whether they are engineers or programmers, not hackers  
6 but people who do cybersecurity, do all of those things.  
7 The idea behind the initiative is we cannot go it alone. We  
8 need to bring those people in, help us at a great time of  
9 need. They can do training, et cetera, et cetera, and then  
10 go back to the private sector.

11 So I just think that is really important. It is a  
12 voluntary program. And I was wondering what you think we  
13 could do with that. What are some improvements that could  
14 be made to the defense industrial base cybersecurity program  
15 that would use this kind of public-private collaboration to  
16 take that private sector expertise and bring it to us?

17 Ms. Lord: I believe private-public partnerships are  
18 critical for our national security and the cybersecurity  
19 reserve is a great step that way.

20 I will tell you, I do not think the greater community  
21 understands that program. I am not, to the degree that it  
22 has been implemented. So I would strongly suggest that you  
23 go on a communications campaign about that and that you  
24 partner with a series of universities and colleges, because  
25 I think it benefits all of us and it is a great idea.

1           Mr. Berteau: I think the National Academy of Public  
2 Administration just did a report for the Department of  
3 Homeland Security and the CISA operation there that  
4 concluded that something on the order of 600,000 jobs needed  
5 in the cybersecurity industry. I am not familiar with the  
6 implementation of your legislation but it is clearly not  
7 enough and we need to do more in that regard.

8           We have talked a lot about the overall workforce  
9 issues. This is a subset. It may be one of the most  
10 important subsets.

11          Senator Rosen: I think so too. Thank you. Thank you,  
12 Mr. Chairman.

13          Chairman Reed: Thank you, Senator Rosen. And I want  
14 to thank the witnesses for their extraordinarily insightful  
15 testimony, for their public service which has been  
16 remarkable.

17          This is a fundamental issue for our national security.  
18 It is not as appreciated as many other issues. I hope that  
19 we can bring the focus of this committee onto the issues  
20 that we have discussed today. Both in the short run and the  
21 long run, we are going to need a very, very vigorous and  
22 dependable industrial base.

23          With that I would again like to thank you, and I  
24 adjourn the hearing. Thank you very much.

25          [Whereupon, at 11:34 a.m., the hearing was adjourned.]