S. HRG. 119–77

DEFENSE MOBILIZATION IN THE 21ST CENTURY

HEARING

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED NINETEENTH CONGRESS

FIRST SESSION

MARCH 6, 2025

Printed for the use of the Committee on Armed Services

Available via http://www.govinfo.gov

U.S. GOVERNMENT PUBLISHING OFFICE
60–351 PDF WASHINGTON : 2025

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DEFENSE MOBILIZATION IN THE 21ST CENTURY

THURSDAY, MARCH 6, 2025

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 Deb Fischer presiding.

Committee Members present: Senators Fischer, Rounds, Ernst, Sullivan, Schmitt, Sheehy, Reed, Shaheen, Blumenthal, Hirono, Kaine, and King.

OPENING STATEMENT OF SENATOR DEB FISCHER

Senator FISCHER. Good morning. I would like to call the hearing today to order. The hearing is on defense mobilization. I am pleased to welcome three witnesses to testify today.

Jerry McGinn is a widely published former DOD [Department of Defense] official who worked at the heart of the Pentagon's industrial base efforts.

Chris Michienzi brings a similar resume. She spent much of her career inside the Industrial Base Policy Office at DOD.

Dave Berteau comes to us from the Professional Services Council. Before that, he served as the Assistant Secretary of Defense for Logistics and Materiel Readiness, early put industrial base revitalization—there seems to be an error here. Before that he served as Assistant Secretary of Defense for Logistics and Materiel.

Welcome to the witnesses. Senator Wicker, the Chairman of the Committee, is detained for a little bit, and when he comes he will enter his testimony into the record.

[The prepared statement of Senator Roger F. Wicker follows:]

PREPARED STATEMENT BY SENATOR ROGER F. WICKER

Today, we face an uncomfortable truth: The United States is unprepared for a protracted conflict. This is not conjecture. The fact is borne out by history, current assessments, and the demands of modern warfare. The Department of Defense and the defense industrial base are not ready to mobilize to meet a large-scale extended conflict.

If large-scale conflict were to erupt, critical systems would be depleted in a matter of days. We would probably lose anti-ship cruise missiles, air defense missiles, and even unguided bombs more quickly than we could replenish them. Our industrial base does not have the capacity to surge production because we have not made the plans or investments that would give it that ability. After decades of off-shoring, our critical minerals and rare earth supply chains are brittle. Often, our adversaries control these supply chains. We put up roadblocks that make it hard for commercial companies to enter our defense industrial base. The Pentagon rarely coordinates

with other government agencies like the Department of Commerce and FEMA. Both would be necessary for mobilization. The DOD has very little analytical capability to develop strategies that would address protracted conflict, strategies that it could then give to senior defense leaders and Congress.

This Committee is going to address these problems. We will get to work this year, in the National Defense Authorization Act (NDAA) for fiscal year 2026. To begin that process, I am pleased to welcome three witnesses to testify today. Jerry McGinn is a widely published former DOD official who worked at the heart of the Pentagon's industrial base efforts. Chris Michienzi [MACKENZIE] brings a similar resume. She spent much of her career inside the Industrial Base Policy office at DOD, and Dave Berteau comes to us from the Professional Services Council. Before that, he served as the Assistant Secretary of Defense for Logistics and Materiel Readiness. I appreciate all of you for being here to share your expertise on this crucial problem.

Industrial mobilization does not happen overnight. It requires years of pre-war preparation during peacetime. World War II showed us the power of mobilizing 20,000 companies before conflict began. Today, we lack that foresight and scale. Clearly put, industrial base revitalization is not optional. It is existential.

We must take action by rebuilding domestic manufacturing. The United States should be able to produce what we need without being reliant on foreign suppliers for resources from steel to semiconductors. Our manufacturers will not be able to surge capacity in a crisis of tomorrow unless we make investments today in idle plants, worker retraining, and material prepositioning. These actions would echo the successful, pre-World War II planning efforts, but they would be tailored to today's threats. We will need to expand and streamline the Defense Production Act and undertake a wholesale modernization of the Pentagon's industrial base policy office.

We must explore the use of purchase commitments and lean on the Office of Strategic Capital to provide loans and loan guarantees for crucial production lines. New sources of supply will need to be qualified, with an emphasis on advanced manufacturing technologies that can quickly shift between civilian and military production. We must incorporate our allies and partners by making it possible to co-produce weapons with them.

This challenge is bigger than the Pentagon alone. Numerous agencies will have to cooperate. The Department of Commerce must help secure supply chains. The Treasury Department will need to freeze the assets of adversarial companies. Energy will drive power production, and Labor will train workers. Every corner of American society—private industry, universities, even local communities—must contribute, just as they did when Ford built bombers and Kaiser churned out Liberty ships.

The cost of inaction would be catastrophic. It would far exceed the cost of action right now. A lengthy war would expose our fragility. One conflict could erode deterrence and embolden adversaries. We cannot repeat the complacency of the interwar years, when unpreparedness invited aggression. Congress must act now to fund stockpile expansion, incentivize domestic production, and mandate interagency plans for rapid mobilization. This is not about one weapon or one war. We need to restore America's ability to deter aggression and to defend itself and its allies if necessary. I look forward to hearing from our esteemed witnesses on how we bridge this gap. The clock is ticking, and history will judge us by our resolve. I now recognize my friend and Ranking Member, Senator Reed.

With that I would like to recognize the Ranking Member, Senator Reed.

STATEMENT OF SENATOR JACK REED

Senator REED. Thank you very much, Senator Fischer, and I want to welcome our witnesses. Dr. Christine Michienzi, Dr. Jerry McGinn, and Mr. David Berteau, thank you very much for joining us.

This is a very important conversation, and we are fortunate to have such a distinguished panel before us.

Throughout history, we have consistently seen nations with well-prepared militaries lose to nations with superior industries. The ability to deploy well-trained troops and advanced weapons to the front line is important in any armed conflict, but the ability to sus-

tain those forces with adequate amounts of supplies and munitions is just as important.

The Defense Acquisition University defines industrial mobilization as, quote, "the process of marshaling the industrial sector to provide goods and services, including construction, required to support military operations and the needs of the civil sector during domestic or national emergencies." Put more simply, industrial mobilization represents the Defense Department's ability to call on the private sector in times of crisis.

I am concerned that the United States is not currently prepared to do this effectively in a sustained, large-scale or protracted conflict. The war in Ukraine and the incredible amount of military support we have provided has been vital for Ukraine's survival, but it has exposed our own industrial base vulnerabilities. We have learned that our capacity to provide vast amounts of artillery shells, precision munitions, and other modern weapons in a rapid, responsive way, is much more limited than we realized. Our capacity has expanded significantly over the past 3 years, but we have relied on existing tools such as the Defense Production Act to overcome supply chain problems and increase production. Any future conflict we may face, particularly in the Indo-Pacific, will require much greater levels of military-industrial capacity, as well as interagency coordination to leverage a whole-of-government response.

The process for large-scale mobilization dates back the World War II era. When America entered the war, there was an enormous increase in military production of ships, planes, artillery, vehicles, and more, which eventually earned us the title as the "Arsenal of Democracy." However, we must not forget that the industrial ramp-up actually began long before the war started, and did not yield significant results until we were years into the fight. This is an important lesson we should remember today. Industrial mobilization does not occur overnight.

Further, while we have a useful model from our experience in World War II, it is not a blueprint for the future. We must recognize that the industrial base of today is very different from any period in the past, especially considering our reliance on information technology and software-based systems. We will need to mobilize different sectors of the economy and workforce unlike any time before. Moreover, we cannot assume, as we did in World War II, that our production facilities will be safe from kinetic or cyberattack or that we will have uncontested supply lines for materials. I would ask our witnesses to discuss the lessons they have drawn from the war in Ukraine and what processes they believe need to start now so that the United States is prepared to win the next contest.

This Committee has spent years examining the challenges around this issue. We have worked to identify supply chain problems and to improve investments in long-lead items for the military. In recent National Defense Authorization Acts, Congress has directed the Department of Defense to stress-test its industrial mobilization and supply chain capabilities. The Department has found a number of challenges, including integration of software and information technology, but it is clear that material and labor shortages are the biggest problems to increasing production.

Indeed, there is nothing more important for our defense mobilization strategy than our workforce, the men and women in the defense acquisition corps and the personnel in the defense industrial base. We cannot solve our industrial mobilization and acquisition problems without an adequate supply of skilled and trained workers.

I would note that acquisition reform is necessary, but it is not sufficient to address the broader issues of industrial mobilization. In a crisis, having an acquisition system that is efficient and effective is important, but production capacity is far more so. Many of the policies and processes we put in place in peacetime for the sake of efficiency may actually be counterproductive in a prolonged crisis. That is why I am so troubled by the mass firings of the defense civilian workforce which the Administration is undertaking right now.

The urgency around these issues has never been clearer. As Russia continues its onslaught against Ukraine, and China calculates its own potential expansion, we have to make sure our defense industrial base is able to adapt, scale, and outpace our competitors in the 21st century. I would ask our witnesses' thoughts on how we might overcome this challenge, and how we can ensure that the workforce in place is there to do so.

Thank you again to our witnesses, and thank you, Senator Fischer.

Senator FISCHER. Thank you, Senator Reed. Again, welcome to the panel.

Dr. McGinn, you are recognized for your opening statement.

STATEMENT OF JOHN G. MCGINN, PH.D., EXECUTIVE DIRECTOR, GREG AND CAMILLE BARONI CENTER FOR GOVERNMENT CONTRACTING, GEORGE MASON UNIVERSITY'S COSTELLO COLLEGE OF BUSINESS

Dr. MCGINN. Thank you, Chairwoman Fischer and Ranking Member Reed and members of the Committee. Good morning. It is a privilege to be here and thank you very much for having this hearing on this important topic, which is a critical issue facing the Nation.

The United States has the most lethal and capable fighting force in the world. Full stop. But as we have seen in recent war games, as well as in challenges that Senator Reed alluded to in production capacity for munitions, we have real industrial base capacity challenges.

These challenges led me to do a study that addressed the following question, "How well is the U.S. defense industrial base prepared to mobilize in the event of a major conflict?"

The short answer, published in our report, "Before the Balloon Goes Up," is that our ability to win a major war with a near-peer competitor is very much at risk. Unless senior officials across Washington and industry pursue bold actions immediately, we face potentially catastrophic consequences should the balloon go up in East Asia or elsewhere.

Drawing on historical and recent case, we developed a series of recommendations to enable industrial mobilization. I would like to

focus on two areas specifically. One is the authorities and planning capabilities, and then second, our ability to scale.

In the area of authorities and planning, as you all know very well, the government's ability to mobilize industrial base starts with our legal authorities and the policies and plans. The famous War Production Board of the Arsenal of Democracy in World War II helped organize government and industry to address those challenges. Similarly, during the Iraq and Afghanistan wars, the development of the MRAP, the Mine-Resistant Ambush Protective vehicles, the use of the Defense Production Act was critical to help produce those vehicles, and then we all saw the power of DPA [Defense Production Act] during COVID.

Overall, our legislative authorities are strong, but I think there are several opportunities before us. The first, as you know, DPA is up for reauthorization this year. DPA has had tremendous impact on rebuilding and shoring industrial base capacity, and it is essential to reauthorize DPA and keep it focused exclusively on national security issues, particularly threats from China.

DPA Title III is an important tool for building industrial capacity. The use of purchase commitments under Title III would be a great way to enable strong demand signal for industrial capacity and capabilities such as specialty chemicals and critical materials. But currently, purchase commitments are not allowed, or not enabled, because the DPA funds are being appropriated with procurement dollars, which expire, as opposed to traditional DPA appropriations, which do not expire.

there is a real opportunity in another section DPA, Title VII, where we have two sections of authority that have not been used since the cold war, that are really powerful. One is section 708, which allows the creation of voluntary agreements between government and industry that allows collaborative industry-government engagement on critical supply issues. We have a few of these available now, but if we would really kind of invest in these efforts, we could have that collaboration we had during the War Production Board years.

The second section is Section 710, which allows the creation of what is called a National Defense Executive Reserve, which is essentially a group of industry experts that can come into government during a crisis. This is a tremendous authority that has not been used since the 1980's.

the other thing we need to do on the planning side is we have to restart mobilization planning. That ended in the early 1990's. We have to build this across the U.S. Government, and then we also have to relook some of the executive orders that govern DPA.

Transitioning from authorities to our capabilities, we really have to focus on turbocharging our efforts to change how we design, resource, acquire, and sustain capabilities. As the Ranking Member talked about, it is not just about acquisition reform. It is about how we buy. We have to design things for production. We have to focus less on requirements and have more adaptive ways to create technologies. More resources would be helpful, of course, but another way that we can go beyond appropriations is to really tap the power of U.S. capital markets as one of our strengths. So building on the authority that you all created with the Office of Strategic

Capital, there is opportunity to grow the scale of investments, so private capital can make larger bets in investments.

On the areas of production, we have gotten the prototyping game down, but it is really now the time to transition more to production, and there are ways to do that through other transaction, follow-on production agreements, more buying of attritable systems and unmanned systems, and the like.

Then finally the area of sustainment is, frankly, our biggest challenge, being able to do logistics at scale, and there we can actually do things like create contract line items, or CLINs, that develop surge capacities. So instead of having canalized, very limited supply runs, you can have the ability to grow that. Also, second sourcing and multi-sourcing are important options to be able to create more capacity.

One final point I would like to make is on allies and partners. Our recent experience has made it crystal clear we need a larger industrial base. Engaging our closest allies, those with whom we go to war, through robust industrial partnerships will help us build overall capacity.

Unfortunately, time is not on our side. If the Davidson window is correct, we have 2 years, and it takes a while, as the Senator alluded to, to mobilize. The Trump administration and Congress, in partnership with industry and our allies and partners, must harness innovation, manufacturing capacity, and other means to unleash the true strength of our industrial base to deter our enemies in today's very dangerous world. The time to do this is now, before the balloon goes up. Thank you very much.

[The prepared statement of Dr. John G. McGinn follows:]

Why We Need to Address Industrial Mobilization Now, Before the Balloon Goes Up

John G. (Jerry) McGinn, Ph.D.
Executive Director, Greg and Camille Baroni Center for Government Contracting
Costello College of Business, George Mason University

Testimony before the Senate Armed Services Committee
March 6, 2025

Dear Chairman Wicker, Ranking Member Reed, and Members of the Committee:

Thank you very much for the opportunity to speak with you today. I am honored to discuss industrial mobilization with all of you and very much look forward to your perspectives on this critical issue facing our nation.

The United States has the most lethal and capable fighting force in the world. Nonetheless, our munitions stocks will be emptied the first weeks of a major conflict – today's war games have shown this. Significant production challenges supplying munitions and precision guided missiles to Ukrainian and Israeli forces have underscored our inability to rapidly replenish weapons and major systems.

These challenges led me to conduct a study that addressed the following question, ***"How well positioned is the U.S. defense industrial base to mobilize in the event of a major conflict?"***

The short answer, published in our report last fall, is that our ability to win a major war with a near-peer adversary is very much at risk.[1] Profound challenges continue to stymie progress in our defense industrial base despite significant leadership attention and resources. Unless senior officials across Washington and industry pursue bold actions immediately, we face potentially

[1] John G. (Jerry) McGinn, *Before the Balloon Goes Up: Mobilizing the Defense Industrial Base Now to Prepare for Future Conflict*. The Greg and Camille Baroni Center for Government Contracting Report No. 10, October 3, 2024. Available at https://business.gmu.edu/news/2024-10/balloon-goes-mobilizing-defense-industrial-base-now-prepare-future-conflict (accessed March 4, 2025).

catastrophic consequences should the balloon go up—to use a phrase first popularized in World War I to signify the imminent start of conflict–in East Asia or elsewhere.[2]

During this study, we examined how the United States has mobilized its industrial base in response to various crises: the creation of the renowned arsenal of democracy during World War II (WWII); the development and deployment of the Mine-Resistant Ambush-Protected (MRAP) vehicle during operations in Afghanistan and Iraq; the response to the COVID-19 pandemic; and U.S. and allied efforts to support Ukraine's defense against the Russian invasion. **Table 1** illustrates the findings from these cases:

Table 1: Case Study Findings

Case study	Keys to success
WWII (1938-1945)	• Strong national leadership • Close and dynamic government-industry collaboration • Rapid development, iteration, and fielding of systems • Building and maintaining public support
MRAP (2006-2013)	• Senior leadership sponsorship • Utilization of established, largely foreign, designs • Rapid development and fielding • Flexibility in requirements • Multi-sourcing strategy
COVID-19 (2020-2021)	• Powerful authorities such as the Defense Production Act • Strong bipartisan consensus • Delivering at the speed of need
Ukraine (2022-present)	• Production capacity • Flexible acquisition practices to meet exigent circumstances • Addressing supply chain vulnerabilities and bottlenecks • Working with allies and partners to build overall industrial capacity

These findings helped us to identify a series of recommendations that can improve how the Executive and Legislative Branches, working with industry as well as allies and partners, enable our industrial base to deter and defeat national security threats. These recommendations are summarized in **Table 2**:

[2] This phrase originated in the deployment of observation balloons in the face of imminent enemy attack. See, for example, William Safire, "On Language: Balloon Goes Up On War," *New York Times*, February 3, 1991.

Table 2: Recommendations to Strengthen Mobilization

Element of Mobilization	Recommendations for Strengthening
Authorities	**1.** Keep the Defense Production Act (DPA) strictly focused on national security needs **2.** DPA Title I – Update executive orders and regulations **3.** DPA Title III – Delegate determination authority and use purchase commitment authority **4.** DPA Title VII – Relook the use of voluntary agreements and the National Defense Executive Reserve
Design	**5.** Design for production **6.** Dramatically simplify requirements processes
Resourcing	**7.** Increase defense funding levels **8.** Implement PPBE Commission recommendations, particularly o Transform the budget structure o Review and consolidate budget line items o Encourage improved in-person communications
Acquisition	**9.** Continue to prioritize open systems approaches **10.** Make production the pacing metric **11.** Maximize use of unmanned and attritable systems **12.** Contract for speed and surge o Increase the use of follow-on production Other Transactions Agreements o Establish surge CLINs **13.** Where possible, pursue second sourcing
Sustainment	**14.** Grow overseas sustainment capacity **15.** Create a SBIR-like tax to enable the second sourcing of parts and reduce supply chain bottlenecks **16.** Model surge requirements for future mobilization
Public Support	**17.** Leaders need to clearly state and restate the rationale for mobilization **18.** Make the tangible benefits of mobilization clear
Allies and Partners	Develop a true "Build Allied" approach by **19.** Prioritizing international industrial collaboration **20.** Promoting and funding exportability o Strengthen exportability incentives o Dramatically increase funding of the Defense Exportability Features program to spur increased exportability **21.** Establishing a Senate-confirmed DoD official to bolster global coordination with allies and partners **22.** Ensuring that technology transfer regimes facilitate increased international industrial collaboration o Closely monitor the implementation of AUKUS export control reforms o Closely monitor technology disclosure and foreign disclosure processes

The report describes these recommendations in detail, but for the purposes of today's discussion, I would like to focus on my recommendations in two critical areas:

1. Relooking our authorities and planning capabilities
2. Focusing on scale

1. **Relooking our Authorities and Planning Capabilities**

The government's ability to mobilize the industrial base starts with the legal authorities and the agency plans and policies to facilitate production, reduce bottlenecks in the supply chain, and otherwise streamline how government and industry can develop the capabilities and capacities to meet the needs of the country in a crisis. The War Production Board, for example, helped the Roosevelt Administration to organize government and industry and facilitate mobilization during WWII.[3] In the MRAP case, uses of the Defense Production Act in various manners demonstrated how the government could shortcut bureaucratic processes to meet exigent circumstances. We all saw firsthand the power of the DPA during COVID as well.

Overall, our legislative authorities are strong, but there are several opportunities for strengthening their uses, revitalizing DPA authorities that have not been used in decades, and restarting agency mobilization planning, all of which will strengthen the nation's ability to respond to crises:[4]

- **Keep the Defense Production Act strictly focused on national security needs**. The DPA was passed in 1950, and there are three active titles today.[5] Today, it is currently being used to great effect in reshoring and building industrial base capacity in areas such as rare earth processing, castings and forgings, and advanced batteries as well as countering foreign investment that impact national security. The increased use of DPA is welcome but its invocation to support domestic production of solar panels and heat pumps caused political controversy.[6] It is essential to keep DPA focused exclusively on essential defense and national security issues, in particular threats from China. Using DPA outside of direct national security purposes threatens "the viability of this unique tool for rebuilding a robust, resilient, and globally competitive American industrial base."[7]

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[3] Mark R. Wilson, *Destructive Creation: American Business and the Winning of World War II,* University of Pennsylvania Press, 2016*,* pp. 59-76.

[4] Most of these recommendations are summarized in Jerry McGinn, "How to further strengthen the Defense Production Act," *Defense News,* May 7, 2024. Available at https://www.defensenews.com/opinion/2024/05/07/how-to-further-strengthen-the-defense-production-act/ (accessed August 6, 2024).

[5] For a summary of the DPA's history and usage, see Alexandra G. Neenan and Luke A. Nicastro, *The Defense Production Act of 1950: History, Authorities, and Considerations for Congress*. *CRS Reports*, R43767, updated October 6, 2023. Available at https://crsreports.congress.gov/product/pdf/R/R43767 (accessed April 11, 2024).

[6] White House fact sheet, June 6, 2022. Available at https://www.whitehouse.gov/briefing-room/statements-releases/2022/06/06/fact-sheet-president-biden-takes-bold-executive-action-to-spur-domestic-clean-energy-manufacturing/ (accessed April 11, 2024); Press Release, House Energy and Commerce Committee Chair Cathy McMorris Rodgers, December 20, 2023. Available at https://energycommerce.house.gov/posts/chairs-rodgers-and-duncan-decry-administration-s-use-of-war-time-authority-to-subsidize-radical-rush-to-green-agenda (accessed April 11, 2024).

[7] William Greenwalt, Jerry McGinn, and Christopher Zember, "The Defense Production Act is helping rebuild the U.S. industrial base. Let's keep it that way," *Defense News,* June 15, 2022. Available at

- **DPA Title I – Update executive orders and regulations**. At the national level, the DPA is governed by a number of old and overlapping executive orders spanning numerous administrations that need to be refreshed and simplified. The Trump Administration should conduct a thorough review of relevant executive orders and regulations to better orient DPA policies and practices to address future national security challenges.[8]

- **DPA Title III – Delegate determination authority and use purchase commitment authority**. Title III is a tremendous tool for building industrial capacity. The non-delegable requirement for the president's signature on each DPA determination, however, has significantly slowed the process by which DPA projects are developed and executed. Allowing the delegation of that determination in the upcoming 2025 reauthorization of the DPA, perhaps to the Secretary level of those agencies with Title III authority,[9] would significantly streamline the development of Title III projects.

  Another significant improvement would be the use of purchase commitments under Title III. All existing Title III projects are purchases under Section 303 of the DPA, but the authority also permits multiyear purchase commitments. Purchase commitments would allow DoD to create a guaranteed demand signal for an industrial capability over a mutually agreed upon period, thereby reducing risks for industry to make their own investments.[10] Adding several purchase commitment projects could significantly help maintain capacity levels in areas such as critical materials and specialty chemicals to support future mobilization efforts. Purchase commitments, however, have not been an option recently because Congress has appropriated DPA funds over the past three years using standard Procurement funds which expire in two years, contrary to traditional DPA appropriations, which do not expire.

- **DPA Title VII – Relook the use of voluntary agreements and the National Defense Executive Reserve (NDER)**. *Two sections of DPA Title VII have been scarcely used since the end of the Cold War but present a tremendous opportunity for future industrial mobilization*. Section 708 permits the government to establish voluntary agreements or plans of action with industry "to help provide for the national defense."[11] The Administration, for example, could establish voluntary agreements to prepare stand-by industrial capacity for potential surge use during conflict. Further, these agreements could enable dynamic government-industry collaboration on production issues such as that

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https://www.defensenews.com/opinion/commentary/2022/06/15/the-defense-production-act-is-helping-rebuild-the-us-industrial-base-lets-keep-it-that-way/ (accessed April 11, 2024).

[8] Jerry McGinn and Daniel Kaniewski, "Where does the Defense Production Act Go from Here? Key aspects need strengthening," *Defense One,* November 24, 2020. Available at https://www.defenseone.com/ideas/2020/11/where-does-defense-production-act-go-here/170301/ (accessed April 11, 2024).

[9] Currently DoD, the Department of Homeland Security, the Department of Energy, and the Department of Health and Human Services have been delegated DPA Title III authority.

[10] Office of the Assistant Secretary of Defense (Industrial Base Policy) briefing, Defense Production Act Title III. Available at https://www.businessdefense.gov/ibr/mceip/dpai/dpat3/docs/DPA-TitleIII-Overview.pdf (accessed April 11, 2024).

[11] 50 U.S.C. §4558(c)(1); Section 708(c)(1) of the DPA. See also, Neenan and Nicastro, *The Defense Production Act, pp. 15-16.*

during WWII's War Production Board. Section 710 of Title VII also permits the President to establish a NDER, a volunteer group of industrial executives to support mobilization efforts. The Administration should examine the utility of this authority to form on-call groups of industry experts to serve in government during national emergencies. The Baroni team just completed a project addressing these two sections that can inform these efforts when published.

- **Restarting mobilization planning efforts across the U.S. Government.** Mobilization planning ended in the early 1990s. It is time to rebuild that capacity, not only in DoD, but also in the Federal Emergency Management Agency, the Department of Commerce, and the Executive Office of the President. These planning efforts will greatly improve mobilization efforts across agencies.

2. **Focusing on Scale.**

We need to turbocharge our efforts to change how we design, resource, acquire, and sustain capabilities to help enable scale. Despite a decade's focus on innovating with commercial technology, the defense acquisition system largely remains focused on efficiency and cost savings. While this is a worthwhile goal, this regularly leads to limited production runs built precisely to the terms of the contract and results in industrial capacity that is very difficult to scale quickly as well as decades-long franchise programs that reduce competition. We need to change this dynamic and focus on building industrial base capacity in multiple ways:

- **Design.** This starts with simplifying requirements to harness leading commercial solutions, rapidly iterate technologies, and deliver capabilities at speed. The MRAP's utilization of existing, largely foreign, designs and very simple requirements provides a very useful model. DoD also needs to design systems for production so they are inherently scalable and avoid supply chain challenges. That is the approach the Air Force is taking with its Enterprise Test Vehicle effort.[12]

- **Resourcing**. More resources will certainly help with scale, but DoD and Congress also need to transform the budget structure to increase flexibility in budgetary execution as the Congressional Commission on PPBE Reform outlined in its final report last year. Beyond appropriated funds, DoD and Congress should look for opportunities to unleash the tremendous power of private capital, one of the nation's greatest strengths. The Office of Strategic Capital (OSC) is a tremendous start, but there are additional opportunities to strengthen OSC through the establishment of a loan guarantee program to help derisk larger scale capital expenditures (CapEx). Additionally, DoD could also increase the amount of depreciation allowed on CapEx or major investments. This fortunately is already a major provision in Senator Wicker's Forged Act.[13]

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[12] Defense Innovation Unit, "Four Companies Selected to Support the Air Force and Defense Innovation Unit's Enterprise Test Vehicle (ETV) Project," June 3, 2024. Available at https://www.diu.mil/latest/four-companies-selected-to-support-the-u-s-air-force-and-defense-innovation (accessed March 5, 2025).
[13] https://www.wicker.senate.gov/services/files/4396C3A9-DA26-4BD6-A655-9E0910B83DA8.

- **Acquisition**. DoD and industry have become experts at prototyping in recent years, but we need to dramatically increase the use of follow-on production Other Transaction Agreements and other means to rapidly transition prototypes to the battlefield. Our industrial base *can* produce at the scale needed to succeed, but only if we change how we do business. For example, DoD went from the drop of the request for proposals to having over 16,000 Mine-Resistant Ambush-Protected vehicles roll off the assembly line within three years during the wars in Iraq and Afghanistan. Delivering life-saving capabilities at this speed and scale required tremendous leadership, simplified requirements, utilizing existing designs, and multi-sourcing.

  Another way to increase mass and scale capabilities in theater is to maximize the use of unmanned and attritable systems. The focus on unmanned and autonomous systems to increase fielded capacity has grown significantly in the past few years, but the fact is that we need vast numbers of attritable systems to meet near-term threats.[14] This priority of scale cannot become victim to efforts focused on cost savings.

- **Sustainment**. Our sustainment challenges, from contested logistics and supply chains to sustaining forces at great distance, are probably the hardest facing us. We need, for example, to build more production flexibility into contracts by establishing surge contract line item numbers (CLINS) to reduce the time required to ramp production. Second sourcing[15] and multi-sourcing will also be beneficial as shown with contract awards to nine companies—including three based outside of the United States—to scale 155mm ammunition production.[16]

One additional point to add is the importance of allies and partners. Our experience with Ukraine, Israel, and beyond has made it crystal clear that the United States cannot do it all. We need a larger industrial base, involving our closest allies with whom we go to war. Robust international industrial partnerships will help us to build the systems, and the overall capacity we need for future contingencies.[17]

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[14] John G. (Jerry) McGinn et al, *Case Studies in Technology Transition*. Report for the Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform, February 2024. Available at https://business.gmu.edu/news/2024-07/case-studies-technology-transition (accessed March 5, 2025).
[15] Olivia Letts, Jerry McGinn, and Richard Beutel, "Back to the Future? Second Sourcing in Defense Acquisition," Greg and Camille Baroni Center for Government Contracting White Paper No. 16, July 12, 2023. Available at https://business.gmu.edu/news/2023-07/baroni-center-releases-white-paper-back-future-second-sourcing-defense-acquisitions (accessed March 5, 2025).
[16] Jen Judson, "US Army awards $1.5B to boost global production of artillery rounds, *Defense News,* October 6, 2023. Available at https://www.defensenews.com/land/2023/10/06/us-army-awards-15b-to-boost-global-production-of-artillery-rounds/#:~:text=US%20Army%20awards%20%241.5B%20to%20boost%20global%20production%20of%20artillery%20rounds,-By%20Jen%20Judson&text=WASHINGTON%20—%20The%20U.S.%20Army%20said,production%20of%20155mm%20artillery%20rounds (accessed March 5, 2025).
[17] Jerry McGinn and Michael Roche, *A "Build Allied" Approach to Increase Industrial Capacity,* Greg and Camille Baroni Center for Government Contracting Report No. 9, June 26, 2023. Available at https://business.gmu.edu/news/2023-06/build-allied-approach-increase-industrial-base-capacity (accessed March 4, 2025).

Unfortunately, time is not on our side. If the Davidson window is correct, we have two years. Moreover, unexpected crises are always just that – unexpected – so our national security requires preparedness now.

The Trump Administration and Congress, in partnership with industry and our close allies, must harness innovation, manufacturing capacity, and other means to unleash the true strength of our defense industrial base to deter our adversaries in today's very dangerous world. The time to do this is now, before the balloon goes up.

Senator FISCHER. Thank you, Dr. McGinn. Dr. Michienzi.

STATEMENT OF CHRISTINE MICHIENZI, Ph.D., FOUNDER AND CHIEF EXECUTIVE OFFICER, MMR DEFENSE SOLUTIONS, AND FORMER SENIOR TECHNOLOGY ADVISOR TO THE UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT

Dr. MICHIENZI. Thank you, Chairman Fischer, Ranking Member Reed, and distinguished members of the Committee for the opportunity to speak with you today on defense modernization, which is essential for our Nation's security.

The defense industrial base necessary to build our DOD systems is fragile, but this fragility did not happen overnight. Key decisions by the U.S. Government and industry have played a very large role. For instance, decades-long private sector and public policy approaches to domestic production prioritized low, short-term costs over security, sustainability, and resilience. So the industrial base has become optimized for efficiency and not resiliency.

Just-in-time deliveries versus inventories of long lead time items cut warehousing costs and increased efficiency but limits industry's flexibility and responsiveness. The DIB [Defense Industrial Base] has many single and sole-source suppliers due to the decades of consolidation. Often those are foreign adversarial sources that are cheaper but can introduce risk.

At OSD [Office of the Secretary of Defense], I was in the trenches of mobilization efforts for almost a decade. I was the lead for DOD for scaling up production for all of the weapon systems we were sending to Ukraine, a function I led for various crisis scenarios since 2017. I was also very involved in DOD's efforts in response to COVID–19, working with the interagency partners, using the defense production authorities Jerry talked about, Titles I, III, and VII, to execute CARES Act funding to increase production of medical resources, including prioritization and allocation of supplies, which becomes important when we are trying to mobilize and surge, and providing financial support to DOD's suppliers.

As the United States is supporting two conflicts and preparing for potential conflict in the Indo-Pacific region, it has become clear that the DIB is not equipped to mobilize to support the existing activities, much less a competition with China. Although there are, and continue to be multiple efforts aimed at mitigating shortfalls that support mobilization, there are some systemic issues and causal factors that are not being addressed.

The most important of these is DOD's acquisition behavior. I am not referring to acquisition reform here, such as different ways of doing contracting, but to the decisions that are made by the acquisition community that are the root causes of many of our supply chain issues.

The industrial base is very seldom a consideration when most acquisition programs make certain decisions, such as increasing or decreasing procurement quantities, or even analysis during major milestone decisions. When mitigating supply chain issues, DOD is often treating the symptoms and not the cause. I will highlight two representative examples, but there are many more I can elaborate on.

The government is funding efforts to reshore and ally shore critical supply chains, and partners and allies are critical to solving

this issue. However, if we do not bring demand back to those more secure sources, they will not survive. Even though DOD programs have the authority to direct sources of supply, they most often do not, letting industry choose. Because industry is profit driven, they will almost always choose the cheapest source, which is unfortunately often a Chinese or other adversarial source, or a more secure source.

DOD reinforces this behavior by choosing the lower-cost proposal among technically equal options. Industry will not risk losing a contract by using a higher-cost supplier, even if that supplier is more secure. DOD also does not like to direct sourcing because it shifts liability from industry to government if something goes wrong with that material or component. But if we are truly going to have secure suppliers for these critical items, DOD and other agencies, because DOD is often only 1 to 2 percent of the demand, should be required to use a U.S. or allied source if one is available, that meets requirements, and also to incentivize industry to use those sources with policies, such as price preferences and contract selection, for instance.

Another example is one of the major constraints we face when scaling production for weapon systems for Ukraine and other crises, and something that continually plagues DOD, which is obsolescence. The way DOD deals with obsolescence is reactive and ad hoc, at best. With a few exceptions, programs do not plan or budget for obsolescence, choosing instead to wait until an obsolescence issue occurs to determine a mitigation plan and scramble to find funding to execute that plan before time runs out.

Obsolescence was the main reason we could not make more Stinger and PAC–3 Patriot missiles when the Ukraine conflict started initially. Acquisition program managers and even service acquisition executives have told me they cannot afford to budget for obsolescence, but many studies have shown that being proactive by planning and budgeting in advance saves time and cost. Programs should be required to plan and budget to deal with obsolescence more proactively.

Last, as we have been trying to mobilize the DIB to support various efforts, I am often asked why can't we do what we did in World War II, as described in the book, Freedom's Forge. I gave a lecture each year on mobilization to the entire class of the National Defense University's Eisenhower School, and one of the slides I always presented was "Why not Freedom's Forge?" Where I outlined the conditions that were very different between what was happening, and Senator Reed mentioned one of those, and what is happening now that make it impossible to replicate that scenario. I am happy to discuss these in further detail.

I will stop there by saying I appreciate the Committee's leadership and focus on this strategic topic and in helping in any way I can. I have submitted written testimony for the record, and I thank you for the opportunity to testify today, and am happy to answer any questions you may have.

[The prepared statement of Dr. Christine Michienzi follows:]

Testimony before The Senate Armed Services Committee on

Defense Mobilization in the 21st Century

6 March 2025

Dr. Christine Michienzi

Founder and Chief Executive Officer, MMR Defense Solutions and

Former Senior Technology Advisor to the Under Secretary of Defense

for Acquisition and Sustainment

Chairman Wicker, Ranking Member Reed, and distinguished Members of the Committee, thank you for the opportunity to speak with you today on defense mobilization, which is essential for our nation's security.

Erosion of the Defense Industrial Base

Starting in 2020, COVID-19 raised awareness of the fragility of supply chains for both commercial and Department of Defense (DoD) systems. Some countries were completely shut down and shipping was severely delayed even when there was supply. Americans couldn't get cars due to the microelectronics shortage, and this also delayed deliveries of some DoD systems. In 2022, the Ukraine conflict emphasized this fragility, as Russian (titanium) and Ukrainian (titanium, gallium, and 90% of the U.S. chip industry's neon) sources of supply for key items for DoD systems were no longer available.

But this fragility didn't happen overnight. Numerous decisions by U.S. industry and government played a very large role. For instance, decades-long private sector and public policy approaches to domestic production prioritized low, short-term costs over security, sustainability, and resilience – the industrial base has become optimized for efficiency, not resiliency. Just in time deliveries vs. inventories of long lead time components cut warehousing costs and increased efficiency, but limits industry's flexibility and responsiveness. The DIB has many single and sole source suppliers – often foreign adversarial (e.g. China) sources – that are cheaper, but that can introduce risk.

The U.S. is a free-market society and industry is profit driven. They will seek out the least costly sources of materials and components, even when it may create a risk to national security. DoD takes a hands-off approach – contracting with the top-level prime integrator for most systems, and letting industry choose who their sub-tier suppliers are. And in fact, DoD acquisition often incentivizes adversarial sourcing behavior, as given two technically equal proposals, DoD will most often choose the one with the lower cost. Therefore, industry won't risk losing out on a contract award by using a non-adversarial, less risky source of supply.

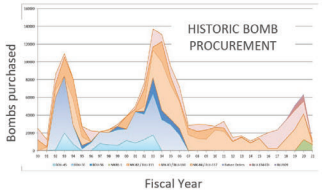
As a result, critical capabilities have been driven off-shore, and global supply chains, although when strategically developed with partners and allies may be beneficial, have introduced risks. Examples include: rare earths elements, where the U.S. was the world-leader until the 1980s, and now China controls 85% of global refining capacity; critical chemicals, where China is the sole source for most of the chemicals needed to produce DoD weapons systems; and semiconductors, where US production has fallen from almost 40 percent to just over 10 percent over the last forty years.

Exacerbating this issue is foreign ownership and control of U.S. businesses. The Committee on Foreign Investment in the United States (CFIUS) process reviews transactions where a foreign company or government attempts to purchase a U.S. company. Nine U.S. government agencies review each

transaction to determine if it is beneficial or detrimental to the U.S. However, each agency conducts their review through a different lens. DoD looks at whether the transaction will affect national security, but the Department of Commerce may look at how many U.S. jobs the transaction may create for instance. Ultimately, the DoD's argument of national security issues may lose out to other agencies' interests, resulting in, worst case – the loss of a supplier and capability, because in many of these cases China is only interested in the intellectual property, so they take it and then shut the company down, and best case – a China-owned company that has now become a much more risky supplier from a national security perspective.

The Role of Acquisition in Industrial Base Health and Resilience

Acquisition or procurement decisions play a key role in the health and resilience of the DIB; however, the effect on the DIB is rarely considered when these decisions are made. For instance, DoD does not send industry a steady procurement demand signal. It purchases in a cyclical, or feast and famine, manner that can provide cost benefits for large lot buys, but that is counter-productive to a healthy and resilient industrial base (see figure below). At the prime contractor level, a large drop in the procurement level for one system is not a major issue, as most companies have multiple large systems they are producing simultaneously, so decreases in one system can be offset by other systems. But at lower levels in the supply chain, this can have detrimental effects, as there are many companies who only produce parts for one or two systems. When procurement levels drop for those systems, those companies may not be able to survive. Even a one- or two-year procurement drop may lead to the loss of a supplier.



A similar situation exists for large increases in procurement. DoD typically has knowledge of production capacity only at the prime integrator level and bases its procurement decisions on that knowledge. However, just because the prime integrator has capacity, doesn't mean all their sub-tier suppliers do. Unfortunately, when these decisions to increase or decrease procurement levels are made, there is no analysis performed to consider what the effect on the industrial base may be or whether the DIB can support the decisions being made. Procurement levels should be smoothed out as much as possible, even if it means the cost benefits of large lot buys are not obtained. Additionally, industrial base health should be one of the criteria used to make acquisition decisions, along with cost, schedule, and performance. An analogous issue occurs during wargaming because there is frequently no component of these exercises that considers whether the DIB can support the scenarios being considered. Just as with the acquisition decisions, it's assumed the DIB will just be there when DoD needs it to produce whatever it requires.

In addition, munitions accounts are fungible and often used as 'bill payers' by both DoD and Congress, with the 'plan' to make up buys in the out-years, which almost never happens. These are conscious decisions – jointly made by the Department and the Congress, in the face of competing priorities, but with little to no analysis performed to understand the effects on the DIB, which are very often detrimental. The use of multi-year procurements solves many of these issues. It provides industry with the steady demand signal it needs to have the confidence to invest in increased capacity (to include

some surge), modernization, and innovation – at the prime and sub-tier supplier levels. At a minimum though, munitions accounts should not be used as bill payers – especially when inventories are at required levels.

Even when new acquisition programs are undergoing milestone reviews as the program progresses from development to production, there are documents (Acquisition Strategy, Lifecyle Sustainment Plan) that contain what is supposed to be analysis to show the industrial base can support the program. DoD typically relies on the prime contractor to conduct this analysis, as DoD divested of industrial base/supply chain analysts in their program offices long ago. The prime contractors usually perform the analysis of just the first few tiers of the supply chain because they lack visibility below that level. However, most of the supply chain constraints and vulnerabilities lie at those lower tiers, so the analysis is far from complete, and major new systems are fielded without a true understanding if the DIB can support production.

The Ability to Surge Production in Response to a Crisis

Russia's invasion of Ukraine has brought into sharp focus the importance of being able to surge production rapidly, as well as the challenges in doing so. DoD lacks flexibility and surge capability in the industrial base for many systems it procures, which affects readiness and mobilization. Over time, DoD and the industrial base have prioritized efficiency over resiliency; production lines have gone cold, parts have become obsolete, and sub-tier suppliers have consolidated or gone out of business entirely – industry right-sizes itself to DoD demand. DoD has the DIB it pays for. Industry is reluctant to build additional capacity at risk until they have a clear, consistent demand signal or business case from DoD. Industry needs to see some degree of confidence that if they invest, there's a good chance they will get something for their investment – and that is sustained production.

Also, DoD does not pay industry to maintain surge capacity. Without that, industry will not run and maintain production lines or keep trained workforce. When the next conflict or stress to the industrial base occurs, DoD pays to re-constitute lost capability. In times of crisis (e.g., Ukraine conflict), DoD attempts to surge quickly to meet requirements, but faces many constraints:

- Insufficient capacity (DoD does not pay industry to maintain surge capacity)
- Insufficient workforce (workforce shortages across the DIB)
- Obsolescence (DoD systems fielded for long periods without technology refreshes)
- Long lead time items (just in time deliveries; no stockpiles)
- Shared sub-tier suppliers (consolidated DIB means systems compete for same suppliers)

Realizing increased capacity can take months or even years, and the deliveries at the increased capacity can come years afterwards due to production lead times. There needs to be a recognition that complex production lines can't be turned on or off based on the requirements of the day.

Increased production rates of some of the weapons (but not deliveries of most yet) donated to Ukraine and Israel to help replenish U.S. inventories are just now being realized, nearly three years after the conflict began, and some haven't even begun. And this is at a time when the Foreign Military Sales backlog for Taiwan is also large. If the 2027 timeline for a potential China-Taiwan conflict is to be believed, we are already too late to start ramping production for systems needed to support that fight. And many of those weapons are different from the ones that DoD has been supplying to Ukraine, which has been engaged in mostly a ground-based conflict using artillery and ground launched missiles. An IndoPacific conflict will not be ground-based and will require more air- and ship-launched munitions, most of which the U.S. is not currently ramping production for. Inventories of many of those munitions are already below requirements – some having been used in the Israel-Hamas conflict, so even without a China-Taiwan conflict, it would be wise to maximize procurement of those systems at a minimum, and increase production capacity if there is no excess currently.

Industry should also be using advanced manufacturing techniques that are more efficient and cost effective, enabling faster production within the same or less capacity and with the same or fewer people. This would help surge production as well. DoD does fund some of these efforts through programs such as ManTech, Industrial Base Analysis and Sustainment, and Defense Production Act Title III, but industry needs to self-fund these efforts as well, and there seems to be a reluctance on their part to do this even with large reported profits at the prime contractor level. Suppliers at lower levels in the supply chain find it more difficult to do so because they operate at lower profit margins due to cost pressure from the primes. This is unfortunate because it is at these levels where the most benefit would be realized from modernized manufacturing and innovation. It is not understood by this author why the primes wouldn't want their sub-tier suppliers to be more efficient and cost-effective, thereby making the primes more profitable, but it seems that if this requires the primes to allow the sub-tier suppliers to make more profit, it is not something they support.

DoD should also be maximizing the use of Modular Open Systems Architecture (MOSA) and Digital Engineering (DE), as it provides a multitude of benefits, one of which is with surging production. When surging weapons production for Ukraine, obsolescence became one of the biggest constraints. It is why DoD couldn't make any new Stinger missiles and why they couldn't ramp production of the Patriot PAC-3 MSE missile for instance. Many obsolescence issues are with microelectronic components, which undergo technology advancements every 2-5 years, while DoD systems stay fielded for 15-30 years. This is completely out of phase. And without MOSA/DE, those systems are not easily upgradeable. To replace an obsolete part requires a redesign of the component the part goes into, and then testing and requalification of the system, which is costly and time consuming. MOSA/DE allows systems to be easily upgraded – enabling obsolete parts to be replaced and even new technology to be inserted that provides better capability.

In addition, DoD should work towards a more simplified and efficient qualification process – especially for non-safety and reliability base materials and components. This would involve sharing of test data between programs and services, increased use of modeling and simulation, and that testing at the component level should be sufficient for non-safety or reliability critical materials and sub-components vs having to do all up round testing. This would allow DoD to expand sources of supply and introduce innovation into DoD systems more efficiently.

However, until all existing systems that aren't designed with MOSA/DE are out of circulation, DoD needs a better way to address obsolescence issues. DoD treats this issue reactively - waiting until there is an end-of-life notice issued and then scrambling to figure out if they want to do a lifetime buy or a technology refresh, neither of which have been budgeted for - and that's if there's time. Instead, they should be proactive and plan and budget for periodic technology refreshes that would allow them to replace outdated parts and even put in newer technology. Program managers say they can't afford it, but they are already paying for it, they are just paying more by having to address it reactively instead of proactively.

Lack of Supply Chain Visibility

A large part of why it is difficult for DoD and industry to surge production is their lack of visibility into their supply chains. This has been a chronic issue for the DoD, as it has shifted responsibility for supply chain and production management to industry. However, as DoD has found out the hard way, industry also does not have visibility into its supply chains past a couple of tiers. Unfortunately, most of the issues in the supply chain, and certainly the constraints when attempting to surge, occur at lower tiers, where there is little visibility.

This has spawned an entire industry of supply chain "illumination" companies that promise to "map" a program's entire supply chain and provide risk analysis of those suppliers. However, these companies mostly rely on publicly available data – news articles, LinkedIn posts, government contracting and financial data, etc. – and then use AI / ML to digest these inputs to find or establish relationships between suppliers and programs. For example: if a news article states that Company X won a contract for Program Y, the software links Company X as a supplier to Program Y.

But none of the information derived from this method comes directly from the suppliers themselves, and none is directly verified. Primes on any contract depend on their sub-tier suppliers (subs) for information about the supply chains the subs use. But for the subs, that information is sometimes fiercely guarded and considered proprietary; it's the 'secret sauce' that makes them competitive, and they don't want to share that information for fear that either it won't be protected or may be misused. This had made illumination big business, with supply chain companies competing to portray themselves as the panacea that can solve DoD's supply chain risk management problems.

The Department pays – inefficiently as each successive program pays over again to start the analysis from scratch. Consider that the Navy paid Govini $400 million "to deliver data, analysis and insights into DoD spending, supply chain and acquisition using a database it continues to compile." The results, e.g., U.S. defense systems are highly reliant on Chinese sub-tier suppliers, were deeply concerning, although not surprising to anyone who has any knowledge of DoD supply chains and yet, still DoD lacks a comprehensive picture. There is no one to cross-reference all the data, and no one tracking cases where companies supply multiple programs. This becomes critically important when there is an obsolescence issue or when DoD wants to surge production.

The biggest issue with all these methods, government or commercial, is they seek to reverse engineer the problem – trying to put together the supply chains after they're already built instead of as they're being built. It would be much easier to capture supply chain data while systems are being developed and fielded. The Service program offices, the prime contractors, and OSD should build complete supply chain maps during this phase, with accurate information that doesn't have to be pieced together after the fact with assumptions and unverified information. And this data should be available so all programs can access it and so there is no duplication of effort and cost. Former Deputy Secretary Hicks was attempting to start a data repository for the information that does exist by storing it in the Advana tool, but that program has recently been paused and is being recompeted.

In place of a repository – in which proprietary data can either be shared inappropriately, or worse, infiltrated by adversarial cyber threats – DoD should adopt a system that uses blockchain and distributed ledger technology where only data owners possess and can grant access to that data. With owners deciding who has access and for how long, DoD can conduct the supply chain analysis it needs (for instance, on programs that share suppliers), while dramatically reducing the risk of enemies using it to find vulnerabilities.

Industrial Policy

The U.S. is not typically in favor of utilizing industrial policy, although many of our adversaries are. Not having an industrial policy may be acceptable as long as there is a level playing field. But as we know, this is not, and has not been the case. Many countries – especially our adversaries, and specifically China – do not play by the same rules. They provide subsidies to their industries, and many are state-owned. They encourage over-production, which leads to dumping/flooding the market, which drive prices down, which then drives out the competition, who cannot be cost-competitive. This captures market share and allows them to monopolize markets. They weaponize this advantage – as China has

recently with export controls on critical minerals – gallium, germanium, graphite, and antimony that are used ubiquitously in national defense, critical infrastructure, and commercial applications.

China has also used this to great effect to capture and dominate markets such as rare earths and lithium for EV batteries and is now attempting to do so for semiconductors. The CHIPS Act and the export controls the Department of Commerce has put in place for manufacturing equipment for advanced semiconductors are examples of where industrial policy is necessary and has slowed China down, but we will not be able to stop them. They are currently concentrating on legacy or trailing edge chips which dominate critical industries such as automotive, aircraft, appliances, cell phones, medical equipment, critical infrastructure, and DoD weapons systems, until such time as they can catch up on leading edge.

The Defense Production Act is also a good example of where the U.S. uses industrial policy effectively – making investments in critical sectors when industry can't make the investment themselves due to market economics.

However, the investment programs only solve the supply side of the problem. To be successful in truly reducing reliance on China, the U.S. must also solve the demand issue. There is a reason the demand went off-shore in the first place – usually cost – so in order to sustain the capability once the investment is made, the U.S. has to figure out how to bring the demand back. One way would be to make U.S. sources cost competitive. This is usually difficult, as U.S. labor rates are higher, China subsidizes its industry, and in the case of critical minerals there may be high environmental costs to build capability. In addition to grants, the government can offer low-cost loans, tax incentives, workforce training credits, and other aid. It can also encourage private investment through public-private partnerships. But all of these may not be enough since China has been known to produce at a loss just to capture and maintain market share.

This is where legislation banning adversarial sourcing and/or requiring U.S. sourcing can be helpful. However, Congress should be careful that the legislation is actually producing the intended outcome. Often legislation on non-Chinese or U.S. sourcing is only levied on DoD. For instance, by January 1, 2027, DoD is prohibited from acquiring certain magnets made from critical minerals mined in China, North Korea, Iran, and Russia. However, DoD only uses ~1% of the total critical minerals consumed by the U.S., so this prohibition will have very little effect on increasing the demand for U.S. critical minerals and magnets. The prohibition, at a minimum, should be in effect for all government agencies, and even expanded to include any industry that receives federal funding. This would have a significant effect on increasing the demand for U.S. suppliers, helping to sustain the capability invested in.

Another classic example of legislation that does not achieve its intended purpose is the Buy American Act. The question needs to be asked "what is this legislation really trying to achieve?" Is the goal to increase the U.S. domestic economy and economic growth, and therefore economic security? Is the goal to increase national security by reducing reliance on foreign sourcing – even if it's allied/partner suppliers? Right now, you can get away with having 65% of your system supplied from America but having all of your most sensitive components come from China. Is that what we're really trying to achieve? It needs to be restructured to focus on what's important. For DoD, it is important for the U.S. to have the capability to produce its own weapons and platforms. However, the U.S. has never had and will never have a completely domestic industrial base. It can't and it shouldn't. The U.S. believes that for certain key critical capabilities, it is necessary for there to be domestic supply, but that is not the case for everything, and in fact there are many situations where this is not the case.

First, there are many instances where the U.S. DoD's demand, while large compared to some other countries, is still not enough to sustain even a single supplier for some capabilities. A perfect example is chemicals production for munitions. Not for things like TNT, where DoD is using millions of pounds per

year, but things like curing agents for solid rocket motors for missiles, where the total demand may be tens or hundreds of pounds per year. Most chemical manufacturers in the U.S. cannot make a business case to produce such small quantities, so it's helpful if DoD can find a supplier in an allied or partner nation that is producing for multiple customers, so the total quantities make that business sustainable. In other instances, there may be better technologies in partner and allied nations that would provide the U.S. with better capabilities for its warfighters, so shouldn't DoD take advantage of that? It may also be advantageous from a logistics perspective to have suppliers and production capability near/in theater. Additionally, when scaling up production, it is helpful when DoD finds constraints in the supply chain to turn to partners and allies to see if they have excess capacity to help mitigate those constraints.

So, instead of blanket percentages, Buy American should focus on key strategic sectors that are more important for the U.S. to have those capabilities and less on those things that are not as strategic and can be purchased from allies and partners. DoD's Executive Order 14017 report identified key sectors where the U.S. should focus reshoring efforts – Kinetic capabilities (missiles, etc), Microelectronics, Critical Materials, Energy Storage and Batteries, and Castings and Forgings. This can help guide legislation. In some instances, Congress does attempt to do this – for instance for Printed Circuit Boards (PCBs) – Congress has attempted to pass legislation in various NDAAs that sets a certain percentage of PCBs in DoD systems that must be made in the U.S. However, the capacity to produce PCBs in the U.S. is not sufficient to meet those requirements, and Congress does not appropriate funding to develop additional capacity, so this is not the most helpful.

Equally frustrating, Congress many times only levies these requirements on DoD, when DoD is often a very small percentage of the market – for instance in microelectronics and rare earth elements/critical minerals. If the Administration is serious about Buy American, Congress should insist that other agencies are held to the same requirements as the DoD, so the combined strength of all government can work to achieve the goal. Again – this goes back to the question – "what is this trying to accomplish?" In addition, it's too easy to get a waiver by claiming there is no capability in the U.S. to produce the item(s). If that is the case (and it frequently is), there should be two courses of action, 1) they should have to use a non-adversarial source (similar to legislation passed in Section 244 of the FY2024 NDAA for certain critical chemicals), and/or 2) it should spur investment to develop and qualify a U.S. source and Congress should help appropriate funding to do that. Otherwise, there is no incentive to stop using the adversarial source, and therefore no way to help increase the demand for U.S. sourcing.

Industrial Base Investments

The Office of the Secretary of Defense has two investment programs that address industrial base issues by providing grants to develop, maintain, and expand capacity, modernize capability, and scale emerging technologies – the Industrial Base Analysis and Sustainment (IBAS) and Defense Production Act (DPA) Title III programs. DPA Title III, in particular, has been used to great effect over the past couple of years to address the effects of COVID-19 and to execute Ukraine Supplemental Funding to increase production capacity, as well as funding efforts to on-shore capability to produce rare earths, critical minerals, and chemicals for munitions to reduce our reliance on Chinese sourcing. IBAS has also made investments in rare earths and critical minerals, as well as castings and forgings – another sector China has taken market share and capability away from the U.S., and has made significant investments in workforce development – a shortfall in nearly every industrial base sector and a major constraint when surging production needed to support Taiwan. Both programs are investing in technologies needed to support the production of hypersonic missiles, a capability that will definitely be necessary in an IndoPacific conflict, and where the U.S. is woefully behind in production compared to China and Russia.

These programs are truly the only ones that can address these cross-cutting industrial base issues. And so additional funding for these programs would increase the health and resilience of the DIB,

allowing it to be a deterrent to China and other adversaries. Currently China knows the U.S. is struggling to supply both Ukraine and Israel with munitions and keep its own inventories healthy. These events are helping to inform their strategy, so the U.S. must do everything it can to repair the health and resiliency of our DIB.

Industrial Strategy and Mobilization

Any industrial strategy and/or mobilization plan requires a multi-agency effort – DoD cannot do it alone. For instance, the Commerce Department can help with supply chain surveys, export controls, and other trade remedies (along with the U.S. Trade Representative). The State Department can help negotiate data sharing agreements with partners and allies that help mitigate some of our supply chain shortfalls. The Treasury Department can help by leading the CFIUS process that limits foreign investment controls and ensuring that national security is the factor that is highest in importance when reviewing transactions. The Education and Labor Departments can help with workforce development and labor regulations. All of these things must come together with the common goal of improving the DIB and planning for and executing mobilization, but not just in times of conflict – that coordination needs to happen now. It is unknown if these sometimes-competing forces can rally around this call to action and take the steps necessary to rescue our industrial base in time. Therefore, there should be a Deputy's Level Committee, led by DoD, and assigned with coordinating interagency efforts to ensure everyone is aware of and moving towards the same goals with regards to mobilization.

Improving industrial base resilience and the ability to mobilize are difficult problems, but we are almost out of time. Bold moves by the Administration and by Congress are necessary if supply chain issues are to be resolved quickly, allowing the U.S. to regain its military strength and deterrence capability.

[Note: Recommendations have been underlined in the text]

Senator FISCHER. Thank you, Dr. Michienzi.

Mr. Berteau, you are recognized for your opening statement.

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

Mr. BERTEAU. Thank you, Senator Fischer, Senator Reed, and the Committee. We really appreciate the opportunity to be here today.

I am David Berteau. I am the President and CEO [Chief Executive Officer] of a trade association, the Professional Services Council. What I need to reflect for the record is I am here today in my personal capacity, and opinions and suggestions that I make today are my own and not those of my organization, who would otherwise be considered guilty.

There has been a lot of talk about the World War II example of full-scale mobilization, and really in American history we have really only had two such examples, the other one really being the Civil War. As old as I am, I was not alive to participate in World War II, as part of that process, but my experience is actually in a different segment that has already been touched on a little, and that is the cold war, and particularly the Reagan buildup during the cold war.

I arrived at the Pentagon in 1981, served there until 1993, and was very actively involved in a number of issues there. There are a couple of lessons I would like to propose to you from that period of time, that may be relevant to the discussion today.

The first is that we actually had an operational plan and a scenario on which we could calculate what our mobilization requirements were. It was, in fact, Soviet tanks coming through the Fulda Gap in Germany and invading Europe. That was the driver. That was the thing that if we did not prevail there, we would go nuclear, and a global nuclear war was clearly not an option we wanted to pursue, although we were prepared for that.

How were we able to use that? We were able to build the requirements and actually secure the funding from the Congress, because we had a common agreement between the White House, the Pentagon, and the Congress as to what the threat was we were facing and what the scenarios were on which we would have to plan and be prepared to execute. So the first thing is we had that common ground.

I do not think we have that today, and I think one of the most important things this Committee can do is drive us to get that common understanding of what the scenario is. We had an operational plan, which is the fight today piece, and then we had a scenario which is how that evolves over time. We need that in place today.

By the way, by being able to do that, we were able to propose funding for surge capacity, for war reserve spares, for training, for sustainment investments, for actually deploying and being able to show that we were able to do this, and the appropriators would give us that money because it was justified and everybody agreed on the basis for it. We don't have that today.

An example of that, in fact, one of the lessons from Ukraine is the multiyear procurement for expanding munitions production ca-

pacity. The Pentagon's first submission to the Congress was decremented by a lot of the extra money that was going to go into building the multiyear procurements for many of those programs because there were higher priorities the committees had to achieve than to put those in place. Ultimately that got fixed, but it took a long time to get agreement on that. So we have to have that agreed-upon set of scenarios on which to base requirements.

The second thing that we learned from that cold war experience is the best way to deter was to demonstrate—demonstrate, not put on paper, but demonstrate—that we had the capacity to deliver that. So every year we would have massive exercises, where we would literally deploy forces from the U.S. and sustain those forces in operations in Europe, thousands and thousands of troops from all the NATO [North Atlantic Treaty Organization] countries combined, clearly showing the Soviets that we could make it work. That demonstrated capacity, I think, is the second key lesson.

The third key lesson, that has been referred to a lot here, is the partnership with industry, and that partnership with industry is oftentimes an arm's length partnership. Dr. Michienzi did a good job describing some of the flaws in that process, and I think that partnership has to include long-term contracts. It has to include stable designs, so you can maximize productions. That is one of the biggest advantages we actually had over Germany in World War II. Hitler and his team could not stop putting change orders into programs because new stuff would come along and they would actually stop production in order to do it, whereas we would actually move those new ideas into the next iteration of different aircraft, so we maximized production while still getting the benefits of new technology and research and development. We did that throughout the war.

The fourth lesson is the reliance on allies and partners. Senator Reed, you mentioned INDOPACOM and the China threat. DOD uses the word "the pacing challenge." I think it is actually much bigger than pacing, but it is the threat, but it is not the only threat, and I think the big difference between even the cold war as well as World War II is the changing nature of the threat and the much more complex nature of that threat. Allies and partners are a key piece to this.

Then the fifth lesson, I think—and we did not really learn this lesson very well through the Reagan buildup—is mobilization is much more than just defense and much more than the defense industry. It is the whole nation. You mentioned workforce, sir, and we have got a shortage of workers. We have kind of come out of that bathtub from COVID where we had twice as many vacant jobs as we had people looking for work. But throughout the industry, both in the production end and in the services and sustainment end, we have got a shortage of workers today that is continuing going forward there.

So those are five lessons I think that would be useful for this Committee to undertake. My one suggestion to you is I think it is time—and I do not think you have time to wait—I would suggest that this Committee direct DOD to do, between now and the time you go to conference, a full-blown exercise of, say, what do our mobilization requirements really look like, what is the scenario on

which we base that. You need that as a Committee before you finalize the fiscal year 2026 National Defense Authorization Act.

With that I will—I have got negative time to yield back, so I do not actually have any time to yield back, but I stand ready for your questions.

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

PREPARED STATEMENT BY DAVID J. BERTEAU

Chairman Wicker, Ranking Member Reed, Members of the Committee: thank you for the opportunity to appear before you today to talk about Defense Mobilization in the 21st Century. I'm David Berteau, President and CEO of the Professional Services Council, but I appear before you today in my personal capacity. I have a bit of history on this topic, and my comments and suggestions today are my personal views.

Oftentimes, the starting point for discussion about defense mobilization is our American experience during World War II. The might of industry was harnessed to defeat the Axis powers and secure peace. Much has been written about that, and I suspect that the committee is familiar with some of the historical lessons. I can go into some of those during questions, if you desire.

COLD WAR MOBILIZATION PLANNING (1981–1989)

Let's look at a more recent period, the mobilization plans and preparations during the Reagan buildup at the height of the cold war. I was working at the center of that buildup for Defense Secretaries Weinberger and Carlucci, and I draw some of the lessons from that time that may be relevant for today.

The Reagan buildup during the 1980's was driven by the need to counter the Soviet threat in Europe. We built plans for surge in the event of conflict and for mobilization in the event of protracted conflict. Importantly, the Department of Defense programmed money—and included it in the President's budget requests—to support those plans. Because we had a solid, programmatic basis for those funding requests, Congress appropriated funds in the billions of dollars.

How did we justify that? The executive and legislative branches held a shared view on the fundamental threat: a Soviet invasion of central Europe through a geographic feature known as the Fulda Gap in Germany. We had a clear understanding of Soviet forces, capability, and intent. We built our force structure to respond to that threat. We exercised, not on paper, but in the real world—deploying, sustaining, and training U.S. armed forces to demonstrate our ability to respond to an invasion. These exercises enabled us clearly to identify shortfalls in weapon systems, munitions, material, logistics and support (including port capability on both sides of the Atlantic), personnel, and training. We worked to address those shortfalls through investments in excess capacity in manufacturing and production, in stockpiling parts and supplies, and in aligning repair cycle times with crew training cycles. We bought, assembled, and forward deployed six army divisions worth of material, equipment, and ammunition. Congress funded these efforts because we had clear requirements that were tied to actual operational plans and scenarios. Much of the funding would also cover our needs for what we called "leaser included cases," meaning wars of smaller magnitude than the Soviet invasion of Europe.

Today, it is much harder for us to replicate what we did in the 1980's. The threats are broader, deeper, and vastly more complicated, including cyber-and space-based threats that are unconstrained by geography. The basis for devising requirements is not a single overwhelmingly prominent scenario against which we would plan for surge and mobilization. Instead, we develop a range of sometimes redundant, sometimes overly specific requirements based on multiple scenarios. Yet to my knowledge, DOD does not have a set of scenarios on which everyone agrees we should base the demand, the needs, the requirements, for near-term surge in the event of conflict and longer-term mobilization for protracted conflict.

In other words, the first lesson from cold war mobilization plans in the 1980's is the need for a comprehensive and agreed-upon set of scenarios on which to base those requirements. These scenarios must include the full panoply of threats.

The second lesson of my cold war experience is that demonstrated capability is the surest form of deterrence. It is vital to have more than just paper plans in place. In those days, we demonstrated, with real world exercises and deployments, the capability to deliver on those plans. Of course, those demonstrations might fall short of what we really needed in some areas, and I suspect the Soviets could see that

as well as we could. However, the best way to justify the necessary expenditures to address shortfalls was to prove them. That's what annual exercises did.

The third lesson is the fundamental need for the government to partner with industry. That partnership must include long-term contracts, including stable designs that can maximize production rates in parallel with the ability to incorporate innovations and new systems and processes. Based on requirements, DOD must identify and fund needed excess capacity. This partnership relies on mutual trust, with each partner living up to its contractual commitments, including timely payment of invoices.

The fourth lesson is the essential importance of allies and partners around the world. Those partnerships depend upon being able to train, exercise, and ultimately fight together. There is no substitute in this area for a common set of assumptions about scenarios and for actual real-world practice.

The fifth lesson, one to which we paid little attention at the time, is that mobilization is far more than a Defense Department undertaking. True national mobilization, such as America has only experienced twice in our history, involves the entire national economy. In my memory, DOD just assumed that would happen. We never actually practiced it.

LESSONS FOR TODAY

What do those lessons mean for today and the coming decade?

Today's threats are different, more diverse, and harder to respond to. They include space and cyber threats and asymmetric responses to the deployment, use, and sustainment of U.S. and allied forces. In a report to DOD in 2012, I studied the force posture requirements of the so-called "pivot to Asia," and America was not then-and I suspect is not today—ready to sustain a long-term conflict across the Pacific. Complications might well arise in the form of conflict in Europe, on the Korean peninsula, in the Middle East, or elsewhere.

To me, the most important task that I draw from those lessons is that the Nation needs a clearer understanding of what mobilization requires. What are the demands? What happens if we don't meet them?

I suggest that this Committee immediately require DOD to undertake a comprehensive mobilization wargame, one that assumes the full array of current and emerging threats, including truly contested logistics in theater and around the world. The Committee could require that the output of that wargame be a comprehensive, prioritized summary of needs that are more than simply a list of stockpiled munitions or increased production rates from weapon systems. The list of needs should also include requirements for logistics and support, fuel resupply, sustainment and repair, operational flexibility in theater, personnel and training, and the impact of attrition from enemy forces.

The list of needs should also address steps needed to maximize the integration of government and industry. Among those needs are improvements in the DOD acquisition system for all companies and a focus on outcomes, including faster times to delivery of results.

I suggest that the Committee direct such an undertaking be done now, with the results provided to the Committee in time to incorporate into conference negotiations for the final fiscal year 26 National Defense Authorization Act. That timetable can help ensure your ability to respond in this next bill rather than waiting another year.

Chairman Wicker, Senator Reed, I think you again for the opportunity to join you today. I have much more that I'd like to cover, and I look forward to your questions. Thank you.

Senator FISCHER. Thank you, Mr. Berteau.

We will have 5-minute rounds, and I will begin with questioning.

I strongly believe the Administration should maximize its use of the Defense Production Act. They have the authority to address challenges in our defense industrial base. However, I am concerned by the expanding definition of what qualifies as national defense. For example, in 2022, President Biden invoked the Defense Production Act to ramp up domestic production of clean energy technologies.

Dr. McGinn, how should the Defense Production Act be used for defense mobilization? Should the DPA investments be focused on areas clearly related to the national defense of this country?

Dr. MCGINN. Thank you very much, Senator Fischer. Yes, the Defense Production Act is an incredibly powerful tool, and it is best used for national security defense purposes, and that is how it has been used during the development of the MRAP [mine resistant ambush protected vehicle] during the Afghanistan and Iraq war, that is how it was used during COVID, and that is how it is being used to rebuild our defense industrial base in areas such as rare earth processing, castings and forgings, and the like, specialty chemicals.

So that is how it is best used, and the more it is focused on national defense, it is not a political issue. Therefore, it is a national security issue.

Senator FISCHER. Thank you, and Dr. McGinn, how should the Act be used for defense mobilization? Should the investments be focused on areas clearly related to being able to get that done? I'm sorry, Dr. Michienzi.

Dr. MICHIENZI. Thank you. I just wanted to make sure. Yes, it should absolutely be focused on mobilization efforts, but some of the efforts that DPA is funding now, it is difficult sometimes to realize that those go toward mobilization. So things that Jerry mentioned such as rare earth processing and critical chemicals.

Senator FISCHER. Would you look at any statutory changes, to be able to make it work and make it identify truly what is national defense? Is there anything we need to be looking at here?

Dr. MICHIENZI. I think making sure that it is centered on national defense issues and national security is critically important, as Dr. McGinn mentioned, because we do not want to dilute the efforts of the DPA that are being very successfully used currently and can be used going forward.

Senator FISCHER. Okay. Thank you. Dr. McGinn, on January 2024, the Department released its first National Defense Industrial Strategy, and later, in October, released an implementation plan. What is your assessment of the strategy?

Dr. MCGINN. Well, I think the strategy did a very good job at kind of bringing together a lot of efforts that have been led across recent administrations. One of the interesting, good things about this area is it is very bipartisan. There have been a lot of similar themes being addressed across the Obama administration, through the Trump administration first, through Biden, and today.

I think the strategy did a good job at identifying the progress that has been made but also setting a vector for the future. I think there were a number of good things in that report. I particularly liked the focus on the importance of production as well as the importance of working with allies and partners. The key will be kind of how that is instantiated in the 2026 budget submission.

Senator FISCHER. Are there any additional areas that you would recommend the Department would consider that maybe we are lacking from the previous strategies?

Dr. MCGINN. Yes, I think two things I would recommend. One is mobilization. It is mentioned briefly in the strategy, but there is no talk about restarting mobilization planning. There actually are program elements in the Army, Navy, Air Force, and Marines for mobilization, but they are really all about prepositioning equip-

ment and the like. There is no kind of planning function that is being done today. That all stopped, and that needs to be restarted.

Then the other area, the strategy talks a lot about building exportability in systems, that is building systems so that we can share them with our partners and allies. That requires investment, because you are going to have different capability levels of different missiles, going to different partners, depending on how close they are. So that requires investments on the front, and if that is a big priority, that needs to be invested in, in terms of making exportability a priority in acquisition and also investing in the technology needed to build that capability.

Senator FISCHER. Thank you. Senator Reed, you are recognized.

Senator REED. Thank you very much, Senator Fischer. First, let me commend you all on excellent testimoneys. Thank you. Thank you very much.

Mr. Berteau, we have seen a lot of chaotic initiatives over the last several weeks, significant cuts of workforce, we have seen funding cuts that do not seem to be organized, and tariffs in place on Canada and other countries who presumably we would like to see work with us.

Can you indicate or give an idea about the impact on these decisions with respect to mobilization of our industrial base?

Mr. BERTEAU. Senator, let me think out loud with you a little bit on that, because I do not have a prepared script to answer that question. This is my eighth transition of one President to the next. My first one was President Carter to President Reagan, and every administration needs to, and does, undertake to make sure that the programs and projects across the Federal Government are in line with their priorities, and I think that is a lot of what is underpinning the efforts we have seen underway. It is being done differently than many have done, and one of the differences is stopping things while you are reviewing it rather than keep going while you are reviewing it.

I think from a governmentwide point of view, this has caused a bunch of hiccups, but more importantly, there is a second element of that review, and that is do not just focus on the things you are going to stop, the money you are going to save, the reductions in workforce, unnecessary workforce, that you are going to do, and so on. You also have to focus on what you want to not only keep going but go further and faster. I think one of the things that we are trying to focus on is what are those areas. Clearly national security is a huge piece of that. Border security is another one. There are probably others that will emerge as part of that process.

So I think my personal concern is that you need to actually undertake those places you are stopping or reducing or realtering and keep in mind you need to be able to keep the capacity and capability and competence in the government contractor community to be able to work while you are going forward. That is the touchstone, I think, that I would advise this Committee to look at it for.

If I could add one thing on the DPA.

Senator REED. Yes, sir.

Mr. BERTEAU. It is up for reauthorization this year. It is obviously not the jurisdiction of this Committee. I have been through two DPA reauthorizations, including one in 1990, where we actu-

ally let the Act expire under a veto threat because it got loaded up, Senator Fischer, as you indicated, with a bunch of things that did not really, from our perspective, contribute to national defense, and we let the Act expire. That is a dangerous time to do it. Saddam Hussein had just invaded Kuwait, and we did it, but it turned out there were other authorities we could use, for a short-term conflict such as that.

I do think this would be important, and input from this Committee might be useful in that reauthorization in terms of looking not only at how the DPA has been used over the previous years but how it has not been used, and where you ought to view it. I agree with Dr. McGinn in terms of Title VII. DPA worked for me for a number of years. I exercised Title VII authority a number of times, and I think it really needs a refresh, because the nature in which DOD would use that authority today, in today's global economy, is very different than it was in the 1980's.

I am sorry for that sidebar, but I think that is an important think for you guys to look at.

Senator REED. Thank you, sir. Your comments, Dr. McGinn. We are running out of time, so if you could, with respect to the present sort of turmoil that we are witnessing and the impact on the industrial base.

Dr. MCGINN. Well, companies that support the government play critical roles in lots of different functions. The big thing that I am recommending is the importance of us restarting mobilization planning. That is not going to be impacted because it does not exist today.

So that is something that has to be developed and is inherently a governmental function.

Senator REED. Thank you very much. Dr. Michienzi, we are much more reliant upon information technology and software-based systems today than we were certainly in World War II and other periods of mobilization. When it comes to planning and preparing for industrial mobilization, how does this reliance change the situation?

Dr. MICHIENZI. Well, luckily software and software systems have been, I would say, more adaptable than some of the hardware systems, as DOD tries to move forward. So they do things like agile acquisition, you know, refreshes and upgrades quite quickly.

So I think software is absolutely key to any mobilization effort because that is what is controlling all of our command and control, for instance, C4ISR [Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance]. So yes, it is absolutely essential.

Senator REED. Thank you very much. Thank you, Madam Chairman.

Senator FISCHER. Thank you, Senator Reed. Senator Rounds, you are recognized.

Senator ROUNDS. Thank you, Madam Chair. First of all, thank you to all of you for being with us here today. We appreciate the time that you are taking from your schedules.

For all of you, the fiscal year 2025 defense bill includes a provision from my office, Section 1074, a report on operational plans of the Department of Defense, which requires an assessment of the

operational plans of the DOD in the event of multiple, concurrent contingencies or protected conflicts. This requirement reflects the reality that in the event the U.S. engages in hostilities with China, other adversaries, such as Russia and Iran, will press their own advantage in Europe, the Middle East, and elsewhere. Basically talking about if we have a conflict, we are going to have a conflict in more than one area or one theater at a time.

What are some of the considerations that we must take into account when talking about a multi-theater mobilization, and what are some of the key shortfalls that you believe the Department should identify and highlight in their assessment? Dr. Berteau, would you like to begin?

Mr. BERTEAU. Thank you, Senator. Let me again go back a few years. At the time of the cold war, we really only had one set of scenarios that we cared about, and that was the Soviet threat in Europe. Everything else was considered to be what we called a "lesser-included case." That means whatever force structure and capability we would have to counter the Soviet threat would probably be sufficient to counter any other threat.

After the end of the cold war, we changed that to several different iterations from a planning process point of view, including a two-war scenario, that essentially being the Middle East and Iran, Iraq, and the Korean Peninsula. It turns out, after 9/11, we discovered that lesser-included cases might be lesser but they were not included, so we had to have a big shift in terms of both our strategy and our force posture to deal with that.

In 2012, I was charted by DOD to do the first assessment of what the force posture would be needed for the pivot to Asia, and what I discovered is there was no basis for that. Again, this was a greater not included, rather than a lesser included.

So I think if you look at that evolution over time, the request of your provision is a very valuable and timely request. But it is important to note that that is only where we are today. So from the operational plan point of view it really focuses, from a combatant commander's point of view, of if I fight today, if I have to fight tomorrow, what do I have, what do I do, how do I use it, how do I sustain it, support it, et cetera.

I think it needs to be much broader than that, of what is it in day 50? What are the lessons from Ukraine and almost every war we have entered in? It may look like it is going to be short at the beginning; it keeps on going. So where are you at day 700? I think that is another element that is useful to add on there, sir.

Senator ROUNDS. Thank you. Dr. McGinn?

Dr. MCGINN. Thank you, Senator. Yes, thank you very much for that provision. I think that is important to really focus on operational plannings. But one of the things that is missing in most operational planning is the role of industry. One of the things that we saw when supporting Ukraine is the challenge of production, that we have got to really kind of be able to ramp that up, and that requires really close government-industry collaboration.

During the cold war we had these voluntary agreements that created integrated committees, that were focused on the production of 155 munitions, that were actually non-FACA [Federal Advisory

Committee Act] boards that allowed for close collaboration between government and industry on production issues.

So that needs to be part of the planning. We need to do the war games that have that, because you have seen the war games where if we have a Taiwan Strait scenario, we are out of Schlitz in 2 weeks on munitions.

So we have got tremendous kind of industrial implications to these operational scenarios that have to be part of the planning going forward.

Senator ROUNDS. Thank you. Dr. Michienzi?

Dr. MICHIENZI. Real quickly, I will just add that the National Defense Strategy drives how the Defense Department looks at operational planning. So the current National Defense Strategy stays focused on China. Previous National Defense Strategies did include multiple conflicts at the same time and looking at that from an operational planning perspective. So National Defense Strategy would be helpful here if we are going to really, truly look at that.

I do want to mention some of the impacts, though, are the types of munitions that we are going to use. In Ukraine, we are fighting mostly a ground war, so we are using a lot of artillery, mortars, things that we are absolutely not going to be using in a China fight. In a China fight we are focusing more on service launched, air launched long-range missiles. If we now have to add in another fight, say Korea, we are back to a partial ground war.

So it really matters which fights we are looking at as to which parts of the industrial base we are trying to ramp up.

Senator ROUNDS. Thank you. Thank you, Madam Chair.

Senator FISCHER. Thank you, Senator Rounds. Senator King, you are recognized.

Senator KING. Madam Chair, congratulations on your meteoric rise to the chairmanship. [Laughter]

Mr. Berteau, I was really interested in your approach during the Reagan years of defining the scenario and then defining the strategy to meet it. Isn't that what is done now? I would assume that is exactly what is done. Or is it being done in too broad a sense without focusing on particular scenarios that would require a particular response?

Mr. BERTEAU. So I should probably clarify my use of the words. So you have an operational plan which, from my perspective in history, is the today fight, with the forces today and the theaters they are in.

Scenarios can go beyond that, both in terms of time and in terms of geography. What we had in the cold war was almost no difference between the operational plan in the fight today and what the long-term scenario would look like.

Today, as we just heard in the discussion in response to Senator Rounds' question, we have a wide variety of potential conflicts that could arise. In addition, we have got——

Senator KING. But still, shouldn't we, within that wide variety we should try to choose the most likely. You cannot just throw up your hands and say, "We have a very complex situation, and therefore we can't have a specific response." Should we not we be saying, "Okay, this is the most likely scenario, and that is what we should be preparing for"?

Mr. BERTEAU. I think you are right, sir. You need to figure out what you are going to base your requirements on and what you are going to spend your money on, and what comes first. You have to have a mechanism for prioritization. I think it is probably a combination of likelihood and probability, and I am certainly not qualified to put those on there.

But it is also a question of where are the greatest stressors, and what are the vulnerabilities if we cannot meet those stressors. That could, in fact, require an integration across multiple scenarios to look at what is the aggregated or combined impact and effect and where are the greatest things where we need to put our resources first. We will never have enough money to do everything, so the question is where do you put it first.

Senator KING. The likelihood. A very quick, easy question for everybody. Can we all agree that continuing resolutions absolutely are not part of the solution to this problem?

Mr. BERTEAU. Franklin Roosevelt did not face a single continuing resolution through the entire buildup to World War II and the execution thereof.

Dr. MCGINN. Yes, I concur.

Senator KING. All of you agree with that, and, of course, that is one of the difficulties that we are in now, and it creates all kinds of downstream effects with regard to the industrial base and preparation and everything else.

Thank you for that. Let the record show continuing resolutions are not the way to do business, particularly in the defense area.

All of you have mentioned something very interesting, which is allies are part of the solution, and it concerns me that we seem to be embarked on a course that at least is not encouraging to our allies, and in some cases is definitely poking our allies in the eye. Talk to me about the importance of allies in dealing with the production necessary for a significant conflict, whether it is Japan, the U.K. [United Kingdom], Canada, or other countries.

Dr. MCGINN. Our allies are important, sir, a key part of our industrial base, and we have a number of agreements and collaborative programs. I mean, the largest fighter program in the world, the F–35, we have a dozen partner countries, I believe.

Senator KING. So we cannot do this by ourselves. Is that a fair answer?

Dr. MCGINN. That is correct.

Senator KING. All of you are nodding. Could you say yes, because nods do not show up in the record.

Dr. MICHIENZI. Yes.

Mr. BERTEAU. Nods do not show up in the transcript either.

Senator KING. Exactly. One of the problems is the consolidation within the defense industrial base. How do we go about expanding the options available? One suggestion we had from one witness earlier was to go to major manufacturing facilities, Ford Motor Company, for example, and getting them engaged in military production as well as making F–150's. How do we expand the industrial base? Everybody comes here and says we need to expand the industrial base. Give me some practical suggestions as to how that might happen.

Dr. MCGINN. Senator, it is a great question, and I think, one, we have to recognize the consolidation of the industrial base that people talk about, it is largely a function of spending. During the cold war, during the 1980's, when Mr. Berteau was in the Pentagon, we were spending 5.5, 6 percent of GDP [Gross Domestic Product]. Now we are spending around 3. So you are going to have less companies in the overall system.

Then something that Dr. Michienzi mentioned is that when your acquisition is focused on efficiencies, you want to buy the right system, for the right time, and what that ends up with is very limited production runs and/or production runs that last for, you know, when you have platform programs like the F–35, the Bradley fighting vehicle, the Abrams tank, they last for 40 years. So you have a prime contractor that has that market position.

So my argument is that we have to change how we buy, which means buying more systems, buying from multiple sources, and you can do that very much with unmanned systems. With some of the platform systems you can do that, as well. There has been a lot of work done on second-sourcing back in the 1970's and 1980's, where we were buying munitions from two suppliers and that reduces costs.

So there are ways you can increase competition by changing your buying approach, and that has to get away from some of the efficiency focus and more on what capabilities and capacities do we need.

Senator KING. Well, and one of the particular things that ought to be part of this is modularity, so that you can upgrade without having to upgrade the entire platform.

Dr. MCGINN. Madam Chair, would you indulge me for one sentence? We just do not buy enough to keep more companies in business. We just do not buy enough. The reason we only have 2½ manufacturers of tactical missiles is we only buy enough to keep 2½ companies in business.

Senator KING. Thank you. Thank you, Madam Chair.

Senator FISCHER. Thank you, Senator King. Senator Sheehy, you are recognized.

Senator SHEEHY. Thanks for appearing today. Mr. Berteau, you talked about the World War II construct obviously with regard to revisioning of product specifications and how we evolved that.

I share the same concern, though, with regard to the customer has created this problem, i.e., the Pentagon has created this defense consolidation and the brittle supply chain we have. I am not confident that the government can be the solution to it either. How do we incentivize the industry, free market solutions, to actually create a resilient and diversified supply chain, rebuild the industrial base in a way that's resilient for a sustained conflict.

Because during World War II, Japan and Germany had a very centralized defense acquisition ministry, specified everything from on high, and tried to control the entire process from A to Z. That worked very well early on, but it could not keep up with the sheer quantity required, and there is a certain amount of quality in quantity. So that strength, for us, came from the free market. It came from private companies, working in coordination, of course, with the government.

But how do we take defense base that has largely been atrophied to the point of almost non-existence for quantity-level manufacturing, and how do we incentivize the free market to outpace the government in fixing this solution?

Mr. BERTEAU. Thank you, Senator. There are two ways to approach that. When I got to the Pentagon, there is this famous chart, if we went from 51 prime contractors down to 5. When I got to the Pentagon, all 51 were there. Why did they go away, during a buildup in which we were doubling the size of procurement and research and development expenditures in DOD?

They went away for three reasons. No. 1 is even with those more dollars, there was not more quantity to buy. Second is we began to put more and more regulations on top, the compliance regulations. I am working on, and I will be glad to provide it to the Committee when I am finished, a comparison of the compliance requirements that a government contractor has, not just defense contractors but any government contractor, and what happens in the private sector. It is a list of at least 15 or 20 things that cost more, take time, and do not really improve results, in my opinion. I think that is an important piece of it, as well.

Ford Aerospace, Fairchild Industries, Sperry, Bose, GM [General Motors], they all went out of the defense business, in the middle of the buildup, because it was, two things. It was no longer—time, value, money in the private sector is way different than the time, value, money in DOD. So the returns were not there. The opportunities for better returns elsewhere were there.

So you have to be able to counter that with government policies and programs that offset that risk-reward basis that the financial market is always looking for. I think that can be done, but that is not the path we are on right now.

Senator SHEEHY. So for any of you who choose to answer, then, how does the government remove the bureaucratic red tape that really creates the sclerosis in the acquisition chain, that disincentivizes companies from wanting to do business with the Pentagon, that we do not have to have SpaceX and Palentir sue the government to buy a solution that is better for the warfighter. That is what has been going on. A better solution could be sitting on the shelf, but since it does not comport with a dizzying array of byzantine regulations, either it is not purchased or that company has to sue the government to give the warfighter the equipment they need. So how do we change those regulations, quickly, internally, so people want to do business and want to support the warfighter?

Dr. MCGINN. Yes, great question, Senator. I would start, again, what is unique about the government contracting system is it is a monopsony. You have one buyer or different sets of buyers. They can set the market.

So the power is in the hands of the government or the Department of Defense to change incentive structures, because companies—private companies, public companies—they respond to incentives. So the onus is on the Department to change those incentive structures, and Congress can help here, and a couple of ways that we can do that, that will create more opportunities for companies across the spectrum, is to bring the power of our capital system that you allude to, to bear. Because if we want to build factories

in advance of need, that can be done through the government investing, but we are not going to be doing any more big CHIPs bills, that kind of government investment.

But if you incentivize companies and create offtake agreements or financing programs that enable them to make a bet at below market rates, like the Department of Energy has, and builds off what the Office of Strategic Capital is doing, that is how you get lots of money, which is there, the private equity and venture capital money, to invest. That will help build capacity and build competitors for the Dept.

Dr. MICHIENZI. Can I just add one quick thing? I think there also needs to be a recognition of risk acceptance in the Department. Contracting officers are personally liable for if something goes wrong with the contracting. Program managers are promoted if they produce things and nothing goes wrong.

So there is a very low risk tolerance in the Department, and I think that contributes to the fact of not introducing new supplies, not wanting to change things, not wanting to bring in new industries. So I think there needs to be that piece of it that accounts for it, as well.

Senator SHEEHY. Thank you. Quantity, iteration, and speed are key, and what won World War II for us was not the capability of our technology. It was our ability to build lots of things fast and get them in the hands of our warfighter, so we have got to get back to that. Thank you.

Senator FISCHER. Thank you, Senator Sheehy. Senator Kaine, you are recognized.

Senator KAINE. Thank you, Senator Fischer, and thanks to our witnesses.

My concern about mobilization is heavily on the workforce side, and I think maybe because I am on the Health, Education, Labor, Pension I look at a lot of things through this workforce angle. But also in my dialog with our shipbuilders and ship repairs in Virginia and elsewhere, I am very, very nervous about us not having the workforce we need.

I think this is sort of a long-term problem with birth rates declining, and they are not going to change immediately, and if they did we would not see it for 25 years. So I think there are some big picture solutions like a workforce-based immigration reform that we are going to have to grapple with to get this right.

But I would love it if each of you could just address workforce strategies to help us with mobilization, and maybe even include workforce strategies that we could do jointly with allies. I will start with Mr. Berteau, because I know you talked about workforce in your opening statement.

Mr. BERTEAU. Thank you, Senator Kaine. A lot of what we have already talked about has an impact on that, but I think there are two additional points that I would like to make here. One is, in fact, the impact of COVID and both the inflation and general costs and the increasing costs of labor over the last 5 years.

Many defense companies, and many other contractors in the rest of the Federal Government have bids that were put in place, accepted by the government, and contracts currently underway, that made assumptions about zero percent interest rate, very low infla-

tion, a balance between job vacancies and those seeking to work, so a stable workforce, low unemployment. None of that is true over the last 5 years.

Many of those contracts have not been adjusted. In fact, DOD is still issuing contracts today with an annual inflation clause of somewhere 1 or 1.2 percent, both for workforce, for wages and benefits, and for other costs associated with that. That is not only unrealistic, it leads companies to bid proposals that are inexecutable in the end.

What have we done about this? This Committee actually put some language in a couple of years ago in the NDAA—I think it was 3 years ago now—that gave the Defense Department the flexibility, where funds were available, to offset some of those costs. We have seen very little effort on the part of the Defense Department to look at those economic price adjustments come into play.

What is the result? You know this. You have got a starting welder salary at a shipyard, or even after a year of experience, that is substantially less than what that person can make at Walmart or Costco—not standing out in the cold or the heat. I mean, welding is an honorable profession, but it is hard work. I am not saying being a warehouseman at Costco is not hard work, but it is a lot easier on the body.

So we have got to offset some of that or else we are never going to climb out of this hole.

Senator KAINE. Could I ask Dr. McGinn and Dr. Michienzi.

Dr. MCGINN. Yes, thank you very much, Senator. I think one of the strengths of the workforce, the defense industrial base workforce, is the nature of the business. Unlike commercial industries, we generally have longer-term contracts, 5-year contracts, or 1-year with four options, that enables stability in the workforce. It enables companies to plan for the future.

However, when you have continuing resolutions, as Senator King mentioned, and you have stability in budget, it makes it harder for companies to do that. So the more that Congress and the Department can create stable demand signals—and that is through things, like I mentioned, if you do purchase commitments for certain capabilities that you need, or you do multiyear procurement contracts, that enables kind of the stability to grow and stabilize workforce.

Senator KAINE. Great. Dr. Michienzi, you have got a minute 15, but the Chair may let you go just a little bit longer.

Dr. MICHIENZI. Okay, thank you. It is a great question, and I have been involved in this very much as we have been scaling up production for Ukraine and other obstacles.

You know, the quickest way to scale up is to increase capacity, if you are not already operating at full scale. But you need people for that, and it was always an issue to get the people, even if you had excess capacity, getting people to come on board to observe that excess capacity was difficult.

A lot of it has to do with areas that these plants are located in. By design, they are in rural kind of areas that are not near exciting cities, so young people do not want to move there. So I think things that can build infrastructure and make those places better

for young people and make them want to go there and want to stay would be helpful.

It also goes to, when we were growing up we wanted our kids all to be engineers, right, not technicians. That was not considered a valued job description. So we need to make being a technician exciting, and there are some efforts in the Department to do that. So make sure that they understand that what they are doing is important, it goes direct to the warfighter, et cetera.

Last, for allies, I have done a lot of work in that area. I was the lead for the Guided Weapons Explosive Ordnance Program with Australia. One of the things that we had proposed was, as they were trying to ramp up their capacity to make munitions in Australia, which they have not done in a long time, bring some of their folks over to train here and fill some of the workforce shortages that we had here, so it is a win-win. That is something that we should pursue.

Senator KAINE. Which is sort of what we are doing with AUKUS [Australia, United Kingdom, United States] a little bit. We have Aussie shipbuilders and sailors here, training with us, so they can go back and do the same thing.

Dr. MICHIENZI. We need to do more.

Senator KAINE. Yes. Thank you very much. Thanks, Senator Fischer.

Senator FISCHER. Thank you, Senator Kaine. At this time I would like to ask unanimous consent to enter Chairman Wicker's prepared statement into the record.

Senator FISCHER. This concludes today's hearing. I would like to thank the witnesses for their testimony, and we are adjourned.

[Whereupon, at 10:29 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR TOM COTTON

DEFENSE PRODUCTION ACT

1. Senator COTTON. Dr. McGinn and Dr. Michienzi, the Defense Production Act (DPA) is one of the most important tools the Department of Defense (DOD) possesses to revitalize our woefully inadequate defense industrial base. Yet, DOD has historically struggled to effectively utilize the program, and the previous administration used DPA to fulfill non-critical priorities instead of defense needs. How should we reform the Defense Production Act to better suit DOD's needs?

Dr. MCGINN. DPA is indeed a very powerful Presidential authority. As I noted in my testimony, I believe that it is critical "to keep DPA focused exclusively on essential defense and national security issues, in particular threats from China."[1] I also proposed some specific recommendations to strengthen the DPA for the future:

- *DPA Title I—Update executive orders and regulations.* At the national level, the DPA is governed by a number of old and overlapping executive orders spanning numerous administrations that need to be refreshed and simplified. The Trump Administration should conduct a thorough review of relevant executive orders and regulations to better orient DPA policies and practices to address future national security challenges.[2]

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[1] John G. McGinn, Testimony on Defense Mobilization in the 21st Century, U.S. Senate Committee on Armed Services hearing, March 6, 2025. Available at *https://www.armed-services.senate.gov/hearings/to-receive-testimony-on-defense-mobilization-in-the-21st-century* (accessed May 12, 2025).

[2] Jerry McGinn and Daniel Kaniewski, "Where does the Defense Production Act Go from Here? Key aspects need strengthening," Defense One, November 24, 2020. Available at *https://*

Continued

- *DPA Title III—Delegate determination authority and use purchase commitment authority.* Title III is a tremendous tool for building industrial capacity. The non-delegable requirement for the president's signature on each DPA determination, however, has significantly slowed the process by which DPA projects are developed and executed. Allowing the delegation of that determination in the upcoming 2025 reauthorization of the DPA, perhaps to the Secretary level of those agencies with Title III authority,[3] would significantly streamline the development of Title III projects.

  Another significant improvement would be the use of purchase commitments under Title III. All existing Title III projects are purchases under Section 303 of the DPA, but the authority also permits multiyear purchase commitments. Purchase commitments would allow DOD to create a guaranteed demand signal for an industrial capability over a mutually agreed upon period, thereby reducing risks for industry to make their own investments.[4] Adding several purchase commitment projects could significantly help maintain capacity levels in areas such as critical materials and specialty chemicals to support future mobilization efforts. Purchase commitments, however, have not been an option recently because Congress has appropriated DPA funds over the past 3 years using standard Procurement funds which expire in 2 years, contrary to traditional DPA appropriations, which do not expire.
- *DPA Title VII—Relook the use of voluntary agreements and the National Defense Executive Reserve (NDER).* Two sections of DPA Title VII have been scarcely used since the end of the cold war but present a tremendous opportunity for future industrial mobilization. Section 708 permits the government to establish voluntary agreements or plans of action with industry "to help provide for the national defense."[5] The Administration, for example, could establish voluntary agreements to prepare stand-by industrial capacity for potential surge use during conflict. Further, these agreements could enable dynamic government-industry collaboration on production issues such as that during WWII's War Production Board. Section 710 of Title VII also permits the President to establish a NDER, a volunteer group of industrial executives to support mobilization efforts. The Administration should examine the utility of this authority to form on-call groups of industry experts to serve in government during national emergencies. The Baroni team just completed a project addressing these two sections that can inform these efforts when published.

Dr. MICHIENZI. The DPA program at DOD has undergone major changes in the last couple of years that have made it much more effective than it had been previously. They have been able to have Presidential Determinations (required to spend DPA funds) approved that are broader in scope to help mitigate a larger number of industrial base shortfalls; they are able to use contracting vehicles—including an OTA that was approved last year—and other contracting entities besides Wright Patterson Air Force Base, which has made awarding grants much faster. The DPA executed almost one billion dollars in grants last year—proving that it is more efficient and effective than it was in the past. However, even with these changes, the DPA is not as responsive as it should/could be. A number of things could improve the use of the DPA—in peacetime, but especially in times of conflict or other crises.

i. Delegating authority to fund industrial base shortfalls to the Secretary of Defense instead of the President. The current process to staff a package to the Secretary of Defense for approval prior to staffing it at the White House for the President's signature takes approximately 1 year. That timeline is no conducive to being responsive to industrial base issues.

ii. Additional funding. The DPA needs to cover industrial base shortfalls in all sectors, so even though one billion dollars is a lot of money, it has to cover too much. Additional funding would enhance the DPA's effectiveness.

iii. Restoring non-expiring funding. Without this, the DPA cannot issue purchase commitments, which is one of the most powerful aspects of the DPA—especially as the U.S. is trying to reshore critical industrial base capabilities. Providing grants solves the supply issue, but the demand issue will still remain, and those invest-

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www.defenseone.com/ideas/2020/11/where-does-defense-production-act-go-here/170301/ (accessed April 11, 2024).

[3] Currently DOD, the Department of Homeland Security, the Department of Energy, and the Department of Health and Human Services have been delegated DPA Title III authority.

[4] Office of the Assistant Secretary of Defense (Industrial Base Policy) briefing, Defense Production Act Title III. Available at *https://www.businessdefense.gov/ibr/mceip/dpai/dpat3/docs/DPA-TitleIII-Overview.pdf* (accessed April 11, 2024).

[5] 50 U.S.C. § 4558(c)(1); Section 708(c)(1) of the DPA. See also, Neenan and Nicastro, The Defense Production Act, pp. 15–16.

ments will be wasted if there isn't a means to bring demand to those new suppliers. Having off-take agreements and purchase commitments is one of the best ways to provide that demand.

iv. Although all Titles (I, III, and VII) of the DPA can and should be used by other agencies under the right circumstances (response to COVID–19 for instance), the funding supplied to DOD's DPA Title III program should be used solely for defense purposes—to support industrial base shortfalls that have a direct tie to DOD systems. If other agencies, Congress, or the Administration wish to use DPA Title III authorities and grants, they should acquire separate appropriations to do so.

v. DOD should make better use of provisions of Title VII of the DPA to 1) establish voluntary agreements with private industry to develop collaborative plans of action for national defense, including mitigating industrial base shortfalls—participants are granted relief from specific antitrust laws (Section 708), and 2) establish a volunteer pool of industry executives (National Defense Executive Reserve (NDER)) who could be called to government service in the event of a national defense emergency (Section 710).

2. Senator COTTON. Dr. McGinn and Dr. Michienzi, do you believe congressional oversight of DPA would be more effective with congressional oversight by the Armed Services Committees?

Dr. MCGINN. I defer to the congressional Committees to determine the best manner of oversight of the DPA.

Dr. MICHIENZI. I do not believe that there needs to be additional congressional oversight of the DPA.

ARSENALS

3. Senator COTTON. Mr. Berteau, Dr. McGinn, Dr. Michienzi, while DOD has begun to modernize its organic industrial base, it is still not fully utilizing its arsenals and ammunition plants. Arsenals, including the one in Pine Bluff, Arkansas, are struggling to secure funding to modernize its facilities and boost output. How should DOD utilize existing arsenals and ammunition plants to expand desperately needed production capacity?

Mr. BERTEAU. Senator Cotton, the Defense Department's organic industrial base consists of the maintenance and repair depots, shipyards, arsenals, munitions assembly plants, etc. Together, these organic industrial base components provide capacity and capability for current operations and future needs. DOD balances its budget investments in these areas with all the other competing priorities in a budget request that always faces shortfalls. This Committee might assess the soon-to-be submitted President's Budget Request for fiscal year 2026 for those shortfalls.

There is a substantial negative impact on the organic industrial base, including arsenals, of short-term and repeated Continuing Resolutions. Pine Bluff will be better able to modernize its facilities and operations if Congress passes on-time full year appropriations for fiscal year 2026 and avoids both short-term and full-year Continuing Resolutions.

Dr. MCGINN. DOD should use the most cost-effective manner to expand production capacity for munitions and other capabilities. Arsenals and depots in the organic industrial base should definitely be considered as part of that assessment by DOD.

Dr. MICHIENZI. Arsenals and ammunition plants have a role, but it is not to displace commercial industry. They should be used in sectors and for materials and components that are critically important to U.S. national security, that are DOD unique, and where poor business cases prevent private industry from maintaining capability and capacity. A prime example is 155mm ammunition, which is being used extensively in Ukraine. This is a DOD unique item that is critical for national security, and where private industry would have right sized itself to DOD demand (14,000 rounds a month prior to the Ukraine invasion). Luckily, the Scranton Army Ammunition Plant that produces those rounds had maintained some excess capacity, which allowed the Army to scale up production more quickly than having to expand or develop a new commercial facility. So where these conditions exist for other systems, the organic industrial base can and should be examined as an option. However, if there is enough demand and the item is commercial or has commercial applications, private industry will be best suited, as they will always be the most economical choice.

4. Senator COTTON. Mr. Berteau, Dr. McGinn, Dr. Michienzi, would you recommend using the arsenals to establish secondary sources of critical supply chain choke points, such as nitrocellulose?

Mr. BERTEAU. Senator Cotton, as this Committee and DOD continue to work on solving supply chain problems, it is useful to consider the potential of the arsenals to provide secondary sources of supply.

Dr. MCGINN. The organic industrial base is often used to develop capabilities that are military unique or not part of the commercial supply chain. To that end, nitrocellulose is currently produced at the Radford Army Ammunition Plant. Having a second source for nitrocellulose and other specialty chemicals or materials would be beneficial if there is a business case for its development.

Dr. MICHIENZI. Given the above criteria, yes—this is a good use of the organic industrial base. DOD could split the procurement of these items to give just enough to the organic facilities to maintain the capability and capacity, while still utilizing mostly commercial industry, where available. Nitrocellulose is currently produced at Radford Army Ammunition Plant, so it may not be the best example, but there are plenty of other examples where this would apply.

CRITICAL MINERALS

5. Senator COTTON. Dr. McGinn and Dr. Michienzi, can you explain why it is so dangerous for the United States to depend on Communist China for certain critical minerals?

Dr. MCGINN. It is very dangerous for the United States to be in a sole or single source situation with critical minerals or other materials to a Chinese source because the Chinese government can shut down exports of these materials at any time. In 2010, China restricted the export of certain rare earth materials to Japan because of a trade dispute, causing a worldwide spike in rare earth prices.[6] Recent rare earth export restrictions in response to increased tariffs has further demonstrated this danger. Despite over $400 million in industrial base investment since 2020 in the United States to rebuild domestic industrial capacity in rare earth processing, the Chinese still have tremendous market power in critical minerals that are vital for commercial and defense products.

Dr. MICHIENZI. Critical minerals are used ubiquitously in both commercial and defense systems. They are used in almost everything the DOD builds and uses, but also in military and civilian critical infrastructure, medical devices, IT and communication equipment, and household appliances—to name a few. China has already restricted the exports of a number of critical minerals, including some rare earth elements, which has DOD scrambling to examine stockpiles and inventories and racing to expedite development of non-Chinese sources. And it's not the mines that are the issues—the U.S. and its allies have plenty of mines for these materials. It's the processing and downstream product manufacture that are the issue because China controls a large percentage of these industries. What we've seen so far are just shots across the bow. China knows exactly where our industrial base pain points are, and they know how to weaponize them. Taken far enough, these export controls could cripple both military and civilian life.

6. Senator COTTON. Dr. McGinn and Dr. Michienzi, how important is it that we pursue other sources of critical minerals outside of China, both domestically, and in other countries like Ukraine, for example?

Dr. MCGINN. There are many sources for critical minerals outside of China. The United States and allies and partners such as Australia, Canada, Ukraine, and many others have deposits of critical minerals. The key, however, is the processing and refinement of these minerals and materials, not just the sourcing of the raw material. That is where China has the dominant market position. Increasing the capacity of domestic and allied sources for processing rare earths and other critical minerals should be the priority for near-term investments in my view.

Dr. MICHIENZI. Critically important due to the reasons listed above. However, processing and magnet making should be the priorities for DOD since there are plenty of mines for these materials outside China.

FOREIGN MILITARY SALES

7. Senator COTTON. Dr. McGinn and Dr. Michienzi, you've discussed the importance of sending a clear demand signal to industry so it has the predictability it

[6] Keith Bradsher, "China Bans Rare Earth Exports to Japan Amid Tension," New York Times September 23, 2010. Available at *https://www.cnbc.com/2010/09/23/china-bans-rare-earth-exports-to-japan-amid-tension.html* (Accessed December 10, 2024).

needs to invest strategically in its supply chain and facilities. In addition to signaling U.S. demand for equipment like munitions, how do foreign military sales play a role in sending industry clear demand signals?

Dr. MCGINN. Foreign Military Sales (FMS) and direct commercial sales (DCS) send important demand signals to industry. FMS and DCS often help extend the life of a military program for years after the U.S. military stops buying them. The U.S. Army, for example, stopped purchasing Stinger missiles in 2002, but production continued for almost another 20 years based on FMS and DCS. Thus, when demand for Stingers suddenly spiked in response to Russia's invasion of Ukraine, there was a production line still in existence. Many other defense systems, such as the F–16 fighter jet and Patriot missiles, continue in production exclusively or largely because of FMS or DCS demand.

Dr. MICHIENZI. Foreign Military Sales (FMS) can augment U.S. demand to industry for DOD systems. However, studies have shown that FMS is not a reliable enough demand to fill the gaps created by inconsistent DOD and congressional funding. This is mainly due to the reluctance of foreign partners to provide information on their projected demand. Even when DOD tries to calculate what the demand might be by including requirements for foreign partners in operational plans, it requires knowledge of those partners' inventories, which they also will not provide. This leaves DOD and industry in the dark, thereby not providing what could be a better demand signal.

QUESTIONS SUBMITTED BY SENATOR JACK REED

IMPACT OF WORKFORCE REDUCTIONS

8. Senator REED. Mr. Berteau and Dr. Michienzi, how do you believe that the steep and indiscriminate workforce cuts that are being proposed by the Trump administration will impact the Department's efforts to plan and prepare for defense mobilization in the event of a large scale or protracted conflict?

Mr. BERTEAU. Senator Reed, I believe that DOD's total workforce (including military personnel, Federal civilian employees, and government contractors) MUST be aligned with its requirements. The reductions in force and employee terminations undertaken in the past few months exhibit no assessment of such requirements or alignment with personnel reduction goals.

In the 1980s, I managed two such efforts. First, DOD conducted the first and only assessment of Flag and General Officer requirements. This work resulted in a reduction of nearly 10 percent of such officers, downgrading some to lower-level officers, eliminating many, and even elevating the requirements for some positions. The recent announcement by DOD of Flag and General Officer cuts have no discernible connection to any assessment of actual requirements.

Second, under direction from this Committee, DOD conducted a full assessment of overall officer requirements, and the subsequent report to this Committee resulted in significant changes to DOD's officer corps in every military department, with some increases and many decreases.

Similar efforts for civilian employees and contractors are more difficult to undertake, because those workforces respond to requirements that are generated with the budget. Prudent management in DOD would align workforce with budgeted work. The Committee will need to assess the Fiscal Year 2026 President's Budget Request for evidence of such alignment of work with workforce.

Dr. MICHIENZI. DOD will need experienced people with expertise in multiple areas to prepare for defense mobilization. The current workforce cuts do not seem to be strategically planned to preserve that capability, while trying to achieve efficiencies. Developing a list of workforce skills necessary and matching it against requirements would make the effort more effective and still allow DOD to maintain the people necessary.

9. Senator REED. Mr. Berteau and Dr. Michienzi, in thinking about that, how do you think the proposed workforce cuts to other Federal agencies or entities that may support DOD in a whole-of-government effort for industrial mobilization will indirectly impact DOD efforts in this space?

Mr. BERTEAU. Senator Reed, in my experience, such assessments are vitally important and take some time. Workforce reductions in other agencies may or may not affect DOD, and this Committee should consider such effects as it marks up the Fiscal Year 2026 NDAA. I am not aware of any attempt at DOD or in the other Federal agencies to assess the impact on DOD of cuts in those agencies.

Dr. MICHIENZI. Preparing for defense mobilization requires a whole-of-government effort. For instance, the Department of Education to help with workforce training, the Department of Transportation to enable movements of people and equipment, the Department of Commerce and the U.S. Trade Representative to help balance trade and the flow of goods into and out of the U.S. while preserving U.S. capability. The same strategic planning should be done at these agencies to ensure the right skill sets and capabilities remain.

10. Senator REED. Mr. Berteau, are there any lessons from your time working in the Department during the Reagan administration that might be helpful to keep in mind?

Mr. BERTEAU. Senator Reed, I was in charge of overall DOD manpower requirements from 1986 through the end of the Reagan administration and continued in that role for the first 10 months of the following administration. The most important lessons include:

- DOD needs to assess workforce requirements and reflect in the President's Budget Request the resources needed to meet those requirements.
- DOD needs to consider the total costs of workforce in that assessment (keeping in mind that the full cost of contractors is known but the full cost of Federal civilians and military personnel is hidden in other accounts and hard to determine),
- DOD needs to consider the potential for surge capacity in that assessment.

INFORMATION TECHNOLOGY ISSUES

11. Senator REED. Dr. Michienzi, to elaborate on my question to you on the challenges information technology (IT) and software-based systems pose for industrial mobilization, I am particularly interested in how the tangled supply chain for IT products-such as microelectronics or specialized materials-might be complicated in the event of a protected conflict with China. For instance, we saw how sanctions on Russia interdicted microelectronics to the point that it impacted how the Russians produced specific weapons. How are companies thinking about such supply chain disruptions might impact their ability to produce systems for DOD?

Dr. MICHIENZI. Unfortunately, much of the supply chain that supports IT products is global, and much of it lies in China and/or the Asia Pacific theater. For instance, although the U.S. still leads in the design of semiconductors, roughly 75 percent of semiconductor fabrication and 98 percent of the packaging of those semiconductors occurs in the in that theater. Taiwan accounts for about 60 percent, South Korea 13 percent, and China 12 percent. Compare that to the U.S. which only produces about 14 percent and produces NO state-of-the-art semiconductors, which are what are primarily used in IT products. Critical minerals, which are used in semiconductors and other IT sub-components are also primarily processed and made into finished goods such as IT systems in China. As we've seen with China's recent export controls, they can cutoff supply at any time, and this has already caused issues, with DOD scrambling to examine stockpiles and inventories and racing to expedite development of non-Chinese sources. Additionally, even if we are currently acquiring these things from allied nations such as South Korea, if a conflict should start between China and Taiwan, it will be difficult to ship anything from Asia-Pacific theater countries. Companies should have learned lessons about this during COVID–19, when supplies of critical items from some countries were scarce or nonexistent. And some companies have begun looking at alternate or second source suppliers that are less risky. However, as long as industry is profit driven and the U.S. remains a free-market society, most of industry will use cheaper vs higher priced but more secure sources. This is where the U.S. should use industrial policy to combat this—something it is reluctant to do. Not using industrial policy solutions is an adequate strategy as long as there is a level playing field. But as we know, this is not, and has not been the case. Many countries—and especially our adversaries—do not play by the same rules:

i. They provide subsidies to their industries, and many are state-owned:

ii. They encourage over-production;

iii. Which leads to dumping/flooding the market which drive prices down;

iv. Which then drives out the competition, who cannot be cost-competitive;

v. This captures market share—monopolizes markets;

vi. They weaponize this advantage—as China has recently with gallium, germanium, graphite, and other critical minerals;

China has used this to great effect to capture and dominate markets such as rare earths and lithium for EV batteries and is now attempting to do so for semiconductors. The CHIPS Act and the export controls Commerce has put in place for manufacturing equipment for advanced semiconductors are examples of where industrial policy is necessary and has slowed China down, but we will not be able to stop them. They are currently concentrating on legacy or trailing edge chips which dominate critical industries such as automotive, aircraft, appliances, cell phones, medical equipment, critical infrastructure, and DOD weapons systems, until such time as they can catch up on leading edge.

12. Senator REED. Dr. Michienzi, are you aware if DOD in planning for industrial mobilization is considering these sorts of supply chain disruptions, and how might they be considering alternative or fall back approaches for dealing with them?

Dr. MICHIENZI. Yes, DOD is very aware of these disruptions and has been tracking and mitigating them well before COVID–19 surfaced them for the general public and highlighted them for industry. OSD's office of Industrial Base Policy has made numerous investments, through both the Defense Production Act (DPA) Title III and Industrial Base Analysis and Sustainment (IBAS) programs, in critical capabilities within the U.S. where they have identified risks and issues. For example, during the previous administration, those programs invested ~$700 million to on-shore critical minerals mining, processing, and magnet making capabilities. They are encouraging industry to have better visibility and management of their supply chains, and they also work with the Services and Congress to provide incentives for using secure (U.S. or allied) sources vs. adversarial sources.

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

TRUMP ADMINISTRATION'S CIVILIAN WORKFORCE CUTS

13. Senator HIRONO. Dr. Berteau and Dr. Michienzi, one of the biggest lessons learned from the World War II mobilization was that labor shortages were a huge challenge to increasing production. Given the potential for a conflict with China over the next several years, I would like you to comment on how President Trump, Elon Musk, and the Department of Government Efficiency's (DOGE) efforts of taking a chainsaw to the Federal workforce impacts our ability to properly mobilize for such a contingency, especially since we need a 2-year personnel ramp up to be in a position to be ready in time?

Mr. BERTEAU. Senator Hirono, I highlighted these issues in my opening statement and during the hearing, particularly in the exchange with Senator Kaine. DOD workforce planning for military personnel and Federal civilians must include consideration of the lead times needed for such personnel to be proficient in their positions. In addition, DOD must include such considerations in its contracting processes and funding. Contracts that cap future compensation at rates below the national economy make it hard for companies to compete for the workers needed.

Dr. MICHIENZI. DOD will need experienced people with expertise in multiple areas to prepare for defense mobilization. The current workforce cuts do not seem to be strategically planned to preserve that capability, while trying to achieve efficiencies. Developing a list of workforce skills necessary and matching it against requirements would make the effort more effective and still allow DOD to maintain the people necessary. In addition, preparing for defense mobilization requires a whole-of-government effort. For instance, the Department of Education to help with workforce training, the Department of Transportation to enable movements of people and equipment, the Department of Commerce and the U.S. Trade Representative to help balance trade and the flow of goods into and out of the U.S. while preserving U.S. capability. The same strategic planning should be done at these agencies to ensure the right skill sets and capabilities remain.

INFORMATION TECHNOLOGY AND SOFTWARE MOBILIZATION

14. Senator HIRONO. Dr. Michienzi, one of the biggest differences between the mobilization that occurred during World War II, which focused entirely on hardware like tanks, ships, and planes, and the present is the DOD's increasing reliance on IT and software to wage war effectively. From a supply chain perspective, what specific challenges and risks do you think our reliance on IT and software-based systems poses when it comes to planning and preparing for industrial mobilization, and what recommendations would you give DOD to address this important issue?

Dr. MICHIENZI. Unfortunately, much of the supply chain that supports IT products is global, and much of it lies in China and/or the Asia Pacific theater. For instance,

although the U.S. still leads in the design of semiconductors, roughly 75 percent of semiconductor fabrication and 98 percent of the packaging of those semiconductors occurs in the in that theater. Taiwan accounts for about 60 percent, South Korea 13 percent, and China 12 percent. Compare that to the U.S. which only produces about 14 percent and produces NO state-of-the-art semiconductors, which are what are primarily used in IT products. Critical minerals, which are used in semiconductors and other IT sub-components are also primarily processed and made into finished goods such as IT systems in China. As we've seen with China's recent export controls, they can cutoff supply at any time, and this has already caused issues, with DOD scrambling to examine stockpiles and inventories and racing to expedite development of non-Chinese sources. Additionally, even if we are currently acquiring these things from allied nations such as South Korea, if a conflict should start between China and Taiwan, it will be difficult to ship anything from Asia-Pacific theater countries. Companies should have learned lessons about this during COVID–19, when supplies of critical items from some countries were scarce or nonexistent. And some companies have begun looking at alternate or second source suppliers that are less risky. However, as long as industry is profit driven and the U.S. remains a free-market society, most of industry will use cheaper vs higher priced but more secure sources. This is where the U.S. should use industrial policy to combat this—something it is reluctant to do. Not using industrial policy solutions is an adequate strategy as long as there is a level playing field. But as we know, this is not, and has not been the case. Many countries—and especially our adversaries—do not play by the same rules:

i. They provide subsidies to their industries, and many are state-owned;

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vi. They weaponize this advantage—as China has recently with gallium, germanium, graphite, and other critical minerals.

China has used this to great effect to capture and dominate markets such as rare earths and lithium for EV batteries and is now attempting to do so for semiconductors. The CHIPS Act and the export controls Commerce has put in place for manufacturing equipment for advanced semiconductors are examples of where industrial policy is necessary and has slowed China down, but we will not be able to stop them. They are currently concentrating on legacy or trailing edge chips which dominate critical industries such as automotive, aircraft, appliances, cell phones, medical equipment, critical infrastructure, and DOD weapons systems, until such time as they can catch up on leading edge. Policies should be put in place to incentivize industry to use more secure sources, even if they are more costly. Those can be things like price preferences for using those suppliers.

15. Senator HIRONO. Dr. Michienzi, how should we think about mobilization differently today than in the past—for example, should we think about mobilization of different sectors of the economy, or should we think about mobilization on a different timeframe than in the past?

Dr. MICHIENZI. Mobilization will definitely be different today than it was in the past. I'm often asked, why can't we do things like we did it in the book "Freedom's Forge", and I have developed a 'gap analysis that describes why we can't do that and how we should proceed now:

The Nation has an imperative to mobilize the Defense Industrial Base to address the increasingly aggressive threat from China and, to a lesser extent, Russa, Iran, and North Korea. As a reference point we can ask ourselves; "Can we, at least in principle, do what we did in World War II, as described in the book Freedom's Forge?" Here is a perspective on how we can accomplish similar objectives (i.e. large-scale mobilization of the Nation's industrial base to deliver affordable capacity for critical military capability) by addressing the conditions that are very different now relative to what was happening then.

Some key challenges we face today, relative to back then, are:

- The industrial ramp up started years before the U.S. entered WWII and was motivated by some key visionary leaders, including the President. We need to create that vision and have it embraced by POTUS with senior leadership assigned specifically to solve the challenges in a manner that Knudsen was empowered to do so.
- Time is of the essence and we are likely behind the curve. To achieve the necessary transformation, we must immediately start addressing inventory short-

ages for critical materials and components and build capacity in the industrial base to produce capability that goes well beyond what is currently available. Today's industrial base is not resilient as a result of right-sizing itself to the DOD "peacetime" demand. In other words, we must rebuild resilient surge capacity in our defense industrial base and supply chain.

- We must immediately address today's major workforce shortages across all industrial sectors by aggressively implementing a strategy to upskill the current population and investing in the next generation of workers across the spectrum of essential skills. Our much more complex systems today (e.g. precision guided munitions) versus in WWII (e.g. gravity bombs), along with an increase in automated manufacturing, will require leveraging and training a more highly skilled workforce.
- There were many large companies and factories that were not operating at capacity prior to WWII, so companies were eager to quickly repurpose that excess capacity for defense production. Today excess capacity is much scarcer, so we will have to immediately identify the capacity needs and aggressively build to fill the gaps.
- Our current supply chain is filled with single and sole source suppliers, many in adversarial countries, resulting in unacceptable lead times for some items and potential for supply chain disruption by unfriendly nation suppliers. Therefore, we must identify specific critical supply chain vulnerabilities then onshore or 'ally shore' critical materials and components and develop multiple sources for critical elements of our supply chains.
- Many of the deals made back then were based on handshakes, where industry went out at risk, spending their own money until Federal funds were available. We must immediately address our contracting environment to dramatically minimize contracting times and develop an incentive structure that motivates industry to move out quickly (if necessary, even before a contract is definitized), allowing us to deliver systems aggressively while compressing schedule and maximizing throughput and efficiency.
- We must return to the paradigm that understands and accepts developmental risk then allows for failing early to accelerate learning and deliver capability much more rapidly.

MOBILIZATION POLICIES

16. Senator HIRONO. Mr. Berteau, following the end of the cold war and subsequent peace dividend throughout the 1990's, a lot of the policies, processes, and organizations focused on mobilization atrophied or were put on the shelf. Based on your experience in the Reagan administration, what policies, processes, or organizations from the cold war would you suggest we go back and emulate or modify to consider implementing now?

Mr. BERTEAU. Senator Hirono, I noted in my opening remarks the following lessons from my cold war experience in the Reagan administration:

1. We need an operational plan and a scenario on which to calculate mobilization requirements, and from those requirements, propose and secure appropriations for needed funding. Requirements depend on a clear-eyed assessment of current and future adversary capabilities.
2. We need to demonstrate the capability to deploy forces to the theaters and to sustain those forces for a long time. This demonstration needs to be in the real world, not on paper or in plans alone. We did this with annual exercises in Europe that deployed thousands of personnel.
3. We need to build a collaborative partnership with industry, not an arms-length relationship. Industry needs to be part of the requirements assessment and part of the demonstration of capacity and capability.
4. We need to plan for, train and equip, and operate with allies and partners.
5. Mobilization planning includes more than DOD and the defense industry. It must involve all of government, the national economy, and the forces, industries, and economies of our allies and partners.

17. Senator HIRONO. Dr. McGinn, your report emphasizes the importance of creating mobilization scenarios and exercising them regularly—do you think DOD is doing enough in this area?

Dr. MCGINN. DOD needs to rebuild its capacity to conduct mobilization planning and exercises. As I noted in my testimony, "Mobilization planning ended in the early 1990's. It is time to rebuild that capacity, not only in DOD, but also in the Federal

Emergency Management Agency, the Department of Commerce, and the Executive Office of the President. These planning efforts will greatly improve mobilization efforts across agencies."[7]

INTERAGENCY COORDINATION

18. Senator HIRONO. Dr. McGinn and Dr. Michienzi, your report also highlights the importance of interagency coordination in mobilization efforts, something former President Franklin Roosevelt addressed by appointing czars during World War II. What recommendations would you give the current administration to improve interagency coordination in support of mobilization?

Dr. MCGINN. I believe that the administration could undertake a number of actions to improve interagency coordination in support of mobilization. I highlighted a number of specific recommendations in this area in my testimony:

- DPA Title I—Update executive orders and regulations. At the national level, the DPA is governed by a number of old and overlapping executive orders spanning numerous administrations that need to be refreshed and simplified. The Trump Administration should conduct a thorough review of relevant executive orders and regulations to better orient DPA policies and practices to address future national security challenges.[8]
- DPA Title VII—Relook the use of voluntary agreements and the National Defense Executive Reserve (NDER). Two sections of DPA Title VII have been scarcely used since the end of the cold war but present a tremendous opportunity for future industrial mobilization. Section 708 permits the government to establish voluntary agreements or plans of action with industry "to help provide for the national defense."[9] The Administration, for example, could establish voluntary agreements to prepare stand-by industrial capacity for potential surge use during conflict. Further, these agreements could enable dynamic government-industry collaboration on production issues such as that during WWII's War Production Board. Section 710 of Title VII also permits the President to establish a NDER, a volunteer group of industrial executives to support mobilization efforts. The Administration should examine the utility of this authority to form on-call groups of industry experts to serve in government during national emergencies. The Baroni team just completed a project addressing these two sections that can inform these efforts when published.
- Restarting mobilization planning efforts across the U.S. Government, as outlined in my response to the previous question.

Dr. MICHIENZI. It will take a whole-of-government response to mobilize for a conflict. Currently, different government agencies have different, sometimes conflicting, requirements. An example is when a foreign government tries to purchase a U.S. company. The transaction is subject to review by the Committee on Foreign Investment in the United States (CFIUS), a multi-agency process where each agency reviews the transaction through their particular lenses. So, for example, while DOD could consider the transaction a national security risk, the Department of Commerce could look at it as creating jobs, which is good for the U.S. economy. This is a real-life example of where agencies are sometimes not aligned, and which could present large obstacles to an effort that requires them to be aligned. For industrial mobilization to be successful, direction will need to be provided from administration leadership to all agencies that there needs to be alignment to the goal, even when it may not align with the agencies' normal priorities.

CONTINGENCY CONTRACTING—ALL WITNESSES

19. Senator HIRONO. Mr. Berteau, Dr. McGinn, Dr. Michienzi, are there lessons from our experiences in contingency contracting in Iraq, Afghanistan, and during the COVID–19 pandemic that we should also look at to consider emulating or modifying for use today?

Mr. BERTEAU. Senator Hirono, three big lessons from contingency contracting are:

1. Plan for contractor support in operational plans
2. Train with the contractors that will support deployments and operations
3. Have contracts in place and ensure funding is available.

Dr. MCGINN. Our experiences during the COVID–19 pandemic are particularly applicable today. The dramatic use of emergency Federal Acquisition Regulation

[7] McGinn SASC Testimony.
[8] McGinn and Kaniewski, "Where does the Defense Production Act Go from Here?"
[9] 50 U.S.C. § 4558(c)(1); Section 708(c)(1) of the DPA.

(FAR) provisions, Other Transactions Authorities (OTs), and rapid procurement activities enabled the U.S. Government to meet the needs of this true national emergency through approximately $40 billion in contract obligations over 6 months.[10] The increased use of OTs and rapid acquisition are excellent models for continuing use today.

Dr. MICHIENZI. Contingency contracting can be extremely helpful during crisis periods, as the defense industrial base does not routinely maintain excess production capacity, and it can take 6–24 months for capacity expansions to be completed. DOD has used this effectively many times. In addition, collaboration between government agencies can help provide more efficient contracting. During the COVID–19 pandemic for instance, DOD played a vital role in the response from a health perspective. Congress provided funding to HHS and FEMA to help provide more medical resources—ventilators, masks, cotton swabs, syringes, etc. However, neither office had the necessary acquisition resources or training to execute that funding or use tools like the Defense Production Act (DPA), so DOD stepped in and helped them execute over $60 billion and helped expand production capability and prioritize orders using DPA. The same thing happened when Commerce received $52 billion in CHIPS Act funding. This was many times the annual budget for Commerce, and they didn't have sufficient acquisition workforce and knowhow (for instance, they only knew how to use FAR based contracts vs. other options such as Other Transaction Authorities (OTAs)) to execute, so DOD stepped in—helping train them how to do acquisition and sending personnel to help get them started while they staffed.

QUESTIONS SUBMITTED BY SENATOR ELIZABETH WARREN

DEFENSE PRODUCTION ACT

20. Senator WARREN. Mr. Berteau, Dr. McGinn, Dr. Michienzi, in your written testimony you said, "mobilization is far more than a Defense Department undertaking." How does this apply in considering reauthorization of the Defense Production Act?

Mr. BERTEAU. Senator Warren, the Defense Production Act (DPA) provides authorities that have been delegated by the President to six Federal cabinet departments: the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, and Transportation. In addition, section 722 of the DPA establishes the DPA Committee (DPAC) and provides that Committee membership includes the heads of 12 Federal departments and four Federal agencies as well as the Chair of the Council of Economic Advisors.

At the time that I was in charge of DPA for DOD, we held regular discussions with and coordinated closely with the other agencies (some more than others). Because of the paucity of separate legislation enacted in recent Congresses, the most recent DPA reauthorization was enacted in the Fiscal Year 2019 National Defense Authorization Act (P.L. 115–232). However, DPA reauthorization in the Senate is under the jurisdiction of the Senate Committee on Banking, Housing, and Urban Affairs, of which you are the Ranking Member.

I respectfully suggest that you encourage that Committee to examine, as part of its reauthorization, the integration of interagency interactions with regard to mobilization requirements, roles, and responsibilities across the interagency community.

Dr. MICHIENZI. Preparing for defense mobilization requires a whole-of-government effort. For instance, the Department of Education to help with workforce training, the Department of Transportation to enable movements of people and equipment, the Department of Commerce and the U.S. Trade Representative to help balance trade and the flow of goods into and out of the U.S. while preserving U.S. capability. Under the current Defense Production Act (DPA) authorization, multiple agencies have authority for Title I, which is used to prioritize government orders so they can be delivered on time if there are commercial orders that would delay the delivery. Title III, which is the investment part of DPA, is a unique defense authority and it should remain so. There are so many risks and issues within the defense industrial base, that diluting that authority risks reducing its effectiveness—just at a time when it is needed the most. Other agencies have investment authorities and funding which can be used to address their needs.

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[10] McGinn, *Before the Balloon Goes Up: Mobilizing the Defense Industrial Base Now to Prepare for Future Conflict.* The Greg and Camille Baroni Center for Government Contracting Report No. 10, October 3, 2024. Available at *https://business.gmu.edu/news/2024–10/balloon-goes-mobilizing-defense-industrial-base-now-prepare-future-conflict* (accessed March 4, 2025).

21. Senator WARREN. Dr. McGinn, do you believe that energy self-sufficiency enhances the Nation's national security?

Dr. MCGINN. Absolutely. Energy self-sufficiency eliminates the risk of the dependence of foreign sources of energy that could be impacted by trade policy, conflict, or natural disaster.

22. Senator WARREN. Mr. Berteau, Dr. McGinn, and Dr. Michienzi, is Congress currently appropriating enough money to the DPA Fund to carry out Title III activities at the speed and scale necessary to respond to PRC economic warfare and mobilize in the event of a conflict?

Mr. BERTEAU. Senator Warren, there are not sufficient authorizations or appropriations for DPA Title III. In part, this is because DOD budget requests are based on DPA requirements that do not reflect the true readiness and mobilization needs of the Department. Congress, and this Committee, have the capability and, I believe, the affirmative responsibility to address that shortcoming, to direct the administration and DOD to determine those needs (and the basis for that determination) to provide that information to the Committee. I recommend that the Committee not wait until the final enactment of the Fiscal Year 2026 NDAA to provide such direction to DOD but instead, as I stated in my testimony, to direct DOD to conduct a full-blown exercise to determine what mobilization requirements are and to describe the scenarios on which those requirements are based. I recommend the Committee direct receipt of the results between now and the time the Senate and the House of Representatives finalize the Fiscal Year 2026 NDAA.

Dr. MCGINN. Congress has dramatically increased appropriations to the DPA Fund since the COVID–19 pandemic. Many of these appropriations have focused on countering Chinese industrial policy efforts to gain dominant market positions in areas such as rare earth minerals, batteries, and specialty chemicals. Congress could appropriate more funds for these and other efforts.

Congressional support for mobilization would be welcome on a number of fronts, including appropriated funds in the DPA Fund. Title III activities will help increase domestic industrial capacity in key sectors that support U.S. military capability development.

Dr. MICHIENZI. No. Defense industrial base issues are immense. Decades of supply chain globalization and diminishing U.S. capability have made this country vulnerable if conflict should arise. Take the example of China restricting the exports of certain critical minerals. The PRC controls 80 percent of the processing of critical minerals, and they understand completely where the U.S. uses these materials—including our most critical weapons systems, satellites, and communications equipment. They have restricted a handful of materials so far, and those restrictions have been targeted to maximize pain for U.S. industry—both commercial and defense. But there are many more they control and could weaponize if a conflict occurs. DOD funded ~$700 million over the past 4 years in this sector—a large portion of the Title III budget—but this is not nearly sufficient to completely mitigate the issues. And there are many other industrial base problems—shipbuilding, castings and forgings, microelectronics, missiles and munitions, etc. Title III is the most efficient and effective way to address these issues. Nowhere else in DOD is positioned to look across all portfolios to see cross-cutting issues and address them in a holistic manner. More funding would allow it to be used for strategic portfolio and sector investments (similar to what is being done with critical minerals) vs. having a more 'whack-a-mole' approach driven by insufficient funding.

DEFENSE COMPETITION

23. Senator WARREN. Dr. McGinn and Dr. Michienzi, what are the cost, schedule, or readiness benefits of prioritizing an open systems approach?

Dr. MCGINN. Prioritizing open systems approaches help DOD to foster competition and refresh technology throughout the life of a program. Increased competition helps lower overall costs and prevents vendor lock-in to proprietary solutions.

Dr. MICHIENZI. Open systems approaches are the most cost effective and efficient way for DOD to acquire and sustain its systems and its ability to adopt innovation and new capabilities. Currently most DOD systems are provided by a sole supplier (vendor lock) who owns all the technical data, thereby reducing competition which leads to higher pricing and lack of technology development. Having an open system, along with the technical data, allows DOD to compete production contracts for systems to get better pricing and potentially better technology. It also allows DOD to upgrade systems to provide increased performance and readiness, and to mitigate obsolescence issues—something that constantly plagues the department.

24. Senator WARREN. Dr. McGinn and Dr. Michienzi, do you have any quantitative analysis or examples that show the cost, schedule, or readiness benefits of prioritizing an open systems approach?

Dr. MCGINN. One example where an open systems approach has shown benefits is the Army's Joint Light Tactical Vehicle (JLTV) program. During the 2022–2023 recompete for JLTV, AM General defeated the incumbent Oshkosh Defense. This was very surprising given the history of long-running franchise programs over the past several decades. The Army's open systems approach to JLTV enabled an effective competition during the recompete. While the Army leadership just canceled JLTV, the competition showed the value of an open systems approach.

Dr. MICHIENZI. Although I don't have quantitative analysis, the Sentinel program was one of the first Major Defense Acquisition Programs (MDAPs) to use digital engineering and open architecture. I know that it has saved the Air Force money, even before the system is fielded, and allowed them to keep competitive pressure on industry. I'm sure you can get data from the Air Force.

25. Senator WARREN. Dr. McGinn and Dr. Michienzi, do you have any quantitative analysis or examples that show the cost, schedule, or readiness harms of failing to prioritize an open systems approach?

Dr. MCGINN. The F–35 fighter aircraft program is an example of this. Like many systems at the time, DOD did not prioritize an open systems approach when it competed the F–35 program. This resulted in a largely closed proprietary system that limited DOD's flexibility and created a reliance on a single vendor for updates and support.

Dr. MICHIENZI. From my time working for a Navy Program Office, there was an example where the prime contractor was charging 18 percent markup on the rocket motors and another 18 percent to manage the rocket motor supplier for a key missile system. Had they had an open systems approach and the technical data, they could have looked at other options for the rocket motors to avoid that high cost.

26. Senator WARREN. Mr. Berteauand Dr. Michienzi, you previously testified that many governmentwide acquisition contracts "limit the number of companies eligible to receive awards and offer few opportunities for new companies to gain a spot." What tools would you recommend DOD use to increase competition?

Mr. BERTEAU. Senator Warren, although agency heads and many of their personnel focus on reports regarding the breadth and depth of competition in Federal contracts, it is vital to recognize that competition is not an end in itself. Competition is a tool that, properly pursued, enables Federal agencies to achieve its needed results and outcomes more effectively and efficiently through contracts. Adequate competition also helps ensure that the government pays a fair price for contract results, and competition can spur innovation. Finally, a competitive business environment can provide surge capacity in time of war or emergency.

The testimony you reference in your question was my statement for the record for the April 26, 2022, hearing before the Senate Armed Services Committee on the health of the defense industrial base. Specifically, I wrote that "DoD contracts are often awarded to companies eligible under a set of contracts known as GWACs, or governmentwide 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."

GWACs award contracts to a limited number of companies, then compete task orders only among those firms on the GWAC schedule. Under both the Trump and Biden administrations, the implementation of an approach to contracting called "category management" meant that some agencies shifted contract work to a GWAC on which incumbent companies were not eligible to bid for task orders and for which no opportunity existed for those incumbent companies to become eligible on that GWAC (through a process referred to as an "on-ramp"). When interested, capable companies are unable to bid on a contract, competition is reduced.

Some ways to offset that reduction in competition is for the Federal Government to:

a) Include more companies on GWAC schedules

b) Increase the frequency of on-ramp opportunities

c) Avoid shifting ongoing contract work to other GWACs on which incumbent contractors are ineligible to bid.

The Trump administration is currently assessing consolidating under the General Services Administration GWACs for "common products and services" and for information technology contracts. Agency proposals and comments are due to GSA by

May 19, 2025. This Committee could benefit from directing GSA to provide their plan for such consolidation, particularly with regard to DOD.

Dr. MICHIENZI. Requiring programs to carry multiple contractors for integration, but for also critical sub-systems until Milestone B. It will cost more up front but will reduce risk and save the program money overall because competition will drive costs down and ensure DOD is getting the best technology, while providing alternatives should an issue arise during development.

ACQUISITION WORKFORCE

27. Senator WARREN. Mr. Berteau, how does a well-qualified acquisition workforce benefit the industry and the Department of Defense?

Mr. BERTEAU. Senator Warren, the defense industry and all Federal Government contractors depend on a competent, capable, and fully staffed acquisition workforce. This workforce includes contracting officers, program managers, and those who develop requirements and help determine what to buy as well as how to buy it. Actions that undermine such a workforce are detrimental to regular operations as well as planning for mobilization.

28. Senator WARREN. Mr. Berteau, do you have any examples of how a program was less costly or faster because it was managed by an acquisition official who was an acquisition expert?

Mr. BERTEAU. Senator Warren, one of the challenges of the Federal procurement process is the focus on problems to the exclusion of documenting success stories. In my experience, there is a strong correlation between acquisition expertise and successful outcomes, but there are many other factors that have equal or greater impact on success, including program management, adequate and stable funding, consistent requirements, and support from the chain of command and the Congress. There are no studies of which I am aware that would prove a cause-and-effect relationship between acquisition expertise and program success in meeting cost, schedule, and performance goals.

29. Senator WARREN. Mr. Berteau, how long does it take for someone to become an acquisition expert?

Mr. BERTEAU. Senator Warren, I am unaware of any analysis that can answer this question, but in my experience there is wide variation in the range of time it takes to become an expert.

30. Senator WARREN. Mr. Berteau, does DOD have the acquisition workforce it needs to manage DOD contracts, and if not, what resources or training does the workforce need?

Mr. BERTEAU. Senator Warren, the data reported by Federal agencies show that DOD has a smaller percentage of vacancies in the contracting officer workforce than many other agencies. It is likely that recent actions such as the Deferred Resignation Program, termination of probationary employees, retirements under VERA and VSIP, and Reductions-in-Force actions will increase the number of vacancies in the DOD acquisition workforce. I suggest that this Committee request up-to-date information from DOD.

31. Senator WARREN. Mr. Berteau, would the Department of Government Efficiency's significant layoffs or resignations of DOD's acquisition workforce hinder DOD's ability to keep programs on schedule?

Mr. BERTEAU. Senator Warren, layoffs, resignations, and retirements will hinder DOD's ability to award and administer its contracts and will impact program success.

Dr. MICHIENZI. DOD will needs experienced people with expertise in multiple areas, including acquisition. The current workforce cuts do not seem to be strategically planned to preserve that capability, while trying to achieve efficiencies. Developing a list of workforce skills necessary and matching it against requirements would make the effort more effective and still allow DOD to maintain the people necessary to keep programs on schedule, as well as make them efficient and cost-effective.

32. Senator WARREN. Mr. Berteau, would the Department of Government Efficiency's significant layoffs or resignations of DOD's acquisition workforce hinder DOD's ability to manage programs efficiently and cost-effectively?

Mr. BERTEAU. Senator Warren, layoffs, resignations, and retirements will hinder DOD's ability to manage programs efficiently and cost-effectively.

Dr. MICHIENZI. DOD will needs experienced people with expertise in multiple areas, including acquisition. The current workforce cuts do not seem to be strategically planned to preserve that capability, while trying to achieve efficiencies. Developing a list of workforce skills necessary and matching it against requirements would make the effort more effective and still allow DOD to maintain the people necessary to keep programs on schedule, as well as make them efficient and cost-effective.