

THE HEALTH OF THE DEFENSE INDUSTRIAL BASE

HEARING

BEFORE THE

**COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE**

ONE HUNDRED SEVENTEENTH CONGRESS

SECOND SESSION

—————
APRIL 26, 2022
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THE HEALTH OF THE DEFENSE INDUSTRIAL BASE

TUESDAY, APRIL 26, 2022

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

The Committee met, pursuant to notice, at 9:30 a.m. in room SD-G50, Dirksen Senate Office Building, Senator Jack Reed (Chairman of the Committee) presiding.

Committee Members present: Senators Reed, Gillibrand, Blumenthal, Hirono, Kaine, King, Manchin, Rosen, Kelly, Inhofe, Wicker, Rounds, Ernst, Tillis, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. Good morning. The Committee meets today to receive testimony on the health of the defense industrial base (DIB). I would like to welcome our distinguished witnesses and I thank them for joining us.

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

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

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

The United States industrial base is core to our national security. America's capacity for technological innovation and manufacturing has ensured that our military is the finest in the world, with benefits felt well beyond the military sphere. From the internet to GPS to the microelectronics in our phones and computers, many of the technologies gained from investments in our defense industrial base regularly contribute to our broader national well-being.

This industrial advantage, however, is not a given. It must be nurtured and maintained through careful investments and strong leadership from both the public and private sector. The urgency around this issue has never been clearer. As Russia continues its onslaught against Ukraine and China calculates extensive geostrategic ambitions, we have to make sure our defense indus-

trial base is able to adapt, scale, and outpace our competitors in the 21st century.

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

However, in the last three decades the defense sector has consolidated substantially, transitioning from 51 aerospace and defense prime contractors down to just 5. That has unintended consequences on costs, barriers to entry for new companies, displacement of established technologies with new, innovative capabilities, and the overall buying power of the Federal Government. I am interested in the witnesses' thoughts on how we can better address the factors affecting consolidation, including tensions over data rights and intellectual property, and how to better leverage small business programs to grow the overall pool of providers in the industrial base.

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

More broadly, the procurement and acquisition practice of the Department of Defense (DOD) and the Federal Government are often convoluted, poorly communicated, and burdened with inertia that makes contracting with private industry far too difficult. As America confronts threats around the globe that are evolving at unprecedented speeds, we must find a way to better identify our defense needs, communicate them, and deliver them in a timely manner. This is being tested right now as we work to backfill our stockpiles following the enormous transfer of weapons to Ukraine. The lack of responsive and rapidly scalable production capacity for consumable systems like Stinger and Javelin missiles highlights issues with our planning factors and manufacturing flexibility for long-lead items needed in short order, with little to no advanced warning. I would ask for our witnesses thoughts on how we might overcome these challenges.

Finally, a highly skilled workforce is necessary for designing, engineering, and employing the game-changing technologies of the future. As we seek to keep pace with our strategic competitors, it is imperative that we invest in facilities, training, and education to support our defense industrial base workforce. I hope our witnesses will discuss what steps the Department could take to ensure that

people who pursue STEM education and careers want to work in areas that support the defense industrial base.

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

STATEMENT OF SENATOR JAMES INHOFE

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

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

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

The problem does not seem to be one of strategy but rather providing the full budget needed to implement it. The budget simply does not deliver the real growth our military needs, especially with the historic inflation that we are experiencing. Which brings me to today's hearing. I am hoping to better understand what our defense industrial base is seeing and dealing with and how we can help them, whether through legislative authorities or additional funding.

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

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe, and we appreciate your continued leadership despite your still recovering. I very much appreciate it.

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

[The prepared statement of Senator James Inhofe follows:]

Thank you, Mr. Chairman. I join you in welcoming our witnesses.

For four years, this Committee has been using the 2018 National Defense Strategy (NDS) and the Commission report as our roadmap for the resources and tools we need to meet the threats we face. Both documents have helped accelerate change at the Pentagon.

Last month, we received the classified version of the Biden administration's new 2022 NDS, which we continue to analyze. But I can tell you this document expands our understanding of the scope of the threat from the Chinese Communist Party, and what will be required to maintain deterrence against them.

The problem does not seem to be one of strategy, but rather providing the full budget needed to implement it. The budget simply doesn't deliver the real growth our military needs—especially with the historic inflation we're experiencing.

Which brings me to today's hearing. I am hoping to better understand what our defense industrial base is seeing and dealing with and how we can help them—whether through legislative authorities or additional funding.

In the 20th century, our defense industrial represented a unique comparative advantage. From the arsenal of democracy in World War II to the technological feats

of the Cold War, our ability to harness American ingenuity for deterrence played a decisive role in world events.

Today, the arsenal of democracy is a husk of its former self. While many companies still use equipment from the early Cold War, the weapons and equipment they manufacture have fundamentally changed, as has the workforce.

We have far too many single points of failure. We have brittle supply chains. We have hundreds of production contracts at minimum sustaining rates. We have persistent funding shortfalls across the board, but particularly in our workforce development.

Over the past decade, many new burdens have been asked of, demanded, and even mandated on these companies and their employees. From sequestration to a pandemic, an increasingly assertive China, Russia's new invasion of Ukraine, record inflation, and more.

In particular, our attempts to arm Ukraine have laid bare many of our vulnerabilities, from insufficient munitions stocks to slow production times and incredible bureaucratic hurdles, especially when it comes to doing business with allies and partners.

The defense industrial base is at the core of our national security. I am eager to discuss with our witnesses these specific challenges and how our defense industrial base has responded.

We need to rebuild our defense industrial base. I hope today's hearing will help us understand what more Congress can do to help ensure that our defense industrial base gets all the resources it needs to remain resilient and able to meet the capability and capacity needs of our men and women in uniform who go into harm's way. Thank you, Mr. Chairman.

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

Ms. LORD. Chairman Reed, Ranking Member Inhofe, and Members of the Committee, thank you for the opportunity to discuss the health of the defense industrial base.

I represent myself here today with my perspective informed by 33 years working in a variety of leadership positions within a global, multi-industry conglomerate, and 3½ years serving as a political appointee reporting to the Secretary of Defense, in addition to my current activities, which include serving on the boards of a publicly traded company, a venture capital-owned company, and a privately held company, advising a wide range of companies from new space to emerging biotech, and participating as a senior fellow at Johns Hopkins Applied Physics Lab.

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

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

Our ability to deter aggression that violates our country's values and principles requires a strong government-industry partnership.

It is a choice for a company to do business with DOD. It is a choice for an individual to work for a defense contractor. It is a choice for a startup to focus on applying their emerging technologies to national security challenges. It is a choice for individual investors or fund managers to risk their money on a Department of Defense contractor. In order for business to survive and flourish there must be a clear demand signal and a fast pace of predictable development, production, and sustainment.

Technology innovation is now predominantly driven by the commercial sector, and DOD must accelerate its adoption of business practices that enable rapid testing and fielding of new capability. Many authorities that have been provided by recent NDAA's [National Defense Authorization Act] have been translated to policy and implementation guidance by the Department. These authorities need to be exercised so that the acquisition process moves at the speed of relevance. It requires leadership, from both Congress and DOD, to ensure that the DOD workforce embraces the imperative to conduct business in a manner that encourages patriotic individuals and companies to participate in our national security ecosystem, versus driving them away through frustration over slow decision-making and acquisition ambiguity.

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

Our Ukraine experience has shown how we can hope to carry our policy, to provide specific munitions to support, and then realize that we have not provided funding to keep manufacturing lines hot and supply chains intact, and will therefore have significant delays in shipping desired quantities of specific weapons systems. We have an opportunity to regenerate our capacity and throughput by leveraging our national manufacturing capability, but by also modifying our releasability and exportability regulations to allow our National Technological Industrial Base, NTIB, partners to establish indigenous capability to produce critical munitions and guided weapons.

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

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

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

Chairman REED. Thank you very much, Secretary Lord.

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

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

VOICE. So moved.

Chairman REED. Is there a second?

VOICE. Second.

Chairman REED. All in favor, say aye.

[Chorus of ayes.]

[The information referred to follows:]

MILITARY NOMINATIONS PENDING WITH THE SENATE ARMED SERVICES COMMITTEE WHICH ARE PROPOSED FOR THE COMMITTEE'S CONSIDERATION ON APRIL 26, 2022.

1. *BG Douglas A. Schiess, USAF to be major general* (Reference No. 950)
2. *BG Douglas A. Schiess, USAF to be brigadier general* (Reference No. 951)
3. In the Marine Corps there are 315 appointments to the grade of lieutenant colonel (list begins with Jeremy D. Adams) (Reference No. 1433)
4. In the Marine Corps there is 1 appointment to the grade of lieutenant colonel (Jon C. Peterson) (Reference No. 1631)
5. In the Marine Corps there is 1 appointment to the grade of lieutenant colonel (Andrew E. Cheatum) (Reference No. 1633)
6. In the Marine Corps there is 1 appointment to the grade of major (Christopher J. Voss) (Reference No. 1636)
7. In the Marine Corps there are 2 appointments to the grade of major (Dustin E. Guerpo) (Reference No. 1637)
8. *In the Air Force Reserve there are 21 appointments to be brigadier general (list begins with Christopher M. Blomquist)* (Reference No. 1717)
9. In the Air Force there are 60 appointments to the grade of lieutenant colonel (list begins with Michael A. Armstrong) (Reference No. 1732)
10. *In the Air Force there are 30 appointments to the grade of brigadier general (list begins with Kirsten G. Aguilar)* (Reference No. 1784)
11. *Brig Gen Rebecca R. Vernon, USAF, to be major general and Deputy Judge Advocate General of the Air Force* (Reference No. 1850)
12. *LTG Randy A. George, USA to be general and Vice Chief of Staff of the Army* (Reference No. 1900)
13. *LTG Andrew P. Poppas, USA to be general and Commanding General, US Army Forces Command* (Reference No. 1901)
14. *MG Sean C. Bernabe, USA to be lieutenant general and Commanding General, III Corps and Fort Hood* (Reference No. 1902)
15. *LTG Duke Z. Richardson, USAF to be general and Commander, Air Force Materiel Command* (Reference No. 1904)
16. *LTG Mary F. O'Brien, USAF to be lieutenant general and Director for Command, Control, Communications, and Computers/Cyber; Chief Information Officer, J-6, Joint Staff* (Reference No. 1906)
17. *LTG Brian S. Robinson, USAF to be lieutenant general and Commander, Air Education and Training Command* (Reference No. 1908)
18. *MG Randall Reed, USAF to be lieutenant general and Deputy Commander, Air Mobility Command* (Reference No. 1909)
19. *LTG David S. Nahom, USAF to be lieutenant general and Commander, Alaskan Command, US Northern Command; Commander, Eleventh Air Force, Pacific Air Forces; and Commander, Alaskan North American Aerospace Defense Region* (Reference No. 1910)
20. *LTG Tom D. Miller, USAF to be lieutenant general and Deputy Chief of Staff for Logistics, Engineering, and Force Protection, Headquarters US Air Force* (Reference No. 1911)
21. *Col. Amy D. Holbeck, ANG to be brigadier general* (Reference No. 1912)
22. *Col. David N. Unruh, ANG to be brigadier general* (Reference No. 1913)
23. *MG Dimitri Henry, USMC to be lieutenant general and Director of Intelligence, J-2, Joint Staff* (Reference No. 1914)
24. In the Air Force there are 7 appointments to the grade of lieutenant colonel (list begins with Jonathan P. Dietz) (Reference No. 1917)
25. In the Air Force there are 3 appointments to the grade of major (list begins with Alan K. Chan) (Reference No. 1918)
26. In the Air Force there is 1 appointment to the grade of major (Alec S. Williams) (Reference No. 1920)

27. In the Army Reserve there is 1 appointment to the grade of colonel (Derwin Brayboy) (Reference No. 1922)
28. In the Army there are 383 appointments to the grade of lieutenant colonel (list begins with Yonatan S. Abebie) (Reference No. 1927)
29. In the Army there are 461 appointments to the grade of lieutenant colonel (list begins with David H. Aamidor) (Reference No. 1928)
30. In the Army there are 245 appointments to the grade of lieutenant colonel (list begins with Michael S. Abbott) (Reference No. 1929)
31. In the Army there are 27 appointments to the grade of lieutenant colonel (list begins with Rachell H. Baca) (Reference No. 1930)
32. In the Army there is 1 appointment to the grade of lieutenant colonel (Charles J. Bulva) (Reference No. 1931)
33. In the Army there is 1 appointment to the grade of lieutenant colonel (David L. Armeson) (Reference No. 1932)
34. In the Navy there are 74 appointments to the grade of captain and below (list begins with Joseph L. Campbell) (Reference No. 1934)
35. In the Space Force there are 2 appointments to the grade of lieutenant colonel (list begins with Matthew B. Christensen) (Reference No. 1935)

TOTAL: 1,652

Chairman REED. The motion carries. Thank you very much.
Now let me recognize Secretary Berteau.

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

Mr. BERTEAU. Thank you very much, Mr. Chairman and Senator Inhofe, and thanks to all the Members for being here.

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

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

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

Chairman REED. Without objection.

Mr. BERTEAU. I did omit one preposition, which I would like to insert before it goes into the record. I happen to be an English major and I should catch my own errors, but I did not do it in time there.

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

The first, to me, is that companies and their workers—and I did not realize this when I was first in the Pentagon—are as committed to national security and to support DOD missions as the folks inside the business are as well, the civilians and military

themselves. Of course, many of them came from that. It is that mission commitment that I see drives those companies every day.

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

Another key element, I think, is the timelines. For a company to bid and win work with DOD, whether it is in products, major weapons systems, or in the 50 percent of defense contracts that goes into services, which includes RDT&E [Research, Development, Test, and Evaluation] and it includes all the sustainment and support necessary to keep those systems going, the timelines can be 3 to 4 years long. In order to be successful, the company has to predict what DOD is going to need, what they are putting in their budget now, before it comes to Congress, what comes out of Congress, and then ultimately what gets apportioned and allocated out of OMB [Office of Management and Budget] and through the Comptroller down to the programs. So they have to predict what that is going to be, they have to invest in that years in advance, and then they have to maintain that investment until such time as the contract is awarded.

This is lengthy. It is hard enough even if the rest of it were easy. But the rest of it is not because it is hard to do business with the Federal Government. The Federal Government legitimately has a lot of additional requirements with which companies have to comply, that the commercial world, that you mentioned, that does all the innovation, does not necessarily have to meet. So that is an added layer. Those are some of the key elements, if you will. My statement goes into more detail on that. It also talks a bit about the DOD competition report that was issued a couple of months ago.

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

There is also a significant impact of inflation, and I would suggest to you that we cannot really wait for the fiscal year 2023 budget to be fixed to address that. I actually do not know what inflation is going to be a year from now, but we do know what it is right now, and we have companies operating with 5 or 6 percent margin on their contracts and 8 or 10 percent growth in wages, and

over the long run that is not going to be sustainable, so we have to figure out some ways to address that.

Then, finally, the impacts of COVID-19 seem to be regularizing, but there is still some enormous impacts, not only on supply chain but also on the workforce. So in conclusion, I have got a number of recommendations in my statement. I am happy to go over those. I think the timing of this hearing is really tremendous, and I commend you and the entire committee for doing this.

Thank you, sir.

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

PREPARED STATEMENT BY MR. DAVID BERTEAU

Chairman Reed, Ranking Member Inhofe, and Members of the Committee, thank you for the invitation to testify this morning on the vital topic of the defense industrial base (the DIB) and its importance to the success of Department of Defense (DOD) missions.

I speak today on behalf of the Professional Services Council (PSC), our more than 400 member companies, and their hundreds of thousands of employees across the Nation. PSC represents the full range and diversity of the government contracting sector, with companies of all sizes, doing all types of work, and serving every cabinet department and agency of the Federal Government. I also speak on behalf of their government customers, because a key PSC goal is to help the Federal Government become a smarter customer and a better buyer. The diversity of functions performed and the business size of PSC members gives us unique perspectives on the DIB and on changes in government policies and practices that will lead to better support for DOD's missions and America's security.

I appear before you not just as the head of PSC but also as a person with more than 40 years of experience on these issues from all sides, including two stints inside the Pentagon as well as with industry, at a think tank, in academia, and now in my seventh year at PSC. I have seen what works and what does not.

My statement includes:

- comments on the DOD-industry partnership;
- DIB statistics, including data on recent trends in DOD contract spending; and
- observations on the impacts of the war in Ukraine, of inflation, and of COVID-19.

My statement concludes with some observations and recommendations, focused on priorities and criteria for you to keep in mind as your committee develops the Fiscal Year 2023 National Defense Authorization Act and considers programs, policies, and funding that impact the DIB.

THE VITAL PARTNERSHIP OF GOVERNMENT AND INDUSTRY

For centuries, one of America's great national security strengths has been the dynamic partnership of government and the private sector. This partnership is vital in the core meaning of that word: our way of life depend on the continuing success of that partnership.

In DOD, contractors provide a wide range of goods and services to the warfighter and to the components and agencies of the Department. These contractor contributions are essential maintain national security, and the government benefits from a strong, diversified national interest business base to support its current and emerging requirements.

Based on my long experience, here are some key elements of that partnership. I hope that you can keep these in mind as you move forward to address the challenges we face today and in the future.

1. Companies and their workers are committed to national security and to support DOD missions across the board.

From the most recently hired worker to the top of the company, DOD contractors are fully committed to supporting the missions and functions of the department. The partnership works best when DOD works with companies to address and solve challenges, not in an "us vs. them" approach, but together as "we."

We witness this Commitment to mission over and over. Here are two examples.

- When the COVID-19 pandemic hit in March of 2020, and businesses across America shut down, defense contractors kept working. On the factory floor, maintaining ships at sea, in classified facilities, etc., their workers kept on

working. In fact, associations like PSC worked with DOD to provide company workers with the necessary documents to keep going to work. Citing DHS guidance about the essential workforce, the Under Secretary of Defense for Acquisition and Sustainment issued a letter that tens of thousands of contractor workers used to enable them to travel to and work on site when others were shut down.

- During the drawdown in Afghanistan last spring and summer, contractors stayed on the job even as the security committed to them in their contracts disappeared.
2. *The defense industrial base is governed by the economic laws of supply and demand.*

Industry's ability to provide defense-unique goods and services depends entirely on DOD demand. For large parts of the defense industrial base, DOD is the largest—and sometimes the only—customer. When that is the case, the size and economic viability of the industrial base will be determined by how much DOD buys.

Recently, DOD issued a report, entitled: "State of Competition within the Defense Industrial Base,"¹ in response to Executive Order 14036: Promoting Competition in the American Economy.² The report criticized defense industry for excessive consolidation but failed to acknowledge the department's own role in that consolidation. For example, the report noted that only 3 prime contractors produce tactical missiles in the U.S. today but failed to note that DOD does not buy enough missiles to keep more companies in business. PSC, in conjunction with the National Defense Industrial Association, produced a short paper that addresses shortcomings of this report, and I would be glad to provide it to the Committee for the record, should you so desire.

In addition, even where there is an opportunity for companies that do business outside of DOD, defense-unique requirements of the government impose costs and constraints that make companies less competitive in the commercial marketplace. From security clearance delays to operating on obsolete data systems to complying with reporting requirements that no commercial company has to face, companies in the defense industrial base are tied inexorably to the DOD market.

Finally, with more than 11 million open jobs across the U.S. and only 6 million people looking for work, defense companies are competing for workers who can command higher salaries, without the delays required for security clearances, and with flexibility in work locations and conditions that are hard for contractors to match (often because contracts restrict a company's flexibility in such matters). While there is no accurate way to count, discussions with our member companies lead me to conclude that tens of thousands of vacant billets exist today, and they grow harder to fill with each passing month of economic recovery. Unlike in other economic matters, increased demand is not producing the needed increase in supply. Instead, it is contributing to wage inflation, which I will address in a subsequent section of this statement.

3. *Federal contracting processes are complex, with voluminous regulations, and often reflect competing priorities that are not mutually compatible.*

Government contracting is among the most highly structured and controlled elements of the U.S. economy. It consistently prioritizes compliance more than it rewards results. The contracting process is managed by people who often are unconnected to the benefits from the goods and services delivered by contractors. For example, contracting officers (and other officials) are evaluated by the percentage of contract dollars that are awarded to small businesses, but they are not scored on how well those companies actually perform on the contracts they receive.

4. *Companies have to earn enough to stay in business. They compete for funds with the rest of the commercial marketplace in a global economy.*

No company is entitled to a contract, and they must provide a competitive return on investment for the funds they need to stay in business. Government rules generally dictate payment for work only as or after it is completed. Companies have to fund themselves in advance of government invoice payments, and to obtain those funds, they must provide a competitive rate of return.

¹ <https://media.defense.gov/2022/Feb/15/2002939087/-1/-1/1/STATE-OF-COMPETITION-WITHIN-THE-DEFENSE-INDUSTRIAL-BASE.PDF>

² <https://www.federalregister.gov/documents/2021/07/14/2021-15069/promoting-competition-in-the-american-economy>.

5. *The success of contractors depends on their ability to predict the future needs of DOD, to invest resources in being ready to meet those needs when contract bids are solicited, and to maintain the commitments in those bids for the months (or years) that it takes DOD to award the contract.*

DOD awards contracts based on proposals submitted by bidding companies, using criteria specified in advance by the government. Those bids include commitments to technical and operational performance, key personnel, and cost, all frozen at the time the bid is submitted. No matter how long it takes DOD to evaluate those bids, companies are expected (at their own cost) to keep available all the resources in the bid, from technology to workers, at the submitted price, no matter what is happening in the overall economy.

As one member company CEO told me, “I don’t need to go to the casino to gamble. I gamble every time I submit a bid on a government contract.”

Let me turn now to the dimensions and characteristics of the defense industrial base.

DEFENSE INDUSTRIAL BASE STATISTICS

One measure of the defense industrial base is the amount of funds obligated for contracts. In fiscal year 2021, the most recent full year of data, PSC calculates that DOD contract obligations totaled \$408 billion. This amount was roughly equally split between contracts for products (\$194 billion) and those for services (\$214 billion). Overall, contract obligations were 9% lower in fiscal year 2021 than in fiscal year 2020, due largely to a decline in contracts for COVID (including vaccine development) and for support of Afghanistan.

The table below includes contract obligations for fiscal year 2020 and fiscal year 2021 (note that overall appropriations, including OCO funds, were nearly identical for both fiscal years).

DOD Contract Obligations for Products and Services, Fiscal Year 2020 to Fiscal Year 2021

Contract Category	Fiscal Year 2020	Fiscal Year 2021
Products	\$220 billion	\$194 billion
Services	\$229 billion	\$214 billion
Total	\$449 billion	\$408 billion

The fiscal year 2021 decline in contract obligations was the first such decline since fiscal year 2015, which was at the tail end of the impact from the fiscal year 2013 sequestration of DOD funds. This trend may reflect a one-time decline; preliminary first quarter fiscal year 2022 contract obligations are slightly higher than for the same quarter in fiscal year 2021, even though funding under Continuing Resolutions was at the same level as in fiscal year 2021. With the enactment of fiscal year 2022 appropriations, we expect later this year to see increases in fiscal year 2022 contract obligations commensurate with the increase on DOD authorizations and appropriations.

Declining Numbers of Prime Contractors

Another measure of the DIB is the number of companies that participate as prime contractors or subcontractors. A recent report from the Center for Strategic and International Studies³ cited the drop in overall numbers of companies with one or more prime contracts from DOD, from more than 60,000 in 2009 to roughly 41,000 in 2020. Experience tells us, though, that those numbers alone are not the full story.

The vast majority of those companies (more than 25,000 in 2020) are small businesses, and their contracts are frequently awarded through various programs that “set aside” awards only for eligible small businesses. This does help keep small businesses going, until they outgrow their eligibility for those “set-aside” contracts. PSC analysis shows that once such companies “graduate” from small-business status, their success in winning DOD contracts drops precipitously. In other words, DOD and federal small business policies and practices punish growth rather than rewarding it. This is not the way to attract more companies to do business with DOD.

What happens to small businesses that graduate? They become mid-sized companies instead of small ones, and the same CSIS study shows that the decline in mid-

³ https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/220329_Sanders_DefenseAcquisitionTrends_2021_0.pdf?n_gpAQf5972Vi6KIWfAS4mN9iOrK1CIh.

sized businesses is roughly the same as for small businesses. Even large companies are fewer in number than at the peak in 2009.

In addition, neither the CSIS report nor any publicly-available data from DOD tells us the actual number of contracts. It is my belief, based on anecdotal evidence, that two dynamics are at play here.

One is that DOD may be awarding fewer contracts overall. There is inconsistency in counting and reporting contracts into the publicly-available data, which makes it hard to compare from year to year. In addition, classified contracts are not part of that data (and are excluded from the CSIS report and from PSC's own analysis).

The second is that DOD contracts are often awarded to companies eligible under a set of contracts known as GWACs, or government-wide acquisition contracts. Many of these contracts limit the number of companies eligible to receive awards and offer few opportunities for new companies to gain a spot on any given GWAC. This makes the job of the contracting officer easier but does little to increase the number of bidders.

Why has this happened, and what does it mean? How many companies does DOD need in the industrial base? While beyond the scope of this hearing, more analysis could be valuable here, but there are two other elements of the defense industrial base that may matter more.

Subcontractors

Neither DOD nor any other agency tracks the number of subcontractors. DOD estimated in 2019 that up to 300,000 companies performed subcontract work for DOD in areas that would be covered by cybersecurity requirements. No one knows whether or to what extent the companies that no longer receive prime contracts are still in the defense industrial base as subcontractors. Efforts to increase supply chain resiliency will rely on layers of subcontractors, yet DOD knows little about these companies and even less about what makes doing business with DOD more attractive.

Non-traditional Contracts

In addition, DOD has increasingly turned to Other Transaction Authority, or OTA, for work done by the industrial base. Such work is under an OT agreement, not a contract, and is not captured in the data. No one knows the extent to which work under such agreements offset the apparent decline in the overall number of companies.

THE REAL QUESTION

The real question is what policies and regulations are needed so that the defense industrial base can meet national security needs, today and in the future.

To help answer that question, let's look at three specific challenges.

Impacts of Ukraine

Even before Russia invaded Ukraine on February 24, 2022, DOD was drawing down stocks of weapon systems and supplies and providing them to Ukrainian forces. The pace of that support continues to increase, with the president announcing additional support last week and preparing to ask Congress to authorize more. The nature and purposes of such support is evolving and will continue to change, which makes analysis complicated.

Three big questions arise for industry:

- 1) How will depleted stocks be replenished or replaced?
- 2) What else will be needed?
- 3) Who pays for this?

Public reports indicate, for example, that fully one third of the available stock of Javelin anti-tank weapons have already been drawn down for Ukraine, in barely two months. It's apparent that stocks will not last for long at that pace, and to the best of my knowledge, no contracts have been awarded for replenishment of any items being supplied to Ukraine or to allies to replace their own contributions to Ukraine.

What else will be needed? That information is not broadly available to industry today, although some programs have begun discussions with some companies. Who will pay for the up-front costs of increasing production capacity or even reopening closed production lines? As of now, there is no line item for such funding and no proposal that I have seen. Indeed, thanks to delays in submitting budget justification material coupled with the submission of Unfunded Priority Lists from DOD components, as I write this, we know more about what is NOT in the fiscal year 2023 budget than the details of what IS in it.

DOD did, however, issue a Request for Information (RFI) last week for "Weapons Systems or Commercial Capabilities for Ukraine Security Assistance," with re-

sponses due May 6. This is a step, albeit belated, in the right direction, but it seems apparent that it may be easier to deplete stocks of weapon systems and munitions than it is to restore them.

This is not a new problem. We saw it during my last tour in DOD, where the use rate for certain munitions (HARM missiles, for instance) was far in excess of current production capacity to replace them, and the lead time for increasing production was years, not months. I am not privy to current assessments, but it is likely that today's supply chain constraints have made those time lines longer, not shorter.

Workforce and Replenishment

In addition, replenishment faces a problem today that did not exist in 2015 for Afghanistan or the counter-ISIS campaign, and that is a shortage of workers for nearly every defense contractor. My statement already covered this issue more broadly, but if action is not taken soon, this shortage of workers will diminish industry's ability to respond to the increased demands resulting from Ukraine assistance.

The impact of inflation on supplies, components, energy, and wages further complicates the issues of replenishment. Let me turn now from Ukraine to that second challenge.

Impacts of Inflation

There are three separate challenges with the return of higher rates of inflation: wage and price inflation today, recovering cost increases on existing contracts, and addressing possible inflation shortfalls in the fiscal year 2023 DOD budget proposal.

1) Wage and Price Inflation

Defense companies are in a bind. Existing contracts, whether of a fixed-price or cost-reimbursable nature, offer little room for them to recover the increased costs from wage inflation or the increase in prices for material and components, including energy and transportation. Because inflation has been so low and stable for so long, fewer existing contracts include what's known as an EPA, a clause that permits Economic Price Adjustments. Absent such a clause, contractors have a harder time making the case for DOD to cover their increased costs. However, even with such a clause, programs may claim that they don't have the funds to cover these increased costs.

This is particularly a problem for companies providing services. Such contracts are often so competitive that margins for successful bidders are in the low single digits. A company that realizes a 4% or 5% fee on a contract simply cannot absorb the wage cost growth of 8% or 10% that we are seeing today.

DOD's public response to this has been to note that, to date, it has received few requests for equitable adjustments, known as REAs. While that may be true at this time, this does not mean there is no problem. Rather, companies faced with uncompensated cost growth must first document the situation and discuss it with their program office before submitting an REA.

In addition, the REA process requires companies to submit requests rapidly, often within 30 days of incurring the unanticipated cost, but there is no timeline for the government to respond to those requests. I have seen DOD take a year or more to reach a decision on an REA, and even then only a part (or none) of the costs are paid.

Finally, the breadth of the inflation problem cannot be addressed one contract at a time, which is the preferred approach of the current policy. We need a faster way to deal with this. PSC believes that DOD should issue broad agency-wide guidance that reminds programs and contracting officers of their affirmative responsibility to maintain the long-term viability of the industrial base and to increase the flexibility that programs have to cover such cost growth.

2) Existing Contracts and Availability of fiscal year 2022 Funds

Even though DOD's fiscal year 2022 appropriations was signed by the president just over a month ago, its funding levels did not provide for coverage of 8% inflation. If I were still in DOD, rather than saying that we don't yet see a problem because few requests have been received, I would try to get in front of this problem by estimating the additional funding needed to cover this cost growth and looking at ways to meet those costs. Perhaps DOD is doing that, but to date we have seen no requests for the information they would need for such estimates. Absent action, this problem will get worse. Companies that cannot recover their costs will not be able to stay in business for long.

3) *fiscal year 2023 Inflation*

DOD in testimony before this Committee has already undertaken to explain their approach to inflation estimates in the fiscal year 2023 budget. While this is a real challenge both for DOD and for this Committee, it is important to recognize that addressing inflation in fiscal year 2023 will not fix the current problems.

Impacts of COVID-19

The third challenge facing the defense industrial base includes the impacts of COVID-19. As I mentioned previously, defense industry stepped up from day one of the pandemic. Companies kept going as the rest of business shut down. They provided for the health and safety of their workers and their families and households, including testing and vaccinations as well as changes to workplaces. The cost for these provisions were not recoverable under existing contracts and in many cases were completely absorbed by the companies themselves.

One action taken by Congress was significantly beneficial. Known as Section 3610 (because that was the section number of the 2020 CARES Act provision), it provided the authority for agencies (subject to the availability of funds) to reimburse companies for retaining essential workers even when COVID-19 prevented them from accessing workplaces. Tens of thousands of workers were retained as a result of this provision, at no additional cost to the taxpayers. The intelligence community and civilian agencies also used the same authority.

That authority, unfortunately, has been allowed to expire. Last year, this Committee considered but ultimately did not include language that would have provided such authority on a stand-by basis, making it available for DOD to use if needed. PSC urges the Committee to take another look at such language and include it in the fiscal year 2023 NDAA.

In addition, executive branch actions regarding COVID-19 continue to impact the ability of industrial base companies to meet the requirements of their contracts and to hire and retain necessary workers. While the contractor vaccine mandate is unenforceable under a federal district court injunction, the FAR clause remains in effect. Were the injunction to be revised or reversed, that clause would be immediately effective. Every government contractor worries about what that would mean for their workers and their contracts. No company can tell a prospective employee what the requirements might be in the future.

An additional complication arises under COVID-19 with regard to access to facilities. Unlike the enjoined FAR clause, which applies government-wide, the requirements for access to government facilities is completely decentralized to each facility and often to individual offices within a facility. On any given day, a company's worker can face changes in requirements for vaccination status, attestation, or proof. Masking requirements are dictated by the COVID risk designation of the county as reported by the CDC to be low, medium, or high. For now, few counties are medium or high, but that can change rapidly and without advance notice. All of this makes it hard for companies to know whether their employees and sub-contractors will be able to access their workplaces.

I am not suggesting that this needs a legislative fix, but I am suggesting that it makes it harder for companies to manage their workforce and to meet the needs of their DOD customers. To date, there has been no coordinated action to address this complex challenge.

ADDITIONAL OBSERVATIONS AND RECOMMENDATIONS

PSC offers the Committee a number of additional proposals for consideration in the fiscal year 2023 National Defense Authorization Act that could support the ability of the defense industrial base to meet DOD's needs, including:

1) Reinforce real competition where it can thrive.

Half of DOD contract dollars go to services, and what was once a product is often now procured as a service. From data storage to satellite launches, DOD does not need ownership to benefit. This \$200+ billion services market offers unrealized potential for DOD. For example, 70 percent of DOD system costs are in life-cycle support, sustainment and operations, yet there are too few opportunities for real competition.

This is in part due to the lack of transparency surrounding the long term needs of the Department. Requiring DOD to provide Congress with additional, publicly available information would benefit DOD and the industrial base. Accordingly, PSC recommends that Congress require DOD to include in Operations and Maintenance (O&M) budget justification documents an unclassified budget display for the total amount projected for each subactivity group for the future-years defense program. I will tell you that, when I was the Assistant Secretary of Defense for Logistics, this

information would have helped me do my job, and if Congress had required it, I would have had it for internal use as well.

In addition, excessive focus on low bids reduces real competition. Past legislation by this Committee required DOD to use Low Price Technically Acceptable (LPTA) contracts only when clearly justified, but reports from our member companies indicate a lack of compliance with the statute in this area.

Finally, DOD should emphasize competing on results rather than price. This would support innovation, encourage improvements in systems and processes, creates jobs, and better meet warfighter needs.

2) *Reduce Procurement Administrative Lead Times (PALT).*

Long procurement administrative lead times can prevent the government from accessing the solutions it needs when it needs them and can limit the participation of companies in the defense industrial base. The fiscal year 2018 NDAA required DOD to measure and track PALT with a goal of reducing lead times, but we believe PALT is increasing. Reducing PALT should be a priority for the government to improve acquisition timelines and also to attract and retain innovative companies. PSC believes this Committee can call attention to DOD's need to implement that fiscal year 2018 language.

CONCLUSION

There are a number of additional challenges that merit attention, and I would be happy to discuss any or all of them during this hearing. In closing, though, and on behalf of PSC and our members, I thank you for your time and consideration of these matters. As always, PSC is available at your convenience to address any questions or concerns the Committee has, now and in the future. I will try to answer any questions you may have, and I look forward to continuing to work with the Committee on all of these important industrial base challenges.

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

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

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

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

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

Equitable adjustment clauses and so forth have fallen out of a lot of contracts because we have not seen inflation, but requests for equitable adjustment take an enormous amount of time and effort to

gather data for, through all the different levels of the supply chain, and then work through the Department.

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

Chairman REED. Thank you. Secretary Berteau?

Mr. BERTEAU. Thank you, Senator. I would echo the importance of inflation and the ability to cover costs for inflation, but it is also important to look at what the root causes are, and half of this inflation is in the workforce. It is not actually the fault of the government that there are not enough workers to go around to fill the needs that are there.

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

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

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

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

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

Senator MANCHIN. Good decision.

Chairman REED. Senator Manchin is now doing handstands.

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

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

Chairman REED. Thank you very much, both of you.

Let me now recognize Senator Inhofe.

Senator INHOFE. Thank you, Mr. Chairman, and I think we covered that pretty well, and Mrs. Lord, in terms of the inflation and the effect that it has, and a lot of people do not really understand that. Is there anything after the comments that were made by Mr. Berteau that you would want to add on that particular issue?

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

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

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

Ms. LORD. Thank you, Senator. The Stinger, which is a ground-to-air-launched missile, shoulder-launched, which we have sent, probably given public domain information, a quarter of our stocks to Ukraine on, is an issue where we cannot, within the next couple of years, produce more because we have a problem with the government not paying to maintain production capacity. When that happens, you have test equipment become obsolete and not work. You have supply chains with links broken in them. Especially if we had key elements of that supply chain supplied by now adversarial countries we have to reconstitute that.

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

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

There are a couple of answers to that, and one, I would say, is to begin to think about our releasability and exportability regulations. We have been very, very conservative with what we allow our closest allies to receive, in terms of technical information and manufacturing capability. We know that we do not have enough munitions. They end up being the bill payer, usually. We could look at countries like Australia that have capacity, that have throughput, that have the budget to develop indigenous capability, and work more closely with them to make sure we have the munitions we need and our allies and partners do as well.

Senator INHOFE. Do you think that we might be criticized for maybe holding too much from some of our allies?

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

Senator INHOFE. That is good. Very good. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe.

Senator Gillibrand, please.

Senator GILLIBRAND. Thank you, Mr. Chairman. Does DOD still intend to implement the Cybersecurity Maturity Model Certification 2.0 (CMMC 2.0) requirements next year, and are you receiving feedback from the companies in the defense industrial base addressing whether the CMMC 2.0 will aid their cybersecurity posture?

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

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

I do think, though, that an important element that is missing from here—and there is a National Institute of Standards and Technology standard, 800–171, which is the basis of that cybersecurity regulation—that almost every company I know and participates in the defense business today at the prime contractor level, whether large, medium, or small, is already investing and has a

plan on record for compliance with and meeting those standards. The real question is, do those standards go far enough in order to protect us against the evolving threat, and nobody really knows the answer to that.

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

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

Senator GILLIBRAND. Thank you. What aspects of the Federal Government's contracting process do you recommend adapting to better facilitate rapid acquisition and emerging technologies, and do you believe that certain defense programs should be excluded from the Federal acquisition regulations altogether? Related, over the past few years, DOD has used other transaction authority contracts or OTAs [Other Transaction Authority] to develop prototypes with industry for emerging technologies to speed the acquisition process, and how has this contracting method been received by the DIB, and should we expand the use of this authority?

Then final and related, I just returned from a trip to India and Nepal, and these countries would love to acquire United States-produced helicopters and other weaponry. The challenges is that it just takes too long, and so it is so cumbersome to create any acquisition fluidity with these countries, that it is easier to buy from Russia, or not in those cases, but China. I think we have to understand that our cumbersome nature in acquisitions is highly problematic from the way we project power worldwide, but also so that our warfighters can have the most lethal and most effective technology possible.

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

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

So I think we need to encourage and train to use things, as you talk about, the other transaction authority. That is huge, because you do not have a key requirement there. You just sort of say what you need, and you can move quickly. I think we need to give the entirety of the budgets for OTAs right up front and let people move fast. That is how the Defense Innovation Unit does, and they have been able to work very well with commercial entities.

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

Mr. BERTEAU. Mr. Chair, if I could add just one thing. I know we are over time.

Chairman REED. Go ahead, sir.

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

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

Chairman REED. Thank you, Senator Gillibrand.

Senator WICKER, please.

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

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

Right now, with not as many politicals in the seats at DOD, we do not have a strong demand signal to modernize our practices, and we are not training people to utilize them. I think it is very, very important for a virtuous business cycle here and to get these new developments fielded, because capital markets are going to play out. There is going to be consolidation. What is not happening is the new companies coming up quickly and gaining speed to cross that valley of death from a few prototypes to actual fielded solutions.

So middle tier of acquisition, for instance, just to explain that, says if you have a commercial capability or a fielded military system, that just through an incremental investment could really give us a step function change in capability, then we do not have to go through the Joint Staff's requirements process that can take up to 2 years. What we can do is get the leaders of military services, the Secretaries, or the leaders of agencies to document that they do

have that requirement, and then we can move out on middle tier of acquisition very quickly.

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

Senator WICKER. Okay. Let me shift to what we are trying to do to help the Ukrainians, and I will ask both of you this. How are we doing replenishing our own supplies with those of our allies, and how long can we keep this up, providing weapons at the current rate? Secretary Lord, you go first, and then we will take Mr. Berteau.

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

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

Senator WICKER. Mr. Berteau, that sounds like a real problem for our efforts to help our friends in Ukraine win this war.

Mr. BERTEAU. It is definitely a problem, and I think we have yet to see a single contract in place to start that replenishment. Discussions are going on, but there is no definition of what the requirement is yet, because we still do not know how far we are going to draw down. We are drawing down, I have seen, in some cases, as much as a third of our available stocks—that means not forward deployed but available for that—in less than 2 months. If we are one-third down in less than 2 months, and we keep that rate up, that is only 6 months.

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

Ms. LORD. If I may, I will say the Army has a UFR [unfunded request] over here, UFR Number 24, that is looking at doing exactly this.

Senator WICKER. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Wicker.

Senator Blumenthal, please.

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

year, and replenishing United States stocks of those weapons would require 32 months.

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

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

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

Ms. LORD. There are a few different titles in the Defense Production Act. Title I talks about DO [delivery order] ratings and DX [direct exchange] ratings. Everything that the Defense Department puts on contract basically gets a DO rating that brings it ahead of any other commercial item. The most critical items get DX ratings, which pull those items in front of the other defense goods. So often some of our long-lead nuclear materials and so forth, go there.

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

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

Senator BLUMENTHAL. If I can just interrupt, because I am going to be out of time, moving the needle requires moving the money. It is a question of investing the resources. To its great credit, the Navy's fiscal year 2023 budget requests over \$750 million to invest in the submarine industrial base and train the workforce. I have been urging for years that we need to make this investment. Twenty, thirty million dollars is what we have included in past budgets. Seven hundred fifty million marks a major leap forward, and it is desperately needed to train and retain our engineering and shipyard workforce.

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

Ms. LORD. Absolutely.

Senator BLUMENTHAL. Thank you. Thank you, Mr. Chairman.

Mr. BERTEAU. Mr. Chairman, if I could add one thing.

Chairman REED. Of course, sir.

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

Chairman REED. Thank you very much.

Senator Ernst, please.

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

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

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

Ms. LORD. Thank you for the question. COCOMs do not have acquisition authority. They generate the demand signal. They are the ones, obviously, in their AORs [area of responsibilities] that understand what is required. They must go back to the military services and work through them. I think what we are seeing right now is leadership of the military services perhaps are not totally aware of all of the mechanisms they have to very rapidly acquire, and they need to exercise those authorities they have.

So I think a better-informed COCOM can go and speak to a service and ask specifically for what they need and how to go about and get it, and that gets back to the issue of training the workforce. I think that is one area where the committee could help by asking the Department what they are doing to train the workforce and what they are doing in terms of keeping metrics to look at the utilization of MTAs [major training area] and how that has helped to rapidly field.

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

Ms. LORD. Yes. I think it is being a smart customer, if you will. You do not only tell your supplier what you need but how you need to get it, and then hold them accountable for that. Again, middle tier of acquisition is somewhat a new muscle that is being exercised in the Department, and it takes a number of reps and sets

for that to be comfortable, and to do it over and over. Human nature being what it is, unless leadership is demanding that that new muscle be used, it probably will not be.

Senator ERNST. So that is an area that we really need to work on then, because it is a tool, and existing tool already, that we have available to us, for rapid fielding.

You brought up the valley of death as well. So as you are talking about training and the professionals that need to have the appropriate training, do you believe that the acquisition professionals that we have at DOD are effectively trained to utilize that middle tier of acquisition and make sure that new technologies that are being developed do not die in that valley of death?

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

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

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

Mr. BERTEAU. If I could add something to that, just briefly.

Chairman REED. Yes, sir.

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

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

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

Chairman REED. Thank you, sir.

With that let me recognize Senator Hirono, please.

Senator HIRONO. Thank you, Mr. Chairman. We have covered a lot of ground, I think, in this hearing. Frankly the DOD acquisition process has been a challenge, an ongoing challenge in all the years that I have served on this Committee, and I think it is going to continue to be an ongoing challenge with workforce issues and supply chain issues, and now with the war in Ukraine, replenishing our munitions supply.

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

Secretary Lord, you can start.

Ms. LORD. I think, Senator, it all comes down to speed, and I think if you were in a business and you had these kinds of concerns you would have monthly accountability as to what the targets were to reach and what your deviation from that target was, and why. So I think you might want to look, given the conflicts in the Ukraine, what are the top 10 weapon systems that you are concerned about, understand current inventories, understand what it is going to take to ramp up production, what the top three inhibitors to that are, and then just follow that to understand progress and what tools are being used to solve that.

Mr. BERTEAU. Senator, if I could—

Senator HIRONO. Go ahead.

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

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

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

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

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

By the way, we created the Office of Cost Assessment and Program Evaluation (CAPE). Mr. Berteau, maybe this is yet another entity that focuses more on inputs rather than on outcomes. But what is CAPE's role, if any, in the acquisition process? Are they not supposed to analyze whether a system is needed, whether a ship is needed, make the input analysis and provide guidance on what should be done?

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

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

The one place where they are short is in sustainment costs. That is where 70 percent of the cost occurs, and we still do not pay much attention to that at the upfront, and yet that is what eats us alive once a system is delivered and fielded.

Senator HIRONO. I think that is interesting that you consider CAPE to be a success story. Would you agree with that, Secretary Lord?

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

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

Mr. BERTEAU. Senator, let me be clear. Their success is on the CA, the cost assessment end. They are not nearly as good at the point that you raised also in your question, the program evalua-

tion, what are the options. That has actually gone down, but the cost analysis has gone up.

Senator HIRONO. Thank you.

Chairman REED. Thank you, Senator Hirono.

Senator Tuberville, please.

Senator TUBERVILLE. Thank you, Mr. Chairman. Thank you very much for being here today.

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

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

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

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

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

There are two things that I think would be useful for this Committee to spend its time on this year. One is the reauthorization of the Small Business Innovation Research authority that has expired. I do not know whether DOD has submitted a legislative proposal to extend that, but I think there is an opportunity for you to improve that act and particularly focus on something that has come up, that you mentioned earlier, which is the migration of a good idea into actually using it, which would benefit many in that regard.

PSC was actually instrumental in the first passage of that act. I was in the Department at that time so I did not give them any

credit for it at all, but they deserved a lot of credit for doing it. That is one thing that you can do.

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

Senator TUBERVILLE. How can the DOD provide small businesses with the necessary insight and cybersecurity support to successfully contribute to our national security? Small businesses—they do not have the money that these big corporations have for cybersecurity.

Ms. LORD. I think there are a couple of ways we could go about that. One, there are some resources inside of the Department to help and mentor on that. What is a minimal, viable cybersecurity posture, if you will? Secondly, I think that is one of the ways that small companies can partner with larger companies, with a mentor protegee type arrangement, which actually benefits not only the small company but the large company.

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

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

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

Senator TUBERVILLE. One more quick question. In the past 2 months, the United States sent more Stinger missiles to Ukraine than we have manufactured in the last 20 years. The Stinger program is in its eighth restart. I will repeat. Eight times we have restarted this program. This missile has not been modernized in 30 years. What mistakes have we made and mismanaged in this munitions program? Just real quick.

Ms. LORD. We have not kept a hot production line. It is the lumpy nature of the funding.

Mr. BERTEAU. I think we do have a path now to upgrade the Stinger. I believe it will be here in something like 2026 or 2027.

I would suggest that our mistake was we should have done that 8 years ago.

Senator TUBERVILLE. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Tuberville.

Senator King, please.

Senator KING. Thank you, Mr. Chair, and thanks to both of you for your extraordinary service to the country.

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

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

It seems to me—and I understand the politics of immigration. It has been difficult in this country for 150 years, but we ought to be able to figure out how many people do we need to avoid this demographic disaster and keep our industries, the defense industry being one of them, operating, and figure out a rational immigration policy to match the need to the supply.

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

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

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

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

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

Mr. BERTEAU. Senator, may I make one suggestion on that?

Senator KING. Please.

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

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

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

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

Ms. LORD. That is correct, and, in fact, if there is a multi-year contract it drives certainty. It allows the industry partner to put their internal research and development as well as capital investments into the area in which the government is buying. It allows employees to say this is a good place to work because I know that the job will be here for at least 5 years, or whatever it might be, with options. It also saves the government an enormous amount of money because the cost and time to renegotiate these contracts is non-trivial. You want to get all the terms and conditions up front and then have options there.

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

Senator KING. Industry is not going to make those investments that they need to make in the capital unless they have some assured stream of income.

Ms. LORD. Correct.

Senator KING. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator King.

Senator Blackburn, please.

Senator BLACKBURN. Thank you, Mr. Chairman.

Ms. LORD, I want to ask you about the vaccine mandate and the effect that that had when it was extended to our government contractors, and the impact that that had. You know, Senator King is asking about workforce, and I know with the government contractors people could not test weekly. That was not an option. It was just you get the shot or you are going to lose your job, and we have time-sensitive programs, like the *Columbia*-class submarine. So talk a little bit about that vaccine mandate and that impact.

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

Senator BLACKBURN. It disadvantages many of our specialty vendors who are small businesses. Correct?

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

Senator BLACKBURN. I know recently Deputy Secretary Hicks had voiced concern about the diminishment of small businesses that were competing, and we need them for innovation, especially as we look at the realm of cybersecurity. Is that correct?

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

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

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

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

Ms. LORD. I agree that we have a challenge, and I think a big part of this is being agile and quick to adapt. So using your vaccine mandate example, perhaps that was the right thing at one time, but you have to look at the environment around you and adapt to that. I think we have to be more adaptive with the defense industrial base. Because companies are not going to be here to supply

our warfighters with the kit they need downrange and the services they need if they cannot make sufficient margin to be able to reinvest in research and development and capital investment and so forth.

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

Senator BLACKBURN. Well, and I think that that is vitally important to do.

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

Ms. LORD. Yeah. So obviously there are tens of thousands of them. I have been out of the DOD for over a year so I do not know the exact number. However, I will say we have pockets of excellence, whether it be the Rapid Capabilities Offices or DIU or other people. They do not have special authorities. What they have are the best and the brightest, a clear communication path to leadership, and the ability to move quickly. What we have to do is scale that across DOD.

Senator BLACKBURN. I am over time. I have got some questions I will submit for the record. Thank you.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator.

Let me now recognize Senator Kelly, please.

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

That is why last year I negotiated and helped pass a \$52 billion plan to boost semiconductor manufacturing production here in the United States, including in my home state of Arizona. This plan passed both the House and the Senate, and hopefully we are going to get this, the differences in the legislation, resolved through conference negotiations, and get this across the finish line soon. It is vitally important to our national security.

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

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

But the real challenge here is that most of the intellectual property for these semiconductors actually originates in the United States, but for a variety of reasons—some of them environmental laws, some of them labor laws, some of them cost competitiveness of final units—we have offshored, over time, to the point where we are no longer in control of those supply chains, even the most fundamental, lower-level items such as the rare earth elements. We can get them out of the ground but to date they are very dirty processes to make them usable, and they go in not only semiconductors but lots of other things.

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

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

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

Ms. LORD. Yeah, test and evaluation as well as packaging. Two very important parts of that chain, and you are absolutely correct. Those test systems are highly engineered, complex systems.

Senator KELLY. Well, I just recently returned from a meeting with our partners in Europe and Asia, speaking directly with international leaders in Germany and other countries. This underscored the opportunity we have to rebuild our global supply chains and strengthen our security partnerships in the process.

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

Ms. LORD. India has enormous opportunities but also enormous challenges. We have never been able to get the overarching security agreements with India that we would hope. We have challenges with things like the S-400 being on contract, and so forth. Additionally, the challenge of doing business, I can tell you, in India, is enormous because of the offset requirements there, to be able to provide local business.

So enormous potential, but I would say the opportunity and the challenge is to work with the Indian Government to streamline

policies and procedures, make them consistent so that it is a predictable venue for United States business and United States Government to invest in.

Senator KELLY. I agree, and, you know, the opportunity we have there is enormous right now, and their ties to the Russian Government, Russian military through their Russian hardware that they have purchased, two-thirds of the Indian military force consists of Russian hardware, which, as a lot of us expected, did not perform well on the battlefield. So this is an opportunity for us to build some ties through the sale of some of our military equipment, which I would like to see.

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

Chairman REED. Thank you, Senator Kelly. Senator Hawley, please.

Senator HAWLEY. Thank you, Mr. Chairman. Thanks to both the witnesses for being here.

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

Mr. BERTEAU. The upfront optics of that are obviously not very attractive at all, and so the real operative question is what are the protections in place that we need to have in order to preserve any risk from coming out of that. In the case of some of these companies, they are actually a foreign-owned company, in that they have a full, dedicated protection against foreign ownership control and interest. The policies are there. The procedures are there. The structures are there. The execution and implementation is what has to be monitored very, very carefully in that regard.

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

Senator HAWLEY. Should it be a conflict of interest for a company like Deloitte, let us say, or McKinsey, to do work for the Chinese Government and/or its proxies while also doing work for the Department of Defense?

Mr. BERTEAU. We have looked at the legislation that has been introduced in this body on that regard and we think there are some very serious concerns that do need to be addressed there. But we also need to make sure that America can still get the capability and competence of the workers we need as well. So it is that balancing act that becomes critical there. I am not sure if it is directly a conflict of interest. There is definitely a conflict, there is definitely interest, but there may be a better way of getting at it.

Senator HAWLEY. Yeah. Well, this is pretty concerning, I would say. Let me just ask you. I mean, you are the head of the Professional Services Council. What advice would you give to companies like Deloitte that are doing business in China, including with the Chinese Government and its proxies, despite the threat that gov-

ernment, its proxies, and the Chinese Communist Party pose to this Nation?

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

Senator HAWLEY. Yeah. Fair enough. Thank you.

Ms. Lord, let me ask you about the Stingers issue, which Senator Tuberville raised a little bit ago. Obviously, Stingers are in high demand in Ukraine. They may well be in high demand in Taiwan. We need, of course, to maintain a robust supply ourselves. You said that you think one of the problems here is we have not kept a hot production line. What do we need to do now to accelerate production of the Stingers, and other similar capabilities that we are going to need for frontline states like Ukraine and Taiwan but that we are also going to need for ourselves, all at the same time?

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

Senator HAWLEY. How much of it, in your opinion and in your experience, is about incentivizing industry versus overcoming hurdles within our own acquisitions bureaucracy? Can you speak to that?

Ms. LORD. Oh, I think that it is a Venn diagram that is very—well, there is a huge amount of overlap, and I think, again, we have an acquisition system that can do these things quickly. We are not incentivizing our workforce to do that. To David's point earlier, how often does this Committee have a hearing calling out and trying to understand all the fantastic applications of other transaction authorities and middle tier of acquisition, what that did to speed up the acquisition process, what that did to help the user downrange? We need to communicate the art of the possible and then encourage it, versus admiring the problem.

Senator HAWLEY. My concern on this, to be clear where I am coming from here, it is not just related to the Stingers. I understand we are also having production issues with the LRASMs [Long-Range Anti-Surface Missiles] and other advanced munitions we are going to need if we are in an environment, and I think we are, where deterrence is the name of the game, and deterrence by denial—

Ms. LORD. Absolutely.

Senator HAWLEY.—both in the Indo-Pacific, also going forward in Europe. We have got to be able to deter our near-peer competitors, and in the case of China, frankly, our peer competitors. In order to do that our competitors—our enemies, frankly, our opponents—have got to believe and got to know that we have the kind of capabilities that we are going to need, and we can supply our partners

and allies with the capabilities they are going to need in short order.

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

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

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

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hawley.

Senator Manchin, please.

Senator MANCHIN. Thank you, Mr. Chairman. Thanks to both of you for your service and thank you for being here today.

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

Ms. LORD. It is a huge threat to our security. I think you can go back to the supply chain report we did in 2018, in responding to an Executive order, where we called out all of these areas of our defense industrial base where we either had very fragile supply chains, we were single sourced, or we were dependent on an overseas, unfriendly nation.

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

Senator MANCHIN. Are they looking down the road right now? Are you all looking down the road, knowing that we have to resupply ourselves for what we are basically sending over to Ukraine?

Ms. LORD. I think that is clear within the Department, but—

Senator MANCHIN. Has that acquisition started yet? Is there any acquisition going on right now to replace immediately?

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

Senator MANCHIN. I am thinking the money we are sending, the goods we are sending over would be resupplied.

Mr. BERTEAU. Senator, about a week and a half ago the Defense Department posted what is called a RFI, request for information, soliciting input from companies. I think it is due May 6th, so it is a very rapid turnaround, with respect to Ukraine. What it does not address, though, is something that you hinted at. We are not only sending equipment to Ukraine, we are oftentimes replacing equipment that other countries are sending to Ukraine. In many cases they are sending them Russian equipment, and we are replacing

them with American equipment. That is part of the demand as well. I do not believe it is covered in the RFI. So we have only made the baby steps here.

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

Mr. BERTEAU. In many cases those are still being negotiated.

Senator MANCHIN. Okay. If I can ask you also about, when you have contractors, first of all, from cyber, most of our hacks come from the bottom up. So let us say that we have a major contractor, one of the big boys—I will not name any names but the big ones. They are pretty much hardened. But the subs that they have are not as hardened. A lot of the subs do not want to be tied to the main because then the main will do what they are going to do and knock them out of the contract.

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

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

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

Senator MANCHIN. I mean, we just put so much red tape involved in this, trying to secure something, and people are just so absolutely aghast at us continuing to throw money away. I mean, that is where you have got the toilet seats and the hammers and all those. Remember all the comparisons they used for years and years?

Ms. LORD. That comes back to training the workforce. We have the authorities. Congress provided them to DOD. We have translated those into policy and implementation guidance or procedures. We need to train the workforce to use those and then hold the workforce accountable. That needs to happen at DOD senior levels as well as here.

Mr. BERTEAU. Part of that training, Senator, is we frequently, in DOD, will say we want to commercial but we would like you to tweak it just a little bit so we can use it. Of course, when you have got a production line of a million a month and DOD is only going to buy 100, there is no benefit in that tweaking.

Senator MANCHIN. Is President Dwight Eisenhower's statement still true today—beware of the industrial complex?

Mr. BERTEAU. You know, the original draft of that actually said beware of the military congressional industrial process.

Senator MANCHIN. Oh, congressional.

Mr. BERTEAU. They took the congressional out of it, but it is still worth paying attention to.

Senator MANCHIN. He had it right, did he not? Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Manchin.

Senator ROUNDS, please.

Senator ROUNDS. Thank you, Mr. Chairman. First let me begin by just thanking both of you for your continued service to the Nation, both within the DOD and within the private sector. Ms. Lord, I want to thank you for working so closely with me in 2020, to execute the Defense Production Act authorities in response to the worst days of COVID-19. I think we made a difference.

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

The pandemic and recent supply chain disruptions have had particular impacts on small and mid-sized businesses that DOD relies on. My question is, what can we do to increase competition and encourage small and mid-sized businesses who often are at the cutting edge of innovation, to compete to provide with us for the best and strongest national defense that we can possibly afford?

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

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

Senator ROUNDS. Mr. Berteau?

Mr. BERTEAU. Senator, you have raised some absolutely great points, and we have been wrestling with this for a long time. Let us look first at the question of is there enough demand to support the supply. Your missiles were a great example. A big part of the reason why there are only three companies delivering on that 90 percent is we are not buying enough missiles to keep more companies in business, from a production line point of view.

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

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

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

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

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

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

Mr. BERTEAU. Well, there are two ways to do that, and it is really critically. So you have really got a dilemma there. You want the companies you do business with to be secure against cyberattack, and that is not just in America but around the world as they go forward. At the same time, you do not want to burden them with the costs that, in fact, it puts them out of business in order to do that. We hear this from our member companies all the time.

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

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

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

Senator ROUNDS. I think we agree it is a problem, but I am not sure that we have resolved it with the appropriate answer yet.

Mr. BERTEAU. As I mentioned before, the threat keeps increasing every single day.

Ms. LORD. This is an area where the industrial policy team at DOD could probably more clearly articulate the avenues to be followed.

Mr. BERTEAU. What DOD has done is they have migrated the responsibility from your old shop to now the CIO, the chief information officer shop. Sometimes reorganization does not speed up results.

Senator ROUNDS. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Rounds.

Senator KAINE, please.

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

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

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

You could talk about other authorities. I think both of you mentioned the other transaction authorities that we have provided.

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

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

So I think this is one of those issues that need to be unpacked, so to speak, so it is very clear that secretaries of the services, leaders of agencies, have an expectation that a certain amount of their procurements will go through these methods, and then measure what the progress is being made, how fast it is. Because it is just not getting things on contract. It is bringing it over the finish line and then making sure it moves on to a sustainable situation.

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

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

This contracting officer said to me—I said, “Why aren’t you using,” and I mentioned another part that has a lot more flexibility, and he said, “I am more comfortable with the one that tells me everything I need to do and I do not have to make any decisions on my own.”

Senator Kaine. Wow. Wow.

Mr. Berteau. So the point I made earlier, if we do not actually promote people taking a risk but actually evaluate and promote them, give them credit for it, that is the only way we are going to get out of it.

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

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

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

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

Protecting the U.S. defense industrial base is not just a DOD responsibility. So the Department of Commerce has a Bureau of Industry and Security, and here is their mission statement. They are responsible for, “advancing U.S. national security, foreign policy, and economic objectives, by ensuring an effective export control and treaty compliance system and by promoting continued U.S. leadership in strategic technologies.”

Based on your opinion, do the DOD and Commerce work together in a good fashion on this? Because I am not so much aware of what

Commerce is doing in this space, but they may be able to be helpful for the DOD.

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

Senator KAINE. Thank you. I am over time and I see Senator Scott chomping at the bit over there.

Mr. BERTEAU. I have some good news on that point, though, on the BIS [Bureau of Industry and Security], if I may indulge myself on that, Senator.

Senator KAINE. Go ahead.

Mr. BERTEAU. The United States Senate, just last month, confirmed a long-time defense expert as the Under Secretary of Commerce over at BIS, Alan Estevez. You are going to have a much better time having that work together going forward. But I do not expect immediate results tomorrow.

Chairman REED. Thank you, Senator Kaine.

Senator Scott, please.

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

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

Mr. BERTEAU. Triple.

Senator SCOTT. Seventy-two dollars.

Mr. BERTEAU. Ten times.

Senator SCOTT. It is even better. The same company.

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

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

Mr. BERTEAU. Senator, I was part of a Defense Science Board study that looked at that exactly question back in the 1990s, and we concluded, and I think the analysis was arithmetically pretty accurate, that it was in the range of 30 to 35 percent. Then I had the privilege of trying to translate that into what people would actually have to do to achieve that money, and the number one thing people had to do was get rid of government bureaucrats. As you know, in your experience as governor, this is not the easiest thing to do. So that is where we ran aground very, very quickly. I actually got subpoenaed and hauled up before the United States Congress because I was going to get rid of four of those bureaucrats.

Senator SCOTT. So did either of you ever come and say—let us say it would be a minimum of the numbers you have got, 30 percent, so \$200 billion? That is \$60 billion that we can be spending on something else. Did you ever come in front of us and say, “I need this” and Congress did not give it to you?

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

But here is the problem—that is a one-time savings. It is gone, and then you have still got to maintain the momentum.

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

Senator SCOTT. Were you able to do that when you were there?

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

Senator SCOTT. Have you ever outsourced a whole bunch? I mean, in the private sector I used to—I am a business guy—if I could outsource the whole operation, if it was not a core function, I mean, why did I do it, right? So if it is not a core function of government—the core function of, I think, the military is to be able to be a lethal military, not to be the best buyer of anything.

Ms. LORD. Right. So I think some really great examples of outsourcing and using contemporary contracting practices are launched as a service. That has been incredibly successful. ISR [Intelligence, Surveillance, and Reconnaissance] is a service, with contractor-operated, contractor-owned systems. However, there is a fear factor there about giving that away, and so that is the cultural issue.

In this day and age, we were just saying earlier, we buy many things as a service. It is a far more efficient way to do it and will

save us money. But that is very foreign to a lot of DOD, and they have got to get comfortable with it.

Senator SCOTT. Thank you.

Chairman REED. Thank you, Senator Scott.

Senator Rosen, please.

Senator ROSEN. Thank you, Chairman Reed, Ranking Member Inhofe—I know he is not here—but it is a really important hearing, and it has been really interesting to hear both of you speak on so many topics. I appreciate your work and you being here.

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

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

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

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

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

This is a problem that did not happen overnight. It happened over a long time, and for industry to be able to get the supply it needs, the trusted supply it needs, we have to reestablish that supply chain, but businesses are not going to reestablish themselves unless they can make a profit and be an ongoing concern. David?

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

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

The second is because we are always one or two generations behind, we are not drawing from the latest technology, so we have to figure out how to do two things—get what we need and sustain innovation. I think there is a huge technical challenge of mapping the generational gap that we have, because it takes us so long to buy anything, with the technical capabilities we need to sustain and support.

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

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

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

Senator ROSEN. That is right.

Mr. BERTEAU. Right, because that cost is a future cost. The cost today is what we need to invest. You just need to keep reinforcing that.

Senator ROSEN. Thank you. I would also like to take—oh, can I finish my question? I am the last one here. Thank you. Senator Rounds talked about cybersecurity needs, and I just want to talk about—it is not just enough to talk about the needs. We have to talk about the people who actually do the work.

Last year, in last year's Senate NDAA, as reported out of this Committee, it included my Civilian Cybersecurity Reserve Act. It is bipartisan legislation I introduced with Senator Blackburn to create a civilian cyber reserve that ensures additional cyber capacity at greatest times of need, just like we have other reserves. So they are people who work, whether they are engineers or programmers, not hackers but people who do cybersecurity, do all of those things. The idea behind the initiative is we cannot go it alone. We need to bring those people in, help us at a great time of need. They can do training, et cetera, et cetera, and then go back to the private sector.

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

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

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

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

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

Senator ROSEN. I think so too. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Rosen, and I want to thank the witnesses for their extraordinarily insightful testimony, for their public service which has been remarkable.

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

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

[Whereupon, at 11:34 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JACK REED

MERGERS AND ACQUISITIONS

1. Senator REED. Ms. Lord and Mr. Berteau, do you believe The Department of Defense (DOD) has sufficient data and analysis tools to maintain insight into a baseline for the defense industrial base (DIB) to improve the ability to proactively assess the impact of any merger or acquisition actions?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. In response to these two questions, the long history of DoD assessments of proposed mergers and acquisitions shows first, that DoD considers each proposed action as a separate action for assessment and decision and second, that government-wide decisions may not agree with DoD's position.

In the first question, PSC suggests that the Committee require DoD to report not only on the baseline assessment of the defense industry but more importantly on what the goals of such assessments should be. Too often, mergers are assessed against the impact on DoD contracts. I respectfully suggest that they should also be assessed against U.S. long-term national interests. Competition in domestic markets needs to be balanced against competition globally.

Perhaps equally important is the enforcement of compliance with covenants to which companies agree as the basis for approval of a merger or acquisition. Anecdotal evidence indicates instances where companies do not comply with such covenants. The Committee might request a report from DoD to determine the degree to which this is a problem.

2. Senator REED. Ms. Lord and Mr. Berteau, do you believe DOD has authority to block any mergers and acquisition of contractors they believe would cause harm to the defense industrial base. If DOD does not, what would this authority look like?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. In response to these two questions, the long history of DOD assessments of proposed mergers and acquisitions shows first, that DoD considers each proposed action as a separate action for assessment and decision and second, that government-wide decisions may not agree with DoD's position.

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INTELLECTUAL PROPERTY

3. Senator REED. Ms. Lord, what are your thoughts on how to balance intellectual property (IP) rights desired by the government in support of the acquisition and sustainment of weapons programs with the desire of companies to protect IP that may be commercially sensitive?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

INDUSTRIAL BASE PLANNING

4. Senator REED. Ms. Lord and Mr. Berteau, how could the Department better plan for, react to, and make strategic trade-offs in cases where emerging needs for a technology involve long lead times that are compounded by obsolescent manufacturing lines or processes (including collecting, coordinating and analyzing existing data and applying analytic tools to support decision making)?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. DOD currently has too little information on its dependency on obsolete requirements, products, and processes. However, we have seen from the war in Ukraine that systems that do not meet DOD's needs may still be useful to other nations.

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

UKRAINE

5. Senator SHAHEEN. Ms. Lord and Mr. Berteau, I was pleased that last week President Biden appointed retired Lieutenant General Terry Wolff to manage the swift delivery of urgently needed security assistance to Ukraine, something that I and my colleagues Senator Portman, Senator Wicker and Senator Durbin recently called for. What steps should he and the Department of Defense be taking to identify technologies available across the commercial defense industrial base that are available and can make an immediate impact in bolstering the Ukrainians' defenses?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. There appears to be general agreement that the security situation in Ukraine and its ongoing fight against Russian military forces will remain fluid for the foreseeable future. Thus, the types and quantities of capabilities required by Ukrainian forces—particularly through the various United States security assistance programs—cannot be static. To date, I believe there has only been one official DOD request for information (RFI) regarding possible industry support to Ukrainian forces, a Defense Logistics Agency RFI released on April 22 with a due date of May 6, 2022. In the weeks since that deadline, the Department has shared little feedback with industry on submissions received. Given the constantly changing nature of the conflict and the evolving demands for support from the U.S. and our allies and partners, it seems clear that DOD would benefit from providing industry with an open-ended opportunity to propose and provide information on solutions that could serve Ukrainian—and United States—interests.

There are practical steps that DOD officials can take to identify needed capabilities that would bolster Ukraine's defenses. First, DOD could create a portal for proposed solutions, building on the example set by the OSD COVID portal originally

created by the Office of Industrial Policy in the weeks immediately after the COVID-19 emergency declaration in March 2020. Such a portal should be appropriately resourced and sufficiently transparent so that industry could receive feedback on their proposals in a reasonable timeframe. In addition, DOD officials could meet regularly with their industry colleagues—perhaps using trade associations to expand the reach—to share information about urgent capability requirements and about the Department’s decision-making and approval process(es).

SMALL BUSINESS INNOVATION RESEARCH/SMALL BUSINESS TECHNOLOGY TRANSFER PROGRAMS

6. Senator SHAHEEN. Ms. Lord and Mr. Berteau, the Small Business Innovation Research and Small Business Technology Transfer, or SBIR and STTR, programs will lapse at the end of this fiscal year if Congress does not extend the authorizations. How detrimental to the defense industrial base would it be for the SBIR and STTR expire?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. SBIR and STTR are important programs for both small businesses and the Department. PSC recommends that the Congress reauthorize and refine, as appropriate, these two critical programs.

Such refinement, for example, would recognize that participating companies often face a “valley of death” after their initial investments in research and development, as they try to move to SBIR Phase III wherein they would access funding outside of the SBIR program. The committee should consider legislative language that would require development of simplified, standardized procedures for “graduating” work to Phase III test and evaluation, production, etc.

7. Senator SHAHEEN. Ms. Lord and Mr. Berteau, do you believe it is in the best interests of the defense industrial base to simply permanently reauthorize the program?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. Yes, after demonstrating its value for nearly four decades, the program should be made permanent. PSC looks forward to supporting the committee’s efforts to do so.

8. Senator SHAHEEN. Mr. Berteau—in your statement, you cited statistics showing that the number of companies that participate as prime contractors or subcontractors dropped from 60,000 to 41,000—the vast majority being small businesses. Additionally, you mentioned that current DOD policies punish small businesses for growth because they no longer become eligible for “set aside” awards only given to small businesses. What policies and regulations are needed to reward small businesses for growth?

Mr. BERTEAU. The practical results of the government’s efforts to boost the participation of small businesses in the federal market have been mixed. Regardless of the funding amounts going to small business prime contractors, we continue to see a decline in the number of small businesses working with and for the government. This situation extends beyond DOD to include the entire Federal Government.

For many small commercial entities—who often have limited access to capital and other critical resources—the barriers to entry for the federal marketplace can be prohibitively high. For example, requirements for specific accounting systems, potentially burdensome reporting and disclosure requirements, and demands to demonstrate “relevant” past performance can deter such small businesses from bidding. They may not have the scope and scale to operate in the manner the government demands, particularly with constantly evolving requirements.

PSC has long recommended that the Congress conduct a review of how the government measures small business participation, specifically the reliance on information related to prime contract dollars versus small business utilization at prime and subtier contracts. Alternative methods to measure progress could include the number of businesses participating in the federal marketplace, job opportunities that result from small business and set-aside programs, and/or additional subcontracting requirements. Measures such as these may provide a clearer picture of the impacts of the government’s small business policies and programs.

Currently federal agencies and their staff are not incentivized to focus on creating more small business jobs through to small business subcontractors. They only get credit in government scorecards—or in annual performance reviews for senior executives—for dollars awarded to small business prime contractors. Jobs and innovation

can come from subcontractors as well as primes. It may be worth considering how to reward relevant government personnel for all small business jobs and funds, not just some.

For additional information and suggestions specific to DOD, please see PSC's response to the "Notice of Request for Comments on Barriers Facing Small Businesses in Contracting with the Department of Defense."

SUBMARINE INDUSTRIAL BASE

9. Senator SHAHEEN. Ms. Lord, I was pleased to see the President's Budget Request include \$750 million for the submarine industrial base, which supports a number of New Hampshire companies that are critical suppliers for our submarines and develops the next generation workforce to maintain submarines at the Portsmouth Naval Shipyard. How important are sustained investments in our submarine industrial base for correcting the years of neglect after the end of the Cold War and ensuring we retain our critical technological superiority over adversaries like China and Russia?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

AUKUS

10. Senator SHAHEEN. Ms. Lord, through AUKUS, Australia, the UK and the United States are expected to more profoundly collaborate on the advanced systems, like hypersonics, needed to keep pace with China. What benefits does this agreement bring to the United States and its industrial base?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

11. Senator SHAHEEN. Ms. Lord, as we develop these new, advanced technologies, how can we best expand and mature our defense industrial base to meet the often complex requirements of these new systems?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

QUESTIONS SUBMITTED BY SENATOR KIRSTEN E. GILLIBRAND

ACCELERATING ACQUISITION SPEED

12. Senator GILLIBRAND. Ms. Lord and Mr. Berteau, what aspects of the Federal Government's contracting process do you recommend adapting to better facilitate acquisition of emerging technologies?

Mr. BERTEAU. In addition to the burdensome and sometimes arcane nature of the Federal Government's procurement processes, it simply takes too long to identify, generate, and validate a requirement, to translate that requirement into a solicitation, to evaluate offers, and then to award the contract. Each of these steps can take anywhere from several months to several years, and the cumulative effect can delay acquisition and fielding of needed capabilities.

We need to be able to identify and field technologies faster. Once the government identifies a need, it should be able to obtain those goods and services as quickly as possible. This is especially critical given the pace of technology change in contractor-proposed solutions, which can change dramatically between the time at which a requirement is identified and years later at the time of delivery of that capability to the government customer.

Recognizing the adverse impact of extensive procurement administrative lead times (PALT) on procurement outcomes, Congress acted to reduce PALT by requiring the government to "develop, make available for public comment, and finalize" a definition of PALT and a plan for measuring and publicly reporting this data for contracts. In January 2021, OMB's Office of Federal Procurement Policy provided a PALT definition and guidance to federal agencies so they can "reduce PALT in their acquisition activities through modern business practices that shorten the time from the identification of need to delivery of value."

At PSC, we believe that PALT has increased rather than been reduced. A review by the Committee and/or the Government Accountability Office of how DOD is implementing this requirement—particularly as it related to purchasing and applying emerging technologies—would be timely and prudent.

13. Senator GILLIBRAND. Ms. Lord and Mr. Berteau, do you think certain defense programs should be excluded from federal acquisitions regulations altogether?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. PSC understands the value that non-FAR-based contracting procedures can bring to the Department and to participating companies. Other Transaction Authority agreements, certain set-asides and use of Federally Funded Research and Development Centers (FFRDCs), and the creation of new marketplaces are a result of the frustrations with the burdensome and cumbersome requirements imposed on the government and contractors during the acquisition process. However, PSC believes that the government should eliminate unnecessary and duplicative FAR-based requirements for all companies, rather than create avenues to circumvent the existing process for a subset of them. If certain requirements are unnecessary for some, they should be unnecessary for all.

14. Senator GILLIBRAND. Ms. Lord and Mr. Berteau, DOD has used other transaction authority (OTAs) contracts to develop prototypes with industry for emerging technologies to speed the acquisition process. How has this contracting method been received by the DIB? Should we expand the use of this authority?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. PSC believes that OTA agreements, when appropriately managed and with appropriate oversight mechanisms, have a role in the acquisition toolbox. That said, I would reiterate that if requirements are deemed unnecessary for certain acquisitions, they should be reviewed for their necessity for all acquisitions.

FOREIGN MILITARY SALES

15. Senator GILLIBRAND. Ms. Lord, I just returned from a trip to India and Nepal. These countries would love to acquire United States produced helicopters and other weaponry. But the challenge is that such sales take too long—it is so cumbersome that countries turn to China or Russia. What issues have our allies and partners raised about the timeliness of the American FMS process and what can we do to increase the speed of developing long term partnerships with such countries through FMS?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

EDUCATION AND TRAINING PARTNERSHIPS

16. Senator HIRONO. Mr. Berteau, the COVID-19 pandemic has stressed the supply chain and highlighted the importance of a U.S.-based workforce. The 2021 report from the Defense Critical Supply Chain Task Force recommended the Department form partnerships between the DOD and industry, academia, and other entities to incentivize and increase the education and training of the U.S. workforce. What are the primary hinderances to a more robust domestic workforce?

Mr. BERTEAU. PSC believes that the primary hinderances to a more robust United States-based workforce in the defense industry include excessive emphasis on lowest-price contracts without regard to maintaining the long-term workforce needed, the challenges in security clearances for contractors and in providing reciprocal recognition of clearances between agencies, and a focus on input in contracts instead of outcomes.

17. Senator HIRONO. Mr. Berteau, what partnerships have been formed since the release of the Task Force report to bolster the U.S. workforce?

Mr. BERTEAU. PSC is unaware of any widespread new partnerships formed since the Task Force report recommended them.

SHIPBUILDING

18. Senator HIRONO. Ms. Lord, there are significant maintenance delays for a number of the Navy's ships which have triggered delays for the maintenance, repair, and building of other vessels. Given the delay in our Nation's maintenance of ships and China's rapid naval expansion, are additional or expanded authorities or funds necessary to facilitate domestic shipbuilding and maintenance?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

19. Senator HIRONO. Ms. Lord, are the delays primarily caused by a lack of parts or a lack of manpower?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

20. Senator HIRONO. Ms. Lord, has the Defense Production Act been invoked to supply parts for ship maintenance?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

21. Senator HIRONO. Ms. Lord, what partnerships has DOD forged between industry or academia to train a new generation of shipyard workers?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

SUPPLY CHAIN

22. Senator HIRONO. Ms. Lord, supply chains have both been stressed by the pandemic and attacked outright by adversaries. How does DOD work, alone or with partner agencies, to deter and defend against cyber-attacks on the supply chain?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

23. Senator HIRONO. Ms. Lord, what stage of the supply chain is most vulnerable, and how is the U.S. working to defend these vulnerabilities?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

24. Senator HIRONO. Ms. Lord, how do domestic industries alert DOD to possible cyber-attacks?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

CYBERSECURITY MATURITY MODEL CERTIFICATION (CMMC)

25. Senator HIRONO. Ms. Lord, Mr. Berteau, DOD created the Cybersecurity Maturity Model Certification (CMMC) to ensure Defense Industrial Base contractors are following best cybersecurity practices when handling sensitive data. It is important that companies come into compliance with CMMC but it is also challenging for small businesses to meet the requirements for certification. DOD should focus on ways to help small businesses meet CMMC requirements as they make up more than three-quarters of the Defense Industrial Base. What can DOD do to encourage prime contractors to help their sub-contractors, particularly small businesses, come into compliance with CMMC?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. The range of cybersecurity threats to the United States, the Department of Defense, and the industrial base is real and growing. Past approaches are not sufficient to meet these evolving threats.

Cybersecurity rests on a partnership between government and industry, working together to address growing cybersecurity threats with a robust response to protect our infrastructure, information (including operational information as well as technical data for weapon systems), and supply chains, including software, telecommunications, and data systems.

Accordingly, PSC supports the idea of DOD pursuing a unified cybersecurity standard based on 'best practices' to secure the industrial base and for examining programs that may assist small businesses with cyber hygiene and the costs for addressing vulnerabilities, including Project Spectrum and the Trusted Capital Program.

Other options include having DOD provide the infrastructure—the servers, the security structure, etc.—so that a small business can operate without having to own it themselves. Of course, part of the problem is you give up some of your privacy and rights if you are participating in a government-operated program. Another option is for large contractors to provide that structure for their small business sub-contractors. This would require new authorities and funding to implement.

Additionally, small businesses—like companies of all sizes—would benefit from increased transparency on the requirements, timelines and compliance costs that the Department will impose.

However, while these and similar programs may contribute to a more secure ecosystem and to the ability of small businesses to achieve and afford compliance with CMMC, they are not enough. Standards evolve more slowly than the threat. A compliance-focused approach looks back, rather than forward. Rules that apply to DOD only, or even only to all government contractors, are too narrow in their reach. A nationwide approach is needed.

IMPACT OF DECOMMISSIONING ON MAINTENANCE AND REPAIR WORK—BOTH WITNESSES

26. Senator HIRONO. Ms. Lord, decisions and rumors about which ships are slated to be decommissioned can have unintended consequences on companies that are contracted to perform ship repair and maintenance work. What can DOD do to mitigate the impact of decommissioning on ship repair and maintenance contractors?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

27. Senator HIRONO. Ms. Lord, Mr. Berteau, What can DOD do to encourage companies to remain in the Defense Industrial Base even when they lose out on contracts or a decision is made to divest of their product?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. In addition to improving the overall acquisition environment, two improvements DOD could make to keep companies in the industrial base are better business forecasts and improved contract award debriefings.

Business forecasts

Congress can and should provide companies with additional information on their specific contracting opportunities and on the overall market landscape. Greater transparency in government procurement opportunities and approaches help companies have the stability and predictability to remain in the marketplace if/when they choose.

Federal contractors rely on procurement forecasts to conduct business planning activities and better meet the needs of government. The Committee should propose requirements for agencies to provide improved, timely information to the public on acquisition forecasts, choices of instruments, source selection criteria, contract types, and cancelled solicitations.

A procurement forecast is often the first step for those companies who want to contract with DOD. Yet many forecasts contain incomplete, inconsistent, or out-of-date information and the availability of this information is wildly varies across the Department and federal agencies. PSC released its 4th annual Business Forecast Scorecard, reporting on 62 federal agency on-line forecasts of coming contracts. You can find the results here, followed by this press release. Some DOD entities received favorable scores, but others did not, and some are missing entirely. PSC would support Congressional efforts to require DOD to report on progress improving its forecasts to increase the value to contractors who use them to remain or enter the market.

Enhanced Debriefings

Similarly, the Congress took a step toward assisting small businesses by enacting Section 818 of the Fiscal Year 2018 NDAA. This provision required DOD to provide comprehensive debriefings to offerors, to help them understand what went right and wrong with their bid and how to improve in the future.

This provision was implemented initially by a class deviation and then a final DFARS rule. PSC's anecdotal evidence suggested that these debriefings can be valuable when adequately provided but are neither well known nor widely utilized. PSC requests Committee efforts to review the use and value of the debriefings provided by DOD since Sec. 818 was implemented.

QUESTIONS SUBMITTED BY SENATOR JACKY ROSEN

MAINTAINING OUR DEFENSE TECHNOLOGICAL EDGE

28. Senator ROSEN. Ms. Lord, global competition, declining R&D, contracting challenges, and the STEM workforce gap are a few impediments eroding our technological edge with adversaries. I'd like to get your thoughts on an issue I've raised before in this committee—the “valley of death,” which is the point in the DOD innovation cycle when cutting-edge technologies die before they can win a contract to produce software or equipment at scale. One of the gaps in the defense technology development process is the lack of private capital interest in defense-centric startup companies. What are specific steps the Department of Defense can take to improve

the transition of successful technology prototypes to the point of production, and then rapidly field these technologies at scale so that we can leverage technology to better compete with our adversaries? How can the Department of Defense better incentivize private capital investments in small to medium size defense companies and does it need any new authorities to do so?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

QUESTIONS SUBMITTED BY SENATOR MARK KELLY

STEM EDUCATION

29. Senator KELLY. Ms. Lord and Mr. Berteau, in 2018 the previous administration released an analysis of the resiliency of the U.S. manufacturing and defense industrial base. The analysis identified a few challenges driving risk within our defense industrial base, one of them being a decline of STEM-related skills within the labor force, particularly among younger Americans. Over time this decline can result in a lack of innovation, placing our technological and competitive edge at risk. This is an issue that I've focused on as Chair of this committee's Emerging Threats and Capabilities panel—because we need these skills to continue to outcompete countries like China. In your view, what concrete steps can this Congress take to curtail that decline and promote an increase in STEM-related skills?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. For STEM-related workers, as for the entire federal and contractor blended workforce, PSC believes that creating and supporting a more robust United States-based workforce in the defense industry is the best way to promote such an increase. Barriers to this include excessive emphasis on lowest-price contracts without regard to maintaining the long-term workforce needed, the challenges in security clearances for contractors and in providing reciprocal recognition of clearances between agencies, and a focus on input in contracts instead of outcomes.

IMPACT OF EXECUTIVE ORDERS ON EXISTING CONTRACTS

30. Senator KELLY. Ms. Lord, I am curious about your views regarding the impact of inflation on the defense industrial base. My office has heard concerns from industry that DOD has been slow to adjust agreements to reflect the realities of inflation, and that the Department has not been forthcoming in adjusting contracts generally to reflect certain realities, such as when changes are made to contracts at the government's insistence to comply with a new Executive Order. These changes have real impacts on the costs for contractors that we count on to deliver national security critical systems. In your view, does failure to account for costs impact the industrial base?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

QUESTIONS SUBMITTED BY SENATOR JAMES M. INHOFE

MUNITIONS—AMMUNITION

31. Senator INHOFE. Ms. Lord, we discussed a lot about guided munitions, such as stingers. However, I also have concerns about ammunition supply chain vulnerabilities. My understanding is a little-known mineral compound, called antimony trisulfide, plays a unique role in its application for primers. Antimony primarily comes from and is processed in China, but also from Russia. I worry that without a domestic source and processing capabilities of this little-known compound, that is inherent and strategically important to the lethality of our armed forces, we will, in the not so distant future, run into ammunition supply shortages. Did you know this about antimony and do you think we need to secure domestic sourcing and processing capabilities for not just antimony, but a variety of other minerals that are almost entirely sourced from China and are at the same time strategic components in our national security platforms?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

QUESTIONS SUBMITTED BY SENATOR ROGER F. WICKER

ESTIMATED INFLATION RATE

32. Senator WICKER. Ms. Lord and Mr. Berteau, in preparing the budget for fiscal year 2022, the Department of Defense used 2.2 percent for its predicted inflation rate. Furthermore, in preparing the budget for fiscal year 2023, the Department of Defense used 2.6 percent for its predicted inflation rate. Are the DOD's estimates of inflation realistic for 2022 and 2023?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. The estimate for fiscal year 2022 may have seemed adequate at the time the president's budget was submitted, but it was clearly unrealistic by the time fiscal year 2022 appropriations were enacted in March of this year. While inflation for fiscal year 2023 is harder to predict, it is unlikely that the assumptions in the fiscal year 2023 President's Budget will reflect reality.

Inflation, including controlling future costs and recovering actual costs incurred, is a top and immediate concern for the contractor community and an issue that cannot wait for the fiscal year 2023 appropriations bills to be enacted. Contractors across the board are seeing dramatic increases in their costs—for materiel at every step of their supply chains, for transportation, and for the skilled labor necessary to provide much-needed capabilities in support of federal missions.

While component and raw material supply chain concerns have been regularly assessed and discussed, the impact of inflation on our contractor workforce has been not received the attention it deserves. With wage growth of roughly 8 percent year over year, a contractor that operates on a 5 percent margin may not be able to absorb wage growth that outpaces that margin and still stay in business. This is needs to be urgently addressed.

Industry will suffer if DOD tries to address the impact of inflation one contract at a time. Thanks to years of low inflation, few current contracts include the contract clauses that would allow companies to request price adjustments to recover inflation-related costs. With hundreds of thousands of contracts every year across a variety of agencies and sub-agencies, it is not possible to amend every relevant contract.

Rather, contracting officers need guidance that would cover all contracts—"blanket" guidance, so to speak. The Office of Management and Budget (OMB)—or the heads of agencies if OMB does not act—should issue such guidance to their program and contracting officers that would let companies recover inflation-related costs, subject to the availability of funds.

In the case of one agency, the General Services Administration removed the cap on the number of requests for equitable price adjustments (EPAs), easing just one of several constraints. GSA's temporary moratorium on the limits to these requests is a positive step but it (a) does not make more money available; (b) does not direct contracting officers to proactively allow for EPA requests, when funds are available; and (c) does not provide an expedited timeline for consideration of such requests. Currently, there is a tight time limit at the front end for filing requests, but there is no real time limit for how quickly the government processes payments to contractors.

Consistent with Part 1.6 of the Federal Acquisition Regulation (the FAR), government-wide guidance would provide contracting officers with both an affirmative responsibility on the individual contract, but also a responsibility to maintain the long-term viability of the business base that's supporting the government across the board.

This could and should be done quickly, and without legislation. As an example, the government can look to the beginning of the pandemic, when OMB guidance instructed contracting officers across the Federal Government to maximize teleworking for contractors, even if there was no clause in the contract that permitted such teleworking. The government did not need to modify each contract. All that guidance did was provide direction to the contracting officers to make that decision. The same thing could—and should—be done very quickly with recovering costs from inflation.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

SHRINKING DEFENSE INDUSTRIAL BASE

33. Senator SULLIVAN. Ms. Lord and Mr. Berteau, the recently released DOD report, "State of Competition within the Defense Industrial Base" says that "[o]ver ap-

proximately the last three decades, the number of suppliers in major weapons system categories has declined substantially: tactical missile suppliers have declined from 13 to 3, fixed-wing aircraft suppliers declined from 8 to 3, and satellite suppliers have halved from 8 to 4. Today, 90 percent of missiles come from 3 sources.” In your estimation, what is the most effective way to lower barriers to entry for small businesses to adequately compete for defense contracts?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. One measure of the defense industrial base is the number of companies that participate as prime contractors or subcontractors. A recent report from the Center for Strategic and International Studies cited the drop in overall numbers of companies with one or more prime contracts from DOD, from more than 60,000 in 2009 to roughly 41,000 in 2020. Experience tells us, though, that those numbers alone are not the full story.

More than 25,000 of those 41,000 companies in 2020 are small businesses, and their contracts are frequently awarded through various programs that “set aside” awards only for eligible small businesses. This does help keep small businesses going, until they outgrow their eligibility for those “set-aside” contracts. PSC analysis shows that once such companies “graduate” from small-business status, their success in winning DOD contracts drops precipitously. In other words, DOD and federal small business policies and practices punish growth rather than rewarding it. This is not the way to attract more companies to do business with DOD.

For many small commercial entities—who often have limited access to capital and other critical resources—the barriers to entry for the federal marketplace can be prohibitively high. For example, requirements for specific accounting systems, potentially burdensome reporting and disclosures, and relevant past performance can deter such small businesses, who do not have the scope and scale to operate in the manner the government demands and cannot afford to stay in business to comply with existing and constantly evolving requirements.

PSC has long recommended that the Congress conduct a review of the government measures small business participation, specifically the reliance on information related to prime contract dollars versus small business utilization at prime and subtier contracts. Alternative methods such as the number of businesses participating in the federal marketplace, job opportunities that result from small business and set-aside programs, and/or additional subcontracting requirements may provide a clearer picture and better achieve the goals of the government’s small business policies.

Currently federal agencies neither measure, track, nor reward small business funding and jobs generated by small business subcontractors. They only get credit in government scorecards—or in annual performance reviews for senior executives—for dollars awarded to small business prime contractors. PSC believes that innovation can come from subcontractors as well as primes and that the government should recognize all small business jobs and funds, not just some.

The SBA could base their small business score on the total dollar value of the award, considering both prime and subtier contracts to small business concerns with equal weight in their annual scorecard. This would better reflect the participation of small businesses in the federal market.

For additional information and suggestions specific to DOD, please see PSC’s response to the “Notice of Request for Comments on Barriers Facing Small Businesses in Contracting with the Department of Defense.”

34. Senator SULLIVAN. Ms. Lord and Mr. Berteau, if we fail to correct this trend of shrinking competition in the defense-industrial base, how would this impact our ability to prepare for and prevail in a great power conflict?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

Mr. BERTEAU. For centuries, one of America’s great national security strengths has been the dynamic partnership of government and the private sector. This partnership is vital. In DOD, contractors provide a wide range of goods and services to the warfighter, as well as the components and agencies of the Department. These contractor contributions are essential maintain national security, and the government benefits from a strong, diversified national interest business base to support its current and emerging requirements.

This is especially true and relevant as we look at potential great power conflicts and the technology that would be utilized by our adversaries in a conflict. Diversity and variety in the government contractor community brings diversity and variety in the solutions that could be procured and deployed.

CRITICAL MINERALS SOURCING

35. Senator SULLIVAN. Ms. Lord, in 2019, the Lynas Rare Earths company was awarded a \$30.4 million contract under a Defense Production Act Title III technology agreement to establish domestic processing capabilities of critical minerals. This award aligns with the previous executive orders to ensure supplies of rare earth elements and strengthen defense supply chains. Fortunately, other companies are answering the call as well; undertaking similar processing and refining projects across the country, including at locations like the Bokan mine project in Alaska. Do you believe the DOD should continue to provide DPA Title III awards to companies answering this requirement?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

36. Senator SULLIVAN. Ms. Lord, how does over-regulation regarding environmental considerations inhibit domestic critical mineral production and processing capabilities?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

37. Senator SULLIVAN. Ms. Lord, globalized competition in the critical minerals space has presented substantial challenges to domestic and allied manufacturers, whom often must exit the industry amid a lack of comparative advantage. As a result, the United States has come to rely heavily on foreign sources for critical weapon system components. Do you believe we are doing enough to create domestic supplies of critical minerals to address our over-reliance on foreign resources?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

38. Senator SULLIVAN. Ms. Lord, how should we balance cost-effective procurement with national security concerns about foreign sourced materials?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

REQUESTS FOR EQUITABLE ADJUSTMENTS

39. Senator SULLIVAN. Mr. Berteau, unprecedented levels of inflation, combined with a delayed appropriations bill this previous year, has significantly impacted the defense industrial base. Deputy Secretary Hicks was recently quoted saying that despite this, the DOD has “not seen a huge influx” of equitable adjustments to contracts. In your written statement submitted to this committee for this hearing, you state, “[i]f I were still in DOD, rather than saying that we don’t yet see a problem because few requests have been received, I would try to get in front of this problem by estimating the additional funding needed to cover this cost growth and looking at ways to meet those costs.” What must be done to better enable the defense industrial base to deal with consistently delayed appropriations and current inflationary pressures?

Mr. BERTEAU.

Delayed Appropriations

Delays in appropriations harm the entire Federal Government but hit DOD particularly hard. Agency budget officers hold back needed funds until at least one month after final appropriations are enacted, which for this fiscal year meant mid-April, more than half way through the fiscal year. The congressionally-chartered commission on DOD’s Planning, Programming, Budgeting, and Execution (PPBE) system will hopefully address this question, but PSC believes that the best way to deal with “consistently delayed appropriations” is to stop doing them.

On-time appropriations enable DOD to contract faster and better and to get the results sooner. In a competition with China, achieving such timely results are critical. Continuing resolutions would be a top item in the wish list of those nations who would undermine America and freedom around the world. PSC urges Congress each year to enact appropriations in advance of the start of the fiscal year. For DOD, this has happened exactly once in the past 13 years.

Inflation

Inflation, including controlling future costs and recovering actual costs incurred, is a top and immediate concern for the contractor community and an issue that cannot wait for the fiscal year 2023 appropriations bills to be enacted. Contractors across the board are seeing dramatic increases in their costs—for materiel at every step of their supply chains, for transportation, and for the skilled labor necessary to provide much-needed capabilities in support of federal missions.

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Rather, contracting officers need guidance that would cover all contracts—“blanket” guidance, so to speak. The Office of Management and Budget (OMB)—or the heads of agencies if OMB does not act—should issue such guidance to their program and contracting officers that would let companies recover inflation-related costs, subject to the availability of funds.

Consistent with Part 1.6 of the Federal Acquisition Regulation (the FAR), government-wide guidance would provide contracting officers with both an affirmative responsibility on the individual contract, but also a responsibility to maintain the long-term viability of the business base that’s supporting the government across the board.

NAVY SHIPBUILDING PLAN

40. Senator SULLIVAN. Ms. Lord, released last week, the Navy’s 30-year shipbuilding plan states, “[t]he buildup in the 1950s and 1980s, followed by “bust” periods of little production, each led to the loss of portions of our shipbuilding industrial capacity,” and that, “[w]e are at a level of fragility in the supplier base, amplified by COVID impacts, such that without consistent and continuous commitment to steady and executable acquisition profiles the industrial base will continue to struggle and some elements may not recover from another ‘boom/bust’ cycle.” Given the evolving requirements that emerge from a dynamic geopolitical landscape, how do we attain more consistency in these production cycles?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

41. Senator SULLIVAN. Ms. Lord, new classes of ship such as the Light Amphibious Warship (LAW) and various unmanned vessels could be built in smaller shipyards, increasing competition and driving costs down for these contracts while allowing larger shipyards to focus on large surface combatants, amphibious ships, and nuclear submarines. What are your thoughts on the role smaller shipyards can play in delivering new vessels to accelerate the Navy’s ship growth?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

HYPERSONICS

42. Senator SULLIVAN. Ms. Lord, one sector that has been stifled by reduced competition is the testing and production of hypersonics. The recently released DOD report on the “State of Competition within the Defense Industrial Base,” says that “[w]ithin this sector, many primes, first-tier subcontractors, and first-tier material suppliers are positioning themselves to acquire lower-tiered hypersonic contractors and material suppliers. This vertical integration will likely lead to reduced competition and may eliminate it altogether.” How should we combat the trend of vertical integration in the hypersonics market and defense industrial base as a whole?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

SMALL BUSINESSES

43. Senator BLACKBURN. Ms. Lord, with a substantial decline in small business competition, what are the immediate and long-term implications of only having approximately five prime contractors?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

44. Senator BLACKBURN. Ms. Lord, what are the benefits and disadvantages between consolidation and competition within the DIB?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

CYBERSECURITY

45. Senator BLACKBURN. Ms. Lord, what steps are companies that provide critical components to the Department of Defense (DOD) taking to mitigate adversary malicious cyberactivity?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

46. Senator BLACKBURN. Ms. Lord, how is the DOD supporting these companies, and is this a system-wide or ad hoc issue?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

47. Senator BLACKBURN. Ms. Lord, what shortfalls do you identify in the current industrial base and acquisition policies and practices concerning DIB cybersecurity?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

NATIONAL TECHNOLOGY AND INDUSTRIAL BASE (NTIB)

48. Senator BLACKBURN. Ms. Lord, how have Beijing's malign actions influenced the role of NTIB integration with allies and the commercial marketplace?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

MUNITIONS INDUSTRIAL BASE

49. Senator BLACKBURN. Ms. Lord, how can we address the gap between production time of munitions and energetics production lead time?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

50. Senator BLACKBURN. Ms. Lord, how is the crumbling infrastructure of our government energetics production facilities a single point of failure in a protracted conflict?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

QUESTIONS SUBMITTED BY SENATOR JOSH HAWLEY

CHINESE PRINTED CIRCUIT BOARDS

51. Senator HAWLEY. Ms. Lord, I led efforts last year to pass legislation phasing out the Department of Defense's use of Chinese printed circuit boards inside of our Nation's critical defense systems. We ultimately succeeded, but it was a multi-year fight, in large part because major corporations and their allies seemed determined to put profit ahead of protecting our national security. What should Congress or the Department itself do going forward in order to overcome this kind of resistance from industry, so we can end our reliance on Chinese inputs for some of our most sensitive military systems?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

DEFENSE INDUSTRY CONSOLIDATION

52. Senator HAWLEY. Ms. Lord, over the past few decades the defense industrial base has increasingly become consolidated, where now only a handful of companies are conducting the critical defense and aerospace work for the Department. In your opinion, how has the consolidation of the defense industrial base impacted DOD's ability to acquire the capabilities it needs, when it needs them, at reasonable cost?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

53. Senator HAWLEY. Ms. Lord, how should we address the fact that DOD is now effectively reliant on just a handful of prime defense contractors for many—most, even—of the most important programs currently underway?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

EFFECTS OF INFLATION

54. Senator HAWLEY. Ms. Lord, we are currently experiencing some of the worst inflation our country has ever seen. How have these soaring prices, high inflation, and supply chain disruptions impacted our defense industrial base and its ability to do the critical national security work needed to keep pace with competitors such as China and Russia?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

SOLE-SOURCING LIMITS ON PRODUCTION SURGE CAPACITY

55. Senator HAWLEY. Ms. Lord, according to recent reporting, the Air Force relies on a sole-source vender to repair its military aircraft. If surge capacity is needed, how would this type of reliance on a sole-source impact our ability to surge effectively in the event of a potential conflict in the Indo-Pacific?

Ms. Lord did not respond in time for printing. When received, answer will be retained in committee files.

