

THE NOMINATION OF FRANK KENDALL III TO
BE SECRETARY OF THE AIR FORCE, HEIDI
SHYU TO BE UNDER SECRETARY OF DEFENSE
FOR RESEARCH AND ENGINEERING, AND
SUSANNA BLUME TO BE DIRECTOR OF COST
ASSESSMENT AND PROGRAM EVALUATION,
DEPARTMENT OF DEFENSE

HEARING

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

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TION, DEPARTMENT OF DEFENSE**

TUESDAY, MAY 25, 2021

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

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

Committee Members present: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Warren, Peters, Manchin, Duckworth, Rosen, Kelly, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cramer, Scott, Blackburn, Hawley, and Tuberville.

OPENING STATEMENT OF SENATOR JACK REED

Chairman REED. Let me call the hearing to order.

The Committee meets this morning to consider the nominations of Mr. Frank Kendall III to be Secretary of the Air Force, Ms. Heidi Shyu to be Under Secretary of Defense for Research and Engineering, and Ms. Susanna Blume to be the Director of Cost Assessment and Program Evaluation. On behalf of the committee, I want to thank each of you for your willingness to return to public service.

Mr. Kendall, I would like to welcome your wife, and also know that each of the nominees have additional family members who have liked to have been here this morning but because of the pandemic restrictions they are watching from home. So we thank them all for the continuous support that they have given to you as you continue to serve the Nation.

I thank former Secretary of Defense Ash Carter for joining us today via Webex. He will introduce both Mr. Kendall and Ms. Shyu, and I also thank former Deputy Secretary of Defense Bob Work, who will introduce Ms. Blume this morning via Webex.

As we consider Mr. Kendall's nomination, I note that he has a wealth of experience in aerospace and defense policy spanning several decades, including his most recent role in government as

Under Secretary of Defense for Acquisition, Technology, and Logistics in the Obama administration.

Mr. Kendall, if confirmed as Secretary of the Air Force, you will lead the service during a major transformation as we strengthen our ability to deal with near-peer competitors. In addition to balancing the size and modernization of the Air Force, you must also continue to implement guidance establishing a Space Force.

After two decades of high operating tempo and continuous overseas deployments, readiness remains a challenge. The next Secretary's efforts in improving the force structure and supporting our airmen will be crucial. The Air Force is on the threshold of modernizing several critical capabilities, including the bomber force, the ground-based intercontinental ballistic missile force, and the Advanced Battle Management System program. But modernization can only be successful if the Air Force retires legacy platforms. Force structure realignments and the divestment of certain platforms have long been among the most contentious issues facing this committee and the Congress, and there are near-term risks as we balance modernization against size. However, the number of aircraft we buy does not necessarily represent the service's readiness.

Mr. Kendall, I would ask that you share with the committee this morning how you would plan to address all of these challenges.

Ms. Shyu, you have had a distinguished career at the junction of cutting-edge technology and defense policy, serving most recently in government as the Assistant Secretary of the Army for Acquisition, Logistics and Technology. If confirmed as Under Secretary of Defense for Research and Engineering, you will be responsible for managing the Department's investments in key modernization priorities outlined in the National Defense Strategy, such as quantum computing, hypersonics, biotechnology, and microelectronics.

In order to maintain our technological lead over China and Russia in these technology areas, there are several pressing challenges that you will need to address. First, you will need to advocate for investments in modernization programs while the Department works through many near-term development and readiness issues. Which will require close working relationships with the Under Secretary for Acquisition and Sustainment and the Services, relationships that were strained during the previous Administration. You must also establish appropriate protections to mitigate undue foreign influence in our universities and defense contractors. Balancing the control of information related to defense technologies, while embracing the open innovation that has been the engine of scientific and technological progress.

Perhaps most importantly, you will be charged with overcoming the Pentagon's so-called "Valley of Death," ensuring that the Department is able to turn research innovations into real operational capabilities. This will require strengthening connections between research and engineering activities and the Service acquisition programs and defense prime contractors. It will also include investing in, and protecting, the people and infrastructure at organizations like DARPA [Defense Advanced Research Projects Agency], the Defense labs, and test ranges.

Ms. Shyu, this is a position created by this committee, reflecting our acknowledgment that effective high-level leadership is needed to guide DOD's critical modernization activities. I hope you will share your views on your role regarding these challenges at this important moment for the Department of Defense.

Ms. Blume, if confirmed as Director of Cost Assessment and Program Evaluation (CAPE), you will provide independent analytic advice on all aspects of defense programs, including alternative weapon systems and force structures, evaluation of defense programs' performance, and the cost-effectiveness of defense systems. Your many years of analytical experience at the Defense Department and, most recently, the Center for a New American Security, will serve you well in this role.

Like the other nominees present today, you will face considerable challenges. In the near term, you will need to work with the Congress to improve the quality and timeliness of reporting critical data on acquisition programs. Hopefully, you can work to establish new, streamlined methods for data sharing that reduce bureaucratic burdens and allows Congress to play its important role of oversight.

In the longer term, CAPE will need to improve the ability to estimate operation and sustainment costs for major weapons programs, which represents the lion's share of costs for these systems. You will also need to work with the Comptroller and other officials to develop ways for accurately estimating and reporting on the growing slice of the Pentagon's budget spent on contracting for services.

Further, you will be responsible for balancing the need for rigorous cost estimates with the need to move quickly and use tailored acquisition approaches. This will depend on strengthening DOD's workforce and capacity for conducting independent, rigorous, and objective cost and schedule estimates, and assessments of program risk, based on solid analytic methods, tools, and data.

These challenges will require thoughtful, resolute leadership. Ms. Blume, I would ask that you share with the Committee how you would plan to deal with these issues.

Thank you, again, to our nominees. I look forward to your testimonies.

Now let me now recognize Ranking Member Inhofe.

STATEMENT OF SENATOR JAMES INHOFE

Senator INHOFE. Thank you, Mr. Chairman. We are glad to have our witnesses back here and for being with and their willingness to serve the nation, again. Each one of the witnesses today has been, at least a second time serving.

Our nation's top military and intelligence leaders have told this committee that right now our country is in the most dangerous situation that we have been in, and I agree with that.

The 2018 National Defense Strategy provides a roadmap to deal with these security challenges, and that is why this committee's top priority has been ensuring we effectively implement it.

We have a daunting set of challenges in the areas that you would be overseeing, and the threat is not a 2040 timetable. It is now, and we are behind.

Insufficient and uncertain funding has hamstrung our military for years. We must do a better job of resourcing the strategy, improving our ability to make decisions quickly, and invest in the right capabilities to keep up with China and Russia.

We certainly need to accelerate our invention and adoption of advanced technologies, from hypersonic weapons, to biotechnologies and quantum computing.

The National Security Commission on Artificial Intelligence (AI) told us the Chinese will dominate us, as soon as 2025, if we do not change course. 2025 is also when our combatant commanders tell us the Chinese will have more fifth-generation stealth fighters on the front line than we do. Our days of airpower dominance are long gone. We have got a lot of work to do. If confirmed, you would have the honor of supporting a team of Americans who represent everything that is noble and best in our nation.

Our servicemembers and our military families do everything we ask of them and more. They deserve strong civilian leadership that I hope you will provide this. I am sure that you will, and I am very excited about all three of you in these positions.

Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Inhofe.

Just a note for my colleagues. If we have a quorum I will, at an appropriate time, ask for the consideration of nominees that are pending for a vote.

But at this time I am honored to be able to recognize and introduce former Secretary of Defense, Ash Carter, for introduction of Mr. Kendall and Ms. Shyu. Mr. Secretary, please.

Mr. Carter. Thank you, Chairman Reed, Ranking Member Inhofe, distinguished members of the Armed Services Committee. I am so pleased to see you all. I miss each and every one of you.

I am honored to introduce the President's nominee for Secretary of the Air Force, Frank Kendall, and his nominee for Under Secretary of Defense for Research and Engineering, Heidi Shyu.

I first got to know Frank Kendall in the early 1980s, in Huntsville, Alabama, where we were both working on ballistic missile defense systems, Frank for the Army and I for Secretary Weinberger, and then-President Reagan's Arms Control Negotiator, Paul Nitze. I saw immediately that Frank was a superb program manager, a superb systems engineer, and a superb military leader.

In the years after, we both did work in industry, I some finance and academic, and Frank some law. We stayed in touch and both involved in defense.

So when I became Under Secretary of Defense for Acquisition, Technology, and Logistics I asked that Frank become my principal deputy, and then to take my place as Under Secretary when I was Deputy Secretary of Defense.

During all these years, Frank skillfully managed some tricky and troubled existing weapons programs while starting new programs, including classified ones in full, and I should say very early, recognition of the need to redirect strategy and innovation to keep our edge against high-end competitors like China.

The duties of the Air Force Secretary are much broader than those of Under Secretary for AT&L, and Frank has demonstrated all of the characteristics needed for that job. His handling of the

Acquisition Workforce Initiative emanating from this committee is one example; and the heart—the heart Frank put into urgent support for troops on the battlefield in Iraq and Afghanistan another; of the care Frank would show for airmen and their families.

With his strong experience with defense and national space programs, Frank would also be able to fulfill the vision for our new Space Force, to fully integrate at least space systems into military operations.

I hope the Committee will give Frank its favorable support.

Heidi Shyu also worked closely with me for years as the Army Acquisition, Technology, and Logistics leader, and she is now the President's nominee for Under Secretary of Defense for Research and Engineering. Heidi is an accomplished and deeply respected engineer in her own right. In addition to her government experience, Heidi has had a successful career in industry, at senior levels over a wide range of technologies.

Every one of the Services has its own unique acquisition and technology needs, and I can that Heidi worked very strongly on behalf of the Army mission and leadership, which had some understandable frustrations with its acquisition system. She was a great help and a great success.

Now the defense technology system function best when the Services and the Secretary of Defense's Office work well together in mutual support. Heidi's experience with the Army proved that she will be able to ensure a strong common effort.

A second critical ingredient of the defense technology effort is effective linkages and bridges between the outside tech sector in industry and the inside of the Pentagon. America's secret sauce in the competition, China's communist statism, is a set of independent outside research, training, industry, and investment communities, all with a strong coupling to DOD's in-house research and engineering infrastructure. Above all, a respectful relationship between tech and the military. As a recognition in tech that all the freedom and prosperity that the private sector enjoys depends, in the end, on the security provided by DOD.

The respect that Heidi possesses in the tech community guarantees such linkages, and that as a consequence, the U.S. military remains, as one of our former Presidents used to say, "the firstest with the mostest."

Frank, Heidi, and I worked side by side with Lloyd Austin, now our Secretary of Defense, and Kath Hicks, now our Deputy Secretary, so I am confident theirs will be a strong team. I give them my highest recommendation for your consideration.

Once again, it is nice to be with you, and I look forward to the opportunity to visit with you all in person in your office someday soon.

Chairman REED. Well, thank you very much, Mr. Secretary, not only for the introduction but for your distinguished service to the Nation.

Now it is another pleasure to be able to recognize former Deputy Secretary of Defense, Bob Work, to introduce Ms. Bloom. Mr. Secretary?

Mr. WORK. Thank you, Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee. It is always an abso-

lute honor to appear before the SASC [Senate Armed Services Committee], but today I am doubly honored to introduce to you, and enthusiastically commend and endorse the Biden administration's nomination to be the Pentagon's next Director of the Office of Cost Assessment and Program Evaluation, Ms. Susanna V. Blume.

As you all know, Congress created CAPE as well as the position of Director in the Weapons System Acquisition Reform Act of 2009. It assigned CAPE the mission to provide the Secretary and the Department with timely, insightful, and unbiased analysis on resource allocation and cost estimation problems. CAPE's ultimate role is to deliver the optimal portfolio of Department of Defense military capabilities, through the most efficient and effective use of each taxpayer dollar. In my judgment, there is absolutely no one more qualified to fill this vital role than Susanna Blume.

I first met Susanna when I was the Under Secretary of the Navy in the first Obama administration. As part of the Defense Policy Review Initiative, at that time the Department was in delicate negotiations with the government of Japan as well as the Governor of Guam to move marines off of Okinawa to Guam. The DPRI was extraordinarily sensitive and expensive. Then-Chairman Carl Levin and late Ranking Member John McCain took a personal interest in these negotiations and were, shall I say, quite energetic in their oversight. My backside still has the calluses to prove it.

At the time, Ms. Blume worked for now-Deputy Secretary of Defense Kathleen Hicks, who oversaw the DPRI for the Under Secretary for Policy, who coordinated action between OSD and the Department of the Navy. Susanna impressed me from the first moment I saw her in action. It was obvious she was an absolutely superb analyst. She came to meetings armed with facts and figures, and she was determined to get the move of marines from Okinawa to Guam right. She had an absolute knack for working from high-level strategy through operational alternatives to the discrete budget details. She was cool, confident, articulate, and, I would have to say, she utterly laid waste to anyone who came to meetings unprepared. As a marine, I recognized and admired her warrior spirit, and I vowed to myself to steal her from Policy and get her on my staff as soon as I possibly could.

As it turned out, I ultimately succeeded in getting her on my staff, but it was not until I became the Deputy Secretary of Defense, and the Under Secretary for Policy could no longer fight me off. I knew exactly where Susanna's talents would best fit on my staff, and I made her my Deputy Chief of Staff for Program and Plans. As such, for 3 years she worked with CAPE to help shape the defense program envisioned first by Secretary Chuck Hagel, then Secretary Ash Carter, and finally Secretary James Mattis. She oversaw and managed the Deputy's Management Action Group (DMAG), the organization that made all final program recommendations to the Secretary of Defense. By the time I left the Department there were few people who understood better the confluence of strategy, program, and budget than Susanna Blume.

Susanna herself left government service and joined the Center for a New American Security in August of 2017. There she quickly rose to the position of Director of the Center's Defense Program. In

this role, she authored reports on the link between strategy and resources, the optimization of the DOD program for great power competition, and how to make the planning, programming, budgeting, and execution process work better. When I heard that President Biden had nominated her to be director of CAPE, I was not surprised. She was literally made for the role.

Before I close there is one last thing I would like to note. Everyone knows the director of CAPE needs to be a hardcore analyst, but not everyone comprehends the director's heavy responsibility for independent cost estimates, upon which the fate of programs often hinge. Those who disagree with ICE, be they program managers, members of the Joint Chiefs of Staff, Service Chiefs and Secretaries, and even Members of Congress and their staffs exert pressure on the director to modify it. Directors, therefore, have to have the moral courage to stand their ground and speak truth to power, and Susanna has moral courage to spare. She is not one to bend in a strong breeze. You can all be assured she will always say what she means and mean what she says.

Chairman Reed, Ranking Member Inhofe, distinguished Members of the Committee, I urge you to confirm Ms. Blume as the director of CAPE. You simply will never find a more dedicated, talented, and capable candidate.

Thank you, ladies and gentlemen, for affording me the privilege of introducing this remarkable lady to you.

Chairman REED. Well, thank you very much, Secretary Work, not only for your introduction but also for your extraordinary service to the nation.

Since a quorum is now present, before I introduce the witnesses, I ask the Committee to consider one civilian nomination and a list of 3,438 pending military nominations. First, I ask the Committee to consider the nomination of the Honorable Christine E. Wormuth to be Secretary of the Army.

Is there a motion to favorably report Ms. Wormuth's nomination to the Senate?

VOICE. So moved.

Chairman REED. Is there a second?

All in favor?

All opposed?

The ayes have it. The motion carries.

Finally, I ask the Committee to consider a list of 3,438 pending military nominations. Included in this list is the nomination of General Paul J. LaCamera, U.S. Army, to be Commander of the United Nations Command, Combined Forces Command, and United States Forces Korea. Of these nominations, one nomination is one day short of the committee's requirement that nominations be in committee for 7 days before we report them out. No objection has been raised to this nomination and I recommend the committee waive the 7-day rule in order to permit the confirmation of the nomination of this officer before the Senate recesses for the Memorial Day recess.

Is there a motion to favorably report this list of 3,438 pending military nominations to the Senate?

VOICE. Motion.

Chairman REED. Is there a second?

VOICE. Second.

Chairman REED. All in favor say aye, please.

The motion carries. Thank you very much.

[The list of nominations considered and approved by the Committee follows:]

MILITARY NOMINATIONS PENDING WITH THE SENATE ARMED SERVICES COMMITTEE
WHICH ARE PROPOSED FOR THE COMMITTEE'S CONSIDERATION ON MAY 25, 2021.

1. In the Navy there is 1 appointment to the grade of captain (James M. McDonald) (Reference No. 56)
2. In the Marine Corps there is 1 appointment to the grade of lieutenant colonel (Joseph W. Hockett) (Reference No. 63)
3. In the Marine Corps there is 1 appointment to the grade of major (Jared A. Mason) (Reference No. 76)
4. In the Navy Reserve there is 1 appointment to the grade of captain (Zachary P. Ruthven) (Reference No. 204)
5. In the Navy there is 1 appointment to the grade of commander (Donald G. Barnett) (Reference No. 205)
6. In the Navy there is 1 appointment to the grade of captain (Robert W. McFarlin IV) (Reference No. 209)
7. In the Navy there is 1 appointment to the grade of captain (Michael G. Mortensen) (Reference No. 210)
8. **Capt. Kristin Acquavella, USN to be rear admiral (lower half)** (Reference No. 221)
9. **In the Marine Corps there are 7 appointments to the grade of major general (list begins with Jay M. Barger)** (Reference No. 236)
10. In the Navy there is 1 appointment to the grade of commander (Justin A. Dargan) (Reference No. 312)
11. In the Navy there is 1 appointment to the grade of captain (Raymond Sudduth) (Reference No. 314)
12. In the Navy there is 1 appointment to the grade of captain (Eric D. Lockett) (Reference No. 315)
13. **MG Robert I. Miller, USAF to be lieutenant general and Surgeon General of the Air Force** (Reference No. 323)
14. **MG Edward D. Banta, USMC to be lieutenant general and Deputy Commandant, Installations and Logistics** (Reference No. 346)

15. **General Paul J. LaCamera, USA to be general and Commander, United Nations Command/Combined Forces Command/US Forces Korea** (Reference No. 461)
16. In the Air Force there are 1,178 appointments to the grade of major (list begins with Cody W. Ables) (Reference No. 466)
17. In the Air Force there are 379 appointments to the grade of major (list begins with Jared T. Abramowicz) (Reference No. 467)
18. In the Air Force there are 267 appointments to the grade of major (list begins with Ruben Adornorodriguez) (Reference No. 468)
19. In the Air Force there are 399 appointments to the grade of major (list begins with Donald J. Adkins) (Reference No. 469)
20. In the Air Force there are 52 appointments to the grade of major (list begins with Kaila Weber Acres) (Reference No. 470)
21. In the Army there is 1 appointment to the grade of colonel (Che T. Arosemena) (Reference No. 471)
22. In the Army there is 1 appointment to the grade of major (Regina N. Moeckel) (Reference No. 472)
23. In the Air Force there are 80 appointments to the grade of major (list begins with Christian Nels Alf) (Reference No. 473)
24. In the Army there is 1 appointment to the grade of colonel (Brendan J. Cullinan) (Reference No. 501)
25. In the Army there is 1 appointment to the grade of colonel (James B. Kavanaugh) (Reference No. 502)
26. In the Army there is 1 appointment to the grade of colonel (Justin P. Overbaugh) (Reference No. 503)
27. In the Army there are 450 appointments to the grade of lieutenant colonel (list begins with Kyle R. Abruzzese) (Reference No. 504)
28. In the Army there are 325 appointments to the grade of lieutenant colonel (list begins with Jason K. Abbott) (Reference No. 505)

29. In the Army there are 245 appointments to the grade of lieutenant colonel (list begins with Isaiah C. Abbott) (Reference No. 506)
30. In the Army there are 30 appointments to the grade of lieutenant colonel (list begins with Bryan B. Ault) (Reference No. 507)
31. In the Army there are 2 appointments to the grade of major (list begins with Aaron T. Murray) (Reference No. 512)
32. In the Army Reserve there is 1 appointment to the grade of colonel (Christopher L. Hansen) (Reference No. 513)
33. In the Marine Corps Reserve there is 1 appointment to the grade of colonel (Daniel W. Laux) (Reference No. 514)
34. In the Navy there is 1 appointment to the grade of captain (Benjamin R. Ventresca) (Reference No. 515)
35. In the Navy there is 1 appointment to the grade of lieutenant commander (list begins with Roy M. Hoagland II) (Reference No. 532)
36. **LTG Randy A. George, USA to be lieutenant general and Senior Military Assistant to the Secretary of Defense** (Reference No. 574)

TOTAL: 3,438

Does anyone wish to comment, or, Senator Cramer, do you have a comment?

Senator CRAMER. I do, Mr. Chairman. Thank you. I would just like to be recorded as abstaining on the Wormuth nomination.

Chairman REED. So moved. Your abstention will be noted in the record. Thank you, Senator Cramer.

Now let me call on Mr. Kendall for his opening statement.

STATEMENT OF THE HONORABLE FRANK KENDALL III, TO BE SECRETARY OF THE AIR FORCE

Mr. KENDALL. Chairman Reed, Ranking Member Inhofe, distinguished members of the committee, thank you for the opportunity to appear before you today as the nominee to be Secretary of the Department of the Air Force. I am honored and humbled to have this opportunity. I would like to thank President Biden and Secretary Austin for having the confidence in me to forward my nomination for this position.

I am joined today by my spouse, Beth Halpern. I want to specifically thank Beth for her love and support. When I returned to government in 2010, Beth and I had been married for 6 years and she had no idea what she was getting into. This time is different, and I am especially grateful for her support in what we both know will be a challenging role should I be confirmed.

I would also like to acknowledge my 6-year-old son, James, who is quite excited about his dad potentially having something to do with the Space Force. James is a big Star Wars fan, and his reaction when being told about his dad's possible new job was, "Dad, there is really a Space Force?" There certainly is a Space Force,

and it is a critical contributor to our national security. If confirmed, I will be honored to have a role in making it a success.

I would also like to acknowledge my grown-up sons, Scott and Eric, who have supported me throughout my career. I am very proud of them and of their wives, Amy and Jennifer, and of my five grandchildren, who, in alphabetical order, are Caroline, Mackenzie, Madison, Holden, and Jackson.

I would like to briefly outline for the committee my reasons for seeking one more chapter in a long career of public service, and also to lay out some of my priorities, if this Committee and the Senate see fit to confirm my nomination.

My career in national security started with a year of ROTC followed by attendance at West Point, all during the war in Vietnam. I spent ten years on Active Duty at the height of the Cold War, including serving in West Germany commanding an air defense unit assigned to the Fourth Allied Tactical Air Force. As a civil servant, I served in engineering positions and program management oversight roles, first for missile defense and then for all of Department of Defense tactical warfare programs. For over a decade I worked to ensure that America had the necessary weapons to deter and defeat a peer competitor, the Soviet Union. I was still in this role during the First Gulf War, when we demonstrated to the world how much conventional military dominance the United States had achieved.

I then spent about 15 years working in the defense industry before returning to the Pentagon in 2010. It was in 2010 that I discovered how much our potential adversaries had advanced their own capabilities. China had studied our success in the First Gulf War and had embarked on an ambitious military modernization program with the clear goal to defeat the ability of the United States to project power near China. Russia was also modernizing its forces and had increased its emphasis on tactical nuclear weapons.

We have made progress against these threats, and our adversaries should never doubt the United States, but there is much still to be done. My hope is that, if confirmed, I will be able to lead the Department of the Air Force in organizing, training, and equipping our Nation's Air and Space Forces so that the United States can continue to deter, and if necessary, fight and win, against all adversaries.

If confirmed, my priorities would be straightforward and mirror precisely those articulated by Secretary of Defense Austin as they apply to the Department of the Air Force: taking care of our people, mission performance, and building teams. Our military is people first and foremost. The Air and Space Forces are not just equipment and concepts of operation. At its heart, they are the people who operate, create, and support those things. We have to do everything we can to ensure that our people have the training, the equipment, and the support they need to do their jobs, and we have to ensure that they can do those jobs in an environment that treats everyone with dignity and respect and maximizes their potential to grow and to serve the nation.

With regard to mission performance, I believe the range and severity of the threats that we face, and will face, the rapid pace of technological innovation, and the need to rapidly harness that tech-

nology in new operational concepts demands a sense of urgency and a laser-like focus on getting our choices right.

Finally, teamwork is critical, and it covers a lot of territory. Every member of a military family, every member of the Total Force, Active, Guard and Reserve, the civil servants, and the industry that supports our military are all part of the team. America has an enormous strategic asset in our alliances and partnerships, and one of the key roles of our armed forces is to support American diplomacy.

If I am confirmed, and with your help, I hope to move the Department of the Air Force forward in each of these areas. They are strongly interdependent and all our essential for our success.

I look forward to your questions and thank you again.

[The prepared statement of Mr. Kendall follows:]

PREPARED STATEMENT BY FRANK KENDALL

Chairman Reed, Ranking Member Inhofe, members of the committee, thank you for the opportunity to appear before you today as the nominee to be Secretary of the Department of the Air Force. I am honored and humbled to have this opportunity. I'd like to thank President Biden and Secretary Austin for having the confidence in me to forward my nomination for this position.

I'm joined today by my spouse, Beth Halpern and my niece, Sophie Kendall. I want to specifically thank Beth for her love and support. When I returned to government in 2010, Beth and I had been married for six years and she had no idea what she was getting into. This time is different, and I am especially grateful for her support in what we both know will be a challenging role should I be confirmed. I'd also like to acknowledge my six-year-old son James, who is quite excited about his Dad potentially having something to do with the Space Force. James is a big Star Wars fan, and his reaction when being told about his Dad's possible new job was "There's really a Space Force?" There certainly is a Space Force, and it is a critical contributor to our national security. If confirmed, I'll be honored to have a role in making it a success. I'd also like to acknowledge my grown up sons Scott and Eric, who have supported me throughout my career. I'm very proud of them and of their wives Amy and Jennifer and of my five grandchildren; in alphabetical order—Caroline, Mackenzie, Madison, Holden, and Jackson.

I'd like to briefly outline for the committee my reasons for seeking one more chapter in a long career of public service, and also to lay out some of my priorities, if this Committee and the Senate see fit to confirm my nomination. My career in national security started with a year of ROTC followed by attendance at West Point, all during the war in Vietnam. I spent ten years on Active Duty at the height of the Cold War, including serving in West Germany commanding an air defense unit assigned to the Fourth Allied Tactical Air Force. As a civil servant, I served in engineering positions and program management oversight roles, first for missile defense and then for all DOD tactical warfare programs. For over a decade I worked to ensure that America had the necessary weapons to deter and defeat a peer competitor—the Soviet Union. I was still in this role during the First Gulf War, when we demonstrated to the world how much conventional military dominance the US had achieved. I then spent about 15 years working in the defense industry before returning to the Pentagon in 2010. It was in 2010 that I discovered how much our potential adversaries had advanced their capabilities. China had studied our success in the First Gulf War and had embarked on an ambitious military modernization program with the clear goal to defeat the ability of the United States to project power near China. Russia was also modernizing its forces and had increased its emphasis on tactical nuclear weapons. We have made progress against these threats, and our adversaries should never doubt the United States. But there is much still to be done. My hope is that, if confirmed, I will be able to lead the Department of the Air Force in organizing, training, and equipping our Nation's Air and Space Forces so that the United States can continue to deter, and if necessary, fight and win, against all adversaries. If confirmed, my priorities would be straightforward and mirror precisely those articulated by Secretary of Defense Austin as they apply to the Department of the Air Force; taking care of our people, mission performance, and building teams. Our military is people first and foremost. The Air and Space Forces aren't just equipment and concepts of operation. At its heart, they are the

people who operate, create, and support those things. We have to do everything we can to ensure that our people have the training, the equipment, and the support they need to do their jobs, and we have to ensure that they can do those jobs in an environment that treats everyone with dignity and respect and maximizes their potential to grow and serve the nation. With regard to mission performance, I believe the range and severity of the threats that we face and will face, the rapid pace of technological innovation, and the need to rapidly harness that technology in new operational concepts demands a sense of urgency and a laser like focus on getting our choices right. Finally, teamwork is critical, and it covers a lot of territory. Every member of a military family, every member of the Total Force, Active, Guard and Reserve, the civil servants, and the industry that supports our military are all part of the team. America has an enormous strategic asset in our alliances and partnerships and one of the key roles of our armed forces is to support American diplomacy.

If I am confirmed, and with your help, I hope to move the Department of the Air Force forward in each of these areas. They are strongly interdependent and all our essential for our success. I look forward to your questions and thank you again.

Chairman REED. Thank you, Mr. Kendall. Ms. Shyu, please.

STATEMENT OF THE HONORABLE HEIDI SHYU, TO BE UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING

Ms. SHYU. Chairman Reed, Ranking Member Senator Inhofe, and distinguished members of the committee, thank you for the honor to appear before you today. I would like to thank President Biden and Secretary Austin for nominating me to the position of the Under Secretary of Defense for Research and Engineering, and this Committee for considering my nomination.

My grandfather, a World War II-era Air Force squadron commander, had the great opportunity to come to the United States for 2 years of training. To this day, I remember him saying how much he appreciated the generosity of the Americans. My late grandmother, who passed away at the age of 103, told me, "Don't stop working, and make something of yourself." Both of them were my guiding light.

I came to this country at the age of 11½ from Taiwan, and I am extraordinary grateful for the tremendous opportunities that I have had in my career. In 2012, I had the honor and privilege to be confirmed as the Assistant Secretary of the Army for Acquisition, Logistics, and Technology. In my 5 years in the Pentagon, I had the fortune to work with tremendously dedicated military and civilian personnel and with patriotic contractors across the U.S. This was an experience of a lifetime that I will treasure forever.

Today, I am honored to be considered for the position of Under Secretary of Defense for Research and Engineering. The mission of furthering science, technology, and innovation across the Department of Defense could not be more important than it is today. As Secretary Austin has stated, China is the pacing threat for the United States military, and the challenges facing our military are both diverse and complex, ranging from sophisticated cyberattacks, to supply chain risks, to hypersonic missiles, to biothreats. To address these challenges, the Department must harness our Nation's incredible innovation to stay ahead of our adversaries.

Thankfully, there is no shortage of innovation. As a Nation, we are able solve incredibly tough problems by working collaboratively towards a common cause. DOD can collaborate more strongly with our allies and partners to share insights and lessons learned from our combined exercises and experiments. DOD can also work more closely with the commercial and defense industries, as well as its

ecosystem of universities, Government labs, Federally funded research and development centers, and university-affiliated research centers. By working collaboratively, DOD can address our Nation's toughest challenges.

When collaborating with the commercial sector in particular, DOD should leverage the commercial sector's tremendous investments in research and development and accelerate DOD's ability to incorporate innovative, commercial technologies. Inside the Department, DOD should avoid duplicating private sector research and focus its investments on the innovative technologies that DOD uniquely needs but that the commercial sector is not developing on its own.

DOD should also take steps to change its internal investment strategy. Today, sustainment makes up 70 percent of total weapon system cost, with development and procurement making up only 30 percent. DOD should strive to flip this ratio and invest more in the development of new technologies than it does in the sustainment of legacy systems.

To begin changing this ratio, I believe that several core principles should guide DOD's pivot towards modernization. For example, DOD should prioritize investments in emerging technologies and capabilities such as artificial intelligences, hypersonics, and synthetic biology; create networked systems-of-systems that collect and share information securely, and are robust against cyber and electronic warfare threats; reduce the military's logistics footprint by developing advanced materials and increasing fuel efficiency; design secure, robust, and upgradable software; and widen the pipeline of STEM [Science, Technology, Engineering and Mathematics] talent and ensure that the talent is diverse.

Where shifting away from legacy platforms is challenging, DOD should look for opportunities to insert the innovative technologies by leveraging modular open architectures and standard interfaces. Going forward, DOD should shift away from its traditional linear system development process and adopt a nimbler approach to iteratively design, test, and fix systems. By leveraging rapid prototyping, collecting user feedback from testing, incorporating that feedback into digital redesigns, and utilizing advanced manufacturing, DOD can shorten system cycle times, field capabilities more rapidly, and deliver the military advantage that this Nation needs. Flexible contracting approaches will be critical to ensure this approach and, if confirmed, I look forward to addressing these issues collectively with the Under Secretary of Defense for Acquisition and Sustainment.

Again, collaboration, across DOD, the private sector, and with allies and partners, is what is required to address the tough technical challenges that are facing our military and this Nation. Should I be confirmed, it would be a tremendous honor and privilege to again serve our Nation at the Department of Defense and to shape the Department's research and engineering, ensuring that our warfighters are the best equipped and second to none. Thank you.

[The prepared statement of Ms. Shyu follows:]

PREPARED STATEMENT BY HONORABLE HEIDI SHYU

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- Prioritize investments in emerging technologies and capabilities such as artificial intelligences, hypersonics, and synthetic biology;
- Create networked systems-of-systems that collect and share information securely, and are robust against cyber and electronic warfare threats;
- Reduce the military’s logistics footprint by developing advanced materials and increasing fuel efficiency;
- Design secure, robust, and upgradable software; and
- Widen the pipeline of STEM talent and ensure that talent is diverse.

Where shifting away from legacy platforms is challenging, DOD should look for opportunities to insert the innovative technologies by leveraging modular open architectures and standard interfaces. Going forward, DOD should shift away from its traditional linear system development process and adopt a nimbler approach to iteratively design, test, and fix systems. By leveraging rapid prototyping, collecting user feedback from testing, incorporating that feedback into digital redesigns, and utilizing advanced manufacturing, DOD can shorten system cycle times, field capabilities more rapidly, and deliver the military advantage that this Nation needs. Flexible contracting approaches will be critical to enabling this approach and, if confirmed, I look forward to addressing contracting issues collaboratively with the Under Secretary of Defense for Acquisition and Sustainment.

Again, collaboration—across DOD, the private sector, and with allies and partners—is what is required to address the tough technical challenges that are facing

our military and the Nation. Should I be confirmed, it would be a tremendous honor and privilege to again serve our Nation at the Department of Defense and to shape the Department's research and engineering, ensuring that our warfighters are the best equipped and second to none. Thank you.

Chairman REED. Thank you, Ms. Shyu. Ms. Blume, please.

**STATEMENT OF SUSANNA V. BLUME, TO BE DIRECTOR OF
COST ASSESSMENT AND PROGRAM EVALUATION, DEPART-
MENT OF DEFENSE**

Ms. BLUME. Good morning, Chairman Reed, Ranking Member Inhofe, and distinguished Members of the Committee. I am deeply honored to be here before you today as President Biden's nominee to be the Department of Defense's Director of Cost Assessment and Program Evaluation.

Thank you for taking the time to consider my nomination, and for all that you do for the Department, its people, and our nation's security. The bipartisan cooperation this Committee demonstrates in tackling the most difficult challenges in national defense provides much needed stability in our Nation's defense policy, and is a shining example of good governance.

I would also like to thank President Biden for nominating me for this position, and Secretary Austin and Deputy Secretary Hicks for their confidence in me. Many thanks also to Secretary Work for his very kind introduction. It was a privilege and a pleasure to work for him, and I learned something new from him every day, from how to lead large organizations down to the finer points of the history of military innovation.

Last but not least, I would like to thank my family, especially my parents, Karolyn and Peter, who are watching today from home in Pennsylvania. Without their unwavering love and support, I would not be here before you today.

I began my career as a civil servant in the Department of Defense, and have long understood and appreciated CAPE's role supporting the Department's senior leadership in making some of the toughest decisions put before them.

In my time working for then-Deputy Secretary of Defense Bob Work, I saw firsthand how the most senior leaders in the Department rely on CAPE for independent assessments grounded in rigorous analysis.

After leaving the Department, I spent 3½ years at the Center for a New American Security, working on ideas for improving DOD's decision-making processes and mechanisms to drive innovation throughout the Joint Force.

If confirmed, I look forward to bringing these experiences together, continuing CAPE's long and proud tradition of rigorous independent analysis, while also pursuing reforms necessary to ensure that the U.S. Military remains the world's preeminent fighting force well into the future.

CAPE can serve these goals in three primary ways. The first is supporting the Secretary and Deputy Secretary in reviewing the Future Years Defense Program (FYDP). At its heart, this process is about making the defense strategy real, aligning resources to reshape the Joint Force in service of the nation's strategic objectives.

The second is the responsibility to produce independent cost estimates of the Department's major weapons systems, which is a mission Congress tasked this organization with when it created CAPE as we know it today.

Underlying both of these is the heart and soul of CAPE: analysis. In addition to cost and programmatic analysis, CAPE also produces strategic and operational analysis used to inform a wide range of departmental decisions, including development of the National Defense Strategy.

In doing so, CAPE serves the American people by serving the warfighter. Ensuring that our soldiers, sailors, airmen, marines, guardians, and civilians are appropriately resourced to protect American interests against a rising China, a revanchist Russia, rogue states, and non-state actors.

Should the Senate choose to confirm me in this role, it would be the honor of a lifetime to lead CAPE's incredibly talented and dedicated public servants in this vitally important work.

Thank you for considering my nomination, and I look forward to your questions.

[The prepared statement of Ms. Blume follows:]

PREPARED STATEMENT BY SUSANNA V. BLUME

Good morning, Chairman Reed, Ranking Member Inhofe, and distinguished Committee Members. I am deeply honored to be here before you today as President Biden's nominee to be the Department of Defense's Director of Cost Assessment and Program Evaluation.

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I began my career as a civil servant in the Department of Defense, and have long understood and appreciated CAPE's role supporting the Department's senior leadership in making some of the toughest decisions put before them.

In my time working for then-Deputy Secretary of Defense Bob Work, I saw first-hand how Secretaries and Deputy Secretaries rely on CAPE for frank and independent assessments grounded in rigorous analysis.

After leaving the Department, I spent three and a half years at the Center for a New American Security working on ideas for improving DOD's decision making processes and mechanisms to drive innovation throughout the Joint Force.

If confirmed, I look forward to bringing these experiences together, continuing CAPE's long and proud tradition of rigorous independent analysis while also pursuing reforms necessary to ensure that the U.S. Military remains the world's pre-eminent fighting force well into the future.

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Underlying both of these is the heart and soul of CAPE—analysis. In addition to cost and programmatic analysis, CAPE also produces strategic and operational analysis used to inform a wide range of Departmental decisions, including development of the National Defense Strategy.

In performing these functions, CAPE provides leadership across the cost, analytic, and programming communities in DOD.

In doing so, CAPE serves the American people by serving the warfighter, ensuring that our soldiers, sailors, airmen, marines, guardians, and civilians are appropriately resourced to protect American interests against a rising China, a revanchist Russia, rogue states, and non-state actors.

Should the Senate choose to confirm me in this role, it would be the honor of a lifetime to lead CAPE's incredibly talented and dedicated public servants in this vitally important work.

Thank you for considering my nomination, and I look forward to your questions.

Chairman REED. Thank you very much, Ms. Blume. Under the rules of the committee I must pose certain questions to the witnesses. Please respond appropriately.

Have you adhered to applicable laws and regulations governing conflicts of interest?

Mr. KENDALL. Yes.

Ms. SHYU. Yes.

Ms. BLUME. Yes.

Chairman REED. Have you assumed any duties or taken any actions that would appear to presume the outcome of the confirmation process?

Mr. KENDALL. No.

Ms. SHYU. No.

Ms. BLUME. No.

Chairman REED. Exercising our legislative and oversight responsibility makes it important that this committee, its subcommittees, and other appropriate committees of Congress receive testimony, briefings, reports, records, and other information from the Executive Branch on a timely basis. Do you agree, if confirmed, to appear and testify before this committee when requested?

Mr. KENDALL. Yes.

Ms. SHYU. Yes.

Ms. BLUME. Yes.

Chairman REED. Do you agree to provide records, documents, and electronic communications in a timely manner when requested by this committee, its subcommittees, or other appropriate committees of Congress, and to consult with the requestor regarding the basis for any good-faith delay or denial in providing such records?

Mr. KENDALL. Yes.

Ms. SHYU. Yes.

Ms. BLUME. Yes.

Chairman REED. Will you ensure that your staff complies with deadlines established by this committee for the production of reports, records, and other information, including timely responding to hearing questions for the record?

Mr. KENDALL. Yes.

Ms. SHYU. Yes.

Ms. BLUME. Yes.

Chairman REED. Will you cooperate in providing witnesses and briefers in response to congressional requests?

Mr. KENDALL. Yes.

Ms. SHYU. Yes.

Ms. BLUME. Yes.

Chairman REED. Will those witnesses and briefers be protected from reprisal for their testimony or briefings?

Mr. KENDALL. Yes.

Ms. SHYU. Yes.

Ms. BLUME. Yes.

Chairman REED. Thank you all very much. Now let me assume my question period and then recognize the ranking member. Thank you all for your testimony.

Ms. Shyu noted the issue of sustainment costs. Seventy percent of the cost of the lifecycle of these systems is made up of sustainment, only 30 percent procurement. She responded with some suggestions. Starting with Mr. Kendall, what specific steps can you suggest that we take to control sustainment costs?

Mr. KENDALL. One of the most important things, Mr. Chairman, is to invest in the earlier stages of a program, in features that will result in lower sustainment costs. The design decisions that are made early really reflect downstream, and often in programs, if money gets tight up front people cut those things out. So having the discipline to do the things that are necessary up front to end up with lower sustainment costs is critical.

Chairman REED. I presume that would require making sustainment costs one of the critical factors in developing a new system?

Mr. KENDALL. That is exactly right, Mr. Chairman.

Chairman REED. Thank you. Ms. Blume, in CAPE you will have the responsibility of looking over everyone's shoulder when it comes to sustainment costs, so can you give us some ideas?

Ms. BLUME. Yes Senator, Chairman. I share your concerns that sustainment costs are a critical issue for the Department going forward. It is my understanding that CAPE already has a pretty robust effort underway to improve the Department's ability to estimate sustainment costs ahead of time. I think they got a lot of help from the Congress in the last NDAA in this direction as well, some very useful new direction and authorities, and if confirmed, I look forward to continuing to advance that work.

Chairman REED. Thank you very much. The committee has been focusing some attention on the Planning, Programming, Budgeting, and Execution process, PPBE. It has been with us since the 1960s, with Secretary McNamara. It was a model that was appropriate for the Industrial Age, but we are in a post-Industrial Age.

Starting with Ms. Shyu, can you give us a sense of your view on reforming the PPBE process and any specific changes you would suggest?

Ms. SHYU. Absolutely. I think part of the reason why there is a "Valley of Death" for technology is because a lot of the technology programs are being developed by small companies, and once it passes through a certain point, it needs to transition into a program of record. Part of the problem is to transition into a program of record it has to be in the POM [Program Objective Memorandum] ahead of time, and the POM is 2-year process. Therefore, unless you had the foresight 2 years ago to understand that the technology is going to be mature within 2 years' time, to plan it into your POM there is a 2-year gap.

So if you are putting the POM, because now you like this particular technology you want to put it in the POM, by the time you get the money to buy that technology it is 2 years old now. So there is absolutely a gap in terms of our ability to buy the latest tech-

nology. If confirmed, I would love to be able to work internally within the Department, with the Services, and come back to Congress with some ideas of how we can bridge this "Valley of Death."

Chairman REED. Thank you. Ms. Blume, your thoughts too.

Ms. BLUME. Thank you, Mr. Chairman. I share Heidi's concerns that the process, as it exists now, is not necessarily sufficiently agile to keep pace with the current pace of technology development. However, the process also has a lot of merits, in that it is very comprehensive, it is inclusive, it is transparent within the Department. If confirmed, I would look to make adjustments to the existing process, both things the Department can do on its own and things that the Department and the Congress would need to work on together to improve the agility of the process to overcome the "Valley of Death" that Heidi just described.

Chairman REED. Thank you. Mr. Kendall, your comments please.

Mr. KENDALL. Mr. Chairman, the one comment I think I would make on that is that I think it would be very helpful if the Department could manage risk over time more than it does under the current process. There is a tendency to focus on near-term requirements as opposed to long-term requirements and how risks are changing.

The Chief of Staff of the Air Force, General Brown, and the Commandant of the Marine Corps recently published an op-ed on readiness, and essentially that was their point, that we need to think about readiness and what our needs will be in the future, not just what they are currently, and invest in a way which deals with those threats as they are evolving, and to some degree we can project where the threats are going to go. But there is a tendency to focus very much on immediate needs as opposed to longer-term needs.

Chairman REED. Thank you very much. I thank the witnesses for their testimony. Let me recognize Senator Inhofe.

Senator INHOFE. Thank you, Mr. Chairman. Mr. Kendall, it has been said that the Air Force is too small and too old to do what the Nation asks it to do, and sending a fourth-generation aircraft to do fifth-generation work is something that is not going to work. I know that the F-35 has been criticized by a lot of very prominent people, and this has concerned me for some time now. The F-35, I believe, is the most capable and cost-effective fighter that is available out there today. It has had problems, but there is no other aircraft that offers the capability and the capacity of the F-35. Now at least that is what we hear from the people who fly them.

So I would ask you, for beginners here, do you agree with General Brown that the F-35 is a cornerstone of the Air Force fighter fleet for the future?

Mr. KENDALL. Ranking Member Inhofe, the F-35 is the best tactical aircraft of its type in the world and will be so for quite some time. It is a complex, expensive weapon, unfortunately, but it is a dominant weapon when it goes up against earlier-generation aircraft.

Senator INHOFE. Well, the concern I have is that the complaints still come, and they are out there. I remember, I have been around here long enough, I remember back in 1997, when we cut the F-22s. At that time that was the first and only fifth-generation fight-

er we had. We started out with, I believe it was over 700, I think, and we ended up 187.

Now, we watched this happen, and my concern right now is what kind of actions could we take to ensure that we are fielding the number of F-35s needed to fight against Russia and China? It is a different game out there altogether now. We all understand that. But we are going to have to be dealing with the numbers. What strategy can you have to try to come down with the right numbers?

Mr. KENDALL. Ranking Member, we have to get to an affordable mix that meets our needs as driven by the National Defense Strategy. That is what should guide those investments.

I have a long history with the F-35. It has struggled, certainly, and since I left government 4 years ago, I understand the sustainment costs are a concern. Ms. Shyu mentioned those and talked about those a little bit also. There is concern with the upgrade to the most recent version, and it is having trouble there, which I heard about through press accounts only and I will have to take a look at it if I am confirmed.

The key to keeping the cost down in an air fleet is getting the numbers up. There is a very strong correlation between the size of the fleet and the cost to sustain that fleet. So if there were one thing that I think would drive costs down overall it is continuing to buy. I know there is an issue with the total number that has been on the table for some years, what the requirement is. My own view, at this point in time, is that we are well short of that number, and that what we should be working on most is getting the cost down and keeping the procurement at a rate that makes sense.

Senator INHOFE. Yes, I know the Chairman covered that, and that is a concern that we all have.

Now, Heidi Shyu, do you remember McAlester, Oklahoma?

Ms. SHYU. I sure do.

Senator INHOFE. They remembered you too. I was in McAlester—you have got to hear this now—I was in McAlester on Saturday, and I had mentioned that Heidi Shyu—because I knew that they knew you—was coming back, and they said, “Heidi Shyu is coming back?” The only uniformed officer there was all excited about that, and he was not even there at the time that you were. So I have to say that last Saturday was Heidi Shyu Appreciation Day in McAlester, Oklahoma. Okay?

[Laughter.]

Ms. SHYU. Thank you.

Senator INHOFE. All right. Let me just ask you, because you have a background that you can answer the hard questions to answer, and that would be, in which specific emerging technology areas are we behind or falling behind China and Russia?

Ms. SHYU. Senator Inhofe, it has certainly been a huge concern of mine to see how rapidly China has advanced its technology, especially in the area of hypersonics, in space, in AI, in microelectronics. I firmly believe that we, as a nation, need to work collaboratively together across our entire R&E [research and engineering] enterprise to solve our toughest challenges, moving ahead. I firmly believe we can once again become a leader in these technology

areas if we put a focus on disruptive technologies, and with Congress' help to protect our funding we will be able to get there.

Senator INHOFE. Thank you very much. I agree with that, and you commented, and Mr. Kendall did too, on this document, and it is still worth a lot to us.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Inhofe. Senator Shaheen, please.

Senator SHAHEEN. Thank you, Mr. Chairman, and thank you to each of you for your willingness to be considered for these very important positions.

Mr. Kendall, as I am sure you are aware, we are making parts for the F-35 in Turkey now, and this Congress has made a statement that we should stop doing that because of Turkey's embrace of the S-400 and the potential for that to compromise our F-35. Do you have a position on that, and do you think it is a good idea for us to continue to manufacture those parts in Turkey?

Mr. KENDALL. Thank you, Senator Shaheen. Under the current situation with Turkey I think we should not be building F-35 parts in Turkey.

Senator SHAHEEN. Will you—and I guess I should ask Ms. Blume this too—will you all do what you can to ensure that that ends as soon as possible?

Mr. KENDALL. Yes, I will.

Senator SHAHEEN. Ms. Blume?

Ms. BLUME. Yes, Senator.

Senator SHAHEEN. Thank you.

There are reports, Mr. Kendall, that renovating Space Command's current location in Colorado for long-term use rather than moving the command and authorizing new MILCON [military construction] will save taxpayers dollars and achieve full mission capability 7 years faster than moving to Huntsville, Alabama. Will you commit to this Committee that you will give us cost estimates for both relocating Space Command and the potential costs to build a new facility in Huntsville?

Mr. KENDALL. Senator Shaheen, I understand there is a review going on of that decision, and what I would like to do, first of all, is to see the results of that review. I will commit to work with you on that as soon as we get some more facts on the table.

The Air Force went through a process—I think, in fact, there may be two reviews going on, and I would like to have the results of those, and then we could have a discussion about the specifics at that point.

Senator SHAHEEN. Is that something, Ms. Blume, that CAPE would take a look at the analysis of?

Ms. BLUME. Senator, it is my understanding that both the Air Force and the IG [inspector general], the DOD IG, are reviewing that decision. Ordinarily, CAPE would not, unless asked to for some reason by the Secretary, and if that happens I am happy to take a look.

Senator SHAHEEN. Thank you. I am just suggesting that it would be helpful for this Committee to know what the analysis is and to be able to weigh in with DOD on that, since we are the authorizers of funding.

Ms. Shyu, you talked a lot about the importance of research and innovation for DOD in accomplishing its mission. Right now it administers about \$2 billion a year through the Small Business Innovation Research program and the Small Business Technology Transfer program. As I am sure you are aware, one of the challenges with those programs is the one that you just discussed about moving from Phase 1 to Phase 2 so the innovations can be commercialized. Can you talk about what you might do to help address that?

Ms. SHYU. Senator, I think one of the key successes within a SBIR [Small Business Innovation Research] program, going from Phase 1 to Phase 2 and then ultimately transitioning into a program of record, I would like to share some insights and experiences and success stories. I know back when I was working in the defense industry, one of the business units was very, very proactive, reaching out to the SBIRs, small business organizations, to identify and create an Industry Day on the tough critical challenges that they had.

After having Industry Day with 23 little companies, they identified a list of tough technical problems. These small companies went off, thought about solutions to that, and the big prime actually collaborated with a small company to create the Phase 1 and help them transition to Phase 2 and transition into the program of record. That is a great success story that I have seen that is done. So if confirmed, I would like to push that particular model to make sure that the primes are helping out the small, innovative companies to ensure more successful transition into programs.

Senator SHAHEEN. That is great. As you are probably aware, SBIR is set to end its authorization next year, in 2022. How important is it, do you think for us to reauthorize that program and keep it going?

Ms. SHYU. I think it is very important. I will plead with you to please reauthorize that.

Senator SHAHEEN. Thank you very much. I agree.

Mr. Kendall, I have just a brief amount of time left, but I would be remiss if I did not raise the KC-46 with you, given the current concerns, and the importance of trying to see if it can take on other operations despite the challenge still with the remote vision system and some other problems. I hope you will focus on integrating the KC-46 into other operations that the Air Force is trying to do, especially the Aeromedical Evacuation enterprise.

Mr. KENDALL. Thank you, Senator. I am aware of some things that are being done with the KC-46. It is being used as part of the movement to network Air Force's forces in a demonstration that is coming up, I think, fairly soon. I am not aware of other activities to integrate it, but any asset like that we should be getting as much out of it as we can, and if I am confirmed, I will work to make sure that happens.

Senator SHAHEEN. That would be great. I would encourage you to come up and see the first National Guard base that got the KC-46s, in New Hampshire. We have our full component and we are still waiting to use them, so we hope you will help us do that.

Mr. KENDALL. I am looking forward to doing that, Senator.

Chairman REED. Thank you, Senator Shaheen. Senator Wicker, please.

Senator WICKER. I hope you will visit us all over the country, Mr. Kendall.

Ms. Blume, good morning to you. You wrote, in 2019, "U.S. military superiority is eroding vis-à-vis China." I agree with that. I think Members of this Committee agree with that. We need to do something about it. There is an acknowledgement on the floor of the Senate, last week and this week, in the form of the Endless Frontier Act, which acknowledges that our R&D [research and development] is eroding vis-à-vis China, and we are attempting to address that on the floor.

You also say in your statement, "The first goal at CAPE is aligning resources to the needs." I will tell you, I think it is the desire of Members of the Congress and Members of this committee to say, "Tell us what the needs are," particularly with regard to meeting our national defense needs, and more specifically, with China. Tell us what the needs are, and let's find the resources together. But to cut back on what we are intending to do because of a lack of resources to me is unacceptable.

Last week, media reports indicated that the budget, to be released this Friday, will include only eight ships, including one destroyer. Now I am sure you are aware, Ms. Blume, that in section 124 of last year's NDAA, this Committee approved a plan to bundle LPDs 31, 32, 33 with LHA 9. This was signed into law by the President of the United States, and subsequently the money was appropriated to do just this. It is clear that the congressional intent was for DOD to procure these four amphibious ships in this manner.

Are you able to answer yes or no, do you support this congressionally authorized and appropriate acquisition strategy for amphibious ships?

Ms. BLUME. Senator, first let me say that I believe that a robust and highly capable and sustainable Navy is critical to U.S. national security. In terms of the multi-ship procurement, I think multi-ship procurements can do at least two important things. First, obviously, they can save the taxpayers some money, but they also provide badly needed stability for the defense industrial base.

Senator WICKER. Right. So are you able to answer yes or no, in my limited time?

Ms. BLUME. Senator, I apologize for taking your time. I cannot get ahead of the President and the Secretary in terms of what may be in the 2022 budget request, but if confirmed, I look forward to working with you on this issue.

Senator WICKER. So you are unable to answer yes or no on that. All right. Well, that is a concern.

I recently completed Air Force Design 2030 efforts to reaffirm the continued requirement for conventional amphibious warships, with the addition of a new class of smaller, light amphibious warships. The Commandant of the Marine Corps has written, "A multiple ship contracting strategy also creates resilience and confidence in our Nation's shipyards, supply chains, and highly specialized workforce." Ms. Blume, do you agree or disagree with the Commandant of the Marine Corps on amphibious ships?

Ms. BLUME. Senator, I agree that multi-ship procurements can provide important stability for our defense industrial base.

Senator WICKER. They can be cost effective.

Ms. BLUME. Yes, Senator.

Senator WICKER. In the Navy's annual 30-year shipbuilding plan—I want to ask you a question with regard to the Navy's battle force design. The regional combatant commanders advocate naval presence as the appropriate driver for the size of our modern Navy—naval presence as the driver of our modern Navy. Do you agree or disagree with this?

Ms. BLUME. Senator, I think there are many factors that contribute to the Department's decisions about the size and the shape of the Navy. That is certainly one very important one.

Senator WICKER. Well, let me just say that that is the opinion of the regional combatant commanders, the men and women who we have assigned to go out into difficult areas to enforce our national security.

Let me just ask you this. In 2016, the Navy identified 355 ships as the force structure assessment. That target became U.S. policy in the Fiscal Year 2018 NDAA. Do you support the congressionally mandated 355-ship fleet goal?

Ms. BLUME. Senator, I certainly respect that that is the law, and if confirmed, I look forward to working with you and others in the Congress, in a transparent way, to see where the analysis that the new Administration will do will take us on that question.

Senator WICKER. Tell us what the needs are and we will enact the law and get you the resources, ma'am. Thank you.

Chairman REED. Thank you, Senator Wicker. Let me recognize, via Webex, Senator Gillibrand, please.

Senator GILLIBRAND. Thank you, Mr. Chairman. Mr. Kendall, thank you for our discussion earlier this week. I appreciate it very much.

As you know, fighting sexual assault in the military is one of my foremost issues, and it requires positive command climate where survivors can feel safe and they can disclose their assault. To be frank, the military has not acquitted itself well in this regard. What is your current assessment of the Air Force command climate, and how will you improve it?

Mr. KENDALL. Senator, that is a difficult question. Let me begin by congratulating you on all your efforts in this area, and particularly Senator Ernst as well, for her efforts to partner with you. I think you have made a lot of progress and we are on the brink of some important change that I hope will be very beneficial in this area. Change is necessary, and hopefully we can move forward.

My overall assessment throughout my career of command climate is generally positive, but there are exceptions. There are cases, and I think Fort Hood has been a recent example in the Army, with investigations that have revealed that there are some significant problems. What I can commit to you is that if I am confirmed, I will take command climate and the culture that is created within the Air Force extremely seriously in this regard. I think it is, frankly, at the root of the problems that we have with sexual assault and sexual harassment, and if we cannot address that we are not going to be successful with prevention.

Senator GILLIBRAND. Thank you. The IRC will be recommending that sex crimes such sexual assault and harassment be taken out of the chain of the command. The IRC did not review whether all serious crimes should also be taken out of the chain of command, because it was not within their purview.

A bill that I authored with Senator Ernst, and have 63 other co-sponsors on, the Military Justice Improvement and Increasing Prevention Act, will take all serious non-military crimes out of the chain of command. There are many reasons for doing so, but one of the important ones that recent studies have shown is that there are significant racial disparities in the military justice system, including that black servicemembers are up to twice as likely to be charged with a crime as white servicemembers.

Does that concern you, and do you commit to working with me on that problem?

Mr. KENDALL. It concerns me very much, and I absolutely do commit to working with you on that. There is a report that came out of the Air Force just last winter, last fall, that highlighted the disparities in a number of areas, including the ones that you talked about. It does not get at root causes for that, but I think we have to do that, and I would be delighted to work with you on that. It is important to the health of the force and its mission readiness and its capabilities that we get at this.

You and I spoke yesterday, just yesterday, about the additional coverage under your bill of additional crimes and so on, and I have not had a chance to look into that. But you made some persuasive arguments, but I would really like to hear from the Air Force leadership as well on that before having a final opinion on that.

Senator GILLIBRAND. Thank you. We also talked about one of New York's finest assets, which is the 109th Airlift Wing, which plays a very important role in the Arctic mission and will continue to do so given Russia's interest in the Arctic. However, the LC-130H aircraft flown by the 109th are aging and will soon need to be replaced. Given their importance to our Arctic strategy, do you have a view on replacing these aircraft?

Mr. KENDALL. Senator Gillibrand, you introduced me to that issue yesterday and I did a little bit of research as a result of that. You have some unique assets up there and I think they are very important to the Arctic. I have not had a chance to assess their age or how much life they have left on them, but I can commit to you that if confirmed, I will do so and try to take the appropriate action.

Senator GILLIBRAND. Thank you. For Ms. Shyu and Ms. Blume, the last time Eric Schmidt testified in our committee he spoke about improving innovation with DOD software. He recommended changing the mindset from thinking of software programs as a weapon system to think of them as a consumable, since the competition cycle is so quick. Programs are obsolete before they hit the force. Do you agree with that assessment?

Ms. SHYU. Senator Gillibrand, I actually do agree with it. So one of the key areas I would like to focus on is software. Software is absolutely ubiquitous in all of our weapons systems, and we have to think about how we can develop software continuously, and test

it continuously, so this way we can ensure the latest capabilities as quickly as possible. So I absolutely do agree with you.

Senator GILLIBRAND. Thank you. Ms. Blume?

Ms. BLUME. Yes, Senator, I agree as well. If confirmed, I really look forward to digging in to understanding how we need to think about software differently from other kinds of development and procurement programs that the Department does.

Senator GILLIBRAND. Thank you. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Gillibrand. Now let me recognize, via Webex, Senator Fischer.

Senator FISCHER. Thank you, Mr. Chairman. Secretary Kendall, I appreciate the experience with our nation's nuclear enterprise that you bring to this role from your previous service in government, and in particular, your understanding of the tight timelines many of our nuclear modernization programs face, most importantly GBSD [ground-based strategic deterrence] and the LRSO [long range stand off]. I was happy to see your statement in response to the committee's advanced policy questions that in your view, "The nuclear enterprise is by far the most important and significant responsibility of the Secretary of the Air Force."

I think that is absolutely right. Nuclear deterrence is the most important mission of the Department of Defense, and as the Service responsible for two of the three legs of the triad, the success of this mission depends heavily on the Air Force. I know that if confirmed, you are going to be thoroughly reviewing the nuclear modernization programs and I hope that review will also include the Air Force elements of our nuclear command, control, and communications networks.

I am particularly concerned about the Air Force's plan to recapitalize the E-4B. This is an issue that has been under constant study for well over a decade. But the challenges of maintaining an outdated airplane are only getting harder as time passes. I think it is vital that the Air Force expeditiously move forward, and this issue not be studied indefinitely. So I hope that that is something that you will take a close look at.

Mr. KENDALL. I can commit to do so, Senator. When I left office a few years ago the E-4B issue was looming on the horizon but had not really confronted us yet. But I am aware of it, and the replacements for those aircraft and maintaining the nuclear command and control system is an essential part of our nuclear deterrent, and I would definitely be taking a close look at that.

Senator FISCHER. Thank you very much, and also, Secretary Kendall, as we discussed on our phone call last week, Offutt Air Force Base continues to rebuild after the 2019 floods, and I commend the Air Force's efforts to date, but the work is not over.

Do I have your commitment to work with me as a partner to continue the Offutt rebuild as well as to finish the Offutt runway project so that this crucial element of the Air Force continues to contribute to the fight now and also well into the future?

Mr. KENDALL. Senator, I have not had a chance to look at the exact status of that project, but Offutt as a strategic headquarters is extremely important, and the asserts there are extremely important. So I would absolutely commit to work with you on that.

Senator FISCHER. Thank you. The erosion of our military's technological advantage is something that you have been talking about for a long time, Secretary. I remember, in 2014, my second year in the Senate, on the Emerging Threats and Capabilities Subcommittee, you briefed us on that. There is a lot more attention that is being paid to this challenge now, but at that time that was not a widely appreciate issue.

Understanding that you have been out of government for a while, can you frame the problem as you see it and share some of your thoughts about how, if confirmed as a Service Secretary, you can help address that?

Mr. KENDALL. Thank you, Senator. If there one reason I would like to come back into government, and hopefully will be confirmed, it is to address that problem. As I mentioned in my opening statement, I became aware of Chinese modernization programs and how successful they have been in 2010, and that briefing that you mentioned, I remember it very well. It was a highly classified briefly, and we walked through some of the specific threats.

I hope to address that. I know that progress has been made. There has been a lot of additional attention focused on this in the last few years. The Nation Defense Strategy that the Ranking Member mentioned takes us in that direction, and I think that there is general consensus now that China is the pacing threat, as I think Ms. Shyu mentioned, and I am looking forward to working on that. That is the reason, perhaps, that I am interested in coming back into government.

Senator FISCHER. Very good. Thank you.

Secretary Shyu, this Committee has made a number of changes, including creating the position for which you are nominated, in order to improve its ability to deliver innovative solutions to the warfighter. But one thing Congress cannot legislate is the culture of the workforce, which witnesses have testified is generally risk averse. Can you talk about the importance of culture and risk tolerance, in particular, when it comes to innovation, and do you believe the Department and the Services need to be perhaps more tolerant of risk?

Ms. SHYU. Yes, ma'am, absolutely. I think there is a very different culture in the technology community versus your standard acquisition community. In the technology community, typically there is a lot more risk, and you push the edge of the envelope to create innovation. But on the program management side, you are judged and evaluated, and your career depends upon how well you execute based on performance, cost, and schedule. Therefore, by that definition, they are going to be risk averse. Any perceived technical risks incorporating their program they are going to be averse to it, because it impacts the schedule, the cost, thereby their career.

Senator FISCHER. What happens to innovation then?

Ms. SHYU. Well, that is the problem. So they want to see the technology being very mature. So one of the key things that we need to do, when I get into my position, if confirmed, is to help to bridge this "Valley of Death" that we talked about a little earlier. Make sure the technology we test out in labs are tested in a rel-

evant setting, relevant environment, so the program manager will feel more comfortable adopting that technology.

I think one of the key things we ought to take a look at is after we develop a technology, even a prototype, get the user to test it. Get feedback from the user incorporated into the redesign. The Israelis do that. They are very, very fast in developing a prototype, getting it in the hands of a user, to get feedback as to what needs to be modified, then redesign that.

Based upon my experience with Roboteam, which is a small robotics company in Tel Aviv, that is exactly what they did. They are able to do three prototypes, three generations of prototypes in one year, and that is the kind of speed we need.

Senator FISCHER. Thank you very much.

Chairman REED. Thank you, Senator Fischer. Let me recognize Senator Blumenthal, please.

Senator BLUMENTHAL. Thank you, Mr. Chairman. Thank you all for your public service, and thank you for what you will in the future.

Ms. Shyu, I was very interested and impressed by your goal of flipping the percentages of sustainment versus new technology, 70/30 percent. I noted, however, that there is no reference in the concepts that you set forth in flipping that ratio and investing more in new technologies, there is no mention of climate change and environmental sustainability. I wonder if you have any thoughts, beyond fuel efficiency—and I recognize that you mentioned fuel efficiency—in what the military can do in driving the efforts against climate change forward, because the military has been such a powerful force in innovation and creativity, whether it is the internet or medical devices, and I think there is a real opportunity for the Pentagon to drive innovation here.

Ms. SHYU. Senator Blumenthal, I probably do not have enough time to answer in detail, but I would like to take this moment to kind of explain to you some of my thoughts.

I have had the honor and privilege to work with a number of small companies who have developed advanced materials that are lighter, stronger, and has ability to reduce fuel efficiency. We need to incorporate these type of materials into our design. Logistically, it would be a lot easier to move. That is one example.

I have also had the opportunity to work with some small company that develops engines that will shrink the size down to one-third of the current size. That would significantly change the equation as well as the sustainment of these engines.

So there is a lot of innovation that is out there. I also saw a six-person company that has developed any type of fuel as input, and the output is a DC plug. Those are the types of creative, innovative, technologies we need to nurture, and they are struggling, trying to figure out who to talk to in the DOD.

So if confirmed, I would like to help these type of companies to advance their technology maturity so we can deliver unprecedented capabilities, and it will absolutely help the issue of climate change, because you are reducing the logistics burden.

Senator BLUMENTHAL. It is a matter not only of cost savings but also, obviously, national security—

Ms. SHYU. Absolutely.

Senator BLUMENTHAL.—that the Secretary of Defense has told this committee very persuasively, and I would hope that you will work with us, not only in receiving applications but proactively reaching out to companies like the ones that you mentioned, that are in this area.

I have found, all too often, there are Connecticut companies, for example, and I suspect my colleagues share this experience, that have tried to find the entry point in this system, which seems, from the outside, just like the Pentagon building, a huge, implacable construct without a welcoming entry point. So I would hope that you would do proactively what you have suggested here.

Ms. SHYU. Yes, sir. Absolutely. I plan to talk to a number of the small companies, to meet with them, to understand the impediments that they have, and work to resolve those impediments. You are absolutely, 100 percent right. This is a giant fortress. They have no idea where the door is.

Senator BLUMENTHAL. Thank you.

Secretary Kendall, you and I had a good discussion about the C-130A planes, and I indicated, and I think you agreed, that these planes can play an essential role for our Air National Guard, which have been so important. Our Air National Guard has been at the tip of spear, not only in our wars abroad but also in responding to natural disasters here at home. I have learned that the C-130A propeller upgrade program has been delayed, possibly delayed again. There is funding for 26 additional propeller hits and spares provided in last year's Fiscal Year 2021 Defense Appropriations Bill, that have not been executed. The contract expires on July 6th, unless there is additional funding put in the contract. I know I am hitting you with this issue somewhat cold, but I would like your commitment that you will come back to me by July 6th, if possible, and I would hope that you would be confirmed, I hope all three of you will be confirmed by then, with an explanation as to what could be done to make sure that the modernization of our C-130 fleet is accomplished, because it is so important. It is a workhorse aircraft, as you well know, and it performs a vital function.

Mr. KENDALL. Senator, I can commit to that. The C-130 is a very valuable workhorse, as you say. It is a very versatile aircraft. It does an awful lot of things in support of a lot of missions. I am not aware, in detail, of this specific issue with the propellers, but if confirmed, I will commit to take a look at that and get back to you on it.

Senator BLUMENTHAL. Thank you. I will just close by saying I hear the sentiments of a number of my colleagues that the F-35 should be advanced, that the Air Force should be very assertive in asking, in this next budget, for the numbers of aircraft that will drive down the cost per copy of each of the F-35 aircraft, and I hope that we will discuss it further. Thanks, Mr. Chairman.

Chairman REED. Thank you, Senator Blumenthal. Let me recognize, via Webex, Senator Cotton, please.

Senator COTTON.—appearing before the committee today. Congratulations on your nominations.

Mr. Kendall, I want to direct most of my questions towards you. First, an issue that has long been a concern of mine, on which I worked with Senator King, is the Air Force shortage of pilots. This

is a perennial concern. It drives up operations tempos for our personnel while decreasing their quality of life, causing some of them to leave the force altogether.

What are your thoughts on this recurrent issue and how we can address what a previous service chief has referred to as a crisis?

Mr. KENDALL. Sir, I am aware that there is a shortfall. It is on the order of 2,000 pilots, I believe, and it is an issue that I would certainly address as a high priority, if confirmed. There have been some issues, I think, with planning, as we have moved through the COVID experience and the airlines have shut down. That has given the Air Force a temporary break, but they may have overplayed that. So it is something I want to look at carefully.

There are a lot of possibilities for increasing the flow of pilots into the pipeline. Minority pilots, in particular, are relatively short numbers in the Air Force, and I think we can do something about that. So I would be happy to work with you on that issue. I agree with you it is very important.

Senator COTTON. Thank you. One point I would make, and this is something we learned in our sensing sessions with pilots, is that a common solution is putting more money into pilot compensation. Air pilots are never going to turn down bonuses to stay in the Air Force, and we should recognize their service. But at root, we cannot compete against the salaries that private airlines or aviation companies are going to offer pilots. We need to recognize, in my opinion, that these young men and women join the Air Force to fly high-performance aircraft in defense of our nation, and the more we can do to get more pilots in, so they are flying more and doing other routine administrative duties less, the more we can contribute to their quality of life.

The second question, Mr. Kendall, the Air Force now has a fleet with an average age of 30 years. What are your thoughts on how to improve acquisitions so that we can ensure the Air Force is prepared to fulfill national security requirements with technologically relevant and reliable fleet of aircraft?

Mr. KENDALL. Senator, the age of the aircraft is an issue. I think the number I heard was 28 years, roughly 30 years. There are two things you can do about that problem. You can get rid of the older planes and you can buy new airplanes, and I think we need to take a look at both of those, quite frankly.

I mentioned earlier how we manage risk over time in the Department, and one of the things that I think we should look at is getting rid of some near-term capability in order to have more longer-term capability. But that is a tradeoff that I would be interested in certainly, if I was confirmed.

Senator COTTON. Yes. Thank you for that. I am broadly supportive of what the Air Force has proposed over the last couple of years in terms of modernization, and some of that does involve divesting in older aircraft. To be clear, not every old aircraft needs to be divested. Some very old aircraft are still performing vital missions and performing them effectively and safely. But as you say, some of these older aircraft, we are going to need to divest them so we can invest more in cutting-edge technology.

One final question, Mr. Kendall. Last December, there was a very concerning report released by the National Commission on

Military Aviation Safety. It states that we have lost 224 lives, 186 aircraft, and almost \$12 billion to training accidents in just 7 years. What are your thoughts on what the Air Force can do to prevent such accidents and deaths in the future?

Mr. KENDALL. Senator, I have not seen that report, but that sounds unacceptable to me, quite frankly. We overall, in the military, in the U.S., have had a very good record for flying and mishaps, and I know it is a source of constant attention in the Air Force. A lot of focus is placed on that, from my previous experience.

But I will take a look at that report and I will see what kind of corrective action is necessary and can be implemented, if confirmed.

Senator COTTON. Yes, I think it would be well worth your time to review that. I have my concerns that one possibility is that we are shortening training timelines in part because of the shortage we discussed earlier, and that we are relying too much on augmented reality or other simulator training in place of actual flight time in the aircraft for our junior aviators.

My time has nearly expired. Thank you all again for your appearance. Mr. Kendall, thank you for your answers. I look forward to supporting your nomination.

Mr. KENDALL. Thank you.

Chairman REED. Thank you, Senator Cotton. Let me just also thank Senator Hirono for yielding her time at this moment to Senator King. Senator King, please.

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

Ms. Blume, on the assumption that you are confirmed—I can make that assumption; you can't—I would appreciate it if one of your first tasks might be an updated assessment of the sustainment cost of the F-35. The figures that I have seen, which may be outdated, are 40 hours of maintenance for every hour of operation, anticipated only 250 hours of operation a year, \$36,000 an hour of cost of flying the airplane. We need to understand where that is now. It may be that we have made some progress on that, but I would appreciate it if you could commit to giving us a comprehensive updated of that issue, and also some thinking about how to do something about it.

Ms. BLUME. Yes, Senator, I share your concerns about F-35 sustainment, and if confirmed, I look forward to digging into that and providing you an update.

Senator KING. Thank you. Thank you very much.

Ms. Shyu, we had a wonderful conversation. It strikes me that one of the things that has not been mentioned very much today, that I think is a strategic gap, is both the defense and offense in terms of hypersonic weapons, and I view that as an important part of acquisition over the next 5 to 10 years. We have platforms that are very vulnerable to hypersonic weapons, and we need to figure out how to both defend them and also to maintain or develop our own offensive capability in order to serve as a deterrent. This is one area where we do not really have a deterrent. Is that something that you intend to follow up on?

Ms. SHYU. Senator, absolutely. A lot of the stuff you are talking about is in the classified arena, so once I get briefed on the latest

state of where we are in this area I will be happy to come back and share the results with you.

Senator KING. Thank you, and maybe in a classified setting we can discuss it more thoroughly. But as I said, I think it is a strategic gap right now, and this is a question, I think, for you, perhaps also for Mr. Kendall. In my view, we should never buy another military system without also buying the IP [Intellectual property]. We have to be able to print our own parts and not be dependent upon the OEM [original equipment manufacturer] for parts. I understand that is one of the sustainment costs is parts and availability of parts. So I hope that all contracts in the future, for an acquisition, whether it is a tank or an airplane or a coffee dispenser, we will also buy the IP so that we will have the ability do our own development of parts. I foresee a day where every ship and every aircraft hangar has a 3D printer that will be capable of supplying many of the parts. Is that something you will see to, Ms. Shyu?

Ms. SHYU. Yes. Actually, I agree with you. The other thing that I know the Services are all working towards is having a modular open architecture with standard interfaces. If we implement that across our programs, even if you do not have a specific part, you could potentially develop another part that has the same form, fit, and function as well. So there are two prongs to this I would like to take a look at.

Senator KING. I appreciate that, and, Mr. Kendall, good to see you again. Welcome, and I am delighted that you are willing to take on this challenge.

They often say that September 11th was a failure of imagination on the part of this country, that we did not imagine what could happen. We are now imagining cyber in a serious way, and in discussing, for example, the upgrade of the modernization of the nuclear triad, in my view it is really a nuclear quad. It is submarines, air, and missiles, and communications and command and control.

Give me your brief views on the significance of cyber. I believe the next major attack on this country will not be landing craft or missiles. It will be cyber, and we are not adequately prepared.

Mr. KENDALL. Senator King, first of all I want to compliment you on your work on the Solarium Commission. I think it was a very good body of work and very helpful. I also want to recollect our time together on a submarine under the ice in the Arctic.

Senator KING. Yes, sir.

Mr. KENDALL. It was a great experience with you.

You are right. Cyber is a ubiquitous problem. It is a potential Achilles Heel in any number of places in our overall economic, social, military enterprise, including potentially in the nuclear command and control area. It is an area that, as we look at nuclear modernization, we have to look at very, very seriously.

At the time I left government I thought we had a reasonable posture there, but I think it is well worth taking a look at, and continuous diligence in that area is what is actually required, because the threats never stop. They keep coming at you.

Senator KING. Not only do the threats never stop, the wake-up calls never stop, and we are not thoroughly awake. So I hope you will make this a high priority in your work in the Air Force, be-

cause a jet fighter is not useful if its command and control and navigational system is knocked out in the first moment of a conflict.

Mr. KENDALL. I completely agree, Senator, or its logistics support system.

Senator KING. Correct.

Mr. KENDALL. There are a lot of attack vectors are possible against our assets, as you are well aware.

Senator KING. Thank you. Thank you all for your dedication and willingness to come back to work for the American people. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator King. Let me recognize Senator Rounds, please.

Senator ROUNDS. Thank you, Mr. Chairman. Mr. Kendall, I would like to follow up where Senator King is leaving off. The Fiscal Year 2020 NDAA, Section 1657, directed each military department Secretary to appoint an independent principal cyber advisor to act as the principal advisor to the Secretary concerned on all cyber matters affecting that department. With the surge in high-profile cyber-attacks against the United States, the need for breaking down the cyber silos is needed now more than ever.

If confirmed, I would like your commitment that you will conduct an in-depth review of the implementation of the principal cyber advisor position, and within 60 days of assuming that office, to get back to this committee with your findings. Would you do that, sir?

Mr. KENDALL. Yes, Senator, I will. You are correct in that there are silos of activity in cyber that are not often as well connected as they should be, and the overall posture of our institutions needs to be better understood at an integrated, aggregate level, to make sure we are putting our resources where they belong. I would see that as an important role of the principal cyber advisor.

Senator ROUNDS. Thank you. Ms. Shyu and Ms. Blume, there have been a couple of questions asked now about how quickly we can acquire new products and also to integrate them into a supply system. Ms. Shyu, from Senator King there was just a discussion about how once we purchase an asset, today when it comes to either replacing or fixing, we do not necessarily have the parts and pieces and therefore we go back to the original supplier.

You indicated that you would like to have the ability, because of the open architecture that we are building in, to be able to plug-and-play other products that are similar in nature. But the third part to that component is that we do not necessarily purchase the intellectual property rights that go with that to begin with, and I think that is a critical part of that discussion as well. Would you agree?

Ms. SHYU. Yes, sir, I do agree.

Senator ROUNDS. Thank you, and Ms. Blume, when Ms. Shyu was talking about the need to be able to basically integrate a more quickly moving process, one in which we can investigate, find, determine, test in the laboratory and then bring back out and implement in the field. When we do that, that sometimes means that we are really good at doing workarounds. Meaning if we have got a supply system in place and it is not moving fast enough, we create

a new office which accelerates the purchasing, and yet we leave the other one in place, in part because our rules require that we do so.

If Ms. Shyu is correct that we need to find a way to more quickly acquire—and I happen to agree with her. I think the time has come that we, as a government, recognize that the old way of doing business simply does not work anymore—folks in your position, that actually come back in and look and analyze afterwards, you are going to find that we are moving around systems that are in place today. Are you prepared to work with those individuals to not only find the workaround but to find the appropriate way so that we do not have to work around it anymore but rather to create the system in which the existing infrastructure actually works efficiently in the first place so we do not need the workaround?

Ms. BLUME. Senator, yes, I do commit to working on that, if confirmed. I think that CAPE's role in this space is twofold. The first is going to be making sure that there is sufficient agility in the programming process in order to put money where it needs to be in a timely manner, and the second is making sure that the analysts, both in CAPE and across the Department, have access to good datasets they need to do that kind of analysis much quicker, in order to make sure that decisions that we are making are supported and are the right ones, but quickly.

Senator ROUNDS. Ms. Shyu, I agree with you that we have to move more quickly. Whose job is it to overhaul the system, to see that it gets done?

Ms. SHYU. I think it is the senior leaders' role within the Pentagon. It is working from R&E through A&S. Also collaborative providing the information data to the tester, DOT&E, working collaboratively with CAPE as well, and all the Service Secretaries.

Senator ROUNDS. Do you include yourself as one of those senior leaders?

Ms. SHYU. Yes, sir, I do.

Senator ROUNDS. Okay. So in terms of accountability, we are talking about the folks that are in front of us right now being accountable for seeing that this gets done. Ms. Blume, would you consider yourself to be one of those senior leaders to see that this gets done, as well?

Ms. BLUME. If confirmed, yes, sir.

Senator ROUNDS. Mr. Kendall?

Mr. KENDALL. Absolutely, Senator.

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

Chairman REED. Thank you, Senator Rounds, and once again let me thank Senator Hirono for her graciousness and recognize her.

Senator HIRONO. Thank you, Mr. Chairman. I ask the following two preliminary questions of all nominees who come before any of the committees on which I sit. The first question, since you became a legal adult, have any of you ever made unwanted requests for sexual favors or committed any verbal or physical harassment or assault of a sexual nature?

Ms. SHYU. No.

Ms. BLUME. No.

Mr. KENDALL. No.

Senator HIRONO. Have any of you ever faced discipline or entered into a settlement related to this kind of conduct?

Ms. SHYU. No.

Ms. BLUME. No.

Mr. KENDALL. No.

Senator HIRONO. For Ms. Shyu, I am very glad that President Biden nominated such a highly qualified individual like yourself, and if confirmed, you will be the highest-ranking civilian Asian American at the Department of Defense. I think we all recognize that diversity is a welcome thing in all of our services.

So hearing your testimony, it is very clear that you work very closely with a lot of small businesses, and I am really glad that you recognize the importance of reauthorizing SBIR program. So one of the concerns we have, there are a lot of innovations being done by small businesses. In fact, there is recognition that most innovation comes from small businesses. There are a lot of them out there, and you did get asked some questions about it. How are these innovative small businesses to access your office? You indicated that you understand that they need to know where the door is and that you will be making concerted efforts to make sure that they see the door and that they can go through the door, and work with somebody in your office to propose their ideas.

You also mentioned that Israel is a country that can develop a prototype and then be able to have that prototype used in the field so that changes can be made that make sense to the people in the field. So when you raise Israel as an example, are you saying that we do not do enough of this kind of utilization in the field of prototypes?

Ms. SHYU. Ma'am, what I have noticed is they, being a much smaller country, they are much more agile. The user will go to a company and say, "I need a particular capability," for example, unmanned ground vehicle. "I need to send the ground vehicle into a long tunnel. Can you develop something like that?" So in a period of 4 months, they are able to develop a prototype, and then give it to the user, and say, "Go ahead and use it, and give me some feedback." So the user used it and provided the feedback back to the developer, and the developer was able to modify the design per the request by the users.

Senator HIRONO. So I am running out of time. So that is the role that you play then, to contact or to interface with the users and then to translate their needs to the people who will develop the prototype to meet the need. So in a big outfit like our DOD, that is a critical role that you can play with regard to supporting our small businesses.

I do have a question for Ms. Blume. In 2019, the Missile Defense Review identified the Homeland Defense Radar Hawaii, HDRH, as a requirement for detecting and discriminating against inbound missile threats from an increasingly capable North Korea. Congress appropriated \$133 million for fiscal year 2021 to keep this radar develop on track. Both Admiral Davidson and General LaCamera have testified before this committee in the last 2 months that HDRH would be an important part of the region's layered missile defense system to protect Hawaii and the Lower 48 from long-range North Korean missiles.

I am concerned that the new Administration may cut the radar's funding in this year's budget, based on a CAPE assessment. I un-

derstand that CAPE had gone through an assessment of this radar program and had okayed it in prior years. Was that earlier assessment that gave the go-ahead to HDRH Hawaii wrong, and are you now providing some new assessment that changes the environment and we no longer need this radar for Hawaii?

Ms. BLUME. Senator, I am not familiar with the original assessment that you mentioned. I am not aware of work that CAPE is presently doing on this question.

Senator HIRONO. Should you be confirmed, this is definitely an area of interest to all of the delegation from Hawaii, I can tell you that, so I would really appreciate your paying attention, or looking at this issue. It is really important. I am sure you are aware that we had a scare not too long ago when people of Hawaii thought there actually was a missile headed to Hawaii and there was an extreme fright of all of the people in Hawaii.

So if there is some other system, a new system, that can protect Hawaii, then I would like to be apprised of it. Otherwise, I also would like to know why CAPE is planning to change its assessment of the need for this system. Thank you.

Ms. BLUME. Yes, Senator, I agree completely that defending Hawaii is absolutely imperative, and if confirmed, I look forward to working with you on that.

Senator HIRONO. Thank you.

Chairman REED. Thank you, Senator Hirono. Let me recognize Senator Tillis, please.

Senator TILLIS. Thank you, Mr. Chairman. Thank you all for being here. Mr. Kendall, thank you for being generous with your time last week.

Ms. Blume, Senator Sullivan has already expressed disappointment that I do not have my 680-page proposal for the next-generation handgun. I honestly tried to find it but it is somewhere in a box from my prior office. But I use that as an example, when you are talking about reviewing programs and really trying to stratify them, based on risk and cost. I use it as an example. There is no excuse for 10 years to define the next-generation handgun and 5 to 10 years to deploy it.

I know you have got a lot of forward-looking work that you are going to be required to do in CAPE, but I hope we can go back and do some after-actions on some of these programs to really learn from it and make sure we do not repeat that mistake again. I would love to know if there is anybody in the DOD that thought that that was the right kind of time and effort to find the next-generation handgun. I will bring my prop back when you come back for an oversight hearing.

But Ms. Blume and Mr. Kendall, I wanted to ask a question that may swim into both of you all's lanes. It has to do with the KC-46 and the KC-10. We are retiring KC-10s, but it seems to me that the KC-46 still has problems and is not really able to complete all the mission set that it was designed to do. I know the Air Force has come back and said, well, it is providing some of it. Ms. Blume, do you have any current experience or insights into this program, and any opinions as to whether or not the KC-10 can be retired, given the deficiencies in the KC-46 program?

Ms. BLUME. Senator, I am certainly familiar with the public reporting on this issue, and perhaps just ever so slightly deeper than that. If confirmed, I would look forward to working with both the Air Force and TRANSCOM in order to make sure that that tanker force is sufficient to need.

Senator TILLIS. Mr. Kendall, as I mentioned in our call, I do not want to artificially extend the life of the KC-10. I want the best capabilities in play. But it just seems to me that we really have to take a look at the readiness of KC-46s that are in operation but not fully operational, and weigh that and measure that against the KC-10's capabilities to fill the gaps. I spoke with you about it last week. I just wanted your commitment to take a look at it. It seems like it could be a readiness issue, but I am happy to see a report that definitively answers the question, if the current posture is the correct posture. I think I got your commitment to look at that last week, and it does seem like it swims a little bit into CAPE's lane as well.

Mr. KENDALL. Yes, Senator. I will take a look at that and I will get back to you. Like Ms. Blume, I know from press reports the general situation out there, but I have not had any chance to look at the detailed tradeoffs between keeping the 10s and the 46, and I would commit to do that.

Senator TILLIS. Yes, I would just like to see a drilled-down report back. Ms. Shyu, you know, I think a lot of the ratios, you talk about flipping a ratio in your opening statement, and I can't remember the exact subject matter. I feel the same way about the DOD's leading role in the past in R&D. I mean, we were the technology lead. Now those ratios have shifted more into the civilian sector. I think that is a reality of the pace and scale of technology today. But I am particularly concerned with making the Federal Government and the DOD an attractive place for digital cyber experts to come and work, and possibly even moving into and out of the DOD to keep their skills fresh.

Do you share a view that we have got to come up with a different way to onboard, retain, and fully exploit the talent that we are lacking right now in the DOD?

Ms. SHYU. Yes, sir. I absolutely do agree with you. I would like to share with you something that, in my experience, has worked very well in terms of attracting new grads. PEI STRI [Program Executive Office Simulation, Training and Instrumentation] down in Florida has been very, very effective in terms of attracting brand-new talent. They have an internship program, during the summer, 6 weeks, in which they bring interns in to work them, to show what the Army does, in the simulation and modeling world. What happens is, because they are so closely integrated, they have an opportunity to see what the Army does. They have virtually 99.9 percent retention rate, okay. As soon as they graduate, they enter the PEO and they stay there. There is only 1 loss over 126 people. That is because that person's husband got transferred.

But that is exactly the kind of things we need to do to attract young talent, because young talent loves to be able to see that the work they are doing is for a common cause. It contributes to something greater than themselves. I think this is the kind of model we need to do across the board.

Senator TILLIS. Thank you all. Congratulations on your nominations. Thank you, Mr. Chair.

Chairman REED. Thank you, Senator Tillis. Let me recognize, via Webex, Senator Warren, please.

Senator WARREN. Thank you, Mr. Chairman, and congratulations to each of you on your nominations.

Mr. Kendall, I want to spend some time talking about military housing and climate change this morning, but before I do that I want to briefly ask you about the strategic basing process. This is the formal process the Air Force uses to decide where to station new aircraft, like the F-35 or the KC-46 that you have been talking about.

The Air Force has gone to admirable lengths to ensure that when it is choosing installations for these aircraft, issues like the quality of education available near a base and licensure reciprocity are a big part of the consideration. This is important because the quality of schools available for their children, and the ability of spouses to obtain jobs and sustain careers are critical issues that impact servicemembers' quality of life.

So, Mr. Kendall, can you commit to ensuring that the quality of education and licensing reciprocity are indeed factored into the strategic basing process going forward?

Mr. KENDALL. Thank you, Senator Warren. I have lived in military housing. It has been a while, but I know exactly what that is like and what some of the considerations are. I actually applaud what the Air Force has done, as I understand, relatively recently, to take into account quality of life for families and issues like licensing, and the support the community gives to people.

So the answer to your question is absolutely. The process that you described is a several-step process. It gets to a small number of candidates and then it compares them over several factors—cost, mission support—but also quality of life and the ability of the community to support a military family. So I think that is all very important and all should be taken into account.

Senator WARREN. Good. Well, one thing that is not formally considered during part of the process is the effects of climate change and extreme weather. A 2019 Pentagon analysis found that of all the services, the Air Force's base infrastructure is most at risk for climate change threats such as recurrent flooding, drought, desertification, wildfires, thawing permafrost. Do you think it is worth making that another factor in the strategic basing decision-making process?

Mr. KENDALL. I am not aware of the extent to which it is risen at the moment, but it should be a consideration, absolutely.

Senator WARREN. All right, sir.

Mr. KENDALL. Trying to change implications affect cost, they affect mission performance, and other things. So it should be included, in my view, as one of the things that is looked at.

Senator WARREN. That is terrific. Thank you. On the subject of climate change, there is no way to address the climate crisis without confronting DOD's role as the largest consumer of fossil fuel on the planet. Will you commit to using all the tools and authorities at your disposal to make the Air Force more climate resilient and to reduce its carbon footprint whenever possible?

Mr. KENDALL. Yes, Senator. It is an all-of-the-above type of problem, and there are a number of things that can be done. The Air Force is impacted by geopolitical changes even that affect the threats that we face. But it is also affected by extreme weather events that affect our bases. The Air Force, among the DOD, which, itself, as you pointed out before, is a very large consumer of fossil fuels. It is the highest consumer, because of the large fleet of aircraft that the Air Force operates. So there are a number of things that can be done there.

Ms. Shyu mentioned lighter-weight materials as one thing. I am aware of some technology programs on propulsion that would reduce the consumption of fuels substantially, and also increase operational capability.

So it is an all-of-the-above problem that needs to be addressed on a great many fronts simultaneously.

Senator WARREN. Good, and I if I can I want to get in a question about military housing. We have all heard the stories from military families about the deplorable conditions of on-base, privatized housing. The companies that were hired by DOD escaped accountability by fudging their numbers and sweeping complaints under the rug. My office still hears from military spouses that the problem is not getting any better and that landlords are not following the laws that Congress passed that are designed to protect the military tenant.

So let me ask, if confirmed, will you commit to using all the tools available to hold landlords and private companies accountable to make sure that they build and maintain quality housing for our servicemembers and ensure that they are not profiting off substandard housing?

Mr. KENDALL. Senator, again, I have lived in military housing. I know how important it is to families to have quality housing, and it is a fundamental obligation of someone who would be confirmed, potentially, in a position like the Secretary of the Air Force. So the short answer to your question is yes. But what we need to do is have sound contracts and we need to enforce those contracts and ensure that people get the quality housing that they deserve.

Senator WARREN. You bet. Thank you. I plan to hold you and the other Service Secretaries to these commitments. You know, military housing and climate change are issues of military readiness, but for too long our Services have paid only lip service to this reality. So it is time for that to change, and I look forward to working with you on it, to make this happen.

Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Warren. Let me now recognize Senator Sullivan, please.

Senator SULLIVAN. Thank you, Mr. Chairman, and I want to congratulate all the nominees. Mr. Kendall, I appreciated our meeting. Very constructive. Ms. Shyu, I really enjoyed our meeting, and I think you are going to do a great job in this position. Your experience, patriotism is what this position is going to need, so congratulations. Ms. Blume, I look forward to meeting with you soon. Sorry we did not get a chance to meet before this hearing.

Mr. Kendall, I want to start with you. The father of U.S. Air Force, Billy Mitchell, in an Armed Services hearing I think in the

1930s, stated, “This place”—and I am not going to mention the place; you are going to mention the place. This is a quiz for you—“is the most strategic place in the world. Any nation that fully controls this place controls the world.” What was this place in Billy Mitchell, the father of the Air Force’s statement to the Congress?

Mr. KENDALL. Senator, I have a suspicion it might be Alaska.

Senator SULLIVAN. Yes, it was Alaska. My colleagues should know this too. I ask this question about once a week.

In all seriousness, I do want to get a commitment from all three of our witnesses to come to Alaska, see the most strategic place in the world, according to the father of the U.S. Air Force, soon in your tenure. Can I get that commitment from all three of you?

Mr. KENDALL. Yes, sir.

Senator SULLIVAN. Each nominee? Are you guys all nodding your head yes?

Ms. BLUME. Yes.

Ms. SHYU. Yes. Looking forward to it.

Senator SULLIVAN. Good. Ms. Blume?

Ms. BLUME. Yes.

Senator SULLIVAN. Okay. Great. Let me ask, you know, we have not talked a lot about budget, and I am concerned. The Biden administration is having double-digit increases to many Federal agency budgets, but it looks as if they will be requesting a decline, adjusted for inflation, of the budget for DOD. I hope that is not the case, but that is the rumor. We are going to know soon.

The National Defense Strategy Commission report, previous two Senate-confirmed SecDefs [Secretary of Defenses], and the previous and current Chairman of the Joint Chiefs all stated and agreed with the Commission, of the National Defense Strategy Commission, of a 3 to 5 percent annual real growth to the defense budget. Can I get your commitment—I know you have to do what the President puts out, you have got to support that, but before that you are going to have to fight for a budget. I think it will be a very disappointing and problematic issue for our nation’s national defense if we are increasing the budget of the EPA and the Department of Interior by 15 percent and DOD gets slashed. Can I get your commitment, all three of you, to support and fight for that 3 to 5 percent annual real growth that the National Defense Strategy Commission said was needed for our national defense? Mr. Kendall?

Mr. KENDALL. Senator, rather than try to pick a number, what I can commit to you is that I will fight for the budget that is necessary to fulfill the National Defense Strategy, whatever that may be. If it is 3 percent, yes, if it is 5 percent, if it is 10 percent, I will try to get the money that is needed by the Department of the Air Force, if I am confirmed, so that the Air Force can support combatant commanders as they need to carry out that strategy.

Senator SULLIVAN. Ms. Shyu?

Ms. SHYU. I would definitely commit to fighting for the resources for research and engineering to make sure that we have the most innovative technologies that can transition into our warfighters, so that we are second to none.

Senator SULLIVAN. Ms. Blume?

Ms. BLUME. Senator, I also commit to advocating for the resources that I believe the Department needs.

Senator SULLIVAN. So I have just two final quick question. One—and again, Ms. Blume, we will talk about this—so I follow our Special Operations Forces a lot. It seems like CAPE, on a very regular basis, looks at these, particularly focused on MARSOC [Marine Corps Forces Special Operations Command], makes MARSOC try to justify its existence year after year. Can I get your commitment to fully understand what the SOCOM enterprise is doing, including MARSOC, and how effective they have been, once you are confirmed? This is like an exercise. It gets tiring. You know, all these forces do a really good job, but for some reason CAPE seems to have a focus on the relevance of that unit, and I think it is kind of a focus that is misplaced.

Ms. BLUME. Senator, I am not aware of what work CAPE may have done on that specific question, but if confirmed, I do commit to fully understanding what is happening in the Special Operations enterprise.

Senator SULLIVAN. Thank you, and finally, Mr. Kendall, Alaska will be home to 100 fifth-generation fighters, over 100 fifth-generation fighters, almost by the end of this year, combat-coded F-22s, F-35s. The former Secretary of Defense testified in front of this committee, if you combine 100 fifth-gen fighters with a very serious, strong tanker fleet, that that will give the United States extreme strategic reach, particular with our great power competitors.

The Secretary of Defense, during his confirmation, committed to me to work with this Committee and me to review the Air Force's bed-down of the KC-46. They have moved it from an OCONUS [Outside the Continental United States] strategy to a CONUS-based posture that I think is more budget-driven than strategy-driven. Can I get your commitment to work with me and this committee on that very important issue that the Secretary of Defense has already committed to?

Mr. KENDALL. The short answer is yes, Senator. I have not had a chance to look at the bed-down approach that the Air Force is taking to the KC-46, but I would certainly do so and would be happy to work with you on that.

Senator SULLIVAN. Good. Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Sullivan. Now let me recognize Senator Rosen via Webex.

Senator ROSEN. Thank you, Chairman Reed, of course Ranking Member Inhofe, for holding this hearing. I really appreciate the nominees. Thank you for testifying, and Mr. Kendall, for meeting with me yesterday. I would like to, at this time, take one moment to express my condolences to the family and the friends of the pilot that was killed yesterday, providing necessary adversary air support near Nellis Air Force Base, and to the North Las Vegas and Nellis communities. My thoughts are always with our brave airmen and airwomen, everyone who served, and so we mourn this loss.

But now I would like to move on. Mr. Kendall, I would like to talk a little bit about nuclear waste and the Nevada Test and Training Range. Because of the Department of Energy's proposed routes to transport and permanently dispose of high-level nuclear waste at Yucca Mountain, that potentially border the Air Force's

Nevada Test and Training Range, NTTR, and Creech Air Force Base. Many other installations that we have across Nevada and across the country that are located in 44 states, nuclear waste may be transported through 44 states in order to come to Yucca Mountain.

There has long been Air Force opposition to the Yucca Mountain project due to concerns that the project would impact the ability of Nellis to carry out its air combat training mission at NTTR, the crown jewel of the Air Force. As you know, NTTR provides the largest air and ground military training space in the contiguous U.S., without interference from commercial aircraft, and it is home to 75 percent—75 percent—of all stateside Air Force live munitions.

So in 2017, Air Force Secretary Heather Wilson addressed major concerns with the Yucca Mountain project, citing how it could directly impact military readiness. I am going to quote her here. She says, “There is no route across the range that would not impact testing and training.” Secretary Wilson’s concerns are consistent with those expressed in the House Armed Services Committee in 2003 by Air Force Secretary James Roche.

So, Mr. Kendall, do you share the concerns from the former Secretaries of the Air Force that transporting thousands and thousands of metric tons of nuclear waste around or through Nevada’s Test and Training Range to Yucca Mountain would be detrimental to testing and evaluation of weapons systems, tactics development, advanced air, combat training, and our overall military readiness?

Mr. KENDALL. Well, Senator Rosen, first of all let me join you in offering condolences for the loss that occurred yesterday. Our training advantage in the United States, particularly for our air crews, is an important advantage we have over our adversaries, but unfortunately there are times when that training comes at a very high price. That is what apparently happened yesterday.

With regard to Yucca Mountain, I have not had a chance to look at that issue. We talked about it in your office. I can only commit to you at this point that if confirmed, I would do so and that I would try to understand the mission impacts that you highlighted and raise issues with that, if I think that is appropriate.

Senator ROSEN. Thank you. I would like to move a little bit now onto land withdrawal. In fiscal year 2021, the NDAA reviewed the Air Force existing withdrawal of almost 3 million acres of public lands for the next 25 years, and included a provision that Senator Cortez Masto and I inserted that mandates an intergovernmental executive committee between the Air Force and the U.S. Fish and Wildlife Service to help improve the Administration of and resolve conflicts on jointly managed lands. We have to support military modernization, keep up with current and emerging threats, but we also have to maintain Nevada’s natural and cultural resources. This committee is one way to do so.

As you take on this challenge and you pursue modernization of the range, can you commit to exchanging information, collaborating with local, state, and tribal governments on any proposals to withdraw Nevada’s public lands and work with me and the rest of the Nevada delegation on any future land requests, and also will you commit to setting up the intergovernmental executive committee

and getting its first meeting scheduled, as the Navy has already done, in Fallon, Nevada?

Mr. KENDALL. Senator, with regard to the second part of your question, I would have to go look into that, but in general I think I would support that and try to make it happen as expeditiously.

With regard to the first part, absolutely. Transparency is central to a process like this. There are a lot of affected stakeholders, and having a clear, understandable, and transparent is, I think, the key to success. These issues can be very, very difficult and very tough on all concerned, but they need to resolve it expeditiously so we can get to the right place, and doing that effectively requires a very open, transparent process.

Senator ROSEN. My time is up but I will look forward to meeting with you, because the intergovernmental executive committee is now mandated. The Navy has already done it. We can follow the template that they have done up in northern Nevada, so you can set one up for the Air Force in southern Nevada. I look forward to working with you and your team on that. Thank you so much.

Mr. KENDALL. Thank you, Senator Rosen.

Chairman REED. Thank you, Senator Rosen. Let me recognize Senator Scott, please.

Senator SCOTT. Thank you, Chairman. I want to thank each of you for your willingness to serve. You know, Communist China is clearly a despicable government. Whether it is stealing our jobs, which hurt our American families, stealing our technology, which puts our military and our business community at a disadvantage, putting a million Uighurs in prison for their religion, harvesting organs involuntarily, or taking away the basic rights of Hong Kong citizens, it is just despicable what they are doing. On top of that, they are trying to build a military that will clearly either be able to defeat us or clearly push us out of the Pacific Rim.

So, Mr. Kendall, can you talk about your priorities in implementing the National Defense Strategy as it relates to dealing with Communist China?

Mr. KENDALL. If confirmed, the mission of the Air Force that I would be responsible for is to make sure that we equip, train, and support our combatant commanders in order for them to carry out the National Defense Strategy for the Secretary and the President.

The specific problem that I have been concerned about for some time is China's investments in capabilities that are intended to defeat U.S.'s ability to project power in that region, and the Air Force, of course, is a key contributor to that, both the Air Force and the Space Force within the Department of the Air Force. You know, I would be working very, very hard, as a high priority, to ensure that we make the right decisions about future operational concepts, first of all, and about future equipment that supports those operational concepts, and then that we move as quickly as possible to realize those things so that they are in the hands of our combatant commanders.

Senator SCOTT. Thank you. Where do you think we stand today with our ability to defend our interest in the Pacific along with the interests of our allies, with regard to Communist China? Do you believe we are in the position that we can—

Mr. KENDALL. I do not believe anyone should doubt either our resolve or our capability. You know, Secretary of Defense Austin has talked about agile deterrence and a way to respond in more ways than the enemy may expect, and across different fronts, and I think that is a sound concept and I would support that, and I think, if confirmed, I would work to facilitate the Air Force's role in that.

Senator SCOTT. Do you believe, with the defense budget that the President has proposed, that you will be able to continue to, if you are confirmed, do your job?

Mr. KENDALL. Senator, I am convinced that President Biden will submit a budget that he thinks is necessary to meet the security obligations of the United States. There will be tradeoffs within that. It will be difficult. I think that would be true in any level of the budget. But I believe that the funding that I understand the President will request in 2022 is adequate to meet the National Defense Strategy.

Senator SCOTT. Ms. Shyu, can you talk a little bit about, in procurement, is there an opportunity to use off-the-shelf products that would reduce our costs significantly and give us more capability?

Ms. SHYU. Absolutely. There is a lot of opportunity to do exactly what you are talking about. I will give you an example. One thing that I am very proud that the Army is doing is buying Skydio small UADs [Unmanned Attack Drones]. They are basically—you can flip it into the size of a little pack, okay. It is commercial. They sell it to the commercial industry, but Army is buying, I think, 6,000 of them in production right now. So right on point. Instead of redesigning it for a specific purpose, utilize what you can buy off the shelf.

Senator SCOTT. Do you believe that we need to be careful about continuing to fund legacy programs rather than using off-the-shelf products? Do you think there will be a lot of pressure to just keep using existing companies because we have relationships and they have great lobbyists, rather than what is best for our military?

Ms. SHYU. I think we need to look at the capabilities that the new product brings and trade it off versus a legacy. So it is a cost trade as well as a performance trade.

Senator SCOTT. Have you had any time to look at the ability of our military to talk to each other, and just our communications systems and whether they are compatible enough to allow the transfer of information?

Ms. SHYU. Sir, that is one of the areas I would like to do a deep dive in, especially the fully networked C3, to see how well we are able to communicate within a Service, across a Service, and across different domains.

Senator SCOTT. Mr. Kendall, did you find that a problem when you served, the ability to share information among all the combatants and different branches of service?

Mr. KENDALL. I am sorry, Senator. I did not catch the question.

Senator SCOTT. Did you ever have any experience with the inability to share information rapidly in the military?

Mr. KENDALL. Sharing information is a fundamental thing that the military is working on right now. A lot of effort is going into,

sometimes it is called the "Military Internet of Things." Is that what you are referring to?

Senator SCOTT. Yes.

Mr. KENDALL. Yes, that is one of the very prominent areas of investment and modernization that the Services are talking about right now. The Air Force version of that is something called ABMS, Advanced Battle Management System. I have not had the chance to look at the details of that, but it would be of very high concern to me, to make sure that that program is on track and getting where it needs to be, if confirmed.

Senator SCOTT. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Scott. Let me recognize Senator Peters, please.

Senator PETERS. Thank you, Mr. Chairman, and to each of our nominees, congratulations on your nomination and your willingness to serve our country.

Mr. Kendall, Selfridge Air National Guard Base in Harrison Township, Michigan, is in the running to host and F-16 and F-35 FMS mission. This would consist of F-16s and F-35s from the Republic of Singapore and also F-35s from Finland, Poland, and Switzerland. I know you and I had a chance to speak at length about this mission in a phone call earlier, and my Michigan colleagues and I have also written to Acting Secretary Roth earlier this year and to former Secretary Barrett last fall.

As we discussed, Selfridge is a finalist for this basing decision, and its location clearly exceeds all of the mission requirements. Michigan hosts the largest contiguous joint overland service range airspace complex east of the Mississippi River. Selfridge has extensive flying operations, hosting both the A-10 as well as the KC-135. As we discussed, from a cost-effective basis, which I know is important to you, Selfridge would require no significant infrastructure upgrades in order to complete this mission. The runway length, the number of aircraft shelters, ramp space are all adequate as they are right now. In addition, the folks on the ground in Macomb County have been enthusiastic hosts of this base for over 100 years. Not many air bases can say that, that they have been around for over 100 years, and having community support to handle this mission and others.

So my question to you is can I have your commitment that if you are confirmed prior to a decision being made that you will ensure that it is fair, it is transparent, and that the Air Force will make its judgment solely upon the merits of the installation?

Mr. KENDALL. Senator, if I am confirmed, I will see to it that all Air Force basing decisions are fair, transparent, and that people are properly informed of the results.

Senator PETERS. Well, I appreciate that, and I think you will see the facts very clearly as I have outlined them here, and I look forward to working with you forward.

My next question for you, Mr. Kendall, is that Michigan communities have a number of PFAS [Per- and Polyfluoroalkyl Substances]-contaminated sites, including the former Wurtsmith and K.I. Sawyer Air Force Base. What they are dealing with, these communities are dealing with, is a challenge, and they certainly de-

serve greater transparency and communication about the ongoing remediation efforts that the Air Force is engaged in.

They hosted the Air Force for many years, and it is simply wrong that this process has been slow-walked over the years. The pace for PFAS cleanup on the ground is simply too slow for anybody and is unacceptable. My question for you is, if confirmed, will you ensure that the Air Force conducts meaningful and substantive engagement with communities affected by PFAS?

Mr. KENDALL. Yes, Senator, I will. My understanding is there are some regulatory things that need to happen for us to move forward that are not under the responsibility of the Air Force. But in any event, I will make that commitment to you. We will do everything we can to address this problem.

Senator PETERS. You will commit to pursuing expedited remediation of these sites?

Mr. KENDALL. If confirmed, I will make that a priority. It will be something that would have to trade off with other priorities in the budget, of course, but the Air Force would have obligations, I believe, as we move forward, and I would do everything I could to make sure the Air Force met those obligations.

Senator PETERS. Well, I appreciate that, and we would like to welcome you to Michigan to be at Selfridge and perhaps these other bases as well. If confirmed, I know you are going to want to get out and see these facilities, and we would look forward to having an opportunity to host you in Michigan.

Mr. KENDALL. Thank you, Senator.

Senator PETERS. Ms. Shyu, you mentioned earlier your appreciation of the speed at which the Israelis were able to develop and field new technologies. As part of the fiscal year 2021 NDAA, I led an effort to create a U.S.-Israel operations technology working group, so that the U.S. conducts cooperative research and development with tech-savvy countries like Israel.

My question to you is, if confirmed, will you work with my office to build upon this effort and also work to expand our innovation cooperation with other allies? Maybe related to that, as you mentioned, the Israelis were particularly good. Are there other allies that we should be forming a closer relationship in order to expedite research and development and innovation?

Ms. SHYU. Absolutely. I think that it is absolutely key to do that. I look forward to working with your office to increase the collaboration with our allied countries so we can share the knowledge and the lessons learned.

Senator PETERS. Great. Well, thank you. Thank you, Mr. Chairman.

Senator INHOFE. [Presiding.] Thank you, Senator Peters. Senator Tuberville.

Senator TUBERVILLE. Thank you, Mr. Chairman. Thank you for being here today and thanks for your service. First I would like to thank you, Mr. Kendall and Ms. Blume, for standing by the data of the decision to put Space Command in Huntsville. My colleagues seem to continue to fight that for some reason. The Air Force analysis showed the location at Redstone saves taxpayers millions of dollars, which we all look forward to—I know you do, Ms. Blume—and that co-locating Space Command with NASA, Blue Origin, and

ULA makes strategic sense. I am proud that Secretary of Defense Austin is supportive of the Air Force's analysis, and it is my hope that the decision, which is good for both national security and the taxpayer, remain a political.

Mr. KENDALL, you established a procurement strategy for the National Security Space Launch Phase 2 program and the retirement of Atlas V. In Alabama, we are proud to help the Nation transition from Russian-made engines to American-made engines. That was insightful for our national security.

How should DOD boost our industrial base and secure the United States access to space?

Mr. KENDALL. Thank you, Senator, and as we talked yesterday in your office, I have visited Huntsville for some time and I am very familiar with the capabilities that are there.

The thing that we did in the previous Administration in which I served, the Obama administration, was to reintroduce competition for space launch, and that has had a significant impact on cost in a very positive way. It has also led to the opportunity to modernize our space launch capabilities.

A lot depends, in the future, on what happens in the commercial markets, but one thing I think that the Department should do, and if confirmed I would work to see that this happens, is to take advantage of the synergy with the commercial market for space launch to minimize the cost to the Air Force and Space Force for their future launches.

Senator TUBERVILLE. Thank you. Ms. Blume, do you think we have problems with how we share data with Congress, in your job coming up, how do you think we can make it better?

Ms. BLUME. Senator, I think that the way in which the Department shares data with Congress is sometimes a little bit outdated in terms of what modern data collection, tracking, accessibility tools can do for us. If confirmed, I do look forward to working with the Congress to figure out ways that we can improve that flow of communication.

Senator TUBERVILLE. Thank you. Ms. Shyu, I do not know if you have been to Huntsville, Alabama. Have you been to Huntsville?

Ms. SHYU. Many times.

Senator TUBERVILLE. Yes. Thank you. As you well know, we do a lot of research there. We have over 1,000 defense contractors, and, of course, NASA and Missile Defense, and we want to invite you to come. We talked a little bit earlier about hypersonic missiles. I have seen the work on this, and, of course, we are behind the 8-ball and we need to catch up with that. I would just like to end here—we are probably running a little bit long on time—but invite all three of you to come to Huntsville. We have the Army Command, Material Command in Huntsville, Ms. Blume. We have spent a lot of money but we ship it everywhere, and, you know, we are proud of what we have there, and all over Alabama, in terms of our seven military bases.

So thanks for being here today, and I look forward to working with you. Thank you very much. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Tuberville.

Okay. First of all we are going to stand by for a few minutes, because we have two votes that are taking place right now and we are all switching back and forth.

I recognize Senator Duckworth.

Senator DUCKWORTH. Thank you, Mr. Chairman. I just ran down from that vote. It is so good to see everybody here today. I just want to first start off by openly acknowledging the nominees sitting before us, Mr. Kendall, Ms. Shyu, and Ms. Blume. Congratulations. You all bring significant experience and expertise to these important roles, and I appreciate each in your willingness to continue to serve.

Ms. Shyu, if confirmed, you will be the highest-ranking Asian American Native American Pacific Islander civilian in the Department of Defense. I have fought for better representation for the community in this Administration, so I was so pleased to see your nomination. If confirmed, I am sure that you will make significant contributions to the Department of Defense. I believe truly that our military is stronger when it draws on the full richness of our population for talent, ideas, and leadership.

Mr. Kendall, it is so good to see you again and so good to see you nominated for this role. In fact, I have read your reports in my classwork on acquisition reform, and I am just so pleased that you have been nominated to lead our Air Force.

The Air Force does fulfill a critical set of missions for the Joint Force and the nation. This is especially true with the Air Force Reserve and the Air National Guard, where we supply the C-130, the workhorse of the Air Force, handling both missions overseas and critical domestic mission such as airlift support, aeromedical missions, weather reconnaissance, firefighting support for the U.S. Forest Service, and natural disaster relief. The C-130 also sustains the training and operational readiness of the Army National Guard units as well as the airborne units of the Active Army.

The Reserve components have seen unprecedented activity in the last few years, and our air wings are no exception. The Air National Guard's C-130 fleet has provided 68 percent of hurricane support and 42 percent of civil unrest support since fiscal year 2018. These domestic operations are only projected to grow in coming years. In short, our Nation relies on our Reserve component's C-130 fleet, composed of hard-working units like the 182nd Air Wing in Peoria—you knew I was going to throw Illinois in here somewhere, right?

Yet the Air Force do plan on divesting multiple C-130s squadrons from the Reserve components in the next few years. While I understand that the Air Force has difficult decisions to make in how it manages its budget, I have heard from my [inaudible] is that the Illinois Air National Guard will not be able to fulfill its duties to Illinois and to the country if there are further C-130 divestments without replacement platforms. I know other Members of this Committee have heard the same from their governors and their CAGs.

If confirmed, Mr. Kendall, will you commit to working with the governors and the CAGs of states with Reserve National Guard C-130 wings to ensure that they are able to fulfill their domestic missions and that the Air Force's divestment plans do not eliminate

the C-130 capacity that our Nation has come to rely on, without at least replacing it with some other flying platform?

Mr. KENDALL. Senator, I am very aware of the versatility and the utility and the very wide range of missions the C-130 can perform. It is a remarkable platform that has served us all for a very long time.

I absolutely can commit to taking all those things into consideration in any tradeoffs we have to make in terms of what fleet we can sustain, and I would agree, certainly, to work with the CAGs and with the states on that to make sure their needs are met.

Senator DUCKWORTH. Thank you. I am also concerned about our air mobility capacity. In fact, I sat down with the Air Force's A-8 last month to receive a classified update on the plans for that C-130 fleet, and in the course we discussed the fact that the Air Force had not created a plan for the future of air mobility beyond the C-130. While the C-130 continues to play a critical role in our military, and will for years, technological advances mean that we need to be thinking about the long-term future of air mobility. This is especially true when it comes to providing air mobility in a contested logistic environment in the Indo-Pacific region, where we need to be prepared to face long distances and advanced adversary targeting and sensing capabilities.

If confirmed, Mr. Kendall, will you commit to rapidly delivering a plan for the modernization of the Air Force's air mobility platforms that factors in both overseas and domestic missions?

Mr. KENDALL. In general, yes, Senator. I am not sure what activities are underway. That should be something that is going to be reviewed as we build the fiscal year 2023 budget, and hopefully we will be able to provide a plan in conjunction with that. If confirmed, that is some of the things I would look at, overall mobility posture and how the Department of the Air Force supports that.

Senator DUCKWORTH. Thank you. It is clear to me that without this important enabler we do not have a combat-credible deterrent in the Indo-Pacific, and I hope that you share my concern and sense of urgency when it comes to making sure that we are going to be effective in the Indo-Pacific region.

Mr. KENDALL. I absolutely do.

Senator DUCKWORTH. Thank you. Again, it is so good to see you, and I look forward to working with you. Since we last spoke I now am Chair of the Air-Land Subcommittee, so yay, we get to work together a lot more.

Mr. KENDALL. I look forward to that as well, Senator. Did you get your Ph.D.? I am curious.

Senator DUCKWORTH. I got it on a different topic. I actually got it on the use of electronic medical records, but I am still working on the acquisition reform, and we should talk about future vertical lift as a model on how we operationalize lessons from future vertical lift to other DOD acquisition programs.

Mr. KENDALL. It is a great topic. Thank you.

Senator DUCKWORTH. Thank you. I yield. Oh, I am out of time, Mr. Chairman. You have been very generous.

Chairman REED. [Presiding.] Thank you very much, Senator Duckworth, and now let me recognize Senator Hawley, please.

Senator HAWLEY. Thank you, Mr. Chairman, and thanks to all the witnesses for being here. Congratulations on your nominations.

Mr. Kendall, let me start with you. I enjoyed our conversation last week. We talked about the fact that Missouri is the proud home of the 139th Airlift Wing, and we talked about the fact that the 139th can use the C-130s to get to places that few other units can. Let me ask you how you see this unique capability, allowing the 139th and Air National Guard units like it to support distributed operations in the years ahead.

Mr. KENDALL. Senator, we talked earlier about how important C-130 is and how versatile a platform it is. It serves many missions and many functions, and I have historically been a big supporter of that program. I have not looked at the specific unit that you are talking about and what its capabilities are, but I am sure it is an important part of that overall mix.

Senator HAWLEY. Very good. Thank you for that. Ms. Blume, you wrote, in 2019, that China is investing in capabilities that are designed not to defeat the United States Military but to hold it at bay long enough for Beijing to achieve their objectives before the U.S. can respond effectively, and you went on to write that the resulting fait accompli would present U.S. policymakers with an appetizing dilemma, risk escalation through a massive counterattack against a nuclear-armed state or accept an armed attack on a U.S. ally or partner and the consequent devaluation of U.S. security guarantees.

Can you just tell me, from an analytic perspective, why would it be so difficult for the United States to dislodge Chinese forces from Taiwan, in particular, if we fail to deny a fait accompli at the outset?

Ms. BLUME. Senator, I think the fundamental crux of that challenges is the U.S., in that context, would be fighting an away game. It is much more difficult to project power over the vast distances that exist in the Western Pacific than it would be for China to defend its position once it has achieved a lodgment.

Senator HAWLEY. Given that, would you agree that it is important that we maintain forces forward in the first island chain in order to effectively be postured to defeat, deny a fait accompli?

Ms. BLUME. Yes, Senator.

Senator HAWLEY. Very good. Mr. Kendall, along those same lines, you said last week that if China initiated an offensive against Taiwan they would try to make it impossible for us to intervene before they had accomplished their objectives, which is a classic fait accompli, in a way that Ms. Blume has described.

The Air Force Chief of Staff, General Brown, said recently that the Air Force needs to be postured forward in order to blunt a Chinese fait accompli against Taiwan. Do you agree with that assessment?

Mr. KENDALL. Yes, Senator, I do.

Senator HAWLEY. Ms. Blume, let me come back to you. I have said for a while now that the Department needs to take a harder look at burden sharing, not only to ensure that other nations do not take advantage of our own spending and defense but also for the simple reason that the United States military cannot do everything. We cannot possibly defend every scenario in every theater.

If you are confirmed, can you give us a sense of how you will ensure that CAPE takes full account of the capabilities that our allies and partners can bring to bear and make sure that those variables are fully incorporated into any relevant analytic effort?

Ms. BLUME. Senator, I agree completely that the U.S.'s allies and partners are a critical strategic advantage for us in this environment, and if confirmed, I would look forward to—you know, CAPE is an analytic organizations, incorporating allied and partnered capability in the analysis that the organization produces across the board.

Senator HAWLEY. Very good. I think that is really important and I am really glad to hear you say that.

Let me just, Ms. Blume, going back to China if I could, there is a tension between the requirements for shoring up deterrence in the Western Pacific over the next 5 to 7 years and transforming the force so that we can sustain deterrence over the medium and long term. My question is, from an analytic standpoint, under what conditions should the Department accept some level of duplication, maybe even at extra cost, so that we can strengthen deterrence in the near term while bridging to solutions that will allow us to maintain deterrence in the medium and the long term?

Ms. BLUME. Senator, I think the short answer is that the Department needs to do both. Of course, the devil is in the details. I think that it is really important to look at each of these mission areas on a case-by-case basis to understand what the risks are and tee that up for the Secretary and the Deputy Secretary to make judgments about what risks are acceptable and what risks are not.

Senator HAWLEY. Very good. Thank you.

Mr. Kendall, finally, General Goldfein testified last year that the Air Force required 145 B-21s in order to achieve both its conventional and nuclear missions at moderate risk to the force. You and I talked a little bit about this on the phone. Give us your assessment of the number of B-21s you think the Air Force requires.

Mr. KENDALL. Well, sir, I think that number is a reasonable number at this point. We are a long way from achieving that, and requirements may change over time. But I think as far as the target and basis to manage the program it is reasonable right now.

Senator HAWLEY. Very good. Thank you, Mr. Chairman.

Chairman REED. Thank you, Senator Hawley. Let me recognize Senator Kelly, please.

Senator KELLY. Thank you, Mr. Chairman, and thank you to all our witnesses for being here today.

I want to start with Mr. Kendall. We spoke last week about your views on the future of the Air Force. For the past four decades, the A-10 Warthog has been an invaluable, close-air support asset to America's troops on the ground. Its capabilities are unmatched, and its cost-effectiveness cannot be beaten.

As a former test pilot and combat pilot, and having flown close-air support missions myself, I do not see how the F-35 or the F-16 is going to be effective in this mission—flying low under cloud cover, delivering ordnance on an enemy position while digitally identifying where our guys on the ground are and ensuring we keep them safe, being able turn around the aircraft very quickly and getting it back into the fight.

Mr. Kendall, how would you assess the ability of other fighter aircraft to meet these requirements and conduct close-air support missions?

Mr. KENDALL. Well, Senator, as we discussed, the A-10 is a very special airplane. It was designed specifically for the close-air support mission. I am a former Army officer. I have talked to a lot of Army officers, particularly infantrymen, and if they are going to get some help in the air they want it to be an A-10. It is a formidable aircraft in that mission, particularly in suppressing enemy fire. My son was an infantryman in Iraq, and I am quite sure that if he needed some support he would have preferred to see the A-10 show up. So I am a proponent of the airplane, just because of my background.

There are hard trades that have to be made, and I think there is a question about how much inventory can be kept in the A-10. A lot of them have been rewinged to extend their life. But they provide a unique capability and I would be reluctant to see them come out of the inventory entirely.

Senator KELLY. Thank you, and I think it is important to remember that this is not like hypothetical. The consequences of getting this wrong, of being less effective in this mission, real consequences. I mean, it is the difference of life and death for our soldiers and our special operators on the ground.

So you have gotten feedback. I have as well, from our troops on the ground with respect to the A-10, and I have flown an airplane that was a great, all-weather attack airplane. It did not do the CAS mission very well, so I appreciate your comments here. You know, I think it is critical to our national security to make sure that we sustain the entirety of the current fleet of this very cost-effective and combat-proven aircraft for the U.S. Air Force, and I look forward to working with you on this issue.

Mr. KENDALL. Same here, Senator.

Senator KELLY. I have got a couple more minutes. Ms. Shyu, good to speak with you again. I enjoyed our conversation last week. I know from our past discussions that you share my view of the imperative of bringing advanced semiconductor production capabilities back to our country. It is hard to believe that today that United States scientists and industry have to look to China to test advanced capabilities in semiconductors, and it is clear that investing in United States semiconductor research and fabrication capability today is going to lead to dividends for our national security in the long term.

That is why I am working with colleagues on both sides of the aisle to make sure we fund and support these efforts. A critical element of this work is the National Network for Microelectronics R&D, and it was authorized in last year's defense bill. The network would simultaneously leverage the advanced research capabilities at universities across the country, and it would support American innovation and alleviate supply chain security concerns in today's market.

So Ms. Shyu, can you speak to why this reshoring is so critical to our security, and if confirmed, can you commit to working with me to implement the microelectronics network?

Ms. SHYU. Senator Kelly, I absolutely believe that reshoring our microelectronics is critical. There are so many microelectronics components across all of our weapons systems, as well as in the commercial industry. So I am fully supporting the Congress' effort in terms of finding funding to reshore this capability. I will be more than happy to work with your office once I get a chance to dive into a little bit more details of the microelectronics initiative. I will be happy to come back and chat with you.

Senator KELLY. Well, thank you, and thank you, Mr. Chairman, and just to reiterate, I believe that these investments are critical to our long-term security, and it is important that we support rapid implementation in this year's NDAA. Thank you.

Chairman REED. Thank you very much, Senator Kelly. Now let me recognize, via Webex, Senator Blackburn.

Senator BLACKBURN. Thank you, Mr. Chairman, and I think somebody was not looking at my camera being on and I got skipped a little bit ago. So thank you for coming back to me.

Mr. Kendall, I enjoyed our conversation and, of course, we had a good discussion about Arnold Engineering and the fact that we have wind tunnels and engine test cells and arc heaters and space testing chambers all there at Arnold, but crumbling infrastructure is a problem, and we are hopeful that you are going to make maintenance a priority.

So given the considerable risk that our infrastructure poses to the Air Force test mission, and that affects our combat power, are you confident that our testing facilities are sufficiently well maintained and modern to meet the high demands of our priority testing items like hypersonics?

Mr. KENDALL. Senator, I have not had a chance to review the current status of those facilities. In my previous position in the Department I was responsible for test facilities, and I consider that very important and a high priority, that those facilities enable us to move technology forward, and hypersonics, that you mentioned, in particular, was an area in which I supported additional investments. Once you have the facilities of course you have to take care of them. If you don't then it becomes very un-cost-effective to try to maintain them, use them, or cause them to recover.

So I am, in general, very supportive of that type of installation. Now I have not had a chance to look at the current state of those facilities and what has happened over the last few years to places like Arnold, but I can commit to you that if I am confirmed I will do so.

Senator BLACKBURN. Of course, we know that in order to compete with Beijing and Moscow that that hypersonic capability is going to be important. So what do you understand to be the national security risk of not modernizing these testing facilities, and what roles do you see for preventative maintenance to mitigate some of these risks?

Mr. KENDALL. Again, you need to take care of the things that you have so that they can function properly and be used to do the tests that are necessary. So both modernization of those facilities and acquiring new, more capable facilities that can do things that existing ones cannot, as well as taking care of the things you already have. There is, obviously, some prioritization that has to happen in all

of that, and you have to look carefully at what your expectations are for the future. But it is certainly a high priority.

Senator BLACKBURN. Thank you. Ms. Shyu, thank you for the time last week, and I so enjoyed the conversation about new and innovative partnerships. We discussed that in the Pathfinder program, that Vanderbilt and the University of Tennessee are participating in.

So my question to you is how would you seek to more quickly transition emerging technologies through leveraging some of these public-private partnerships and also the capabilities that we find our national labs?

Ms. SHYU. Senator Blackburn, it was great chatting with you last week. I absolutely believe the fact that the university is working so closely with the users to develop critical technologies that would have strategic implications, that is absolutely the right way to go, because it is the users who understand where the shortfalls are. Collaborating with the universities as well as small companies is the right step moving forward.

What I would want to do, if confirmed, is making sure that the capability that is developed has a transition path into programs, to get into the hands of our warfighters. So that would be a key focus of mine.

Senator BLACKBURN. Okay. I appreciate that, and I think that finding that pathway so that you have that participation by the warfighters in developing both hardware, software, applications. There was discussion from Senator King earlier about 3D printing and looking at those capabilities.

Mr. Kendall, our Guard in Tennessee has some really top-level talent when it comes to cyberspace, remotely piloted vehicles, the drones. The 118th ISR Group, along with five other Air National Guard targeting units, provided robust support to the Active component Air Force Targeting Enterprise to ensure continuity of the mission during COVID. What is your view on the role of the MQ-9 reaper in great power competition?

Mr. KENDALL. Senator, the MQ-9 reaper has been a very valuable program. It has served us incredibly well. We bought an awful lot of them for the campaigns in Iraq and Afghanistan, for the war on terror, and they were used other places around the world as well.

The concern people have about that now is its utility in a high-threat environment, in a non-permissive environment, it is called. So I think we would have to look at what we could do to sustain that program in that environment. I know that some things have been talked about, including adding more countermeasures to the aircraft and providing some standoff capability, and I think those are well worth looking at. We have made a big investment in that platform and it would be a shame to not be able to utilize it against more sophisticated threats.

Senator BLACKBURN. Thank you so much. Thank you, Mr. Chairman.

Chairman REED. Thank you very much, Senator Blackburn. Let me thank the panel for your attendance here today but also your willingness to serve the Nation once again after your distinguished service previously. You have demonstrated the thoughtfulness and

the integrity and the commitment that is essential to be a part of the Department of Defense. I look forward to your confirmations.

With that let me adjourn this hearing.

[Whereupon, at 12:15 p.m., the Committee adjourned.]

[Prepared questions submitted to Honorable Frank Kendall III by Chairman Reed prior to the hearing with answers supplied follow:]

QUESTIONS AND RESPONSES

DUTIES AND RESPONSIBILITIES

Question. What is your understanding of the duties and functions of the Secretary of the Air Force?

Answer. The Secretary of the Air Force is responsible for the supervision and control of the U.S. Air Force and the U.S. Space Force and any other activities as may be prescribed by law, the President, or the Secretary of Defense. By statute, the Secretary of the Air Force is the senior official and head of the Department of the Air Force with authority and responsibility for conducting all affairs of the Department of the Air Force, subject to the authority, direction, and control of the Secretary of Defense (10 U.S.C. §9013). The Secretary of the Air Force is solely responsible for the functions of recruiting; organizing; supplying; equipping; training; servicing; mobilizing; demobilizing; administering; maintaining; construction outfitting and repair of military equipment; construction maintenance and repair of buildings, structures and utilities; and real property acquisition and management. Subject to the authority, direction, and control of the Secretary of Defense, the Secretary of the Air Force is responsible for the functioning and efficiency of the Department of the Air Force; the formation of policies consistent with national security objectives and policies established by the President or the Secretary of Defense; the effective and timely implementation of policy program and budget decisions and instructions of the President or the Secretary of Defense; fulfilling the current and future operational requirements of the unified and specified combatant commands and effective cooperation between the Department of the Air Force and other Military Departments and agencies of the Department of Defense; the presentation and justification of the positions of the Department of the Air Force on the plans, programs, and policies of the Department of Defense; the effective supervision and control of the intelligence activities of the Department of the Air Force; and such other activities as may be prescribed by law or by the President or Secretary of Defense, after first informing the Secretary of Defense. The Secretary of the Air Force may make such recommendations to Congress relating to the Department of Defense as he considers appropriate. (10 U.S.C. §9013).

Question. What background and experience do you possess that render you most highly qualified to perform these duties and responsibilities?

Answer. My background includes a number of positions in the national security arena. I am a West Point graduate and served over 10 years in the U.S. Army on active duty and for approximately 20 years as a member of the U.S. Army Reserve. I am a graduate of the Army War College. I commanded an Army air defense unit in West Germany during the cold war, giving me an invaluable background in troop leadership. I have two graduate degrees in aeronautical engineering from Caltech, have taught aeronautical engineering at West Point, worked as a civil servant and a systems engineer on defense systems development, and worked in industry as the chief engineer of a major defense company. In government I have held several positions of responsibility for U.S. weapon systems development, including as Deputy Director of Defense Research and Engineering for Tactical Warfare Programs, Principal Deputy Under Secretary of Defense for Acquisition, Technology and Logistics and then as Under Secretary for approximately 5 years. In these positions I was responsible for oversight of a broad range of programs including all major Air Force and Space Force programs. I hold MBA and law degrees from Long Island University and Georgetown, respectively, and have been the co-founder and a managing partner in an aerospace and defense industry consulting business, as well as an independent consultant. I have also served on various advisory boards for government and industry and on fiduciary boards of several aerospace and defense contractors. Finally, my experience includes positions as a senior fellow and senior advisor

for national security think tanks where I was involved in a range of defense related issues, including many affecting the Department of the Air Force.

Question. Do you believe that there are any steps that you need to take to enhance your ability to perform the duties and responsibilities of the Secretary of the Air Force?

Answer. No. While I would have a great deal to learn in office, I believe that, if confirmed, I am prepared to perform the duties of the Secretary of the Air Force.

Question. What other duties and responsibilities do you anticipate the President or the Secretary of Defense would prescribe for you, if confirmed?

Answer. At this time, I am not aware of any additional duties the President or Secretary of Defense would prescribe if I am confirmed.

Question. If confirmed, what innovative ideas would you consider providing to the Secretary of Defense regarding the organization and operations of the Department of the Air Force?

Answer. At this time, I do not have any specific recommendations for the Secretary of Defense regarding the organization and operations of the Department of the Air Force. If confirmed, I would particularly evaluate the progress being made on standing up the U.S. Space Force and executing the direction from the Congress in that regard. Based on that assessment, and if I am confirmed, I might have recommendations for the Secretary of Defense in this area. If confirmed, I would be committed to making the Space Force a success and a first step would be to evaluate the plans and directions currently being implemented.

Question. To the extent that the functions of the Air Force overlap with those of other Department of Defense (DOD) components, what would be your approach, if confirmed, to consolidating and reducing unnecessary duplication?

Answer. If confirmed, I would work with the Secretaries of the Army and Navy and with the Office of the Secretary of Defense to identify and to reduce unnecessary duplication. Some degree of operational capability overlap is beneficial, as it compounds the problem set that our potential adversaries would face. In other cases, duplication and redundancy are wasteful and should be eliminated as much as possible. I have a long history of trying to get the Military Departments and Services to work together and I am open to initiatives in this area that would benefit the Department of Defense and the Department of the Air Force.

Question. If confirmed, what specifically would you do to ensure that your tenure as Secretary of the Air Force epitomizes the fundamental requirement for civilian control of the Armed Forces embedded in the U.S. Constitution and other laws?

Answer. I am a firm believer in civilian control of the military. I have always been impressed with the way in which America's senior military leaders accept civilian control and direction. If confirmed, I would work closely with senior military leaders, especially the Chief of Staff of the Air Force and the Chief of Space Operations. If confirmed, I would view their inputs as invaluable, but the direction of the Department of the Air Force is by statute the responsibility of the Secretary of the Department of the Air Force.

Question. If confirmed, what duties and responsibilities would you assign to the Under Secretary of the Air Force?

Answer. The Under Secretary of the Air Force has a very short set of statutory responsibilities; in general, it is to carry out the direction and duties assigned by the Secretary of the Air Force. Having worked at a senior level in DOD in the past, I understand the importance and value of a capable second in command. If confirmed, I would assign specific responsibilities to the Under Secretary consistent with the skill sets and experience that person brings to the table, taking into account our relative strengths and weaknesses. I have held some preliminary discussions with the nominee to be the Air Force Under Secretary, but it is premature prior to possible confirmations to be overly specific in those conversations. That said, the nominee's experience as an Air Force officer who has deployed overseas on multiple occasions, led Air Force personnel, experienced life on Air Force bases, and who has special expertise in intelligence, suggests a lead role in these related areas. I would also expect any Under Secretary to work as my partner in managing the Secretary's office and ensuring the military staff and secretariat are aligned, in representing the Air Force in various fora—as a leader with full authority when representing me or the Department of Air Force, and with various stakeholder and oversight communities.

Question. If confirmed, over which members and organizations of the Air Force would you direct the Chief of Staff of the Air Force to exercise supervision and what would be the scope of such supervision?

Answer. The Chief of Staff of the Air Force is the senior military advisor to the Secretary of the Air Force and senior military officer of the Air Force. The Chief of Staff presides over the Air Staff, communicates plans and recommendations of the

Air Staff to the Secretary of the Department of the Air Force, and advises the Secretary of the Department of the Air Force on those plans and recommendations. In addition to his role as an advisor, the Chief of Staff of the Air Force is responsible for the effective and efficient functioning of Air Force organizations and commands in executing their statutory missions and assisting the Secretary of the Department of the Air Force in the performance of other functions assigned by statute to the Secretary of the Department of the Air Force. Furthermore, the Chief of Staff of the Air Force also performs the duties prescribed for him as a member of the Joint Chiefs of Staff under section 10 U.S.C. § 151. This response also applies to the Chief of Space Operations.

Question. What other duties would you assign to the Chief of Staff of the Air Force?

Answer. At this time I have no other specific duties that I would assign to the Chief of Staff of the Air Force (or to the Chief of Space Operations). My intention, if confirmed, is to ensure that the Department of the Air Force Secretariat, the Air Staff, and the Space Staff work closely together and that the standup of the Space Force is supported as fully and as efficiently by the Air Force as possible to maximize mission performance and minimize costs. If confirmed, I would give direction to achieve this objective as needed.

MAJOR CHALLENGES AND PRIORITIES

Question. What do you consider to be the most significant challenges you would face if confirmed as Secretary of the Air Force?

Answer. If confirmed, I would consider the following to be significant challenges: mission performance, people issues, and teambuilding. With regard to mission performance, I have been beating the drum about the need to respond aggressively to Chinese, and to a lesser extent Russian, military modernization programs. The Chinese have invested heavily in capabilities intended to defeat the power projection capabilities of the U.S. While the level of attention to this threat has increased and some steps have been taken, I do not feel that there have been adequate responses to this challenge to date. If confirmed, I intend to move the needle significantly to improve the fielded conventional deterrent capabilities of the United States. In addition, and tightly coupled to mission performance, there is a financial challenge associated with recapitalizing the two nuclear triad legs for which the Department of the Air Force is responsible and in maintaining current mission capabilities while simultaneously investing in future capabilities. Next, there are a number of personnel-related challenges on which I do not believe the Department of the Air Force has made adequate progress. These include gender issues and others including sexual assault, racial inequities, extremism, and suicide. I am also aware of issues in areas like housing and support to families in which more progress is needed. Finally, I believe there are challenges in making the Air and Space Forces more effective contributors to joint and combined operations. Specifically, the operational resilience and support to operations provided by the Space Force, and the achievement of integrated command and control between both the Space Force and the Air Force and with other Services and allies are areas where the Department of the Air Force will play a critical role.

Question. What plans do you have for addressing each of these challenges, if confirmed?

Answer. As a first step in each case, if confirmed, I would need to assess the current situation to better understand the posture of the Department of the Air Force. I have been out of government for 4 years and am not fully current on the situation I would face if confirmed. I was not previously directly involved in some personnel issues that I would be responsible for, and a number of new programs have been started in each of the areas in which I believe the Department of the Air Force has challenges. In addition to assessing the current situation, I would need to understand how performance is being measured in each of the areas in which I see challenges and I would have to evaluate the current plans to achieve improvements in each of these areas. I am aware that the Department of the Air Force is addressing each of these challenges and that plans are in place or being prepared. Once I have completed these assessments I would be in a position to direct any changes I thought were necessary. In some areas, I am sure there will be relevant direction from the Congress, the President, and the Secretary of Defense that I would be charged to carry out, if confirmed.

2018 NATIONAL DEFENSE STRATEGY (NDS)

Question. The 2018 NDS prioritized “great power competition and conflict” with China and Russia as the primary challenge with which the United States must con-

tend, while also recognizing the need to deter and counter rogue regimes like North Korea and Iran, and move to a more resource sustainable approach to counterterrorism. Secretary of Defense Austin has announced that the Department will review and update the 2018 NDS and conduct a Global Posture Review to assess requirements for military capability.

If confirmed, what role would you expect to play in the review and update of the NDS?

Answer. I understand the DOD has kicked off a review of the 2018 NDS. The Department of the Air Force will have a significant role to play in this review, and I would focus my efforts on providing my best advice regarding how the evolving security environment impacts the organize, train, and equip function of the Department. I agree with Secretary Austin that the 2018 NDS helped consolidate a bipartisan consensus around the threat posed by the growth of China's military capabilities and his prioritization of China as the DOD's pacing challenge. It is also my understanding that since 2018, the Department of the Air Force has made significant progress in developing new operational concepts and identifying the capabilities needed to implement the strategy. If confirmed, I would also review these efforts and evaluate them to determine how to best inform Secretary of Defense-led efforts to review the strategy.

Question. In your view, what, if any, changes should be considered in reshaping the NDS, taking into account developments since 2018?

Answer. While the 2018 NDS accurately assesses the strategic environment, it underemphasized the importance of our allies and partners. It is important that the Department of the Air Force work in conjunction with its counterparts and the Office of the Secretary of Defense to continue revise the NDS in light of those changes. For example, the pace of China's military modernization—it's increasingly aggressive actions in the INDO-PACIFIC, and its ability to threaten the homeland should be continually assessed. In my view, the NDS should involve deliberate prioritization to guide decisions regarding tradeoffs between short-term, mid-term, and long-term risks the Nation will face.

Question. If confirmed, what role would you expect to play in the Global Posture Review?

Answer. Ensuring an effective, survivable and affordable Defense posture that allows the United States to deter our adversaries, reassure our allies and partners, maintain our global power projection capabilities, and is responsive to anticipated changes in the strategic environment is essential. Tough choices on how and where we posture our forces are needed. It is my understanding that the Air Force is providing comprehensive analyses that explore our posture needs and requirements, but there is still much work to do. If confirmed, I look forward to continuing these vital efforts and having these discussions.

Question. In your view, what new requirements for Air Force capabilities should be incorporated in the Global Posture Review?

Answer. I believe the Global Posture Review (GPR) should help inform discussions on new operational concepts to address current and anticipated capability gaps and shortfalls. An understanding for the need to make some global presence tradeoffs as we reprioritize for near-peer competition is critical. If confirmed, I look forward to learning more about investments and work being done in these areas and participating in deliberations about the most cost effective way forward.

AIR FORCE READINESS

Question. How would you assess the current readiness of the Air Force—across the domains of materiel and equipment, personnel, and training—to execute its require missions?

Answer. At this time, I do not have an adequate basis to assess the current and prospective readiness of the Department of the Air Force. The Nation relies upon the Air Force to be "first in" due to its unique capabilities of global reach, agility of employment, speed of response, and lethal precision. If confirmed, I will be committed to ensuring the force is manned, trained, and equipped to provide the readiness needed to meet the growing global security challenges that face our Nation. The Chief of Staff of the Air Force and the Commandant of the Marine Corps have recently articulated the need for a more expansive approach to readiness over time. I am in agreement with that perspective.

Question. In your view, what are the priority missions for which current and future Air Force and Space Force forces should be trained and ready in the context of day-to-day activities, as well as for contingencies?

Answer. Air Force and Space Force capabilities are critical contributors to both strategic and conventional deterrents and to achieving our military objectives if

called on to do so. The Space Force provides critical missile attack warning and nuclear command and control assets for the Nation. The Air Force executes two thirds of the nuclear triad and essential elements of the nuclear command and control network. Both the Air and Space Forces provide essential connective fabric for command, control and communications of the Joint Force across all domains. The Air Force provides both global strike capabilities and forward based tactical airpower to support operations in all geographic combatant commands. Both the Air and Space Forces provide essential supporting capabilities to the Joint Force and in support of our allies. Examples include position, navigation, and timing (PNT) services and global air mobility services. All of these missions and function are critical to the Department of Defense and the Nation.

These missions and functions remain a priority in deterring would-be adversaries, defending the homeland, and winning today and in the future fight.

Question. Does the Air Force have the requisite analytic capabilities and tools to support you, if confirmed as the Secretary of the Air Force, in measuring its readiness to execute the broad range of potential Air Force missions envisioned by 2018 NDS and associated operational plans—from low-intensity, gray-zone conflicts to protracted high intensity fights? Please explain your answer.

Answer. I don't know the answer to this question. One of my first goals, if confirmed, will be to assess the analytic capacity and capability the Department has available to support decisionmaking on future investments and in analyzing the new operational concepts that I believe will be necessary to deal with current and emerging threats. As a person who spent 20 years involved with operational analysis during the cold war, I am concerned that the Department's capability in this area has atrophied. We may not have the tools needed, and the requisite skills in place, to conduct the high quality analysis necessary to support sound modernization decisions.

Question. If confirmed, how would you prioritize maintaining readiness in the near term, with modernizing the Air Force to ensure future readiness?

Answer. I would follow the guidance of the President and Secretary of Defense and the direction implicit or explicit in statutory requirements. My own view for over a decade is that threats to our military superiority, in all domains, are increasing over time and that the Department of the Air Force should be making plans and decisions with that reality in mind.

BUDGET

In its 2018 report, the National Defense Strategy Commission recommended that Congress increase the base defense budget at an average rate of three to 5 percent above inflation through the Future Years Defense Program. The President has released budget totals that indicate that the DOD budget for fiscal year 2022 will not increase from Fiscal Year 2021, but will essentially remain flat.

Question. If confirmed, by what standards would you measure the adequacy of funding for the Air Force?

Answer. The Department of the Air Force should be funded adequately to execute its missions with acceptable risk today, tomorrow, and in the future. This requires a balance of funding between current force structure and readiness, recapitalization and upgrading of aging equipment and investment in both technologies and systems that will be necessary to perform the Department's missions for the foreseeable future. People, airmen and guardians and their families, are essential to the Department's current and future success. So are the government civilians and the industrial base that supports the Air and Space Force. If confirmed, I would try to strike the best possible balance of each of these contributors to our national security. I would measure the adequacy of funding against the degree of risk of current or future mission failure.

Question. Section 222a of title 10, U.S. Code, provides that not later than 10 days after the President's submission of the defense budget to Congress, each Service Chief must submit to the congressional defense committees a report that lists, in order of priority, the unfunded priorities of his or her armed force.

If confirmed, would you agree to support the Chief of Staff of the Air Force and the Chief of Space Operations in providing their unfunded priorities lists to Congress in a timely manner?

Answer. Yes.

ALLIANCES AND PARTNERSHIPS

Mutually beneficial alliances and partnerships are one of our greatest comparative advantages in competition with near-peer rivals.

Question. What do you see as the role of the Air Force and Space Force in building relationships and interoperability with allies and partners?

Answer. In an era of strategic competition, the Department of the Air Force should work closely with our allies and partners to deter and influence our adversaries in the air, space, and cyber domains. The Air and Space Forces should proactively engage in security cooperation and relationship building events with Air and Space components of our allies and partners, in coordination with the geographic combatant command priorities. Increasing interoperability with allies and partners strengthens the position of the United States vis-&-vis its strategic competitors.

Question. If confirmed, what specific actions would you take to prioritize and strengthen existing U.S. alliances and partnerships, build new partnerships, and take advantage of opportunities in international cooperation?

Answer. If confirmed, I will continue the efforts outlined in President Biden's Interim National Security Strategic Guidance to build mutually beneficial partnerships through security cooperation. By leveraging the Department's resources for security cooperation through key-leader engagements, international armaments cooperation, and supporting arms export for the air and space domains, the Department can empower our allies and partners to meet those challenges beside us. Together we will close gaps, reduce costs, and increase resilience in our collective capabilities.

INDO-PACIFIC REGION

Question. What are the key areas in which the Air Force must improve to provide the necessary capabilities and capacity to the Joint Force to deter Chinese aggression and, if necessary, prevail in a potential conflict with China?

Answer. As I testified during the Obama administration, the fundamental vulnerability the Chinese anti-access/area denial investments have attacked is the limited resilience of American high value power projection assets including forward air bases and satellites as well as forward logistics nodes and naval assets. China is attempting to acquire the ability to defeat American power projection forces in the region referred to as inside the first, (and increasingly the second) island chain off China's coast in the Western Pacific.

Question. How would you assess the threat to Air Force forces and facilities from Chinese missile forces?

Answer. In my view, the threat is severe and growing.

Question. In your assessment, have Air Force investments, posture shifts and/or new operational concepts sufficiently addressed this threat?

Answer. The short answer is that I don't know. I do know that significant attention has been paid to this problem and that some efforts are underway. My concern at this point is that those efforts are not adequately focused or moving fast enough to provide meaningful military operational capability to our forces in the region. If confirmed, I will assess the adequacy of the efforts currently underway and work with the military leadership of the Air and Space Forces to make any necessary adjustments.

Question. In your assessment, what are the priority investments the Air Force could make that would help implement the NDS in the Indo-Pacific?

Answer. I believe priority investments for the Air Force in the Indo-Pacific include those that enable the Air Force to perform its key missions in a complex anti-access/area denial threat environment. Air Force modernization must ensure that the service is able to accelerate meaningful and cost effective change to adapt to these challenges.

Question. What is your current assessment of the risk of operational failure in a conflict with China as a result of a critical logistics failure?

Answer. I believe that the emerging capabilities of China to disrupt and attack our logistics pose a significant risk. I understand that the National Defense Authorization Act for Fiscal Year 2021 identifies posture and logistics as a requirement equally as important as modern aircraft and advanced weapons to maintain a credible military deterrent. Military logistics planning must be re-aligned to account for China's anti-access/area denial systems and the simultaneous temporal and geographic demands placed on operations in the Western Pacific.

EUROPE

Question. What are the key areas in which the Air Force must improve to provide the necessary capabilities and capacity to the Joint Force to deter Russian aggression and, if necessary, prevail in a potential conflict with Russia?

Answer. I have not had the opportunity to assess the adequacy of Air and Space Force capabilities to support European combatant command and NATO operational needs. At the time I left government in 2017, the Department of Defense had taken some steps to improve our posture in Europe, but I am not familiar with the current capabilities relative to the threat posed by Russia. If confirmed, I would assess the adequacy of existing and planned forces to support U.S. and NATO requirements in the region.

Question. In your view, are there investments the Air Force should prioritize for the competition with Russia below the level of direct military conflict in order to counter Russian malign influence and hybrid warfare operations?

Answer. In my view, the Russian threat continues to evolve, combining both hard and soft power through the use of hybrid tactics. Countering these tactics will require a comprehensive approach involving our allies and partners and other U.S. Government departments and agencies. The Department of the Air Force has a key role to play in this effort. If confirmed, I would examine the areas in which the Department of the Air Force is investing and how it works with the interagency, our allies and partners to support a comprehensive approach.

ACQUISITION

Question. Congress has expanded and refined the acquisition-related functions of the Service Chiefs.

If confirmed, how would you synchronize your acquisition-related responsibilities with those of the Chief of Staff of the Air Force and the Chief of Space Operations?

Answer. If confirmed, I would work closely with both the Chief of Staff of the Air Force and the Chief of Space Operations to meet the needs of our combatant commanders. Congress has provided for a formal role for the Service Chiefs in the acquisition process and if confirmed I would ensure that role is filled by the Service Chiefs who would report to me as required.

Question. If confirmed, what role would you assign to the Chief of Staff of Air Force and/or the Chief of Space Operations for delivering acquisition programs on time and on budget?

Answer. If confirmed, I would assign both the Chief of Staff of the Air Force and the Chief of Space Operations the role of providing appropriate resources to acquisition units and programs, as well as establishing cost effective and achievable requirements for future programs.

Question. In your view, who should be held accountable for large-scale acquisition failures?

Answer. The leaders who made the key decisions that caused the failure. Often this individual or individuals have retired or been reassigned before a failure becomes apparent, but that is not a reason for the individual to avoid responsibility. The most important decision in an acquisition program is the approval of the plan to enter development for production, usually the Milestone B in a program. At this point requirements, schedule, and cost are approved and any technical or engineering risks should be understood and mitigated. Programs can fail in many ways for many reasons, but this decision generally sets in motion all that will follow. In most programs it takes three or more years after this point for the scale and severity of problems to be apparent.

Section 804 of the fiscal year 2016 NDAA authorized DOD to employ an acquisition approach ("Middle Tier Acquisition") intended to support the rapid delivery of new capability to meet emerging operational needs.

Question. In your view, what benefit has the Air Force derived from its robust utilization of Section 804 authority?

Answer. If confirmed, I will review how the Department of the Air Force is using these authorities to the fullest extent while still maintaining sound acquisition practices and achieving the fielding of meaningful operational capability. I am aware that the Department of the Air Force has used these authorities extensively, but I am not familiar with the status of each of the Section 804 programs. I will review them if confirmed.

Question. What risks accrued?

Answer. If confirmed, I will review how the Department of the Air Force is using these authorities and will ensure the Department of the Air Force is appropriately mitigating program risk.

Question. What processes would you put in place to ensure appropriate oversight of the Air Force's use of 804 authorities? Please explain your answer.

Answer. If confirmed, I would expect the Air Force and Space Acquisition Executives to ensure that the programs they were responsible for had sound acquisition strategies tailored to fielding meaningful military operational capability as cost ef-

fectively as possible, taking into account operational urgency. I will review how the Department of the Air Force is using these authorities and will ensure we are focused on program execution and discipline, while also providing transparency to support congressional oversight.

Question. One of the challenges facing many acquisition programs—ranging from weapons systems to business systems—is unrealistic and infeasible technical specifications.

What best practices can the Air Force employ to generate realistic and feasible specifications, particularly in sophisticated, rapidly evolving technical areas such as cybersecurity, hypersonics, and artificial intelligence?

Answer. Everything in a program flows from the nature of the product being acquired. It is a best practice to identify the challenges and risks associated with a product and to design the acquisition strategy around the need to manage and mitigate those specific risks. In some cases, for example, they are software related, in others propulsion or aerodynamic performance, or often some combination. The basic rule of thumb is to do the hardest things first, and if necessary to revise requirements to be consistent with the results achieved. Experimentation and prototyping are tools that can mature technology and balance desired requirements with prototype demonstrations so that ultimately Airmen and Guardians can receive capability faster and at lower cost. Another important best practice is to focus programs on the most efficient path to the true goal—meaningful capability in the hands of military operators; everything else is a distraction.

Question. Would you expect the Air Force to derive benefits from participation in a greater number of joint acquisition programs? Please explain your answer.

Answer. There are exceptions, but joint acquisition programs, especially C3 programs, have an abysmal record. The most successful Joint programs have a single-service lead and are purchased by other Services once they get into serial production. It is difficult to answer this question abstractly, but I would encourage joint programs where there was a clear lead service, strong commitments by all participants, and strong economic incentives.

Question. Do you perceive any unique requirements, capabilities, or processes that are, or should be associated with the Air Force's acquisition of software?

Answer. Software engineering is continuously improving, paced by commercial practices. In my previous position I found the Defense Digital Service to be invaluable in identifying commercial best practices and helping to proliferate them across the Department of Defense. I am not current on how the Department of the Air Force is managing software intensive acquisition programs, but I understand this has been the focus of significant attention. Critical and in some ways unique factors for the Air Force will be the security of its software products and the reliability and responsiveness of its software development and fielding practices to meet urgent operational needs. If confirmed, I would assess the maturity of the Air Force's current practices and benchmark them against the most modern commercial practices.

Question. What additional acquisition-related reforms would you recommend for implementation, if confirmed?

Answer. If confirmed, I will direct the Air Force and Space Acquisition Executives to assess the opportunities for reform in their respective areas of responsibility.

THE ACQUISITION WORKFORCE

Question. What is your assessment of the size and capability of the Air Force acquisition workforce?

Answer. I do not have current information on the size and capability of the Department of the Air Force acquisition workforce. If confirmed, I look forward to working with Department of the Air Force and Space Force acquisition leadership to ensure an appropriately sized, highly qualified acquisition workforce.

Question. If confirmed, what steps would you take to ensure that the Department of the Air Force has an acquisition workforce of the size and capability needed to manage acquisition challenges?

Answer. If confirmed, I look forward to working with Department of the Air Force leadership to ensure we have an appropriately sized, highly qualified acquisition workforce. I believe a properly skilled and experienced acquisition workforce is vital to the Nation's military readiness, increased buying power, and achieving substantial long-term savings.

One long-standing special civilian personnel management program is the DOD Civilian Acquisition Workforce Personnel Demonstration Project (commonly known as AcqDemo).

Question. Should AcqDemo continue as a temporary authority or be made a permanent program?

Answer. I have some experience with AcqDemo from my previous government position. AcqDemo has been proven successful for many years. I am not fully aware of its status relative to other current alternatives, however. If confirmed, I will support the Department of Defense in determining if it should be made a permanent personnel program.

Question. In either case, should AcqDemo be expanded?

Answer. If confirmed, the expansion of AcqDemo is something I would look into for the Department of the Air Force. I need to learn more about recent experience with AcqDemo and how it might compare to other alternatives before I could make such an assessment.

TEST AND EVALUATION

Question. Under what circumstances, if any, do you believe it appropriate to procure weapons systems and equipment that have not been demonstrated through test and evaluation to be operationally effective and operationally suitable?

Answer. In general, I believe that limited initial production should be used to support formal operational testing. In general, I believe that developmental production prototypes should be used to conduct developmental testing to some degree prior to a decision to initiate production, but this is highly dependent on the urgency of the operational need and the nature of the system being procured. I believe it may be appropriate in some circumstances to procure weapons systems and equipment that have not been fully demonstrated through test and evaluation when an urgent and clear warfighter need exists, the technical risk is low, the system has been demonstrated in some capacity (including cyber-security), and the planned procurement is limited. Even then some degree of safety and basic performance should usually be demonstrated prior to fielding.

Question. What do you see as the role of the developmental and operational test and evaluation communities with respect to rapid acquisition, spiral acquisition, and other streamlined acquisition processes?

Answer. I believe the role of these communities is to ensure prompt fielding of systems that provide operational advantages to our warfighters and that comply with their requirements. For any program with any structure, testing sequencing and content should be tailored to the specific program, taking into account technical and operational risk, operational need, and the efficiency of the test program.

Question. Are you satisfied with Air Force test and evaluation capabilities?

Answer. I have not had the opportunity to evaluate current Air Force test and evaluation capabilities. If confirmed, I will review the test and evaluation capabilities of the Department of the Air Force and make any adjustments necessary.

Question. In which areas, if any, do you feel the Air Force should be developing new test and evaluation capabilities?

Answer. I believe that future opportunities exist for the Air Force to develop space, hypersonic, cybersecurity, directed energy, and autonomous systems test capabilities.

AUDIT

Question. Do you support efforts to drive the Air Force to obtain a clean financial audit opinion?

Answer. Absolutely. I know from my previous service that the audit has proven to be a challenge for the Department of Defense as well as for Department of the Air Force. If confirmed, I will work to ensure that the Department of the Air Force can obtain a clean financial opinion.

Question. Do you think the Air Force should invest funding as needed in audit activities and audit remediation activities to achieve the goal of obtaining a clean financial audit opinion?

Answer. In general, Yes. With funding being a constant constraint, it is critical that the DAF utilize every dollar as efficiently and effectively as possible and make informed business decisions. A successful audit can contribute to that process. There may be some cases, however, where the cost of achieving a clean audit in a specific area vastly exceeds the value of doing so. If confirmed, I will ensure the DAF measures its audit remediation progress to maximize the audit's effectiveness and that it is adequately funded to maximize efficiencies.

Question. How will you hold Air Force civilian and military leadership accountable for achieving Air Force and Departmental audit goals?

Answer. If confirmed, I will ensure that there is an executable plan to meet audit goals with well-defined milestones and metrics to track achievements leading to full audit readiness and I will ensure that senior leaders within the Department of the

Air Force are held accountable for meeting the metrics for which they are responsible.

REFORM OF DOD BUSINESS OPERATIONS

Question. What ideas would you explore and implement, if confirmed, to reform the Air Force's business operations?

Answer. If confirmed, I will leverage both government and industry best practices to enhance the Department of the Air Force's business operations. The introduction of best practices is particularly important as we balance the needs of both the Air Force and Space Force. Moreover, I will adjust resources as necessary to maximize the efficacy of the Department's reform activities across all functional areas so any efficiencies found are reinvested into readiness and lethality programs.

Question. Why is the reform of business operations relevant to Air Force missions?

Answer. If confirmed, I would be open to any new idea or process that improve the efficiency and cost effectiveness of Department business processes and operation—whatever the source. I would be particularly interested in bringing commercial best practices into the Department where they would apply and could be tailored to be effective in a government organization. In a fiscally constrained environment, it is critical that we ensure all available resources are directed in support of our warfighters and our mission, not only the Department of the Air Force, but as a Department of Defense. If confirmed, I will continue to promote and invest in cost effective targeted reform efforts within the Department of the Air Force while ensuring Department of the Air Force leadership is committed to establishing and executing both Department-level and Defense-wide reform initiatives.

NUCLEAR ENTERPRISE

Question. The Air Force is responsible for maintaining and operating two legs of the nuclear triad, including its nuclear weapons and the majority of the 107 nuclear command, control and communications systems that link the President to the nuclear forces. There have been a number of troubling incidents since 2007, including the inadvertent transportation of six nuclear armed AGM-86 cruise missiles without authorization by a B-52 from Minot Air Force Base to Barksdale Air Forces Base, and the shipment of ICBM fuzes to Taiwan. There have also been continued reports of low morale and incidents of cheating on exams at ICBM bases. These actions resulted in a loss of confidence and dismissal of the two senior leaders of the Air Force, both the Secretary and the Chief of Staff. They also resulted in number of reviews, including a DOD enterprise review in 2014 by Secretary Hagel. The reviews resulted in such actions as creation of Air Force Global Strike Command and the establishment of a Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration (A10).

What are your overall views on responsibility of the Secretary of the Air Force as regards the nuclear enterprise?

Answer. In my view, the nuclear enterprise is by far the most important and significant responsibility of the Secretary of the Air Force. The Secretary is responsible for overseeing the safety, security, reliability, effectiveness, and credibility of the nuclear deterrence mission of the Air Force to support national security objectives. The Secretary executes those responsibilities through the Chief of Staff of the Air Force and the Deputy Chief of Staff designated to oversee the Department of the Air Force's nuclear deterrence mission. As the Interim National Security Strategic Guidance emphasizes, this responsibility includes, "ensuring our strategic deterrent remains safe, secure, and effective and that our extended deterrence commitments to our allies remain strong and credible." If confirmed, I will do my utmost to ensure the Department of the Air Force's continued diligence in ensuring the safety, security, reliability, effectiveness, and credibility of the people, processes, procedures, and systems the Air Force utilizes to conduct, execute, and support its nuclear weapon systems and operations.

Question. If confirmed, what actions will you take to oversee the continued implementation of these reforms of the nuclear-focused organizational and personnel systems?

Answer. If confirmed, I first would assess the overall status of the nuclear enterprise within the Department of the Air Force to include the status of these reforms to see if the Department of the Air Force adequately implemented them. If confirmed, I would also direct an evaluation of the success of these reforms to see if they have had the desired impact.

Question. If confirmed, what would be your approach to ensure these nuclear-related systems are adequately resourced?

Answer. If confirmed, I will closely monitor and evaluate how the Department of the Air Force resources the nuclear enterprise within its corporate processes. If confirmed, I would ensure the nuclear enterprise receives sufficient resources to maintain the safety, security, reliability, effectiveness and credibility of the Air Force nuclear deterrence mission. This would include independent internal evaluation of the health of all aspects of the Department of the Air Force nuclear enterprise.

Question. Will you commit that, if confirmed, you will personally visit Air Force nuclear facilities and bases to gain an in-depth understanding of both the infrastructure, hardware, and especially how our airmen operate, maintain and secure them?

Answer. Yes.

Question. The 2018 Nuclear Posture Review (NPR) reaffirmed long-held American doctrine that includes limiting the use of nuclear weapons to “extreme circumstances” and the need to maintain the Nation’s nuclear triad of land-, sea-, and air-based capabilities. The NPR also recommended both the development of a low-yield nuclear weapon to deter threats from Russia, and potentially, the return of a nuclear sea-launched cruise missile to the Navy fleet.

Do you believe a nuclear “No First Use” policy would be appropriate for the United States?

Answer. I understand that the Administration has begun a series of strategic reviews that will include will direct the interagency to conduct a review of the U.S. nuclear posture, where I expect possible adjustments to U.S. nuclear declaratory policy will be considered. If confirmed, I will ensure the Department of the Air Force, as provider of two of the three legs of the triad, provides support in conducting the review and input in determining what nuclear policy and posture would be appropriate based on the threats we expect to face, the risks associated with the existing policy and with any change to that policy, and including an assessment of the impacts on our allies and partners.

Question. Why or why not?

Answer. In my view, there are risks and benefits to both the current policy and a “No First Use” policy. Any change to current policy would be a Presidential decision that would carefully weigh all the implications and, as stated by President Biden, would include consultations with the U.S. military and U.S. allies. If confirmed, I would support any review of this policy undertaken by the Administration.

Question. Do you agree that modernizing each leg of the nuclear triad and the Department of Energy (DOE) nuclear weapons complex is a critical national security priority?

Answer. As Secretary Austin has stated, nuclear deterrence is the Defense Department’s highest priority mission. An effective U.S. nuclear deterrent remains vital to U.S. national security and to the security of our allies. Updating and overhauling our Nation’s nuclear forces is a critical national security priority. If confirmed, I will assess the status of the Department of the Air Force’s current nuclear weapon systems and modernization programs to evaluate how the Air Force can best maintain such a deterrent.

Question. Do you believe the current program of record is sufficient to support the full modernization of the nuclear triad, including delivery systems, warheads, and infrastructure?

Answer. I have not had the opportunity to assess the current status of the programs of record. If confirmed, I would assess each of the Department of the Air Force’s nuclear programs to ensure they are sufficiently resourced.

Question. In your view, does the Stockpile Stewardship Program provide the tools necessary to ensure the safety and reliability of the nuclear weapons stockpile without testing? Q64. If not, what additional tools and resources are needed?

Answer. It has been over 4 years since I chaired the Nuclear Weapons Council. At the time I left the Department in 2017, I believe the Stockpile Stewardship Program was adequate, and as certified by the national laboratory directors, resumption of testing was not required. I have not had the opportunity to evaluate the current status of the program.

Question. While serving as Undersecretary for Acquisition, Technology, and Logistics, you approved the Milestone A decisions for the Ground Based Strategic Deterrent and the Long-Range Stand Off Weapon programs.

Do you support the current program of record for the Ground Based Strategic Deterrent?

Answer. I have not had the opportunity to review the status of the GBSD program. As Secretary Austin has stated, nuclear deterrence is the Defense Department’s highest priority mission and updating and overhauling our Nation’s nuclear forces is a critical national security priority. If confirmed, I will review the details and status of the GBSD acquisition program.

Question. Do you support the current program of record for the Long-Range Stand Off weapon?

Answer. I have not had the opportunity to review the status of the LRSO program. As Secretary Austin has stated, nuclear deterrence is the Defense Department's highest priority mission and updating and overhauling our Nation's nuclear forces is a critical national security priority. If confirmed, I will review the details and status of the LRSO acquisition program.

Question. Do you support the program of record for making the F-35 a dual capable aircraft?

Answer. I have not had the opportunity to review the status of the dual-capable F-35 program. At the time I left the Department in 2017, the dual capability was a firm requirement. As far as I am aware that is still the case.

Question. The Air Force owns and operates the majority of the 107 nuclear command, control and communications systems. Major reforms have been put in place at U.S. Strategic Command to set future requirements, while the Undersecretary for Acquisition and Sustainment oversees the acquisition of new capabilities to replace existing systems.

What are your views on the adequacy of the current Air Force nuclear, command, control and communications systems?

Answer. In general, these systems are aging and need to be upgraded or replaced, but I am not aware of the current status. Maintaining a safe, secure, reliable, effective and credible deterrent to include nuclear command, control, and communications (NC3) systems is a top U.S. national security priority. If confirmed, I will assess the status of the Department of the Air Force's current NC3 systems and evaluate how they ensure such a deterrent.

Question. Do you support the current organizational approach to the acquisition and management oversight of the modernization of nuclear command, control and communications?

Answer. I am not aware of the current status of these programs. If confirmed, I will assess the current Department of the Air Force's organizational approach to the acquisition and management oversight of the modernization of NC3, evaluate current structures, and determine if any adjustment in approaches are required.

Question. The E-4B National Airborne Operations Center utilizes an aging 747-200 platform that must be replaced in the 2030's to ensure the capability and continuity of a number of essential missions including nuclear, command, control and communications.

What are your views on the program to replace this platform?

Answer. I am aware of the need to replace this system, but I do not know the current status of the replacement program. If confirmed, I will review the details and status of the E-4B National Airborne Operations Center replacement program. I cannot make an assessment at this time.

AIR FORCE PROGRAMS

Question. What is your understanding and assessment of the research, development, and acquisition programs supporting Air Force modernization?

Answer. Until I have the opportunity to be briefed in detail, I do not have enough information to assess the cost, schedule, and performance of these programs. These programs are vital to Air and Space Force execution of the National Security Strategic Guidance and for a new National Defense Strategy, when crafted by the Secretary of Defense. If confirmed, I would review these programs and work with the service acquisition executive to ensure all programs are on track to meet cost, schedule and performance criteria, and take appropriate actions if needed.

Question. Where do you believe the greatest gaps remain between required and current capability in both the Air and Space Forces?

Answer. In general, I believe that more needs to be done to identify new operational concepts and to fully fund the programs that will transition those concepts into meaningful operational military capability for our combatant commanders to deter and if necessary defeat peer or near peer potential adversaries. I understand that the Department of the Air Force has been working to identify new operational concepts and addressing associated gaps and shortfalls, I also understand both the Chief of Space Operations and the Chief of Staff of the Air Force are looking closely at changes needed to implement new operational concepts. If confirmed, I look forward to more fully understanding their processes, conclusions, and recommendations.

Question. The Air Force is on record as needing to purchase a minimum of 72 fighter aircraft per year to maintain requisite force structure.

If confirmed, how would you plan to meet that minimum?

Answer. I have not had the opportunity to assess the validity of this number or the programs and choices needed to achieve it. Alongside OSD, I understand the Air Force is currently performing a TACAIR study to evaluate how efficiently different force mixes meet future warfighting challenges. I believe the intent is that results from this study will provide well-developed recommendations on the mix to build the needed force for the Nation.

Question. In your opinion, what is the optimum mix of 4th and 5th generation aircraft required to meet the threat outlined in the 2018 NDS?

Answer. Some mix of 4th and 5th generation fighters will be a reality for over a decade. In my view, based on my previous government service, it will still be some time before we can purchase enough fifth-generation fighters to have an optimal mix. I understand that the Air Force has recently analyzed various war-game scenarios and developed alternative plans to achieve the optimum mix of 4th and 5th generation and NGAD aircraft. If confirmed, I will be in a position to comment on a total force number and mix after I have had a chance to adequately review that analysis and to apply appropriate budget constraints and choices that balance near and longer term risk.

Question. Given the importance of extending the range of U.S. aircraft, what do you believe to be the overall tanker requirement for the Air Force and at what rate and on what schedule must the Air Force procure the new KC-46 to attain that requirement?

Answer. I have not had the opportunity to review combatant commanders' plans and their requirements for tanker support. I understand that the National Defense Authorization Act for Fiscal Year 2021 requires the Air Force to maintain 412 primary mission aircraft inventory (PMAI) tanker aircraft through 2025. If confirmed, I will look at the overall fleet requirements in light of both the NDAA direction and the Air Force's projected requirements.

Question. Large-scale exercises such as Red Flag have illustrated that 5th generation fighters such as the F-22 and F-35 need to fly against multiple adversary aircraft to conduct much of their required training. The Air Force has taken a number of steps to address shortages in adversary air, including using contract air and requiring units to supply their own adversary air.

What are your views as to the appropriate balance of contract and organic adversary air capability?

Answer. At this time, I do not have enough knowledge of this situation to offer an opinion. Training to the high-end fight described in the National Defense Strategy does require a mix of 4th- and 5th-generation adversary air threats. If confirmed, I will review this situation and evaluate the Air Force's plans to meet this requirement.

Question. If confirmed, how would you ensure that the Air Force properly addresses the challenges associated with the availability of adversary air to ensure that its 5th generation fighters are properly trained and ready for combat?

Answer. If confirmed, I would evaluate Air Force efforts and plans to ensure its 5th-generation fighter force is combat mission ready and make any adjustments necessary to meet this objective.

Question. What is your assessment of the readiness of the Air Force heavy bomber fleet?

Answer. At this time, I don't have the information needed to make this assessment. The B-1, B2, and B-52 heavy bomber fleets remain a key component of both conventional and nuclear force employment options. Acquisition of the B-21 will further enhance this capability. If confirmed, I will ensure the viability and readiness of the collective bomber force today and work to recapitalize and modernize the fleet to meet future requirements.

Question. 0/81. As to each of the airframes listed below, what improvements should be made to increase airframe readiness?

Until I have the opportunity to be briefed in detail, I do not have enough information to assess what improvements could be made to increase airframe readiness for the B-1, B-2 and B-52.

MUNITIONS

Question. Air Force munitions inventories—particularly for precision guided munitions and air-to-air missiles—have declined significantly due to high operational usage, insufficient procurement, poor program execution, and a requirements system that does not adequately account for the ongoing need to transfer munitions to our allies.

If confirmed, what steps would you take to ensure the Air Force has sufficient inventories of munitions to meet the needs of Combatant Commanders?

Answer. If confirmed, I will work to ensure that the Air Force has adequate munitions inventories to meet our national security needs. I would also assess the requirements system to ensure our partners remain combat relevant in support of combatant commander regional objectives. Additionally, if confirmed, I will ensure ally capability and capacity requirements are understood and integrated into DAF processes.

Question. What changes in budgeting and acquisition processes would you recommend to facilitate faster Air Force munitions replenishment rates?

Answer. If confirmed, I would assess the adequacy of budgets for munitions and also assess the potential for the consolidation of program elements to generate flexibility to meet changes in replenishment rates. Additionally, I would explore the potential for more efficient business practices, such as multi-year procurement authorization based on design maturity that could provide for unit cost savings and increased replenishment rates. I would also evaluate the cost and benefits of creating additional industrial capacity to meet surge requirements to support contingencies.

Question. In your view, how should the Air Force adapt to self-imposed DOD restrictions on area attack and denial munitions, consistent with the Ottawa Agreements?

Answer. The Air Force should comply with directions from the Secretary of Defense including limitations on munitions. The U.S. is not signatory to the Ottawa Convention, but I understand that current policy imposes some restrictions consistent with the Convention. If confirmed, I will ensure that the Air Force continues to follow the DOD policy.

SPACE

Question. The United States is increasingly dependent on space, both economically and militarily—from the Global Positioning System on which many industries and military capabilities rely, to the missile warning systems that underpin U.S. nuclear deterrence. Our strategic competitors—China and Russia—are engaged in a concerted effort to leap ahead of U.S. technology and limit U.S. freedom of action in the space warfighting domain.

In your view, does the 2018 NDS accurately assess the strategic environment as it pertains to the domain of space?

Answer. In identifying emerging great power competition with China and Russia and highlighting the continuing importance of our allies and partners, the 2018 National Defense Strategy accurately assesses the current strategic environment, including as it applies to space.

Question. In your view, what will “great power competition” look like in space and to what extent do you view China’s and Russia’s activities related to the space domain as a threat or challenge to U.S. national security interests?

Answer. Space is already an arena of great power competition. More than other nations, the United States relies on space capabilities to guarantee our security and project power. As a result, Chinese and Russian military doctrine view space as critical to modern warfare and consider the use of counter space capabilities as both a means of reducing U.S. combat effectiveness and winning future wars. Both countries consider space access and denial as critical components of their national and military strategies and have weaponized the domain as a way to deter and counter U.S. military intervention in regional conflicts that impact American interests. I would anticipate continued Chinese and Russian development, testing, and deployment of space and counter space capabilities as a key component of their respective operations, activities, and investments across the competition continuum.

Question. Are there other nation-states or other actors operating in space that you perceive as a risk to the United States or as cause for concern? Q88. If so, why?

Answer. While presenting less of an advanced threat than China or Russia, Iran and North Korea are also capable of holding U.S. space capabilities at some level of risk, principally through jamming that targets satellite communications and positioning, navigation, and timing signals. Other space-faring nations are conducting space activities of concern and the relative absence of norms or standards to shape or regulate those activities presents risk to U.S. assets. Finally, the recent increase in commercial and private activity in space, while not without benefit, is also not without risk to the U.S. as the related proliferation of satellites and launch debris contribute to an already congested space environment.

Question. Do you support the creation of a separate Service Acquisition Executive for Space as required under section 957 of the fiscal year 2020 National Defense Authorization Act (NDAA)?

Answer. Personally I am not convinced of the need for this position, but if confirmed I will ensure it is filled promptly with a qualified individual and that the

position has the resources and support needed to be successful. If confirmed, I will hold each SAE accountable for the cost, schedule, and performance of the acquisition programs under their purview.

Question. What specific actions would you take, if confirmed, to enhance existing Air Force acquisition policies and process to move space operations projects to orbit faster and cheaper?

Answer. If confirmed, I will work to make all Department of the Air Force programs more cost-effective including achieving faster and more efficient fielding across the board. Space programs, like other programs, should be tailored to the most efficient acquisition strategy possible, taking into account the technology, requirements, risks and opportunities for improvement. If confirmed, I would continue to work with the Office of the Secretary of Defense, the executive branch, and the Congress to improve all Department of the Air Force acquisition policies and processes, while increasing transparency of our actions, to enable the Department to operate with speed and agility in the face of an evolving and pacing threats.

Question. Do you believe the space launch market can sustain four launch providers?

Answer. I have a long history with ensuring the availability of at least two national security space launch service providers and of supporting the introduction of competition into national security space launch services. I also understand the statutory requirement for assured access to space requires at least two launch providers who can meet the full spectrum of national security space missions. Whether or not more than two launch providers can be sustained is highly dependent on the extent of the competitive commercial space launch market and how it will evolve—something I am unable to predict with confidence. Commercial opportunities in space and their profitability will determine how many launch providers continue to exist. If confirmed, I will ensure the Department of the Air Force uses maximum competition—and the benefits it provides—as we look to build the future strategy beyond the existing contracts.

Question. If confirmed, how would you apply section 1601 of the fiscal year 2017 NDAA regarding exceptions to purchase of the RD-180 engine for national security missions?

Answer. In my former government position, I was part of the effort to eliminate the RD-180 and I fully support that goal. The Fiscal Year 2015 NDAA, as amended by the Fiscal Year 2016 and Fiscal Year 2017 NDAAs, allows the procurement of up to 18 Atlas V launch services using RD-180 engines before 31 December 2022. I understand from media coverage that the Department of the Air Force has procured fewer than half of the allowed 18, and does not expect to procure any more. If confirmed, I would support ending the use of the RD-180 as quickly as possible.

CYBER AND ELECTRONIC WARFARE

Question. Section 1657 of the fiscal year 2020 NDAA directed the appointment of an independent Principal Cyber Advisor (PCA) for each Military Department, to act as the principal advisor to the Secretary concerned on all cyber matters affecting that Department.

What do you see as the role of this position in the Air Force?

Answer. The PCA will provide me and the DAF services' leadership with independent advice on all cyber matters. I expect the PCA to actively interact with key leaders throughout the Department including the CIO, cyber operators, and acquisition staff in both Services.

Question. If confirmed, how would you plan to utilize the Air Force PCA as part of your leadership structure?

Answer. As an independent advisor for all cyber matters, if confirmed, I would follow NDAA guidance that states the PCA will help the SecAF, CSAF, and CSO ensure the Department's cyber posture and programs are aligned both internally and with the larger joint community. The PCA will be responsible for advising the SecAF, CSAF and CSO on the best utilization of our cyberspace operations capabilities, enterprise IT framework, as well as coordinate and oversee implementation of policy, strategies, and sustainment in partnership with key DAF stakeholders. If confirmed, I will also empower my PCA to regularly work with congressional staff in order to maintain transparency on all of our cyber efforts.

Question. What are Air Force's top three cyber challenges, and how will you use the PCA to address them?

Answer. I do not have enough information at this time to provide an understanding of the Air Force's top three cyber challenges today, but I do think the Principal Cyber Advisor could significantly help with cyber workforce readiness, advance digital modernization, and prioritizing our efforts to support Joint all-domain oper-

ations. I am also concerned about the cyber security of legacy weapons systems and business systems that could be vulnerable to cyber-attack. Every part of the entire DAF enterprise has to be protected against cyber threats and every individual involved in the enterprise has to be diligent and attentive to cyber threats.

Question. In May 2018, the Cyber Mission Force achieved full operational capability. In September, DOD released its 2018 Cyber Strategy.

In your view, how well postured is the Air Force to meet the goals outlined in the 2018 DOD Cyber Strategy?

Answer. I am not able at this time to assess how well postured the Air Force is to meet the goals outlined in the 2018 DOD Cyber Strategy. But if confirmed, cyber security, including protection of defense-related critical infrastructure and the defense industrial base, will be among my highest priorities.

Question. What actions would you take, if confirmed, to mitigate any gap between Air Force capacity and capability and Cyber Strategy goals?

Answer. If confirmed, I will endeavor to arm and protect our Airmen and Guardians and the combatant commanders they support with the offensive and defensive cyber capabilities they need for the Department and the Joint Force. By pursuing partnerships with the Joint Force, allies, and industry, I will work to strengthen the capability development apparatus by capitalizing on state-of-the-art commercial cyber security developments and incorporating emerging/disruptive technologies that integrate analytics, software, platforms, waveforms and sensors.

Question. If confirmed, what actions would you take to improve military and civilian cybersecurity career paths?

Answer. I believe we must elevate cybersecurity as an imperative across the government in order to defend the American people and U.S. critical infrastructure; the combined military and civilian workforce is central to achieving that objective. If confirmed, I would support continued efforts to enhance and modernize our military and civilian cyberspace career fields. This initiative includes streamlining career opportunities to maximize depth in cybersecurity through partnership with private industry and academia to improve talent management strategies and opening up new pathways for transition from outside the Department to government service. I will work with Congress and DOD to find ways to better compete with industry to attract and retain the best cyber talent through incentives and targeted cybersecurity development programs.

Question. If confirmed, what would you do to enhance Air Force information dominance capabilities?

Answer. Air and Space Force core missions depend on information dominance. As the Department of the Air Force looks to develop Joint All Domain Command and Control and Globally Integrated Intelligence, Surveillance, and Reconnaissance capabilities, it must consider the interconnectedness of systems and the need for actionable information at the point where operational decisions must be made. Future operations will demand near real-time flow of relevant tactical information over a global network without disruptive classification constraints or other barriers to the effective sharing of information with Joint, Allied, and Coalition partners. If confirmed, I will strive to leverage partnerships and shared objectives to field high-priority information systems that effectively support air and space power and the other Services and our partners for the joint and combined force to meet our national security priorities.

Question. In your view, does the Air Force need to conduct a “Cyber Readiness Review” similar to that conducted by the Navy in 2019?

Answer. I am not familiar with the Navy’s 2019 review; however, a “Cyber Readiness Review” can bring insight into how the Department of the Air Force can improve its cybersecurity operations, identify roadblocks and gaps, and inform investment decisions on emerging technology. If confirmed, I will work with the Chief of Staff of the Air Force and Chief of Space Operations to assess the Department’s cyber posture on a continuing basis, to formulate plans to improve that posture, and establish metrics to measure and track progress at improving that posture.

Question. If confirmed, specifically what measures would you take or direct to improve the cybersecurity culture across the Air Force workforce—military, civilian, and contractor?

Answer. I have not had the opportunity at this point to assess the Department’s cyber security posture or culture. Cybersecurity has to be everybody’s business, but we can’t rely on or expect perfect human performance—the many threats we face are capable and adaptive and cover a wide range of levels of capability. The Department needs a mix of strong cyber security awareness and human performance, technology, and resilience. Managing and addressing the risks of cyber-attack must become a ubiquitous and ever present consideration in all that the Department of the Air Force does and in all our interactions and transactions. The Department must

extend this culture to its business partners and stakeholders. Technology and design for resilience are certainly part of the solution, but this must be coupled with high awareness of the threat and diligence at all levels to practice correct cyber hygiene and to hold people accountable when they fail to do so.

Question. How would you empower and hold key leaders accountable for improvements in DOD cybersecurity?

Answer. If confirmed, I would establish meaningful metrics for cybersecurity performance, track trends in that performance through monitoring, regularly test the adequacy of cyber security implementation and practices, and hold leaders at all levels responsible for the performance of their organizations. Leaders would be empowered to implement cybersecurity in their organizations, but I would work to ensure that they had appropriate tools and resources to address cyber security risks.

Question. In 2019, Air Combat Command merged the Twenty Fourth and Twenty Fifth Numbered Air Forces to better integrate cyber effects, intelligence, surveillance, and reconnaissance operations, electronic warfare operations, and information operations.

In your view, are there other Air Force commands and organizations that should be merged or modified to increase unity of effort across like capabilities? Please explain your answer.

Answer. I do not have information to assess if other commands and organizations should be merged or modified. There are often benefits to a merger, providing agility and seamless coordination; however, mergers also can introduce disruption and risk to the organization and the competing priorities and multiple constituents of broader missions. If confirmed, I will assess, in coordination with the Chief of Staff of the Air Force and Chief of Space Operations, the pros and cons of this type of effort.

Question. Should the Space Force take a similar organizational? Please explain your answer.

Answer. My understanding is that the Space Force was designed as a lean and agile service, dependent on the Air Force for shared services for most of its support. This includes information operations and offensive cyber operations, as the Space Force. The Space Force is currently concentrating on defensive cyber teams. As the Service continues to develop and these capabilities mature, I will evaluate the pros and cons of the reorganization steps that have already been taken and consider options for creating a combined space ISR and cyber effects organization. In general, the Space Force as a completely new organization is at this point an experiment with uncertain outcomes. As the Department learns with experience I believe it should be open-minded about possible future changes.

Question. What is your vision for the future of Air Force electronic (EW) capabilities?

Answer. I believe electronic warfare (EW) is a critical warfighting capability and an area in which the Department of the Air Force must invest to ensure future operational superiority. As part of a joint and combined multi-domain force the Air Force and Space Force will need to focus EW capabilities on the broader electromagnetic spectrum (EMS) and joint capabilities. My view is that future battlefields will require an Air Force and Space Force with distributed software-defined systems and capabilities that are rapidly updatable that operate in coordination and jointly to maintain an advantage over any adversary. If confirmed, I would support EW as a priority and the introduction of new and innovative concepts and doctrine in this area.

Question. What is your assessment of the adequacy and efficacy of the EW training that Air Force personnel received in an Air Force environment in specific airframes?

Answer. I am not in a position to evaluate the adequacy of EW training at this time. If confirmed the total EW posture of the Department of the Air Force will be an item of high priority to me. I did have the opportunity to participate in an EW study conducted by IDA for the Joint staff approximately 2 years ago. My impression from that study, as well as from an earlier study by the Defense Science Board, was that there is significant room for improvement in all aspects of EW.

Question. In a joint environment with other Military Services?

Answer. I do not have a current assessment of the adequacy and efficiency of the Department in this regard either, but my impression is that there is significant room for improvement here as well.

AIR FORCE INFORMATION TECHNOLOGY PROGRAMS

Question. If confirmed, how would you improve the Air Force's development and deployment of major IT systems, including business systems?

Answer. My experience with IT systems development and fielding has been mixed at best, but I believe I have learned a great deal about how to structure IT programs for success from that experience. The Department of the Air Force must continue to evolve its business practices and supporting IT systems to improve efficiency and to meet the changing needs of its mission and objectives. If confirmed, I will leverage my experience in both the Department of Defense and in industry to expedite and further these efforts. I will encourage the continued use of modern business methods, as they apply in a military context, leverage the expertise of both commercial industry leaders and DAF leaders, and take into consideration both government and industry best practices to help the Department reduce cost, exceed performance expectations, and meet schedule goals. If confirmed, I would seek out the most cost effective ways to invest in IT to improve the operational and business performance of the DAF enterprise.

Question. In your view, what is the relationship between Air Force efforts to develop and implement enterprise IT programs and efforts being undertaken by the DOD Chief Information Office, the Defense Information Systems Agency, and other Defense Agencies?

Answer. I do not have current information about how well the Air Force and Space Force are working in conjunction with other elements of the DOD IT enterprise. My most recent experience in this area was with DOD healthcare management modernization. In general, the DAF is part of a larger DOD and government information ecosystem in which it should be a solid team player and when appropriate a leader in areas where the DAF can contribute to the total enterprise. If confirmed, I will encourage and support cooperation between the DAF, the DOD CIO, and DISA as well as with the other military departments and agencies.

Question. If confirmed, how would you ensure that appropriate business process reengineering is accomplished before the Air Force initiates, develops, and deploys new business IT systems?

Answer. Yes. The business IT environment is ever-changing—one in which business process re-engineering is an opportunity and a necessary element for effective modernization. If confirmed, I will direct and support the elements of a cost effective and responsive business environment, such as end-to-end re-engineering analysis of the business processes in conjunction with acquiring and deploying new business IT systems.

Question. Do you perceive a role for the Air Force research and testing enterprise in the development and deployment of Air Force business IT systems? Please explain your answer.

Answer. Yes. Military environments place requirements on business IT systems that are unique. These include resilience to various forms of attack, including cyber and possibly EW or kinetic threats. The Department of the Air Force research and testing organizations should play appropriate roles in developing technology needed for these environments and in testing IT systems in those environments. We cannot assume our adversaries will allow us to operate critical business systems that support our people and operations with impunity.

AIR FORCE-RELATED DEFENSE INDUSTRIAL BASE

Question. What is your assessment of the systems and processes for identifying, evaluating, and managing risk in the Air Force's organic and commercial defense industrial base, including the munitions industrial base?

Answer. I am out of date on this topic, but I believe that the risks and opportunities in this area have both increased since I left government over 4 years ago. Industry had developed supply chain management and assessment tools which would improve the Department's ability to understand and anticipate risk on the supply chains. At the same time, the threats and vulnerabilities to disruption in those supply chains may have increased or at least become more evident. Supply chain resiliency and risk management requires persistent attention and resources. If confirmed, I will fully assess the systems and processes for identifying, evaluating, and managing risk in the Department of the Air Force's organic and commercial defense industrial base, including the munitions industrial base, and make the necessary adjustments based on that assessment.

Question. How should Air Force acquisition leaders consider impacts on the industrial base when addressing requirements for recapitalization or modernization of major defense weapons systems and munitions?

Answer. The industrial base impacts are one of many considerations when planning acquisition programs. Usually these impacts are not determinative of outcomes, but this is not always the case. In addition, long term implications, as well as immediate risks and benefits, should be taken into account. We need an indus-

trial base that can meet growing warfighter readiness requirements, reduce sustainment costs, increase environmental resiliency, and posture for future threats. At the heart of achieving those goals is the availability of competition from industry—in any form. Next in importance is ensuring that there is a business incentive to supplying the Department. If confirmed, I will work with acquisition leaders and industry leaders and organizations to consider impacts on the industrial base and its ability to meet the needs of air and space power.

Question. If confirmed, what changes, if any, would you pursue in systems and processes to ensure that risk in the Air Force-relevant sectors of the defense industrial base is adequately managed to enable the development, production, and sustainment of technically superior, reliable, and affordable weapons systems and munitions?

Answer. A robust defense industrial base is critical to providing air and space capabilities to the warfighter. If confirmed, I will fully examine the Department of the Air Force systems and processes to ensure we can manage industrial base risk and work to make changes deemed necessary to enable the development, production, and sustainment of technically superior, reliable, and affordable weapons systems and munitions. I will ensure that the Department is considering both short and long term industrial base impacts in its acquisition planning and doing everything it can to sustain and grow competition. The only changes I can tentatively identify at this point are the potential greater use of modern commercial supply chain risk assessment tools and forging stronger cooperation with prime contractors who are already engaged in managing the supply chains that they depend upon.

OPERATIONAL ENERGY AND ENERGY RESILIENCE

Question. The Department defines operational energy as the energy required for training, moving, and sustaining military forces and weapons platforms for military operations, including the energy used by tactical power systems, generators, and weapons platforms. As early as 2004, then-General James Mattis testified before Congress that DOD must “unleash us from the tether of fuel” if U.S. forces are to sustain momentum and retain freedom of maneuver. He cautioned that “units would be faced with unacceptable limitations because of their dependence on fuel” and re-supply efforts “made us vulnerable in ways that would be exploited by the enemy.” Today, DOD energy requirements are projected to increase geometrically due to technological advances in weapons systems and distributed operations over longer operating distances.

If confirmed, how would you lead the Air Force in harnessing innovations in operational energy and linking them with emerging joint operational concepts in order to reduce contested logistics vulnerabilities for warfighters?

Answer. If confirmed, this issue will be a high priority for me. The DOD is a major energy consumer and I have been involved in earlier efforts to improve the DOD’s operational energy posture, both in foreign deployments and in CONUS. If confirmed, I will ensure that the DAF is adequately supporting the development of more efficient and alternative energy sources with a focus on those situations where the greatest gains are possible. These include alternative propulsion systems, more efficient engines, use of electrical power and fuel cells for example. I will also support the Department’s capability development process, ensuring that operational energy is a consideration in all of our plans and I will strengthen the linkages between Department of the Air Force offices and industry to promote innovative energy concepts, particularly those that maximize combat capability in contested domains, to support both current and future requirements.

Question. In what specific areas, if any, do you believe the Air Force needs to improve the incorporation of energy considerations and alternative energy resources in the strategic planning processes?

Answer. I am not aware of any place where energy generation and use would not be a consideration. The Department of the Air Force must have reliable energy to accomplish its mission, but it should acquire and use energy in ways that are efficient and environmentally friendly whenever possible. In operational energy, I believe that the Department must continue to identify operational energy opportunities and explore traditional and alternative energy options during war games, as well as throughout weapon system design and sustainment activities. In installation energy, the Department must ensure resiliency as the Department conducts and supports operations from overseas and CONUS installations.

If confirmed, I will review and analyze energy consumption data to make better-informed decisions on efficiency, impact, and affordability in the strategic planning process. I would also review and advance installation energy goals to ensure resilient operations.

Question. How can Air Force acquisition systems better address requirements related to the use of energy in military platforms to decrease risks to warfighters?

Answer. The Department's acquisition processes can better address energy requirements in military platforms by considering energy as a foundational capability from day one. If confirmed, I will examine the incorporation of energy considerations into both initial capability development activities and throughout the acquisition life cycle.

Question. In your view, what steps can be taken to render "energy supportability that reduces contested logistics vulnerabilities" a key performance parameter in the requirements process, as compared to "check the box" consideration it is today?

Answer. I do not know the degrees to which energy may be a "check the box" consideration today, but if confirmed I will ensure that energy considerations are taken seriously. Energy supportability is a vital key performance parameter, not only to ensure the suitability of new systems with existing and future energy infrastructure, but also to preserve compatibility with legacy systems which are critical to enabling sustained global combat capability across all domains. If confirmed, I will ensure appropriate emphasis is placed upon the energy key performance parameter, specifically by ensuring thorough analysis of campaign-level energy consumption and that expected logistics risks are addressed.

Question. If confirmed, specifically how would you prioritize energy resilience and mission assurance for the Air Force, including acquiring and deploying sustainable and renewable energy assets to support mission critical functions and address known vulnerabilities?

Answer. Energy supportability is a vital key performance parameter, not only to ensure the suitability of new systems with existing and future energy infrastructure, but also to preserve compatibility with legacy systems which are critical to enabling sustained global combat capability across all domains. If confirmed, I will ensure appropriate emphasis is placed upon the energy key performance parameter, specifically by ensuring thorough analysis of campaign-level energy consumption and that expected logistics risks are addressed.

ENVIRONMENT

Question. If confirmed, how would you ensure that the Air Force complies with environmental protection laws, regulations, and guidance from the Environmental Protection Agency?

Answer. If confirmed, I would ensure the Department of the Air Force has the policy and resources necessary to comply with all applicable environmental protection laws, regulations and guidance from the U.S. Environmental Protection Agency.

Question. What are your ideas for improving collaboration with the Department of the Interior and the U.S. Fish & Wildlife Service to find cooperative ways to ensure military readiness, while protecting the environment on and around installations?

Answer. If confirmed, I will ensure the Department of the Air Force continues to collaborate with the Department of Interior and the U.S. Fish and Wildlife Service in ways that support military readiness while at the same time protecting the environment on and around installations.

Question. If confirmed, how would you further efforts to identify and remediate PFOS/PFOA contamination on Air Force installations, including Reserve component locations?

Answer. I am familiar with the PFOS/PFOA issue, and, if confirmed, I will ensure the Department addresses Department of the Air Force-caused PFOS/PFOA impacts and complies with all applicable environmental laws, regulations, and guidance from EPA for all our installations. I am committed to ensuring the safety and health of our Airmen, Guardians, their families, and the communities in which they serve, including reserve-component installations.

Question. If confirmed, what would be your approach to addressing the health concerns of service members and their families regarding alleged exposures to potentially harmful contaminants on Air Force installations and in the context of performing military duties?

Answer. Nothing is more important than the health and well-being of our people and their families. If confirmed, I will make sure health concerns reported are promptly reviewed, investigated, and mitigated as necessary.

READINESS AND RESOURCE IMPACTS FROM EXTREME WEATHER

Question. In 2017, three hurricanes resulted in over \$1.3 billion in damage to military installations across the U.S. In 2018, extreme weather events caused

roughly \$9 billion in damage at Tyndall Air Force Base, Camp Lejeune, and Offutt Air Force Base.

Based on these readiness and resource impacts, do you believe it necessary to use more resilient designs in Air Force infrastructure?

Answer. Yes, if confirmed I will ensure the Department pursues initiatives that integrate common sense resilience practices into infrastructure planning. They are cost effective and promote installation survivability and recovery.

Question. How can the Air Force better use authorities on extreme weather mitigation granted by Congress in recent NDAAs?

Answer. Severe weather and other climate change-related impacts have degraded the Department of the Air Force's ability to operate and train. If confirmed, I will work to develop a full understanding of the national security implications of extreme weather, taking a comprehensive approach that includes use of authorities, impacts on operations, installations, infrastructure, and force development.

INFRASTRUCTURE CHALLENGES

Question. Non-DOD funding mechanisms such as energy savings performance contracts, utility energy savings contracts, and power purchase agreements are excellent means by which the Air Force can improve infrastructure, increase resilience, reduced deferred maintenance, implement alternative energy resources, save taxpayer funds, and secure other benefits without the need for upfront appropriated funds.

If confirmed, what steps would you take to streamline the process for the identification and use of appropriate non-DOD infrastructure funding mechanisms, and how long would it take you to resume entering into contracts that benefit Air Force installations?

Answer. I am familiar with some of these opportunities and programs from my previous position in government. If confirmed, I will ensure the Department utilizes all available authorities, including third-party performance contracts, to strengthen energy resilience. I will work with all services, OSD, and the Department of Energy to look for opportunities to streamline the processes and expedite solutions.

SCIENCE, TECHNOLOGY, AND INNOVATION

Question. What are the key technologies that the Air Force should be focused on to support modernization activities?

Answer. The re-emergence of great power competition and the specific military modernization programs being pursued by China and Russia are a central challenge to U.S. security. Focused DOD-wide effort to advance and transition technology into modernized warfighting capability through new operational concepts is critical to maintaining our technological advantage. I have been sounding the alarm about these threats since 2010 when I returned to government after being in the private sector for 15 years. The key technologies of interest include autonomy and some forms of artificial intelligence, secure high data rate networks, and advanced sensor technology, just as examples.

Question. What do you see as the most significant challenges (e.g., technical, organizational, or cultural) to U.S. Air Force development of these key technologies?

Answer. I need to be better informed about ongoing development and analysis efforts to have a clear picture, but my observation at this point is that the Department in general has accepted the need for change, but may not be ready to accept the degree of change that will be required. I do not believe there is a lack of innovation per se or that the needed technologies are out of reach. In my view the challenge is to determine how to best harness those technologies into operational concepts that will be effective and resilient against current and emerging threats. There is currently a major emphasis on speed, but going in the wrong direction is not progress. My view is that effective fielded capability at scale should be our North star and that the first and most critical task may be to ensure we are moving in the right direction, at any speed. If confirmed, I look forward to learning more about current efforts and how they align with our military needs.

Question. How well has the Air Force prioritized limited R&D funding across its technology focus areas?

Answer. At this time, I am not well-enough informed to answer this question. My general experience is that the Air Force allocates R&D funding reasonably well, but I have not had an opportunity to review the current portfolio. If confirmed, doing so would be a high priority. As a Nation, we must prioritize modernization efforts toward capabilities with the greatest chance of success against future adversary technologies. If confirmed, I will ensure that the DAF continues to work closely with the DOD research and engineering enterprise, including the military departments

and agencies, to leverage and partner on shared technology interests, capability needs, and delivery of joint warfighting capability.

Question. How is the Air Force balancing revolutionary capability advancements, including investments in basic research, as compared to “quick win” incremental improvements that can be rapidly fielded?

Answer. I am not well-enough informed at this point to be able to say how well the DAF is balancing these needs and others. In my experience, the DAF did have a balanced portfolio of technology investments, but I have had the opportunity to review the current portfolio and how it is being developed. To maintain technological advantage, the DAF must ensure a prioritized research and development investment that ensures long-term competitive advantage, development of cost-imposing disruptive capabilities, and nearer-term incremental improvements that can provide performance and lifecycle cost benefits. If confirmed, I will work to ensure the DAF has a properly balanced portfolio focusing on near-term research and development and longer-term S&T, including basic research.

Question. In your view, what steps must DOD and the Air Force take to ensure that critical technical information is protected by Air Force organizations, industry, and academia?

Answer. Preserving our technological advantage requires a comprehensive strategy that fosters technology development, integration, and fielding, while protecting critical mission capabilities and technologies against unwanted transfer or interference. All of this has to be accomplished without discouraging the participation of the talent and partners that we wish to attract and engage. While open collaborations are critical to the DOD, we must protect against those who would seek to exploit the openness that is the basis for our innovation potential, economic strength, and national security. If confirmed, I will continue the momentum the Department has created to strengthen our industrial and innovation bases, including implementation and enforcement of cybersecurity standards, cyber-threat information sharing, and guidelines for research technology protection.

Question. If confirmed, what would you do to increase the interaction between Air Force labs and the private sector, and between Air Force labs and the rest of the DOD innovation enterprise (i.e., the Office of the Under Secretary of Defense for Research and Engineering, Defense Innovation Unit, the Defense Advanced Research Projects Agency, and the other Military Services)?

Answer. Innovation does not happen in a vacuum and increasingly innovation comes from global commercial and academic sources as well as DOD and other government agency-sourced efforts. If confirmed, I would ensure that the DAF’s leaders in science and technology actively engage with all sources of technology with a focus on the unique needs of the Air and Space Forces and on the efficient application of commercial technology to high priority DAF operational problems.

Question. What are the challenges you perceive to effectively transitioning technologies from research programs into programs of record?

Answer. In my opinion the Department of Defense, including the Department of the Air Force continues to struggle with the so-called “valley of death” between technology research and fielded capabilities embodied in programs of record. My tentative observation is that we may have overemphasized early stage experimentation and demonstrations over the steps needed design, develop, and field meaningful operational capability to combatant commanders. If confirmed, I will review the Department of the Air Force’s efforts to overcome the transition challenge, including experimentation, prototyping, and open systems architectures to enable technology insertion, and work to find ways to prioritize transition from research to warfighter capability.

Question. How would you address these challenges, if confirmed?

Answer. I believe the fundamental problem is not the lack of ideas or technology but the lack of resources to effect transitions to fielded capability at scale. Resources are always limited, so difficult choices will have to be made about what capabilities to take into full scale development, production and fielding. If confirmed, I will ensure that the DAF brings technologists and operators together to make sound decisions on new operational concepts and the highest priority investments needed to make them a reality.

Question. Recent budget requests for defense Science and Technology (S&T) have fallen short of the Defense Science Board’s recommended goal of dedicating 3 percent of the total defense budget to S&T. Robust investment in S&T underpins technological advances in our military capabilities and is vital to maintaining our military technological superiority over emerging adversaries. However, over the past few years, the Air Force has prioritized near-term research and development over long-term S&T.

If confirmed, what metrics would you use to assess whether the Air Force is investing adequately in S&T programs and whether the Air Force has achieved the proper balance between near-term research and long-term S&T?

Answer. If confirmed, I will review the data available to benchmark the current efficiency and effectiveness of the Department of the Air Force science and technology enterprise and link the appropriate combinations of measures to enable the research and development (R&D) required for the U.S. to maintain technology advantage. I will consider various options for allocating resources to near and longer term investments. In general, I believe that the threats we face are going to be more and not less severe over time and that we cannot shortchange long-term investments in high-priority technologies, especially those that are uniquely military.

TECHNICAL WORKFORCE

Question. A significant challenge facing the Air Force today is a shortage of highly skilled data scientists, computer programmers, cyber and other scientific, technical, and engineering talent to work at Defense laboratories and technical centers.

If confirmed, what actions would you take to increase the recruiting and retention of scientists, engineers, software coders, and in other technical positions across the Air Force's research, development, and acquisition enterprise?

Answer. If confirmed, I will work with Department of the Air Force leadership to increase recruiting and retention of scientists, engineers, software coders, and other critical technical positions across the research, development, and acquisition workforce. As part of competing for talent with industry and developing talent for the Nation, the Department of the Air Force also supports efforts to attract diverse individuals with untapped potential into technical fields, develop talent, and ensure the DAF technical enterprise provides a welcoming and inclusive opportunity.

Question. In your view, what are the pros and cons of having Air Force active duty military personnel trained and working as scientists, engineers, software coders, and in other technical positions across the Air Force's research, development, and acquisition enterprise?

Answer. Warfare is changing. Its technical component is constantly increasing in importance. I believe having military personnel serve in technical positions is critical for mission success. The linkage between the warfighter and the research, development, and acquisition communities makes for a much stronger organization and more capable forces for the DAF. I was trained in program management by Air Force officers decades ago. Active management of programs and deep technical knowledge is essential for supervision of contractor efforts. Experienced technical professionals in the military enhance the research, development, and acquisition community's ability to drive toward warfighter needs while informing military operators as to what is possible.

Question. If confirmed, what specifically would you do to provide the directors of Air Force Research Laboratories technology directorates with the workforce management tools they need to shape their science, technology, and engineering workforces consistent with their missions and local needs?

Answer. America is in a global competition for talent. If confirmed, I will ensure that Air Force Research Laboratory leadership and others in the acquisition community are using the most effective techniques to recruit, hire, and retain top talent to shape the technology, science, and engineering workforce. We need to be open to the use of new tools to attract this critical workforce and we need to use modern personnel management tools that are appealing to the current generation of technologists coming out of our schools. In the past, cooperative programs with students have been highly effective and if confirmed I would evaluate the potential to expand these programs as well as scholarship programs that bring talent into the enterprise and inspire it with the work and the mission. If confirmed, I would also explore ways to expedite the hiring and security clearance processes.

Question. What are the major challenges or barriers to the Air Force being able to compete effectively for technical workforce against the private sector and other nations?

Answer. If confirmed, I will work with Department of the Air Force acquisition leaders to understand and address barriers to effectively competing for a robust technical workforce. Compensation is clearly one barrier. Geography can be another, and if confirmed I would look for opportunities for more remote work as a means to make working for the DAF more attractive.

Question. How should the Air Force engage foreign nationals with expertise in critical technology areas who are interested in staying in the United States and working to support national security missions?

Answer. If confirmed, I will work with Department leaders to understand the challenges of recruiting foreign nationals, in particular university students, and devise strategies to ensure that the Department of Air Force has access to the best talent. If confirmed, I would explore and support options for foreign nationals with needed talent to become permanent residents and citizens.

Question. Are you concerned that this foreign national talent is being recruited by China?

Answer. Yes. Programs like China's Thousand Talents program are directed at pulling top international experts toward China. The country that attracts the talent will have advantages in critical areas such as microelectronics, hypersonics, and artificial intelligence. If confirmed, I will review what actions the Department of the Air Force can take to counter these efforts.

Question. If so, how should the U.S. counter these efforts?

Answer. The U.S. should grow its investment in graduate university research and facilitate American attendance at these schools. We should encourage foreign student visas and subsequent work visas for students from friendly nations and encourage those students to remain in the U.S. The dominance of graduate education in the U.S. has historically provided America a strong tool to attract and retain foreign talent. When I was a graduate student at Caltech decades ago a large fraction of the aeronautical engineering students in my class were foreign. They all hoped to stay in the U.S. and work for an American firm. Today an even larger fraction of our technical graduate school students is foreign, many of them from China. Programs such as optional practical training (OPT) and H1 visas help retain desirable U.S.-trained talent after graduation and are therefore an important tool in countering Chinese recruitment efforts. If confirmed, I would work with others in DOD and elsewhere in government and with academia to strengthen the sources of technical talent for the DAF and for the Nation.

Question. In your view, should the Air Force develop mechanisms to employ foreign talent in DOD, Air Force, or partner organizations in some capacity, even performing unclassified work, so that this talent is not lost to the national security enterprise?

Answer. Yes, but with appropriate caution. Our first priority should be to develop American talent, but we should not ignore the contributions that high performing immigrants can bring to the Nation. Our military's success in a global technology competition will require the Department of the Air Force to engage the best global talent. If confirmed, I will look for ways to embrace open innovation as broadly as prudent security concerns will allow. The global fight for talent is becoming tighter and America should take advantage of its attractiveness to talented individuals.

AIR FORCE MILITARY END STRENGTH

Question. Is the Air Force's current end strength sufficient to meet national defense objectives?

Answer. I have not had the opportunity to review that adequacy of current Air Force end strength. If confirmed, I intend to review end-strength requirements for both the Air Force and Space Force to ensure we continue to balance risk in maintaining legacy capabilities to support ongoing deployments and operational tempo against demands of future force requirements.

Question. If not, what end strength do you believe is necessary?

Answer. If confirmed, I will be committed to the judicious use of military end strength to sustain a force structure that provides required warfighting capability and capacity to combatant commands. If confirmed, I intend to review end strength requirements for both the Air Force and Space Force to ensure we continue to balance risk in maintaining legacy capabilities to support ongoing deployments and operational tempo against demands of future force requirements.

Question. How will the continued stand up of the Space Force, and the related transfer of Air Force personnel, impact Air Force and Space Force end strength requirements over the next 5 years?

Answer. From what I understand, the Space Force's overall end strength is expected to grow modestly over the next few years as it continues building out the necessary force to meet National Defense Strategy objectives and fulfill requirements of combatant commanders. I also understand that the Space Force is dependent on the Air Force for numerous shared services where the Space Force lacks the scale to justify the overhead associated with an independent capability. This appears to be the best approach to supporting the Space Force, and if confirmed I will work to ensure the Space Force receives high quality and timely support in those areas. I understand that the plan going forward includes mission transfers from Air Force, Army, Navy, and headquarters growth. The Air Force end strength should

stay tied to force structure requirements in order to maintain readiness and avoid manning shortages. If confirmed, I intend to review end strength requirements for both the Air Force and Space Force to ensure we continue to balance risk in maintaining legacy capabilities to support current requirements against demands of future force requirements.

Question. What additional force shaping authorities and tools does the Air Force need, in your view?

Answer. At this time, I am unaware that the Department requires any additional authorities. If confirmed, I will closely review all existing authorities to ensure we have the tools necessary to manage force strength.

AIR FORCE RECRUITING AND RETENTION

Question. Currently, the Air Force is experiencing a 20-year high in personnel retention levels. This will challenge leaders to ensure that there is sufficient room for fresh talent to enlist or commission.

If confirmed, how would you ensure the Air Force can continue to bring in new talent, while balancing high retention?

Answer. My understanding is that the Air Force and Space Force continue to maintain high standards and achieve authorized end strength. Both are warfighting imperatives and are essential to attracting, building, and retaining an effective force. If confirmed, I will work to ensure our recruiting, retention, and training remain strong while we maintain our high standards of readiness for the Nation's security. I will look for innovative and effective approaches to improving the talent pool that enters the Air and Space Forces, with a strong emphasis on diversity, especially in the officer corps.

Question. How will an individual's job performance factor in to your decisions to grant enlistment extensions or officer continuation?

Answer. If confirmed, I would ensure that individual job performance be a critical factor in all such decisions. If confirmed, I will focus on continuing service members with increased experience who are fully qualified to serve, while balancing the need to achieve targets in critical skill areas.

Question. If confirmed, how would you ensure that the Air Force maintains sufficiently high recruitment and retention standards?

Answer. The quality of personnel is the hallmark of the military. If confirmed, I will work to ensure our standards remain high and the recruiting processes remain strong, while also assessing our standards to ensure there are no artificial barriers to service.

Question. What impact do current medical and other qualifications for enlistment in the Air Force have on the number of individuals eligible for military service?

Answer. I understand that medical reasons disqualify most of the youth in the 17-24 age range eligible for service, a third of which are disqualified for being overweight. If confirmed, I will work with the Department of Defense, other Services, and with Congress on developing ideas and initiatives to increase the number of young Americans qualified for military service.

Question. If confirmed, what changes to such qualifications, if any, would you recommend to increase the number of individuals eligible for Air Force service without degrading the quality of recruits?

Answer. The limited population who are eligible to serve and a low propensity to serve are concerning, as this challenge impacts the Department's ability to meet its national security objectives. While it is important to maintain the high standards for service, it is also important to make sure that there are not artificial barriers to entrance and any standard is needed to maintain the quality and readiness of the force. If confirmed, I will work to take a holistic view and assess both the propensity to serve and continually address qualifications. I am committed to working with Congress and the Department as a whole to increase interest and eligibility for military service among young Americans.

Question. What factors do you consider to be key to the Air Force's future success in retaining the best qualified personnel for continued service in positions of greater responsibility and leadership in the Air Force?

Answer. To retain talented Airmen and Guardians, the Department must constantly look to maximize the quality of their service and the quality of life for the Airmen/Guardian and their families. There are inherent sacrifices associated with military service. However, if confirmed, my job will be to ensure the quality of the experience for Airmen/Guardian and their families is the best that we can make it, consistent with the demands of military service, and that our airmen and guardians recognize how much their service is valued and critical to the Nation.

Question. Do you believe that current military entrance testing methods unnecessarily restrict the pool of eligible recruits, for example, by penalizing prospective recruits for whom English is not their native language?

Answer. If confirmed, I will review the current efforts across the Department to ensure valid, reliable, and fair criteria and measures are used to access applicants with highest potential, to include non-native English speakers. If necessary, if confirmed, I will direct actions that achieve a wider reach to all populations while maintaining appropriate standards. The overarching goal should be to have a representative force comprised of members with the highest potential to perform.

Question. Rather than relying solely on ever-higher compensation for a shrinking pool of volunteers, what creative steps would you take, if confirmed, to expand the pool of eligible recruits and improve Air Force and Space Forces recruiting?

Answer. I believe that Department must continue to reach and inspire Americans from all backgrounds and walks of life to serve the United States. While maintaining an adequate compensation profile is important, we seek those that are inspired and looking for a challenge and the opportunity to grow. To do that, prospective Airmen and Guardians need to see themselves in the force and they need to be part of a force that treats all with dignity and respect, values every team member, and sets the conditions and environment where they can make a contribution to their nation while maximizing their talents and reaching their fullest potential.

The Air Force reversed recently a decision to cancel ROTC scholarships for hundreds of high-performing cadets. Included in this group of cadets were scholarship recipients pursuing technical majors at some of the Nation's most elite universities.

Question. How do you view the effectiveness and utility of the various officer commissioning sources?

Answer. I view each of the Air Force's commissioning sources as important and necessary. The Department of the Air Force needs an officer force representative of a wide variety of skills, demographics, backgrounds, and experiences. Having multiple avenues of commissioning enhances the Air Force's ability to attract and commission those who will lead our force into the future.

Question. Do you believe the Air Force should prioritize available officer slots for cadets who pursue technical degrees or who attend selective universities?

Answer. The future of warfare will increasingly be about the application of technology to operations. The Air Force and Space Force are technical forces and having technically competent Airmen and Guardians is essential. In order to ensure the Department's continued success, we must ensure our officers have the right knowledge and competencies necessary to propel the service into the future. As such, I believe the Air Force does and should prioritize officer slots based on the needs of each career field as well as those of the Air and Space Forces.

PILOT RETENTION

Question. The Air Force has reported a shortage of approximately 2,000 pilots last year, including a shortage of 7950 fighter pilots.

What impact, if any, has the COVID-19 pandemic had on Air Force pilot retention?

Answer. I understand that pilot retention increased in fiscal year 2020, which was likely a result of reduced airline hiring and economic uncertainty. However, the Air Force expects a return to pre-COVID retention by fiscal year 2023. If confirmed, I will ensure that the Air Force continues to look for opportunities to increase retention. I am concerned that the post COVID period may bring a surge in demand for commercial pilots and if confirmed I would be monitoring that situation closely.

Question. What are the Air Force's current efforts to address this critical problem?

Answer. I have not had the opportunity to review the DAF's efforts in this area. If confirmed, I will ensure that the DAF creates a sustainable plan that will increase both pilot production and retention, allowing for sustainable officer corps personnel management.

Question. How would you assess the effectiveness of these efforts to date?

Answer. I have not had the opportunity to assess the effectiveness of current plans and efforts in this area. I understand that the Air Force has developed targeted retention programs, and is seeing high take rates for bonuses with up-front payment options, but still not reaching required retention levels. If confirmed, I will review retention and production initiatives to assess additional opportunities to improve pilot manning health.

Question. What monetary and non-monetary incentives and initiatives implemented by the Air Force have yielded the most positive impacts on pilot retention?

Answer. I have not had the opportunity to review data on this, but I understand that higher payment options and up-front payment have seen the most success.

There may be several non-monetary options available, and if confirmed I will evaluate these options.

Question. What additional authorities does the Air Force need from Congress to address this shortfall definitively?

Answer. If confirmed, I will review whether there are additional authorities that I would recommend Congress provide the Department to address the pilot shortfall.

Question. In your view, was it prudent to disestablish the Air Mobility Command (AMC) “flying-only” career track? Please explain your answer.

Answer. I do not have a basis to offer an opinion on this program, but I am told that AMC found there was little interest in the program. If confirmed, I will consider and evaluate this and other available options for improving the retention and morale in AMC flying units.

Question. In your view, how will AMC’s Resource Driven Allocation Project contribute to pilot readiness?

Answer. I understand the Readiness Driven Allocation Process helps units predict their operations pace. I do not have an in-depth knowledge, but, if confirmed, I will review how this project will contribute to pilot readiness.

Question. How has the Air Force increased pilot production capacity commensurate with the demands of the NDS?

Answer. I have not seen data on this, but I understand that the Air Force strategy to retain more pilots for longer periods combines production increases with retention adjustments. If confirmed, I will evaluate the effectiveness of this approach.

Question. As the Air Force prepares for competition with a peer-adversary, what steps is it taking to increase quality standards within and screening rates for flight school, and the pipeline beyond?

Answer. I have no basis to assess this situation at this time, but I understand and believe the Air Force continually looks for ways to improve and enhance its training. If confirmed, I will look for ways the Air Force can incorporate new technologies, tactics, and procedures into its pilot training programs.

Question. If confirmed, how would you implement the Air Force’s Remotely Piloted Aircraft (RPA) “Get Well” plan?

Answer. I have not reviewed this plan; however, I understand that the “RPA Get-Well Plan” was created in 2015 with the objective of increasing pipeline training capacity and operational unit manpower. I also am told that those objectives were met in 2016 by increasing MQ-9 instructors, growing the RPA pilot inventory, and achieving better crew-to-combat ratios. If confirmed, I will ensure instructor manning and necessary contractor support will be in place to continue sustainable student throughput.

RESERVE COMPONENTS

Question. In your view, what is the appropriate relationship between the active Air Force and the Air Force Reserve and Air National Guard?

Answer. All the components of the total Air and Space Forces are necessary to mission success. The Total Force’s capabilities and lethality are greater than the sum of the individual contributions of the active Air Force, Air Force Reserve, and Air National Guard. I do not have access to DAF-internal data which would be needed to provide a view of how appropriate the current relationship is or whether it needed to be modified. If confirmed, I will work with DAF leaders to ensure the active Air Force, Air Force Reserve, and Air National Guard individually and in concert are ready and resourced to meet operational requirements.

Question. What is your vision for the roles and missions of the Air Force Reserve Components?

Answer. I have not evaluated these relationships and it would be premature for me to provide my vision for the roles and mission of the Air Force Reserve components at this point. If confirmed, I would work with DAF and Air Force Reserve component leaders to ensure we are fully leveraging the strategic depth and operational capacity within the Reserve components and to identify any needed changes in respective roles and missions.

Question. If confirmed, what new objectives would you seek to achieve with respect to the Air Force Reserve Components’ organization, force structure, and end strength?

Answer. It would be premature for me to provide an assessment of new objectives with respect to the Air Force Reserve components’ organization, force structure, and end strength. If confirmed, I would assess the current situation and existing plans and I would work with DAF and Air Force Reserve component leaders to ensure we were fully leveraging the strategic depth and operational capacity within the Reserve components.

Question. Are you concerned that continued reliance on Air Force Reserve Components to execute operational missions—both at home and around the globe—is adversely affecting the ability to meet their recruiting and retention missions? Q172. Why or why not?

Answer. I do not have access to DAF-internal data regarding the ways in which the operational tempo of Air Force Reserve components may be affecting—adversely or positively—their ability to meet their recruiting and retention missions. If confirmed, I would work with Reserve component leaders to understand how the operational tempo may be affecting these missions and how best to address any potential adverse effects.

Question. If confirmed, what would be your approach to creation of a Reserve Component of the Space Force?

Answer. As a former Army reservist, I appreciate the value that the Reserve component can bring to a military service. At the same time, I recognize that the Space Force has unique features. In general, I can see significant value in a Reserve component for the Space Force. If confirmed, I would work with DAF leaders to review Space Force requirements and to evaluate how a Reserve component can best satisfy Space Force needs, especially in wartime or an emergency.

MILITARY COMPENSATION

Question. What is your assessment of the adequacy of military compensation and benefits?

Answer. I have not had an opportunity to assess this situation. In general, my impression is that military compensation and benefits are adequate and appropriate. The cost of maintaining an all-volunteer force is high, but the Congress has consistently increased pay and benefits for service members across the board. That said, there may be special situations and skill sets in which national security needs cannot be satisfied at current levels of compensation. If confirmed, I will work with DAF and DOD leaders to ensure we are continually identifying how DAF-internal requirements and/or factors external to the DAF may be affecting the competitiveness of military compensation and benefits as compared to the private sector.

Question. If confirmed, what steps would you take to control the rising cost of military personnel?

Answer. I do not have access to DAF-internal data to understand why and how the cost of military personnel are rising, and whether those costs are in line with inflation rates. At the time I left government in 2017, healthcare costs were increasing at a greater pace than inflation and imposing an increasing burden on military budgets, but I do not have data to indicate whether that trend continued or not. If confirmed, I will work with DAF leaders to understand the nature of the rising costs and what may be done to address them while remaining sufficiently competitive with private sector compensation and benefits to attract and retain the people essential to DAF mission success.

MILITARY HEALTH SYSTEM REFORM

Question. Do you support the purpose and implementation of section 702 of the fiscal year 2017 NDAA, as clarified by sections 711 and 712 of the fiscal year 2019 NDAA?

Answer. Yes. If confirmed, I will work with OSD and DAF leaders to ensure we are efficiently and effectively transitioning the Administration of military treatment facilities to the Defense Health Agency while continuing to provide first-rate care for our Airmen, Guardians, and their families.

Question. If confirmed, how would you ensure the rapid and efficient transfer of the Administration and management of Air Force military treatment facilities to the Defense Health Agency?

Answer. Yes. If confirmed, I will work with DAF leaders to review these timelines, and identify ways to potentially expedite transfers while ensuring our Airmen, Guardians, and their families continue to receive first-rate medical care.

NON-DEPLOYABLE SERVICE MEMBERS

Question. In your view, should airmen and guardians who are non-deployable for more than 12 consecutive months be subject either to separation from the service or referral to the Disability Evaluation System, as is current Department policy?

Answer. I do not have DAF-internal data that would help me understand how significant this problem is or how the Disability Evaluation System is working in practice and how changes to the current policy may affect readiness. If confirmed, I will implement the current policy while I assess this situation unless the Secretary of Defense provides different guidance.

Question. Under what circumstances would the retention of a service member who has been non-deployable for more than 12 months be “in the best interest of the service”?

Answer. I do not have DAF-internal data to understand how frequent this situation is or if this criterion has traditionally been defined nor the potential consequences of deviating from that definition and its application. If confirmed, I would work with DAF leaders to understand the costs and benefits of the current approach, and ensure any changes in criteria meet the spirit and intent of the provision while satisfying operational readiness requirements.

Question. In your view, how should this policy be applied to service members with HIV?

Answer. I do not have sufficient data to answer this question. I understand the Department of Defense is continuing to review HIV-related policies in light of medical science regarding the treatment and prevention of HIV. If confirmed, I will work with the Department of Defense to ensure the DAF experiences are understood and taken into consideration in any changes to DOD policy and I will implement any related changes in policy by the Secretary of Defense.

Question. In your view, should an airman’s or guardian’s readiness to perform the required specific missions, functions, and tasks in the context of a particular deployment also be considered in determining whether that service member is deployable?

Answer. Generally speaking, yes, but I do not have enough data to answer this hypothetical question. If confirmed, I would work with DAF leaders to ensure Airmen and Guardians had the training and resources needed to be successful in their deployment and to reduce non-deployable rates. If confirmed, I will also ensure that policies that support non-deployment decisions are administered fairly and uniformly, taking into account individual circumstances as warranted.

Question. What are your ideas for addressing the challenges of medical non-deployability in the Reserve components?

Answer. At this point, I do not have access to the non-deployability rate for the Air Force Reserve components, nor a sufficient understanding of factors contributing to that rate to offer an opinion. If confirmed, I will work with DAF leaders to assess the current rate of medical non-deployability in the DAF Reserve components and work to address any challenges identified.

Question. The new DOD transgender policy (DODI 1300.28) states, “any determination that a transgender Service member is non-deployable at any time will be consistent with established military department and Service standards, as applied to other service members whose deployability is similarly affected in comparable circumstances unrelated to gender transition.” The same policy requires commanders to review and approve service member requests to transition gender in a manner that “maintains military readiness by minimizing impacts to the mission (including deployment, operational, training, and exercise schedules, and critical skills availability).”

What Air Force standards and policies related to an airmen’s or guardian’s ability to deploy will be applied to transgender service members undergoing gender transition procedures or treatment?

Answer. I have not had the opportunity to review DAF-internal standards and policies that govern an Airman or Guardian’s ability to deploy; therefore, it is premature for me to identify those which would apply to transgender service members undergoing transition procedures or treatment. If confirmed, I will work with DAF leaders and medical professionals to understand what current standards may be applicable and to assess the need for additional standards.

Question. As the Air Force implements the DOD policy, what level of commander will be responsible for balancing Service member requests to transition gender while maintaining military readiness?

Answer. I do not have access to DAF-internal deliberations that informed the current level of commander involved in those decisions. If confirmed, I would work with DAF leaders to understand how that decision was reached, determine if that level of commander remained the most appropriate, and review the suite of resources afforded to any commander so that she/he can make an informed decision when presented with member requests to transition gender. If confirmed, I will also follow any policies promulgated by the Secretary of Defense.

Question. If confirmed, how would you ensure that commanders are permitted to deny or delay gender transition requests if it such a request would degrade unit readiness and deployability?

Answer. I do not have sufficient data to answer this question because I do not understand the potential medical and mental health consequences of delaying a service member’s transition. If confirmed, I would work with DAF leaders and med-

ical professionals to balance readiness and deployability with the medical needs of affected Airmen and Guardians.

MILITARY QUALITY OF LIFE

Question. If confirmed, what qualify of life and morale, welfare, and recreation (MWR) programs would you consider to be a priority?

Answer. I do not have data on the full suite of MWR programs, which programs are a priority for our Airmen and Guardians, the relative State of each program, nor whether additional programs have been requested. If confirmed, I would work with DAF leaders, including senior enlisted leaders and families to answer these critical questions before determining how best to support the quality of life and MWR programs. As a former Army officer, I know MWR programs provide critical resources for our service members and their families and if confirmed I am committed to supporting those programs.

Question. What metric would you apply in determining which MWR and quality of life programs should be sustained or enriched and which should be eliminated or reduced in scope as ineffective or outmoded?

Answer. In general, I would listen to the views of our Airmen and Guardians in making these decisions. I do not have data on the full suite of MWR programs, which programs are a priority for our Airmen and Guardians or their families, the relative State of each program, nor whether additional programs have been requested. If confirmed, I would work with DAF leaders, including senior enlisted leaders and families to answer these critical questions before determining how best to support the MWR programs. As a former Army officer, I know MWR programs provide critical resources for our service members and their families.

MILITARY FAMILY READINESS AND SUPPORT

Question. What do you consider to be the most important family readiness issues for service members and their families?

Answer. I do not have sufficient data to answer this question at this point. If confirmed, I look forward to working with DAF leaders and military families to understanding and addressing the most pressing readiness issues facing our Airmen, Guardians, and their families. If confirmed, I will support programs that reinforce a strong DAF community and focus on those that build and sustain resilient families.

Question. If confirmed, what specific actions would you take to ensure that military families are provided with accessible, high-quality childcare, at an appropriate cost?

Answer. As a former military parent of young children I understand how important high-quality childcare is to military families first hand. I do not have DAF-internal data regarding the demand for accessible and affordable, high-quality childcare and the DAF's ability to meet that demand. If confirmed, I would work with DAF leaders including senior enlisted leaders and with families to understand how we are meeting that demand and potentials ways to improve doing so. Quality childcare is critical to early childhood development as well as to our sacred obligation to support our people and our ability to retain the talented people needed to perform the DAF's missions.

SUPPORT FOR MILITARY FAMILIES WITH SPECIAL NEEDS

Question. What is your view of the overall effectiveness of the exceptional family member program (EFMP)?

Answer. I do not have DAF-internal data regarding the objectives and measures of effectiveness for the EFMP program, so it would be premature for me to provide an assessment at this point. If confirmed, I will work with DAF leaders to ensure this program is best supporting our Airmen and Guardians and that commanders and supervisors are well-versed in the full scope of what the program provides.

Question. If confirmed, how would you incentivize service member enrollment in EFMP?

Answer. I do not have DAF-internal data that would help me understand the current challenges with service member enrollment. If confirmed, I would work with DAF leaders to understand why incentives may be needed for service member enrollment and how best to craft those. If confirmed, my ultimate objective would be ensuring our Airmen and Guardians and their families feel and are in fact supported.

Question. If confirmed, how would you empower military families to advocate and access individualized educational programs and other support to which their family

members may be entitled under the Individuals with Disabilities Education Act, including from public schools in the vicinity of military installations?

Answer. I do not have DAF-internal data that would help me understand the current challenges service members and their families face in accessing their entitlements under the Individuals with Disabilities Education Act. If confirmed, I would work with DAF leaders to understand the scope of the challenges and as necessary enlist the support and expertise of others within the U.S. Government, and as needed Members of Congress, to ensure our military families' rights are protected.

Question. If confirmed, how would you enhance support to a service member in navigating the TRICARE system to obtain the medical services and support required by a family member with special needs, regardless of where that family member is located?

Answer. I do not have DAF-internal data that would help me understand the current challenges service members and their families face in navigating the TRICARE system. If confirmed, I would work with DAF leaders to understand the scope of the challenges and potential solutions to ensure our service members' families have the support they deserve, regardless of their location.

Question. If confirmed, how would you work with Military Housing Privatization Initiative partners and military commanders to ensure that the needs of service members with an exceptional family member are considered in the military housing assignment process?

Answer. I do not have DAF-internal data that would help me understand the current challenges service members with an exceptional family member face with respect to the availability of housing that meets their special needs. If confirmed, I would work with DAF leaders to understand the scope of the challenges and ensure that our Military Housing Privatization Initiative partners meet the housing needs of service members with exceptional family members in accordance with the privatized housing project legal agreements, the Fair Housing Act, and the Americans with Disabilities Act.

Question. If confirmed, how would you eliminate or reduce the bureaucratic administrative burdens currently experienced by EFMP participants?

Answer. I do not have DAF-internal data that would help me understand the current administrative requirements in place and why some requirements may be considered overly bureaucratic and burdensome. If confirmed, I would work with DAF leaders and EFMP leaders to review administrative requirements, and understand potential areas to reduce administrative requirements while maintaining data needed to measure program effectiveness and ensure accountability.

SUICIDE PREVENTION

Question. The number of suicides in each of the Services continues to concern the Committee. It is believed that, over the course of a single week at the end of March 2020, two U.S. Air Force Academy First-Class cadets committed suicide.

What is your assessment of the efficacy of suicide prevention programs at the U.S. Air Force Academy?

Answer. Any suicide is a tragedy, and suicides among young people and especially those at an institution like the Air Force Academy are particularly tragic and the Air Force must do everything it can to prevent these events, at the Academy and anywhere in the Department. I do not have USAFA-internal data regarding the scope of its suicide prevention program, so I am unable to provide an assessment at this point. If confirmed, I look forward to better understanding the program and working with USAFA leaders to improve it. If confirmed, I would specifically focus on ways to improve cadets' ability to identify behaviors in one another that may be markers for potentially self-harming behavior.

Question. Has the Air Force conducted a comprehensive review of the two recent suspected Academy suicides to determine whether there are any common causal factors? Q198. If so, what did the Air Force find and how will those findings be applied to suicide prevention efforts going forward?

Answer. I do not have DAF-internal information regarding these two suspected suicides. If confirmed, I pledge to review the facts related to these cases and assess how the findings can be applied to future suicide prevention efforts.

Question. If confirmed, specifically what would you do to maintain a strong focus on preventing suicides in the Active Air Force and Space Force, in the Reserve Components, and in Air Force and Space Force families across all Components?

Answer. At this point, I am not aware of the full suite of suicide prevention resources available to DAF personnel and their families. If confirmed, I will work with DAF leaders to review those and identify opportunities to strengthen them as needed, specifically for those in career fields and/or assigned to locations with higher

rates of attempted and/or reported suicides. If confirmed, I will work with DAF leaders to ensure commanders and supervisors are knowledgeable of the knowledgeable of the support resources, including mental health and behavioral health resources, available to them and their personnel, and other critical resources to potentially identify self-harming behaviors.

Question. If confirmed, specifically what would you do to enhance the reporting and tracking of suicide among family members and dependents of airmen and members of the Space Force across all Components?

Answer. If confirmed, I will do everything I can to eliminate suicide within the Department of the Air Force. I do not yet have data on DAF-internal methods to report and track suicides among family members and dependents of Airmen and Guardians across all components. If confirmed, I would work with DAF and DOD leaders as well as other outside experts to identify ways we may be able to improve the reporting, tracking, and information sharing of such data to help identify Airmen and Guardians that may benefit from proactive suicide prevention support.

Mental and Behavioral Health Care

Question. If confirmed, what actions would you take to ensure that sufficient mental and behavioral health resources are available to airmen and guardians in an operational theater, as well as to they and their families at home station locations?

Answer. I have not seen DAF-internal data to fully understand the demand for mental health resources and the DAF's ability to meet that demand. If confirmed, I would work to understand the severity of that deficit and work with the Office of the Assistant Secretary of Defense for Health Affairs to address the needs of those assigned in an operational theater, as well as the needs of their family members abroad and at home station. If confirmed, I would specifically look at how expanding telehealth and telepsychiatry services may help to meet demands across the force.

Question. If confirmed, what specifically would you do to ensure that sufficient mental and behavioral health resources are available to Reserve Component airmen and their families who do not reside near a military installation?

Answer. I have not seen DAF-internal data to fully understand the demand for mental health and behavioral health resources from our Reserve Component, nor the DAF's ability to meet that demand. If confirmed, I would work to understand the challenges associated with providing mental and behavioral care based on the individual's activation status. My priority would be to ensure the service member receives the appropriate care and does not face bureaucratic hurdles that deter him/her for seeking the care they need. If confirmed, I would specifically look at how expanding telehealth and telepsychiatry services may help to meet mental health and behavioral health demands across the Reserve Component.

Question. Although the Department has made great strides in reducing the stigma associated with help-seeking behaviors, many service members remain concerned that their military careers will be adversely affected should their chain of command become aware that they are seeking mental or behavioral health care. At the same time, the military chain of command has a legitimate need to be aware of physical and mental health conditions that may affect the readiness of the service members under their command.

Regarding the provision of mental and behavioral health care, how does the Air Force bridge the gap between an airman or guardian's desire for confidentiality and the chain of command's legitimate need to know about matters that may affect the readiness of the airman, guardian, and the unit?

Answer. I am not familiar with DAF-internal protocols governing an Airman or Guardian's desire for confidentiality and when his/her chain of command should be notified regarding matters that may affect readiness. If confirmed, I would work with DAF leaders to understand current protocols, understand how well they are working, as well as where they may be opportunities to improve the protocols so as to encourage Airmen and Guardians to seek the mental health and behavioral health care they may need.

Question. In your view, do non-medical counseling services provided by DOD Military Family Life Counselors have a role in promoting the readiness of airmen, guardians, and their families? Please explain your answer.

Answer. I am not familiar with current DAF processes used to determine when it is appropriate to utilize a DOD Military Family Life Counselor versus medical counseling services. If confirmed, I would work with DAF leaders to understand how that determination is made, the current scope of work performed by DOD Military Family Life Counselors, and how best to utilize DOD Military Family Life Counselors moving forward.

SEXUAL ASSAULT PREVENTION AND RESPONSE

Question. In your view, how adequate and effective are the policies, programs, and training been that the Air Force has put in place to prevent and respond to sexual assault?

Answer. Not adequate and effective enough. Though my understanding is that the Air Force has attempted to leverage best practices, simply put the policies, programs, and training by themselves have not been sufficient to achieve the goal of dramatically reducing and eliminating sexual assault. The public reports indicate prevalence of sexual assault within the DAF that requires immediate attention, as the existing situation threatens Air Force and Space Force readiness. Despite years of investment into training and prevention programs, there does not appear to be the decrease in instances of sexual assault that we need to see. I understand the Independent Review Commission will release its findings and recommendations shortly, and if confirmed, I will work with OSD and Air Force and Space Force leaders to best implement directed and necessary changes within the DAF and to comply with any statutory changes that are implemented.

Question. If confirmed, specifically what would you do to increase focus on the prevention of sexual assaults?

Answer. While encouraging victims to report and hold perpetrators accountable are of great importance, I believe that as much attention or even more should be paid to prevention. These crimes are particularly onerous when they take place in the DAF or any military institution where teamwork and a safe supportive climate for all members of the team are essential to mission success. I have not been briefed on DAF-internal deliberations focused on the prevention of sexual assaults. If confirmed, I would want to hear from DAF leaders about preventative approaches in development, as well as approaches they decided not to pursue and why. In my mind, prevention and accountability go hand in hand. Accountability is an important part of prevention, but it is not by itself enough. Individuals may not be deterred from engaging in sexual assault if they believe they will not be held accountable. If confirmed, I will work with DAF leaders to ensure we are equally focused on preventing sexual assaults and holding accountable those who engage in this unlawful behavior. I understand the Independent Review Commission will release its findings and recommendations shortly. If confirmed, I would work with OSD and Air Force and Space Force leaders to best implement changes within the DAF.

Question. What is your assessment of the potential impact, if any, of proposals to remove from military commanders case disposition authority over felony violations of the Uniform Code of Military Justice, including sexual assaults?

Answer. I have not participated in recent DOD or DAF-internal discussions to understand the potential impacts of such proposals, so it would be premature for me to provide an assessment. However, if confirmed, the prevention of sexual assault and sexual harassment will be a top priority, and I am committed to exploring all promising ideas to address these challenges to our ability to recruit and retain top talent. While I am open to an alternative criminal process from the current one, if confirmed, I would want to ensure that commanders are not relieved of their responsibility for everything that happens in their units and for creating a positive command climate in which every member of the organization feels respected and safe.

Question. What is your assessment of the Air Force's implementation of protections against retaliation—most notably social ostracism and reputation damage—for reporting sexual assault?

Answer. I have not seen DAF-internal data regarding the assessed prevalence or reported instances of retaliation against those who reported sexual assault, so it would be premature for me to provide an assessment here. If confirmed, I will work with DAF leaders to ensure our processes and policies to prevent and address sexual assault prioritize confidentiality and the victim's privacy so as to not inadvertently re-victimize the victim. Moreover, I would work with DAF leaders to ensure the DAF has a culture and a command climate in which everyone understands that retaliating against victims, or those who reported the assault, in any way is against the Air Force Core Values and will not be tolerated.

Question. In your view, do military and civilian leaders in the Department of the Air Force have the training, authorities, and resources needed to hold subordinate commanders and supervisors accountable for the prevention of and response to, sexual assault and retaliation? Q210. If not, what additional training, authorities, or resources do you believe are needed, and why?

Answer. I do not currently have access to the DAF-internal suite of training and resources available to military and civilian leaders to help them understand the scope of their authorities and available resources to both prevent sexual assault and address potential instances of retaliation for those who report. Therefore, it would

be premature for me to provide a view here. I understand the Independent Review Commission will release its findings and recommendations shortly, some of which may address training, resources, and authorities. If confirmed, I would work with OSD and Air Force and Space Force leaders to best implement those changes within the DAF and to ensure that training, authorities and resources are adequate.

SEXUAL HARASSMENT

Question. What is your assessment of the effectiveness of the military sexual harassment prevention and response programs of the Air Force?

Answer. The public reports indicate the DAF is not making the improvements needed to dramatically reduce and eliminate sexual harassment, and this poses a threat to Air Force and Space Force readiness. Despite years of investment into training and prevention programs, there does not appear to be an appreciable decrease in instances of sexual assault and harassment. I understand the Independent Review Commission will release its findings and recommendations shortly, and if confirmed, I will work with OSD and Air Force and Space Force leaders to best implement changes within the DAF.

Question. In your view, do methods for tracking the submission and monitoring the resolution of informal complaints from airmen or guardians of harassment or discrimination provide DOD and Air Force and Space Force leaders, supervisors, and managers an accurate picture of the systemic prevalence of these adverse behaviors in the force?

Answer. I do not have data on how well the process for tracking the submissions and monitoring the resolutions of informal complaints works in practice. However, I believe critical to ensuring these methods are as effective as possible is to ensure Airmen and Guardians trust the process' outcomes, in the form of prevention and/or accountability measures. Increased trust in the process is ultimately what most helps to close the gap between what is reported and the prevalence of those behaviors. If confirmed, I would work with DAF leaders to identify ways to strengthen confidence in the reporting process to help Airmen and Guardians see the value in reporting.

Question. If confirmed, what actions will you take to improve the quality of investigations into allegations from airmen or guardians of sexual harassment?

Answer. I have not seen DAF-internal data to suggest there is a deficiency in the quality of investigations conducted once allegations are made. However, if confirmed, I will review the current investigative process and take appropriate steps to ensure all Airmen and Guardians receive a thorough and fair investigation into allegations of sexual harassment.

Question. Does the Department of the Air Force's (including the Space Force) method for recording the outcomes of informal complaints of harassment or discrimination from airmen or guardians provide DOD leaders, supervisors, and managers with a means of identifying repeat perpetrators in the military?

Answer. I am not familiar with how DAF records these outcomes. However, if confirmed, I would work with DAF leaders to identify how we might further improve information sharing to ensure we have as complete a picture of potential repeat perpetrators as possible.

Question. In responding to the 2018 DOD Civilian Employee Workplace and Gender Relations survey, 17.7 percent of female and 5.8 percent of male DOD civilian employees indicated that they had experienced sexual harassment and/or gender discrimination by "someone at work" in the 12 months prior to completing the survey.

What is your assessment of the current climate in the Air Force and Space Force civilian workforce regarding sexual harassment, gender discrimination, and other harassment?

Answer. I have not seen current DAF-internal survey responses; however, if confirmed, you have my commitment that preventing such harassment and gender discrimination from occurring and holding individuals accountable when they engage in such behavior will be a top priority. This is fundamentally a leadership issue, and we must aggressively tackle these issues that threaten readiness and degrade our ability to retain top talent.

Question. If confirmed, what actions would you take were you to receive or become aware of a complaint of sexual harassment, discrimination, or other harassment from a civilian Air Force or Space Force employee?

Answer. I would immediately notify the appropriate Human Resources and Equal Employment Opportunity offices. I would take complaints of this nature very seriously, enforce appropriate accountability at all levels, leverage opportunities to train

and educate leaders and the staff, and reiterate my stance that this kind of behavior has no place in the workplace.

Question. Does the Air Force's method for responding to complaints of harassment or discrimination in the civilian workforce provide appropriate care and services for victims?

Answer. I do not have data on DAF-internal methods of responding to such complaints nor the current process by which care and services are provided to victims. If confirmed, I would work with DAF leaders to ensure victims, military or civilian, are fully aware of their legal rights, avenues for reporting, and services and care to which they are entitled and to make certain that those actions are appropriate and professional.

EXTREMISM

Question. What is your view of the prevalence and effect of extremism in the Air Force?

Answer. As a former Army officer, I know that extremism threatens good order and discipline in the ranks and degrades unit cohesion; however, I also believe that the vast majority of Airmen and Guardians serve honorably and continue to uphold their sworn oath to support and defend the Constitution of the United States. Recent events have shown however that some active duty members and veterans are susceptible to extremist ideology, from various perspectives. If confirmed, I will work with DAF and OSD leaders to ensure we have processes and policies in place to identify and address extremist behavior within the ranks, while also protecting the rights of our service members.

Question. In your view, what beliefs and actions should constitute "extremism?"

Answer. I understand that the Department of Defense is continuing to review and refine its definition of "extremism" and unacceptable conduct in order to provide the clearest guidance possible to our service members and their leaders. In my view, any belief that advocates violence against the government or violence as a political tool should not be acceptable. America values and protects freedom of thought and belief and an open public debate about conflicting ideas. Extremism is very much in the eyes of the beholder and my view is that the military, including the DAF, needs to carefully balance the need to reduce or eliminate extremist ideology from the military with the need to also respect the freedom of thought and expression that are core American values. Establishing standards of behavior and conduct for various purposes that correctly balances these interests is not a simple task. If confirmed, I would work with DAF leaders and others to ensure all Airmen and Guardians are able to serve to their full potential, and free from the threat of actions meant to denigrate, illegally discriminate, or otherwise deprive service members of their civil rights. If confirmed, I will continue close coordination and participation with the DOD in this endeavor.

Question. In light of ongoing efforts to combat extremism, what are your views on the current DOD policy that states, "A Service member's right of expression should be preserved to the maximum extent possible?"

Answer. I agree with this policy, but all freedoms have limitations. As a former Army officer, I know that leaders do not stop being leaders once they leave the unit. Their off-duty words and actions continue to set the tone for an organization as much as their words and actions on duty. While I agree that the right of expression for service members should be preserved to the maximum extent possible, service members should also be held to accountable standards when their speech or expression threatens good order and discipline or our national security.

Question. If confirmed, what actions would you take to eliminate extremism within the Air Force?

Answer. If confirmed, I will ensure that the Department of the Air Force continues to support the comprehensive DOD review to combat and eliminate extremism. Once the report and its findings and recommendations are finalized, if confirmed, I will work with Air Force and Space Force leaders to develop clear action plans to implement the necessary changes. My expectation is that the DOD and the DAF will both go through a period of adjustment as we learn from our experience and try to get the balance between freedom of belief or speech and good order and discipline right. At the end of the day one cannot regulate thought, but one can regulate conduct. The problem in this area will be defining pragmatic and effective standards of conduct and correlating them to decisions about a person's fitness to serve or to hold positions of leadership, increased responsibility, and trust. It is not a crime to hold extremist views, but extremist views are not compatible with military service or being a member of a close knit military organization.

DOMESTIC AND CHILD ABUSE IN MILITARY FAMILIES

Question. Recent press reports indicate that the number of incidents of domestic and child abuse in military families has increased. What is your understanding of the extent of this issue in the Air Force, and if confirmed, what actions would you take to address it?

Answer. The abuse of children is reprehensible. It is especially reprehensible in a military family. If confirmed, I will be committed to ensuring Air Force and Space Force families have the support and protections they deserve. Child abuse and domestic abuse have no place in our military, and if confirmed, I would work with the Family Advocacy Program and DAF leaders to understand what may be causing the spike, and how best to screen for, report, and address such abuses. As in other areas of misconduct, prevention should receive equal or greater attention than accountability and punishment. If confirmed I will do everything I can to eliminate abuse in military families.

Question. Do you believe that the Air Force Family Advocacy Program strikes the right balance between healing families and holding individuals accountable for acts of domestic violence and child abuse?

Answer. I do not have sufficient information to address this question. If confirmed, I would work with DAF leadership, the Family Advocacy Program, and the Judge Advocate General to understand if we are doing all that we can in both areas and to identify additional steps we can take to better serve and protect service members, and their children and families.

U.S. AIR FORCE ACADEMY

Question. What is your assessment of the diversity of cadets at the Air Force Academy?

Answer. Although I have not had an opportunity to fully assess diversity at the Academy, I am committed to ensuring our Air Force and Space Force have talent as diverse as the country itself. I understand that over the last 10 years, the Air Force Academy has consistently increased the diversity of the Cadet Wing, though areas of improvement remain. I understand that the class of 2024 is the most diverse class in Air Force Academy history (women comprise 29 percent, while students of color comprise 31 percent). Despite these improvements, the Air Force must continue to devote significant focus and resources on recruiting diverse talent into the Air Force Academy as the DAF competes with the other services and the private sector for talent. If confirmed, I would work with USAFA leaders to support targeted outreach and recruiting events, field Second Lieutenant recruiters focused on diverse populations, and support the Air Force Preparatory School, which provides significant diversity to the Air Force Academy Cadet Wing. Additionally, I would work with Members of Congress, particularly those who represent diverse constituents, to ensure they have the resources to nominate competitive diverse students.

Question. What particular demographic does the Air Force Academy struggle to recruit most?

Answer. It is my understanding that recruiting within the American Indian/Alaska Native communities continues to be a challenge for the Air Force Academy. While USAFA tracks with other institutions across higher education, this demographic is the most under-represented of all racial and ethnic groups. If confirmed, I am committed to improve overall representation with deliberate, targeted recruiting efforts.

Question. What is your assessment of the efficacy of the policies and processes in place at the Air Force Academy to prevent sexual assault and sexual harassment, and to ensure that cadets who do report assault or harassment are not subject to retaliation—social ostracism and reputation damage—in particular?

Answer. Although I have not had a chance to review those policies and processes, to be clear: any instance of sexual assault or sexual harassment is a failure of the good order and discipline we expect, and achieving our goals to eliminate these behaviors not only requires policies and processes but also changes in climate and culture. If confirmed, I commit to work with USAFA leaders to ensure our processes and policies to prevent and address sexual assault and sexual harassment prioritize confidentiality and the victim's privacy so as to not inadvertently re-victimize the victim. Moreover, I would work with leaders of the Air and Space Forces and with USAFA leaders to create a culture that understands retaliating against victims in any way is against the Air Force Core Values and will not be tolerated.

Question. Do you believe the current 5-year minimum Active Duty service commitment for Military Service Academy graduates is sufficient return on investment for the U.S. military and the American taxpayer?

Answer. I have not had a chance to assess the tradeoff between different commitments and recruiting and retention at the USAFA. As a West Point graduate, I understand the immense investment that American taxpayers make into our service academies and the future leaders they educate. Overall, I think that return is well worth the investment based on the actual retention beyond the 5-year minimum. I would be concerned about the impact on recruiting a longer commitment might have. A 5-year Active Duty service commitment helps the Department manage the force and facilitates retention in mission critical career fields, which strengthens Air Force and Space Force readiness and lethality but the commitment for academy graduates has evolved over time and this isn't the only potential policy. If confirmed, I am open to understanding the potential benefits and costs of different lengths and types of Active Duty service commitments for USAFA graduates.

Question. In your view, do the Military Service Academies contribute to the pool of military officer accessions commensurate with their attendant costs? Q229. Why or why not?

Answer. Yes, but admittedly as a West Point graduate I am hardly objective about this. The USAFA plays an invaluable role in educating, training, and developing leaders to serve in our Air Force and Space Force. My understanding is that the USAFA provides a high percentage of Air Force and Space Force officers. About 90 percent of Air Force Academy graduates annually serve in Air Force operations or operations support career fields. Of those, over half enter the pilot pipeline, and the remaining 10 percent commission directly to the Space Force primarily as space operators. I value all of our commissioning sources and the combination of the various sources significantly enhances our officer corps.

Question. Given the provisions of title 10, U.S. Code, applicable to each of the Military Service Academies, under what conditions would you deem it appropriate, if confirmed, to permit an Air Force officer to play professional sports prior to completing at least two consecutive years of commissioned service following graduation from the Air Force Academy?

Answer. I do not have a strong opinion on this topic. I have not assessed this situation for the USAFA, but as another service academy graduate I have thought about it. The USAFA sports programs are a critical recruiting tool for the academies and for the Air Force and Space Force more broadly. They help to broaden the Services' exposure to populations and demographics that are under-represented in the services. The benefits to the DAF and overall strength of these programs may increase if USAFA graduates were provided additional media exposure through participation in professional sports soon after graduation. The prospect of playing professionally sooner would certainly help the academy recruit more capable athletes, and I have a lot of classmates from West Point who would support this. On the other hand, that is not what we have military academies for; they exist to prepare officers for service to the Nation. Anyone attending, and getting the costly taxpayer provided benefits of an academy education, should do so with that intent. Athletes at the academies truly represent their schools and should not be in a separate category from other cadets. In my opinion that shared academy experience should include the same or a similar commitment to service as their classmates. If confirmed, I am open to understanding the potential benefits and costs of allowing a limited number of Air Force and Space Force officers to play professional sports prior to completing at least two consecutive years of commissioned service following graduation from USAFA, but I am not convinced that this is a net benefit to the academy or to the Nation.

GENERAL/FLAG OFFICER REDUCTIONS

Question. The Fiscal Year 2017 NDAA reduced the number of General/Flag Officers by about 12 percent.

What progress has been made in reducing the number of Air Force General Officers (GO) and restructuring the Air Force General Officer grade pyramid?

Answer. I have not had the opportunity to assess this situation, but I understand that the Department is on track to meet the mandated reduction in general officers. If confirmed, I will continue to implement the guidance laid out in the Fiscal Year 2017 NDAA and work to ensure we have the right number of GOs, along with the appropriate grade pyramid within both the Air Force and Space Force, to lead and execute our missions around the globe.

Question. What is the impact of the establishment of the Space Force on the authorized number of Air Force GO positions?

Answer. I have not had the opportunity to assess this situation, but I understand that most of the Space Force GO positions have been filled within the Air Force GO cap and that the Department of Defense is working to meet Space Force GO re-

quirements within the mandated GO reductions across DOD. If confirmed, I will assess this situation and continue to monitor it closely.

Question. If confirmed, what specific actions would you take to ensure the Air Force is successful in meeting this GO reduction and restructuring mandate?

Answer. I understand that the Department is on track to meet the mandated reduction in GOs. If confirmed, I will monitor the timely implementation of this reduction to meet the required goals and I will assess the adequacy of GO billets in meeting the Air and Space Force mission requirements and restructuring mandate.

Question. Are you satisfied that the Air Force has in place sufficient training and resources to provide its General Officers the training, advice, and assistance they need to “play the ethical midfield”? Please explain your answer.

Answer. We owe it to our Airmen, Guardians, and the American taxpayers to ensure that decisions made on behalf of the Air Force and Space Force are done so solely in the interest of national security and consistent with American values. If confirmed, I would work to ensure our GOs have the training, advice, and assistance to ensure they are upholding the highest ethical standards of conduct.

OFFICER PERSONNEL MANAGEMENT SYSTEM REFORMS

Question. The fiscal year 2019 contained several provisions to modernize the officer personnel management system. These reforms were designed to align officer career management with the priorities outlined in the 2018 NDS.

How is the Air Force implementing these authorities and to what effect?

Answer. I have not had an opportunity to assess the implementation of these authorities. It is my understanding the new authorities granted by the Fiscal Year 2019 NDAA have given the Department of the Air Force more flexibility to better manage the officer corps. I am aware that last year the Air Force stopped using below-the-zone promotions, and the Secretary gave promotion boards the authority to reorder promotion lists based on merit. If confirmed, I intend to assess the impacts of these changes and to continue pursuing implementation of authorities that help the Department manage talent and increase flexibilities for service members and their families.

Question. If confirmed, how would you lead the Air Force in further leveraging these new authorities?

Answer. It is imperative we continue to develop and modernize our talent management tools and processes to build the force we need for great power competition and to recruit and retain top talent. If confirmed, I will work to ensure Air Force and Space Force leaders understand the full extent of these new authorities so they may be best leveraged.

Question. Are there other authorities that the Air Force needs in order to modernize the management of its officer personnel?

Answer. Not that I am currently aware of. If confirmed, I will work with Air Force and Space Force leaders to understand where there may be in gaps in authorities that are affecting the DAF's ability to best modernize the management of its officer personnel. If gaps in authority are identified, I will work with DAF leaders and Congress to identify and scope additional authorities that may be helpful.

Question. Does the Department of the Air Force have any plans to utilize the “Alternative Promotion Authority” contained in sections 649a–619k of title 10, U.S. Code? Q239. If not, why not?

Answer. I am not aware of the Air Force's plans with regard to using these authorities or of the reasons for any decision to date. In general I am a proponent of flexibility in personnel management decisions. If confirmed, I would work with Air Force and Space Force leaders to ensure we use those authorities appropriately.

JOINT OFFICER MANAGEMENT

Question. In your view, do the requirements associated with becoming a Joint Qualified Officer (JQO), and the link between attaining joint qualification and eligibility for promotion to General Officer, continue to be consistent with the operational and professional demands of Air Force and Space Force line officers?

Answer. In my view, the movement toward multi-domain operations only increases the importance of joint perspectives and experience. Fulfilling the Interim National Security Strategy and optimizing the resources and capabilities the Air Force and Space Force bring to bear requires our officers have a strong appreciation for how their sister services operate, and the introduction of the JQO qualification has gone a long way toward developing that operational knowledge. If confirmed, I would work with Air Force and Space Force services, as well as the other service secretaries to ensure the requirements for the JQO qualification continue to best

prepare our officers to operate in a joint environment and prepare them for promotion to General Officer.

Question. What additional modifications, if any, would you recommend to JQO prerequisites necessary to ensure that Air Force and Space Force officers are able to attain both meaningful joint and Service-specific leadership experience, as well as adequate professional development?

Answer. At this point, I do not know enough about the current implementation of this requirement to recommend modifications. However, if confirmed, leadership development will be a top priority of mine. And, as part of that, I would work with Air Force and Space Force services, as well as the other service secretaries to ensure the requirements for the JQO qualification continue to best prepare our officers to operate in a joint environment and prepare them for promotion to general officer.

PROFESSIONAL MILITARY EDUCATION

Question. What changes or reform would you recommend to the professional military education system to ensure that tomorrow's leaders have the tools necessary to ensure the Department is able to meet the national defense objectives of the future?

Answer. The vast majority of Airmen and Guardians have not served during a period of great power competition—against a competitor whose diplomatic, economic, and military capabilities are formidable against our own. It is important that our PME quickly help our Airmen and Guardians understand the history, worldview, and interests of these competitors to ensure our actions—from our planning activities and material investments to our engagements with partners and allies—help us maintain our strategic advantages. I believe this approach helps us accomplish the intent of the Interim National Security Strategy. If confirmed, I will work with Air Force and Space force leaders, as well as the Joint Staff and the Office of the Secretary of Defense, to better incorporate this content into the PME curriculum of our Airmen, Guardians, and civilian workforce.

DEPARTMENT OF THE AIR FORCE CIVILIAN WORKFORCE

Question. How would you describe the current State of the Department of the Air Force (including the Space Force) civilian workforce, including its morale and the Department's ability to successfully recruit and retain top civilian talent?

Answer. I do not have current data on the State of the civilian workforce, but having served as a DOD civilian for many years, I know our civilian workforce makes invaluable contributions—from technical expertise to critical continuity—to our Air Force and Space Force. While I have not seen DAF-internal data regarding the morale of the civilian workforce, I know the relative increase in furloughs and government shutdowns over the last several years have generally strained the DOD civilian workforce, and more so when the private sector is relatively strong. More recently, the COVID pandemic has significantly impacted the workforce. These actions have unfortunately translated into personal financial uncertainty for the civilian workforce at times and significantly disrupted normal operations for the past year. All of this factors into our ability to recruit and retain top civilian talent. If confirmed, I look forward to working with this committee, as well as Air Force and Space Force leaders to ensure our civilian workforce is fully supported and has the training, resources, and leadership to accomplish the Department's mission.

Question. In your judgment, what is the biggest challenge facing the Air Force and Space Force in effectively and efficiently managing their civilian workforce?

Answer. Recruiting and retaining the technical talent needed to be competitive in an increasingly technology dominated and competitive conflict environment. Having served as a DOD civilian for many years and having held a leadership role for the over 150,000 acquisition professionals in the DOD, I am a firm believer in investing in and growing our civilian workforce talent from within. However, I also recognize the value and rate of technological advancements outside of the DAF. Additionally, I recognize that there are at least three generations serving within the DAF civilian workforce at any given time, each with different expectations and time horizons for their employment with the DAF. I see these as opportunities as much as I do challenges, and if confirmed, I would work with Air Force and Space Force leaders to ensure we are right-sizing our incentives and professional growth opportunities, while also thinking creatively about how best to bring in and manage civilian workforce talent to meet mission needs.

Question. How will the Air Force and Space Force sustain requisite capacity and capability during the impending workforce "bath tub"—a descriptor used to illustrate graphically the impending loss of senior civilian workforce expertise due to the

retirement of large numbers of baby boomers and the lack of experienced personnel to fill the resulting vacancies?

Answer. At this point, I have not seen DAF-internal data to understand the scope of these challenges in the Air Force and Space Force. In my previous role we had made good progress at filling this “bathtub” in the acquisition workforce at the time I left government. If confirmed, I look forward to working with Air Force and Space Force leaders to quickly understand: which fields and specialties are expected to be most affected and by when, the depth of the current DAF talent pool to address those potential gaps, and potential options to mitigate expected leadership and expertise gaps.

Question. In your view, do Air Force and Space Force supervisors have adequate authorities to address and remediate employee misconduct and poor duty performance, and ultimately to divest of a civilian employee who fails to meet requisite standards of conduct and performance?

Answer. At this point, I have not seen DAF-internal data surrounding instances of employee misconduct and/or poor duty performance, nor the ways in which current authorities were deemed inadequate to address an employee who failed to meet requisite standards of conduct and performance. In confirmed, I would work with Air Force and Space Force leaders to ensure civilian employees were provided with clear standards of conduct and performance, and that supervisors have the appropriate training and authorities to adequately address misconduct and poor duty performance.

Question. If so, are both civilian and military supervisors adequately trained to exercise such authorities? Q248. If not, what additional authorities or training do Air Force and Space Force supervisors require?

Answer. I do not have sufficient information to answer this question. However, if confirmed, I would work with Air Force and Space Force leaders to understand where additional training may be needed to ensure civilian and military supervisors understand the scope of their authorities and to seek additional authority if needed.

Question. In your view, how can DOD and its Components better utilize telework, while maintaining supervisory and employee accountability for high quality performance and the appropriate use of official time?

Answer. There seems to have been a general increase in the recognition that telework is a viable, even preferred and more productive means of work for many institutions and individuals due to the COVID experience. We should all take advantage of this new knowledge. Regardless of the work setting, supervisors must still set clear expectations regarding project timelines and deliverables. This is key to a successful work environment, whether someone is physically working in the office or is working remotely. My main concern is making sure we have access to the best talent. The pandemic has reshaped workers’ expectations around flexible workplace schedules for a number of reasons (e.g., caregiver responsibilities, childcare accessibility), and I think telework is a critical way to ensure the DAF remains competitive with the private sector. If confirmed, I would work with Air Force and Space Force leaders to ensure telework is used as efficiently and effectively as possible.

Question. Has the Department of the Air Force’s (including the Space Force) experience with the new Defense Performance Management and Appraisal Program (DPMAP) to date evidenced the increased supervisor-employee engagement and meaningful “face-to-face” counseling sessions at the core of the program’s objectives?

Answer. I have not reviewed this program or its effectiveness. Developing leaders is the most important activity taking place within the DAF, and if confirmed, I look forward to working with Air Force and Space Force leaders to ensure the DPMAP is working as intended, quantitatively and qualitatively.

Question. Has the Department of the Air Force’s experience to date with DPMAP’s 3-tiered rating structure resulted in the rationalization of employee ratings, such that a “3” rating of “fully successful” is now the mode? Please explain your answer.

Answer. I do not have the data necessary to answer this question. In general, we do ourselves and our people a disservice if we are not able to differentiate between our top performers and their peers. If confirmed, I look forward to working with Air Force and Space Force leaders to ensure the DPMAP is working as intended, quantitatively and qualitatively.

SENIOR EXECUTIVE SERVICE

Question. Given that competent and caring leadership is one of the most significant factors in shaping a high-performing DOD civilian workforce, if confirmed, what factors and characteristics would be most important to you in selecting candidates for appointment to the Senior Executive Service?

Answer. If confirmed, I will examine the current senior executive recruitment and selection processes and ensure it best supports selecting executives who can lead our workforce as effective professionals and managers. The Department needs executives who demonstrate executive leadership qualities with a consistent professional track record, who possess the needed level of technical expertise, are passionate about serving, and have the ability to persevere, especially in these challenging times.

Question. If confirmed, how would you ensure that SES under your authority are held accountable for both organizational performance and the rigorous performance management of their subordinate employees?

Answer. If confirmed, I will assess current SES performance management policies, ensuring goals and expectations of the Department are clearly communicated. SES members will be held accountable for their performance and that of their subordinate workforce based on meaningful and measurable performance objectives.

Question. Are you satisfied with the subject matter and rigor of SES professional development programs currently available across DOD and in the Air Force and Space Force? Q255. If not, what changes would you make to these programs, if confirmed?

Answer. I do not have recent experience with these programs, but overall, I support and approve of the Department's professional development programs which I understand remain tailored to SES developmental needs. If confirmed, I will review the current program to ensure SES members are developed and equipped to lead in a complex and challenging strategic environment.

CONGRESSIONAL OVERSIGHT

Question. In order to exercise its legislative and oversight responsibilities, it is important that this Committee and other appropriate committees of Congress are able to receive testimony, briefings, reports, records (including documents and electronic communications) and other information from the Department.

Do you agree, without qualification, if confirmed, and on request, to appear and testify before this committee, its subcommittees, and other appropriate committees of Congress? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to provide this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs such witnesses and briefers, briefings, reports, records (including documents and electronic communications), and other information as may be requested of you, and to do so in a timely manner? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to consult with this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs, regarding your basis for any delay or denial in providing testimony, briefings, reports, records—including documents and electronic communications, and other information requested of you? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to keep this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs apprised of new information that materially impacts the accuracy of testimony, briefings, reports, records—including documents and electronic communications, and other information you or your organization previously provided? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, and on request, to provide this committee and its subcommittees with records and other information within their oversight jurisdiction, even absent a formal Committee request? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to respond timely to letters to, and/or inquiries and other requests of you or your organization from individual Senators who are members of this committee? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to ensure that you and other members of your organization protect from retaliation any military member, Federal employee, or contractor employee who testifies before, or communicates with

this committee, its subcommittees, and any other appropriate committee of Congress? Please answer with a simple yes or no.

Answer. Yes.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JACK REED

ACCOUNTABILITY IN ACQUISITION PROGRAMS

1. Senator REED. Mr. Kendall, you were asked in the advance policy questions, "Who should be held accountable for large-scale acquisition failures?" In your answer you said, "The leaders who made the key decisions that caused the failure. Often this individual or individuals have retired or been reassigned before a failure becomes apparent, but that is not a reason for the individual to avoid responsibility." How would we apply that to a situation like an aircraft carrier where the officials who set up the program left government service 10 to 15 years before the full scope of the problems were realized?

Mr. KENDALL. Holding individuals and organizations accountable is partly about motivating people and organizations to do better and partly about learning from experience so that mistakes are not repeated. Problem programs occur for complex reasons and are seldom because of incompetence or malicious motivation. Most of the time unrealistic requirements, overly optimistic assumptions about technical risk, underfunding, and unrealistic schedules, or some combination are at fault. The best point to avert these problems is the decision point at which commitment to design for production is made. The person who makes that decision is the Milestone Decision Authority for Milestone B. I highlighted those individuals and the results of the programs they approved in the reports I published annually as USD(AT&L). Most of the time major problems emerge within three to five years of these decision points. I see no reason why those decision makers could not be compelled to testify about their decisions. In some rare cases the time period could be longer, but these are rare exceptions. Even when that occurs, it is still worthwhile to understand the situation that led to the errors of judgement that put a program on the road to disaster so that history does not repeat itself.

BALANCING THE NEEDS OF OVERSIGHT AND SPEED

2. Senator REED. Mr. Kendall, in your respective positions, you will be responsible for development and accurately estimating costs, as well as oversight of programs. These activities require data and analysis, and take time. The activities also are part of a process, which needs to move faster. How will you balance these competing needs?

Mr. KENDALL. Accurate cost estimation and program oversight remain key to acquiring weapon systems that are on cost, on schedule, and meet performance parameters. At the same time, fielding these weapons systems in an expeditious manner is more important than ever, as we pivot toward acquiring and sustaining technologies to compete with near peer adversaries. If confirmed, I would review the acquisition data available to best balance between cost, schedule, performance, and fielding speed by focusing on ensuring the program strategies are grounded in strong risk identification and management.

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

KC-46

3. Senator SHAHEEN. Mr. Kendall, the KC-46 is the premiere aeromedical evacuation capability in the world. I understand that the KC-46s at Pease Air Force Base should be ready to perform aeromedical and personnel transport missions this summer. Will you commit to integrating the KC-46 platform in the global aeromedical evacuation enterprise?

Mr. KENDALL. If confirmed, I would make it a priority to review the potential role of the KC-46 as part of the global aeromedical evacuation enterprise. I certainly support options to use our assets effectively in aeromedical evacuation operations.

4. Senator SHAHEEN. Mr. Kendall, it is my understanding that the preliminary design review on the KC-46 Remote Vision System (RVS) 2.0 should soon be getting underway, which a critical milestone to assess the progress on the capability's rede-

sign. With the importance of the KC-46 to Air Force, it is imperative that this program have the personal attention of the Secretary of the Air Force. Will you commit to personally reviewing the schedule and plans for the RVS redesign in search of any issues standing in the way of declaring operational capability for non-refueling missions, like cargo, aeromedical, and passenger flights?

Mr. KENDALL. If confirmed, I would commit to personally review the schedule and plans for the KC-46 Remote Vision System redesign, and, through the Service Acquisition Executive, identify any issues standing in the way of declaring operational capability for non-refueling missions.

5. Senator SHAHEEN. Mr. Kendall, will you commit to briefing me on the findings of that review?

Mr. KENDALL. Yes. If confirmed, I would commit to briefing you on the findings of my review of the KC-46 Remote Vision System and any issues standing in the way of declaring operational capability for the KC-46.

HOMESTEAD AIR RESERVE BASE

6. Senator SHAHEEN. Mr. Kendall, I understand there's increasing concern among national environmental organizations with the request being made of the Air Force to allow commercial aviation activity at the Homestead Air Reserve Base located between two national parks, Biscayne Bay and Everglades National Parks. Congress has invested billions of dollars over many years in the restoration and protection of the Everglades ecosystem, including Biscayne Bay. Are you aware of the environmental community concerns connected to the Homestead Air Reserve Base?

Mr. KENDALL. I have not yet had the opportunity to familiarize myself with the specific environmental community concerns related to the Homestead Air Reserve Base but I can commit to doing so if confirmed. If confirmed, I would also commit to ensure we first follow the established process to assess whether any proposed civil flight operations are compatible with the military operations at the base and to conduct the required environmental analysis. If the base is found to be compatible with civil aviation use, I understand that the Air Force would then conduct the required analysis under the National Environmental Policy Act (NEPA) prior to making any decision on any major federal action. This would include public notification prior to any decision.

7. Senator SHAHEEN. Mr. Kendall, how would you factor federal ecosystem restoration priorities into your decision-making on such requests?

Mr. KENDALL. If confirmed, I would consider the generally accepted basic restoration principles which focus on ecosystem health, integrity, sustainability, and addressing disturbance to environmental conditions as factors affecting federal ecosystem restoration priorities.

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

AIR FORCE STRATEGY

8. Senator HIRONO. Mr. Kendall, if confirmed, you will play a large part in the Air Force's modernization decisions over the next several years, as well as important decisions affecting the contours of how the new Space Force will support our national defense strategy. In February, General Charles Brown, the Air Force Chief of Staff, launched a study into the service's future fighter jet force mix. With significant cost overruns already in the F-35 program, what are your thoughts on this issue?

Mr. KENDALL. The Air Force has to get this right if the United States is to continue to have strategic and conventional deterrence and the warfighting dominance required to support the National Security and Defense Strategies. I understand the Air Force has recently analyzed various war-game scenarios and developed alternative plans to achieve the optimum mix of 4th-generation, 5th-generation, and NGAD aircraft. If confirmed, I would review this analysis, and other existing analysis and alternative plans for both the Space Force and the Air Force. If confirmed, I would conduct additional analysis as needed to formulate my final decisions on how to work within budget constraints to appropriately balance near- and long-term risks.

9. Senator HIRONO. Mr. Kendall, what are some of the things you plan to consider as the Air Force makes competing decisions on its future fighter force?

Mr. KENDALL. My understanding is the Air Force is conducting a tactical air study that will inform critical decisions about its future fighter force mix. If confirmed, I would evaluate the findings of this study and other Air Force efforts and plans to field a fighter force that is combat mission ready and conduct additional analysis as needed to support making any adjustments necessary to meet the objectives of the National Defense Strategy. My primary consideration would be ensuring the Air Force fields a fighter force structure that adequately meets the threats posed by China and Russia. I would seek to ensure the Air Force can achieve air superiority and dominance over peer adversaries, as well as the capacity to meet world-wide demands in the 2030s and beyond.

10. Senator HIRONO. Mr. Kendall, what are your views on a pending plan to add a Reserve component to the Space Force?

Mr. KENDALL. As noted in my Advance Policy Questions, I see significant value integrating the reserve component into the Space Force. If confirmed, I will work with DAF leaders to review Space Force requirements and to evaluate how a reserve component can best satisfy Space Force needs, especially in wartime or an emergency.

PROTECTING NON-MILITARY SPACE ASSETS

11. Senator HIRONO. Mr. Kendall, we know that space-based capabilities will be an indispensable component of U.S. power, both military and non-military—they will also be vital to our Nation's security, prosperity, and scientific achievement. As many satellites are put into space for non-military purposes, like GPS [global positioning system] and communications, what do you envision the role of the Space Force in protecting commercial assets and non-military satellites from attacks?

Mr. KENDALL. The role of the Space Force is to organize, train and equip space forces to protect United States interests in space, which includes ensuring space remains secure, stable and accessible for our civil, commercial, and national security space needs. If ordered to do so by national leadership, Space Force units must have the ability to protect and defend vital space capabilities, which can include commercial and non-military space capabilities.

12. Senator HIRONO. Mr. Kendall, as China continues to integrate advanced space and counterspace systems into its military arsenal, how can the Space Force work with our allies to combat malign activity in space?

Mr. KENDALL. If confirmed, I would pursue ways to strengthen international space partnerships to address the growing Chinese and Russian threat, and work with those partners to better understand how our space posture contributes to deterrence in all domains. I will continue to build upon existing and new allied and partner capabilities to identify complementary or collaborative capability areas to ensure our collective competitive advantage in the space domain. For example, through the Space Force, if confirmed, I would support ongoing NATO efforts to further integrate space capabilities and knowledge into that alliance.

13. Senator HIRONO. Mr. Kendall, should the United States work toward entering into international agreements regarding appropriate activities in space?

Mr. KENDALL. To build a secure, stable, and accessible space domain that underpins our collective security, we must model and encourage responsible behavior relating to space. I fully support the Interim National Security Strategic Guidance, issued by President Biden in March 2021, which affirms that the United States will lead in promoting shared norms of responsible behavior in outer space.

QUESTIONS SUBMITTED BY SENATOR ELIZABETH WARREN

F-35 AND F-15EX FIELDING

14. Senator WARREN. Mr. Kendall, Dr. Will Roper, former Assistant Secretary of the Air Force for Acquisition, Technology and Logistics, recommended last year a reduction in the projected number of F-35A aircraft from 1763 to 800. Dr. Roper supported a plan to increase the investment in the Next Generation Air Dominance (NGAD) 6th generation fighter aircraft.¹ Do you support this recommendation?

¹ CNN, "Senior Trump Air Force official suggested dramatically slashing F-35 jet numbers," Oren Lieberman, May 15, 2021," <https://www.cnn.com/2021/05/15/politics/f-35-jet-air-force/index.html>

Mr. KENDALL. I am aware of these recommendations; however, I have not reviewed the basis for those recommendations. I would need to know more about these programs, especially NGAD, in order to make any assessments regarding future investments. If confirmed, I would examine the Air Force analysis from various war-game scenarios and alternative plans to achieve the optimum mix of 4th-generation, 5th-generation and NGAD aircraft, appropriately balancing near and long term risks.

15. Senator WARREN. Mr. Kendall, if so, what impact would this process have on the present and projected recapitalization and basing plan of the aging F-15C, F-16, and A-10 fighter aircraft, as well as the projected purchase and fielding number of both the F-35 and F-15EX throughout the Air Force, and specifically the Air National Guard?

Mr. KENDALL. I do not have the information needed to respond to this question at this time. If confirmed, I would review the Air Force's plan to manage its fighter inventory, including Air National Guard inventory, and including recapitalization and basing plans for older aircraft as a high priority.

ADAPTIVE ENGINE TRANSITION PROGRAM

16. Senator WARREN. Mr. Kendall, the Adaptive Engine Transition Program (AETP) is a technology maturation, risk reduction prototyping effort to design, fabricate, and test flight-weight Adaptive Cycle Engines (ACE) in preparation for next-generation propulsion requirements.² Adaptive engines provide a transformational improvement in propulsion capability, including up to 20 percent thrust increase, 25 percent improvement in fuel efficiency, and step-change in thermal management capacity over current fighter engines in service today.³ Unfortunately, the Adaptive Cycle Engine program is reaching its conclusion without a clear transition to a program of record. Failing to capitalize on this revolutionary leap in capability, missing the opportunity to diversify and strengthen the U.S. advanced fighter engine industrial base, and avoiding the injection of competition into the F-35 platform opens the door to our adversaries matching our fielded capabilities. Should the Air Force integrate this capability into the F-35 roadmap?

Mr. KENDALL. I am aware of the Adaptive Engine Transition Program (AETP). I sponsored the program as USD(AT&L) as part of the Air Dominance Initiative. However, my knowledge is four years out of date on the status of the program. I would need to learn more details about the current state of the program and the Air Force's plans before I could make such an assessment about future integration. If confirmed, I would look into the program as a high priority.

17. Senator WARREN. Mr. Kendall, should the Air Force capitalize on the significant taxpayer investment that has been made to this point and transition this capability to our warfighter? If yes, please detail the next steps including timing for these actions.

Mr. KENDALL. I am aware of the Adaptive Engine Transition Program (AETP); however, my knowledge of the status of AETP is four years out of date. I would need to learn more details about the current state of the program and the Air Force's current plans before I could make such an assessment about future transition and timing. If confirmed, I would look into the program as a high priority.

ETHICS

18. Senator WARREN. Mr. Kendall, I have long been concerned with the influence of money in politics and the cozy relationship between powerful special interests, corporations, and lawmakers and government officials—including the relationship between defense contractors and the Pentagon. In 2018, I introduced the Anti-corruption and Public Integrity Act, legislation to strengthen Federal laws governing conflicts of interest, recusals, and the revolving door between government and industry. In May 2019, I introduced a companion bill focused on the Defense Department, the Department of Defense Ethics and Anti-corruption Act. If enacted, the following requirements would apply to all senior DOD officials: (1) Four-year cooling off period for all senior DOD officials before they can seek compensation from a

²GE Aviation, "Testing on GE's First XA100 Adaptive Cycle Engine Concludes, Proves Out Transformational Capabilities," May 13, 2021, <https://www.geaviation.com/press-release/military-engines/testing-ge-first-xa100-adaptive-cycle-engine-concludes-proves-out>

³Defense News, "Pratt, GE Battle for Future of Military Engines," Jen Judson, Lara Seligman, October 10, 2015, <https://www.defensenews.com/air/2015/10/10/pratt-ge-battle-for-future-of-military-engines/>

DOD contractor; (2) Extension of the existing prohibition on retired general and flag officers from lobbying DOD to 4 years; (3) Heightened recusal standard for DOD employees that would prohibit them from participating in any matter that affects the financial interests of their former employer for 4 years; and (4) A ban on senior DOD officials owning any stock in a major defense contractor and a ban on all DOD employees from owning any stock in contractors if the employee can use their official position to influence the stock's value. (This was adopted in the Fiscal Year 2020 NDAA.)

In response to my request at his hearing, Secretary Lloyd Austin committed to recusing himself from all matter involving Raytheon for the duration of his government service, not seeking a waiver from that recusal, and to not seek compensation from a defense contractor for a period of 4 years post government service. Will you make the same commitments as Secretary Austin?

Mr. KENDALL. I have no financial interests in the Raytheon company. If confirmed, I will comply with the requirements set forth in my Ethics Agreement to terminate my outside positions with and divest my financial interests in defense contractors. I have dedicated my career to serving and protecting our country. I will always seek to serve the good of our country and the good of the men and women in uniform. I have made extensive ethics commitments as requested by the Office of Government Ethics and documented in a written agreement, which I have signed. My Ethics Agreement and the President's Ethics Pledge will require me, if confirmed and appointed, to recuse myself for a period of two years from participating personally and substantially in any particular matter involving specific parties in which I know that a former employer or client identified in my Ethics Agreement is a party or represents a party, unless I am first authorized to participate by the appropriate ethics official. If confirmed, I agree to extend this term of my Ethics Agreement from two years to four years. I will ensure that I have a robust screening process in place to help implement these recusals. I have no intention to seek a waiver and no expectation that it will be required, but if unanticipated circumstances were to arise, I would consider available alternatives to a waiver before seeking one and would consult very carefully with DOD ethics officials.

I have committed to abide by the extensive post-government employment ethics rules required by Federal law and the Biden Administration, just as I have complied with the applicable ethics rules throughout my 50-year career in public service and private industry. If confirmed, I will carry out the responsibilities of the Secretary of the Air Force honorably and will seek any post-government employment in full compliance with the applicable ethics rules, as I have done during previous transitions from public service to the private sector.

19. Senator WARREN. Mr. Kendall, will you recuse yourselves from matters involving the companies you listed as compensating you for consulting, corporate board services, or other matters on your Office of Government Ethics Form 278 and on post government employment?

Mr. KENDALL. My Ethics Agreement and the President's Ethics Pledge will require me, if confirmed and appointed, to recuse myself for a period of two years from participating personally and substantially in any particular matter involving specific parties in which I know that a former employer or client identified in my Ethics Agreement is a party or represents a party, unless I am first authorized to participate by the appropriate ethics official. If confirmed, I agree to extend this term of my Ethics Agreement from two years to four years. Moreover, I will implement a robust screening arrangement. The screening arrangement does not create any exceptions, waivers, or modifications to my Ethics Agreement, but rather provides guidance to Department personnel to assist in implementation of my ethics requirements. I can pledge to you that I will be mindful of not only the legal requirements that govern my conduct, but also of the need to ensure that the public has no reason to question my impartiality, and I will consult with the Department's ethics officials should such issues arise. I will always place the good of our country and the men and women in uniform above all other interests.

20. Senator WARREN. Mr. Kendall, will you refrain from seeking a waiver on these recusals?

Mr. KENDALL. I have no intention to seek a waiver and no expectation that it will be required, but if unanticipated circumstances were to arise, I would consider available alternatives to a waiver before seeking one and would consult very carefully with Department ethics officials. If I am privileged to be confirmed, I can pledge to you I will be mindful of not only the legal requirements that govern my conduct but also of the appearances to ensure that the public has no reason to question my impartiality and I will consult with Department ethics officials on these

issues and require everyone who serves with me to ensure public service is and will remain a public trust.

21. Senator WARREN. Mr. Kendall, will you not seek compensation from a defense contractor for a period of 4 years post government employment?

Mr. KENDALL. I have promised to abide by the extensive post-government employment ethics rules required by Federal law and the Biden Administration, just as I have complied with the ethics rules throughout my 50-year career in public service and private industry. These statutory and Administration provisions set forth comprehensive restrictions relating to acceptance of compensation from defense contractors, as well as communicating back to the Federal Government on behalf of any future employers and clients. I believe that these existing rules are appropriate and sufficient to protect the public interest. If confirmed, I will carry out the responsibilities of the Secretary of the Air Force honorably, and I will seek any post-government employment in full compliance with the applicable ethics rules, as I have done during previous transitions from public service to the private sector.

QUESTIONS SUBMITTED BY SENATOR JACKY ROSEN

MQ-9

22. Senator ROSEN. Mr. Kendall, the MQ-9 Reaper is critical to supporting our current intelligence, surveillance, and reconnaissance (ISR) requirements. U.S. Central Command (CENTCOM) commander, General Kenneth McKenzie has previously told this committee of the MQ-9 importance and his need for more of them, not fewer. The Air Force today still lacks the ISR capacity to meet combatant commanders' requirements contained in the 2018 National Defense Strategy (NDS). Despite this, the Department has previously proposed cutting this cost-effective platform. If confirmed, what will be the Air Force's plan for the MQ-9?

Mr. KENDALL. If confirmed, I would work with all the combatant commands to support current intelligence, surveillance, and reconnaissance (ISR) requirements while also balancing resources to modernize for future information superiority and ISR capability.

23. Senator ROSEN. Mr. Kendall, given its importance, cost-effectiveness, and the requirement from combatant commanders for more ISR assets, why has the Air Force in the past sought to divest from this platform?

Mr. KENDALL. I do not have the information needed to speak to the reason for prior Air Force divestment recommendations. In general, while many platforms are important, the Department of the Air Force needs to modernize systems that can operate in contested environments. As I noted during my recent nomination hearing, the MQ-9 has been a valuable platform in the War On Terror and I understand there have been some proposals to make it more useful in a contested environment, but I have not had a chance to review those proposals. If confirmed, I would ensure decisions for divestitures are carefully balancing risks now as we modernize for future conflicts.

QUESTIONS SUBMITTED BY SENATOR MARK KELLY

A-10 RE-WING PROGRAM EXECUTION

24. Senator KELLY. Mr. Kendall, Arizona is proudly home to the largest contingent of A-10 aircraft at Davis-Monthan Air Force Base. These aircraft provide the warfighter with unparalleled close air support capability and have proven themselves time and time again. In order to keep the entire fleet of 281 aircraft flying into the 2030s, as I believe is of paramount importance, it is necessary to replace the wings on 108 aircraft that have not been previously re-winged.

Last year, Congress appropriated \$100 million to purchase additional wing sets under the A-10 ATACK re-wing program—a program intended to purchase 112 wing sets, of which I am fully supportive. I believe Congressional intent is clear that this fiscal year 2021 funding should be executed expeditiously. I have been concerned to see comments from Air Force Chief of Staff General Charles Brown during a hearing in the House Appropriations Defense Subcommittee earlier this month and other Air Force products that indicate the Air Force plans on only executing 50 percent of this funding by the end of the fiscal year.

If confirmed, will you commit to rapidly executing the balance of \$100 million in fiscal year 2021 funding by purchasing additional wing sets? This would be a show

of good faith as Congress considers the Fiscal Year 2022 President's Budget request, which I am hopeful will likewise include robust funding to complete re-winging the entire fleet of 281 aircraft.

Mr. KENDALL. If confirmed, I would ensure the Air Force obligates all fiscal year 2021 funds within the three-year timeframe of obligation authority granted by Congress. I would expect that fiscal year 2021 funding will be allocated towards kit buys and also installations, engineering change orders, and other government costs/efforts that are typically required to execute major modification programs of this nature.

VERTICAL INTEGRATION AND ENSURING COMPETITION

25. Senator KELLY. Mr. Kendall, in your prior tour at the Pentagon, you expressed significant competitive concerns about the Lockheed Martin acquisition of Sikorsky, noting that "with size comes power, and the Department's experience with large defense contractors is that they are not hesitant to use this power for corporate advantage."

The Department has another large Lockheed Martin acquisition pending, over which you will have oversight, if confirmed. Lockheed has proposed to acquire the last independent domestic rocket motor vendor, a matter which is currently before the Federal Trade Commission (FTC).

In 2018, the FTC indicated that the acquisition of the second to last rocket motor vendor would produce anticompetitive harms. It would follow from that logic that the loss of the last independent vendor would result in even greater competitive harm.

I am concerned it could result in decreased innovation and higher prices borne by taxpayers by constricting the already limited field of companies capable of competing for U.S. Government missile system contracts. I am also concerned the Department may not be adequately considering the long-term implications of such consolidation.

Please outline the principles by which DOD should review such transactions and assess the potential harm to the industrial base of vertical consolidation.

Mr. KENDALL. While I was USD(AT&L) the DOJ and the FTC issued a memorandum that covers the principles for such a review. The memorandum included broader national security concerns as well as direct anti-competitive effects as factors to be considered in reviewing a potential merger. If confirmed, this is the approach that I would use in making recommendations within DOD.

26. Senator KELLY. Mr. Kendall, do you believe it would be premature for DOD to make a final recommendation on this specific issue before Senate confirmed officials such as service secretaries and acquisition executives are in place?

Mr. KENDALL. I have no reason to believe that the decision should be delayed until additional confirmations take place.

27. Senator KELLY. Mr. Kendall, if confirmed, will you commit to taking a hard look at this specific case and ensuring that the Department weighs the long-term implications of a loss of competitiveness and innovation for our national security and for taxpayers?

Mr. KENDALL. If confirmed, I would ensure mergers and acquisitions, including this specific case, if it has not been resolved, and others of Department of the Air Force interest, are properly assessed for anticompetitive implications or adverse national security implications to ensure the U.S. sustains a healthy defense industrial base.

QUESTIONS SUBMITTED BY SENATOR THOM TILLIS

F-35 JOINT STRIKE FIGHTER

28. Senator TILLIS. Mr. Kendall, Congress has sent clear congressional intent that we would like to see the Department ramp up towards full rate production. More specifically, the Air Force needs to make the investments necessary to ramp F-35 production to 60 on a path to 80 aircraft per year, yet the Air Force continues to disappoint with a limited number of F-35s in the budget request year over year, with mixed messages on its support of the program and continued concerns on modernization and sustainment. I am hearing that the Air Force may be considering reducing their buy to 44 F-35As in the fiscal year 2022 budget, which is extremely concerning to me. This down from 48 jets per year, and despite the Air Force's stated need to procure 72 fighters a year. If confirmed, do I have your commitment to

support the current program of record and full-rate production profile of 60–80 F–35As per year to ensure we can maintain an edge for our fighter force?

Mr. KENDALL. I agree with General Brown's recent statement that the F–35 is a cornerstone of the future fighter force. However, I am also aware that the Air Force is conducting a tactical air study in conjunction with the Office of the Secretary of Defense and that the crucial Block 4 upgrade to the F–35 is experiencing delays. If confirmed, I would commit to the importance of the F–35A as part of a balanced future force that provides the combat capabilities our country needs, but I need to understand the full status of the program and how it fits into overall Air Force plans before committing to a specific production profile. As I stated during my recent nomination hearing, increasing inventory is important to reducing ownership cost per aircraft, but the Air Force must also procure the Block 4 aircraft it needs to deal with advanced threats.

29. Senator TILLIS. Mr. Kendall, I know sustainment costs have been a concern on the F–35 program. It is my understanding that the Joint Program Office (JPO) has recently stated the cost per flight hour of the F–35A is approx. \$33,000 (in fiscal year 2012 dollars), less than F–15EX will be. I also understand that dialog has begun between the Department and industry to explore a longer-term, outcome-based approach to sustainment to assist with ways to drive down sustainment cost on the F–35 program. I would like your commitment, if confirmed, to explore a sustainment summit with the U.S. Government, Lockheed Martin, and Pratt & Whitney to put all options on the table to bring down F–35 sustainment costs. Further, I would like your commitment that the Department will be a willing partner to work with all parties involved to take an enterprise approach to bring these costs down?

Mr. KENDALL. If confirmed, I commit to explore such a summit and to working with my Department of the Navy counterpart, senior military leadership, the Joint Program Office, Allies, and industry partners to assess opportunities for cost reduction across the F–35 enterprise in a way that ensures product support during peace and conflict and meets warfighter needs.

30. Senator TILLIS. Mr. Kendall, as the Air Force is looking to bring down sustainment costs of the F–35A, manpower is a large contributor to those costs. I understand Luke Air Force Base and Hill Air Force Base have successfully demonstrated for over 3 years that they can maintain F–35As with 25 percent fewer maintainers but that Air Combat Command has reduced emphasis on that initiative. However, there are multiple third party studies which recommend a different manpower approach and corroborate the real-world activity in the field. If confirmed, would you commit to an objective look at reshaping the Air Force's approach to maintaining the F–35 to ensure that the Air Force's portion of sustainment costs come down?

Mr. KENDALL. Yes. If confirmed, I commit to working diligently with our maintenance professionals to review options to ensure the most efficient utilization of manpower across all Air Force weapon systems, including the F–35A.

31. Senator TILLIS. Mr. Kendall, as you know, reducing operations and support (O&S) costs will require a team effort (enterprise approach), and I understand the air-vehicle portion has come down 44 percent over the last 5 years and is expected to decline an additional 40 percent over the next 5 years. If confirmed, what will you do to reduce the Air Force's O&S costs?

Mr. KENDALL. If confirmed, I would review the sustainment cost structure for F–35 and plans to reduce costs to determine if additional opportunities are available. I will ensure the Air Force is doing everything it can to explore and evaluate cost-reduction options in collaboration with the F–35 Joint Program Office, and others as appropriate to pursue avenues to reduce all F–35 program costs including procurement, modernization, and sustainment.

32. Senator TILLIS. Mr. Kendall, what will you do to ensure that Pratt & Whitney, as the engine provider, takes action to reduce O&S costs?

Mr. KENDALL. I understand engine issues are a significant challenge to Air Force F–35 readiness today and that the Air Force and Navy are working together with the Joint Program Office to develop a revised concept of operations for engine sustainment. If confirmed, I commit to work with the Joint Program Office, and others as appropriate to continue those and other opportunities to make the F–35 engine more affordable while maximizing F–35 availability for operations and training.

33. Senator TILLIS. Mr. Kendall, will you ensure the Air Force is an active partner with industry to bring down overall costs?

Mr. KENDALL. Yes. If confirmed, I commit to work with the Joint Program Office, our F-35 Partners, and industry to explore opportunities to reduce procurement, modernization, and sustainment costs across the F-35 enterprise. The Air Force will operate the largest fleet of F-35s and must play an active role in managing costs. I will also investigate mechanisms to increase the utilization of competition in the program.

AIR-TO-AIR REFUELING

34. Senator TILLIS. Mr. Kendall, the KC-46A Pegasus aircraft has yet to achieve full rate production and lacks a remote visual system that is fully functional during all light levels. Moreover, a KC-46 carries only 2,000lbs more transferable fuel than a KC-135 and carries 140,000lbs less than a KC-10. In an effort to reduce cost at the risk of mission failure, the Air Force seeks to retire legacy aircraft with fully functional and approved fuel transfer systems; specifically, KC-10s. In your opinion, are cost savings more important than strategic mission success? Put differently, should a legacy platform with proven, capable systems be maintained and utilized over a future system that has yet to meet primary mission requirements?

Mr. KENDALL. Both mission success and cost savings are important to the long-term health of the Air Force. I have not had the opportunity to review the trade-offs in cost, near-term operational risk, and future performance associated with the KC-46 and KC-10 decisions. If confirmed, I would work closely with U.S. Transportation Command and Air Mobility Command to ensure we strike the proper balance between the need to modernize and the need to provide capable air refueling assets on a continuing day-to-day basis.

35. Senator TILLIS. Mr. Kendall, do you support the Air Force's expedited retirement initiative of KC-10s?

Mr. KENDALL. I have not had the opportunity to review this initiative. I generally support the Air Force's efforts to accelerate modernization, which includes retirement of aging systems and fleets but I also support the Air Force's obligation to conduct global refueling operations on a day-to-day basis. If confirmed, I would work closely with U.S. Transportation Command and Air Mobility Command to ensure we properly balance the important tanker missions.

36. Senator TILLIS. Mr. Kendall, how important is it that "warfighters train like they fight" and prepare for future deployments by tanking from platforms that they will encounter overseas and in combat?

Mr. KENDALL. As we learned long ago in Vietnam, aircrew survivability in combat will improve exponentially if we provide them their first 10 combat sorties in a training environment. This concept applies across all elements of Air Force operations, but I am not in a position to assess how important training on specific tankers is to that conclusion. In general, training like we fight is critically important, and my assumption is that this includes training on any tanker platform.

37. Senator TILLIS. Mr. Kendall, last year General Stephen Lyons, Commander, U.S. Transportation Command, testified before this committee that the KC-10 and KC-135 legacy tanker retirements proposed in fiscal year 2021 would "create a capacity bathtub with significant impacts to combatant command daily competition and wartime missions, and negatively impact senior leader decision space for mobilization when confronted with a crisis." Congress prevented some, but not all, of these retirements in the Fiscal Year 2021 National Defense Authorization Act (NDAA). Given that the KC-46 is still not fully operational, and aerial refueling requirements have presumably either increased or remained the same, would you support efforts to increase tanker capacity in order to meet aircrew training and daily combatant command (COCOM) operational requirements?

Mr. KENDALL. In general, yes, and, if confirmed, I commit to reviewing the internal trade-offs that might be required to achieve that goal. If confirmed, I would work closely with U.S. Transportation Command and Air Mobility Command to ensure we properly manage the air refueling mission.

38. Senator TILLIS. Mr. Kendall, I have serious concerns regarding the Air Force's desire to retire a significant number of legacy tankers prior to the KC-46 becoming fully operational. I am particularly concerned by the potential loss of the KC-10, which provides significantly more fuel offload than both the KC-135 and the KC-46. I understand that the KC-10 fleet has many more years left in terms of poten-

tial service life, and am concerned that prematurely retiring such a strategic asset would result in a loss of warfighter capability that cannot be regained for many years to come. Based on your experience and knowledge, please describe the importance of the KC-10 to the Air Force's aerial refueling capability, and the potential impact to missions for Air Force, Navy, and Marine Corps pilots and aircrews if we cut additional KC-10s.

Mr. KENDALL. I have not had the opportunity to review current analysis of the adequacy of the tanker fleet. The tanker fleet is a critical part of the DOD's overall global capabilities. If confirmed, I would ensure that the Air Force strategically weighs decisions to retire aircraft fleets to provide resources that will benefit future warfighter missions. Working with U.S. Transportation Command and Air Mobility Command, I will ensure the Air Force strikes the proper balance between allocating resources toward modernization and mission capabilities for tomorrow and the future.

39. Senator TILLIS. Mr. Kendall, I understand that there have been conversations regarding possible uses for KC-10 aircraft prior to being fully retired and sent to the boneyard. I understand that one option is to provide the aircraft to industry, either through sale or as Government Furnished Equipment, for use in a commercial air refueling program. I understand that the Navy and Marine Corps have been successfully utilizing a commercial air refueling program for the last 20+ years. Do you believe the Air Force should be pursuing a commercial air refueling program to address current and future aerial refueling shortfalls?

Mr. KENDALL. At this time, I am unaware of the industry interest or intentions for the KC-10, but if there is potential residual financial and operational value in the aircraft. If confirmed, I would work with the Navy and Marine Corps to understand their programs and with U.S. Transportation Command and industry to investigate capturing that potential residual financial and operational value in the aircraft.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

ARMED FORCES READINESS

40. Senator SULLIVAN. Mr. Kendall, over several years this Committee has worked tirelessly to restore military readiness—across each of our services—to levels that would enable our success in a conflict. We've had some success, but there is STILL a lot of work to do. If you have not done so already, I recommend that every senior defense leader read T.R. Fehrenbach's "This Kind of War", which provides a cautionary tale of our Nation's failure to adequately fund and train our Armed Forces before the Korean War. The consequences were steep and American servicemembers paid with their lives. If confirmed, each of you—based on your positions—will invariably make decisions that directly or indirectly impact readiness. Accordingly, will you commit—if confirmed—to work with this committee and within the Department to ensure the readiness failures we endured in the Korean War do not happen again?

Mr. KENDALL. Yes. If confirmed, I would do everything in my power to ensure our Air and Space Forces remain the world's most capable and ready. I share General Brown's view that readiness is a complex matter that has to include an understanding of future readiness needs and their impact as well as present needs. I recognize that maintaining a ready combat force is a task without end and that any question of readiness can only be answered relative to an adversary. I look forward to any opportunity to work alongside the committee to enhance the capabilities and readiness of the Department of the Air Force.

STRATEGY DRIVEN BUDGET

41. Senator SULLIVAN. Mr. Kendall, the National Defense Strategy Commission report, the two previous Senate-confirmed Secretaries of Defense, and the previous and current Chairman of the Joint Chiefs of Staff have all stated the need for sustained 3 to 5 percent annual real growth to the Defense budget to implement the NDS, increase much-needed readiness, and advance long-overdue modernization. To further emphasize the need for consistent and increased funding, the NDS Commission report stated, "America is very near the point of strategic insolvency, where its 'means' are badly out of alignment with its 'ends.'" This critical situation is negatively compounded by the Biden administration's proposal for a topline that does not keep pace with inflation. With these facts in mind, and understanding your ability

to influence the budget will be limited to future year submissions, will each of you commit to advocating for a strategy-driven budget vice a budget-driven strategy?

Mr. KENDALL. Yes. If confirmed, I would work with the Secretary of Defense to develop a budget that supports the President's strategy, and I would talk candidly about the risks associated with difficult strategy and budget decisions.

GREAT POWER COMPETITION IN THE ARCTIC

42. Senator SULLIVAN. Mr. Kendall, given the National Defense Strategy's focus on great power competition and increased Russia and Chinese activity in the Arctic, would you agree that the Arctic is an emerging front-line for great power competition and rivalry? Please elaborate.

Mr. KENDALL. Yes. I am aware of the Arctic's strategic importance for U.S. national security interests. The U.S. has seen increased activity in the region from Russia and China, and climate change has enabled increased physical access that could lead to greater regional competition. If confirmed, I would work to maintain and improve the Department of the Air Force's ability to support deterrence and any required operations in the region and look for opportunities for collaboration with allies and partners in the region to increase interoperability and maintain Arctic regional awareness.

43. Senator SULLIVAN. Mr. Kendall in your personal opinion, what makes Alaska an important strategic region for the United States, and why would our adversaries want to limit our presence and power projection capabilities in the Arctic region? Please elaborate.

Mr. KENDALL. Alaska's unique location and resources are integral to our ability to project air and space power and to defend the homeland. Alaska serves a critical role in deterrence and defense of the homeland, due to its proximity to adversaries with the potential to launch strategic air and missile attacks against the United States. Alaska also provides unique opportunities for training and supports global power projection by the United States. Adversaries are well aware of the strategic importance of the region and Alaska's strategic importance is only increasing as the Arctic itself becomes more accessible.

44. Senator SULLIVAN. Mr. Kendall, what air and space power capability gaps presently exist that inhibit our ability to effectively project and sustain power in the Arctic and compete with Russia and China in the northern latitudes? Please elaborate.

Mr. KENDALL. The Arctic region is an expansive area with challenging environmental conditions that requires coverage by surface, subsurface, space, and air capabilities in order to monitor and defend our homeland. I agree with the 2020 Department of the Air Force Arctic Strategy's position that "Given the Arctic's vast distances and challenges to surface operations, air and space capabilities have long been essential to gain rapid access and provide all-domain awareness, early warning, satellite command and control, and effective deterrence." If confirmed, I would review the Air and Space Forces' approaches for power projection to identify and address any gaps in capability. If confirmed, I would also work with our NATO Arctic Allies, as well as Finland and Sweden to carefully consider how best to ensure the United States can outpace our adversaries in the region.

AIR FORCE ARCTIC STRATEGY

45. Senator SULLIVAN. Mr. Kendall, the Department of Defense released its Arctic Strategy in June 2019, the Air Force followed suit with its own in July 2020, and the Navy and Army published their respective strategies earlier this year. Through their respective confirmation processes, both the Secretary of Defense and Deputy Secretary of Defense committed to resourcing the service Arctic strategies. If confirmed, can I get your commitment to follow through on those pledges to fully resource the Department of the Air Force's Arctic strategy so that our Nation can successfully defend the Homeland along our northern approaches?

Mr. KENDALL. Yes. If confirmed, I would review the implementation of the 2020 DAF Arctic Strategy, to include potential resourcing requirements for the Air Force and Space Force, then make a determination accordingly.

46. Senator SULLIVAN. Mr. Kendall, since the release of the Department of the Air Force's Arctic strategy last year, the Headquarters and 11th Air Force staffs have moved out on developing a robust implementation plan for execution. To ensure momentum and action continue on this critical effort, can I get your commitment to review the strategy and implementation efforts within 30 days of your confirmation

and then schedule a sit down with me to discuss your views, vision, and way forward for executing the Department of the Air Force's Arctic strategy?

Mr. KENDALL. Yes. If confirmed, I look forward to reviewing the full DAF Arctic Strategy and implementation efforts, and meeting with you to discuss the execution of the DAF Arctic Strategy.

KC-46 BASING

47. Senator SULLIVAN. Mr. Kendall, the previous Senate-confirmed Secretary of Defense Mark Esper acknowledged that collocation of 100 5th-Generation Fighters with KC-46 tankers would provide our Nation with "extreme strategic reach". The commander of U.S. Transportation Command (TRANSCOM), General Stephen Lyons, USA, has stated: "The aerial refueling fleet continues to underpin the Joint Force's ability to deploy an immediate force across all NDS mission areas..." Given Alaska's beddown of F-35s, access to expansive training ranges, and proximity to several high-priority regions, will you commit, as Secretary Lloyd Austin has, to take a personal look at tanker basing in Alaska—specifically as it relates to the KC-46—to ensure our Nation pursues a strategy-driven decision rather than a budget-driven one?

Mr. KENDALL. Yes. Department of the Air Force tanker decisions, including basing actions, should be strategy-driven, budget-informed decisions. If confirmed, I would ensure the tanker bed downs best meet all national priorities.

48. Senator SULLIVAN. Mr. Kendall, in your personal opinion, would you agree with former Secretary of Defense Mark Esper that collocation of 100 5th-Generation Fighters with KC-46 tankers in Alaska would provide extreme strategic reach to the United States? Please elaborate on how that kind of air power could affect our power projection posture, strengthen our alliances, and message to our adversaries.

Mr. KENDALL. The 5th-generation fighter fleet provides strategic advantages across the whole national defense spectrum providing assurance to our allies and deterring potential aggressors. It is important to bed down these assets and their support systems, to include tankers, in the locations that most efficiently and effectively meet combatant command requirements and provide the flexibility for contingency operations. If confirmed, I commit to ensuring force structure is aligned with these priorities.

JOINT PACIFIC ALASKA RANGE COMPLEX MODERNIZATION

49. Senator SULLIVAN. Mr. Kendall, in March of 2020, the Department of the Air Force submitted a report to the congressional defense committees concerning range modernization for the Joint Pacific Alaska Range Complex (JPARC) and the Nevada Test and Training Range (NTTR). The report identified JPARC and NTTR as the only two major training ranges the Air Force would modernize to Threat Matrix Level 4 (e.g. near peer) capability. The report also stated it would complete such modernization efforts by fiscal year 2026. Will you commit to continue prioritizing and accelerating investments so that JPARC and NTTR achieve Threat Matrix Level 4 capability by 2026?

Mr. KENDALL. If confirmed, I would continue efforts to modernize JPARC and NTTR to a Threat Matrix Level 4 capability as rapidly as feasible to facilitate the training needed to support the National Defense Strategy. Air Force readiness is dependent upon superior training opportunities that ensure our Nation can address the potential aggression of near-peers.

50. Senator SULLIVAN. Mr. Kendall, in your opinion, what benefits will the Air Force, joint, ally, and coalition partner forces realize when the Joint Pacific Alaska Range Complex is modernized to Threat Matrix Level 4 capability?

Mr. KENDALL. We know from both experience and experimentation that combat crews increase lethality and reduce attrition when they are able to train against the actual threats they will encounter in combat. Benefits are magnified when the training occurs with joint, ally and coalition partners. Air Force crews will achieve a significant training advantage over their adversaries by replicating a peer adversary at JPARC. This benefit could be the difference between winning and losing a future fight.

51. Senator SULLIVAN. Mr. Kendall, on my most recent trip to visit the Joint Pacific Alaska Range Complex—alongside Admiral John Aquilino—I was briefed on the need for a new Joint Range Operations Center with highly classified capabilities to ensure integration of 4th, 5th, and 6th generation assets with advanced threats.

Will you commit to reviewing this requirement, and—if valid—ensure its submission as part of the President’s Budget or as an unfunded requirement?

Mr. KENDALL. Yes. If confirmed, I would review the requirement, and, if valid, I would ensure it is pursued in the budget or as an unfunded requirement.

F-35 BEDDOWN

52. Senator SULLIVAN. Mr. Kendall, roughly half of the F-35s (25) are on the ground at Eielson Air Force Base, and as of March 2021, the base is projecting an additional 283 inbound military servicemembers with approximately 560 dependents to complete the beddown. The last F-35 is expected to be delivered by March 2022. According to the Air Force, community housing growth is not keeping pace with aircraft delivery and personnel arrival which may negatively impact or delay the beddown. Will you commit to review the housing issue and provide me an update of your assessment within 30 days of being confirmed?

Mr. KENDALL. Yes. If confirmed, I commit to reviewing the housing situation and further ensuring the Air Force partners with the community so they understand the specific housing needs of our members and their families. If confirmed, I would provide you an update within 30 days of being confirmed.

KC-135 BEDDOWN

53. Senator SULLIVAN. Mr. Kendall, the site survey for the KC-135 beddown at Eielson Air Force Base was scheduled to be completed by the end of April 2021. The Environmental Impact Analysis process is expected to be completed with a decision placed on the Secretary of the Air Force’s desk by March 2022. This puts the additional KC-135 operational capability at Eielson Air Force Base into fiscal year 2023. Will you commit to ensuring the environmental impact statement (EIS) process is expedited to the extent possible, to keeping my staff apprised of any new developments, and to follow-up with me when the EIS process is complete?

Mr. KENDALL. Yes. I am aware of this important basing action and commit to timely communications with your staff throughout the process. If confirmed, I would keep your staff apprised of any new developments as we complete the required National Environmental Policy Act (NEPA) actions.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

INFRASTRUCTURE

54. Senator BLACKBURN. Mr. Kendall, if confirmed, what would be your specific priorities for the Air Force’s infrastructure investment strategy—and ultimately for reversing the Service’s maintenance backlog? Please explain.

Mr. KENDALL. I understand the Department of the Air Force’s installations are warfighting platforms essential to accomplish its missions. If confirmed, I would evaluate the strategy, consider how to provide adequate funds to sustain its infrastructure within the overall Department priorities, identify how to invest those funds using targeted and cost effective decision criteria, then evaluate and as feasible expand the use of creative investment and divestment strategies to bring down the maintenance backlog.

55. Senator BLACKBURN. Mr. Kendall, if confirmed, what additional investments—including in personnel—would you prioritize to support the testing needed across the hypersonic spectrum to better compete with Beijing and Moscow?

Mr. KENDALL. If confirmed, I would review the current and planned testing capacity, including personnel, to determine what additional investments might be needed. My priorities would also be shaped by the detailed roadmaps created by the Test Resource Management Center, an organization within the Office of the Secretary of Defense that reported to me when I was USD(AT&L).

56. Senator BLACKBURN. Mr. Kendall, what specific efforts would you undertake to expeditiously stand up the nascent Ground Test Asset Board (GTAB)?

Mr. KENDALL. I have not had the opportunity to review the Ground Test Asset Board’s status or resource requirements. If confirmed, I would make it a priority to do so and would take action to expedite the GTAB standup as appropriate.

UNMANNED AERIAL VEHICLES

57. Senator BLACKBURN. Mr. Kendall, how can we leverage the large, existing fleet of flexible and highly reliable MQ-9 Reaper aircraft in a near-peer fight?

Mr. KENDALL. If confirmed, I would review existing analysis and reporting on how we can leverage the Air Force's fleet of MQ-9s, as well as their potential utilization in non-permissive environments against more sophisticated and complex threats. I am open to funding cost-effective upgrades, such as adding more countermeasures to the aircraft and providing standoff capability, to the MQ-9 to make it more survivable.

58. Senator BLACKBURN. Mr. Kendall, how do you intend to leverage Air Force intelligence, surveillance, and reconnaissance (ISR), to include the rapidly developing Air National Guard Cyber ISR Enterprise in the increasingly critical cyber domain?

Mr. KENDALL. If confirmed, I would ensure the Department of the Air Force assesses the operational need and opportunities to maximize the integration of the rapidly-evolving Air National Guard Cyber and ISR capabilities with the Department's current and future ISR capabilities. My view is that the need for ISR is virtually unlimited, and the Air Force needs to maximize the return on all of its ISR investments, including particularly those in National Guard cyber and ISR capabilities.

59. Senator BLACKBURN. Mr. Kendall, what would be the value of layering redundancy into our MQ-9 Command and Control architecture—specifically, moving MQ-9 command/return links to a commercial low-earth-orbit constellation? Please explain.

Mr. KENDALL. If I am confirmed as Secretary of the Air Force, I would work to achieve operationally-resilient redundancy wherever it is cost-effective and operationally-important. As part of this process, I would consider any viable options to provide layered redundancy for the MQ-9 command and control architecture.

60. Senator BLACKBURN. Mr. Kendall, can I have your commitment that the Air Force will take a hard look at employing this unique capability to ensure that our unmanned fleet is postured to meet a peer adversary?

Mr. KENDALL. Yes. If confirmed, I would review the Air Force's unmanned fleet to determine its utility and effectiveness against a near-peer adversary in contested environments and seek to identify cost-effective new capabilities and operational concepts for unmanned platforms.

61. Senator BLACKBURN. Mr. Kendall, if confirmed, how would you seek to leverage intelligence, surveillance and reconnaissance—to include the rapidly developing Air National Guard Cyber ISR Enterprise—in the increasingly critical cyber domain?

Mr. KENDALL. If confirmed, I would ensure the Department of the Air Force assesses the operational need and opportunities to maximize the integration of the rapidly-evolving Air National Guard Cyber and ISR capabilities with the Department's current and future ISR capabilities. My view is that the need for ISR is virtually unlimited, and the Air Force needs to maximize the return on all of its ISR investments, including particularly those in National Guard cyber and ISR capabilities.

CULTURE

62. Senator BLACKBURN. Mr. Kendall, if confirmed, how would you address the lack of an indigenous culture in the emerging skill area, of unmanned piloting?

Mr. KENDALL. I have not had an opportunity to review the efforts made to address this cultural issue in the Air Force to date. If confirmed, I would review the programs already in place to assess their effectiveness and direct any needed additional actions.

COST DATA

63. Senator BLACKBURN. Mr. Kendall, which specific opportunities do you identify for improving the completeness of DOD's cost data for weapons system software?

Mr. KENDALL. Accurately estimating and projecting software costs is a perennial issue, both in DOD and in the commercial world. Modern software methods that embrace agile processes and DevOps environments introduce more difficulties to accurate estimating, but also bring significant improvements over historical waterfall development methods and traditional earned-value metrics. I understand that it is still a work in progress, but that there is widespread recognition of the need to have more effective cost estimating and software development management tools that are compatible with modern software development processes. I also understand that the DOD has made some progress in addressing these issues, but I have not had the

opportunity to review that work. I look forward to having the opportunity to do so. In my view it is essential that the DOD and the DAF have effectively planning and progress measurement metrics for software development. If confirmed, I would fully support the effort to achieve that goal.

64. Senator BLACKBURN. Mr. Kendall, what should be DOD's biggest lessons learned from early weapons systems contracts that did not allow for fulsome data collection? Please explain.

Mr. KENDALL. In an age of integrated digital designs DOD should have seamless access to data that it needs from its contractors. The Air Force, under the leadership of Air Force Acquisition Executive William LaPlante actually pioneered the concept of "owning the technical baseline." If confirmed, I would work to ensure that the DAF has access to and takes delivery of whatever data it needs to perform its missions.

65. Senator BLACKBURN. Mr. Kendall, if confirmed, would you seek to implement a plan to execute and monitor the requirement that government organizations—such as DOD software centers—submit cost and software data? Please explain.

Mr. KENDALL. If confirmed, I would work to ensure that the DAF has the tools and processes it needs to accurately and efficiently gather cost and other accountable data, including cost and productivity data from its own software centers. That data is necessary to manage productivity of these organizations and to benchmark them against other sources of similar work. I would also work to ensure that all DAF activities are auditable.

[The nomination reference of The Honorable Frank Kendall III follows:]

NOMINATION REFERENCE AND REPORT

PN484

AS IN EXECUTIVE SESSION,
SENATE OF THE UNITED STATES,
April 28, 2021.

Ordered, That the following nomination be referred to the Committee on Armed Services:

Frank Kendall III, of Massachusetts, to be Secretary of the Air Force, vice Barbara McConnell Barrett.

_____, 2021.
(Date)

Reported by Mr. Reed _____
(Signature)

with the recommendation that the nomination be confirmed.

☐ The nominee has agreed to respond to requests to appear and testify before any duly constituted committee of the Senate.

[The biographical sketch of The Honorable Frank Kendall III, which was transmitted to the Committee at the time the nomination was referred, follows:]

Bio
Frank Kendall III

Education:

- Rensselaer Polytechnic Institute, Troy, NY
 - 1966-67
- United States Military Academy, West Point, NY
 - 1967-1971
 - B.S.
- California Institute of Technology, Pasadena, CA
 - 1971-1973
 - M.S. Aeronautical Engineering, A.E. Aeronautical Engineering
- C.W. Post Center, Long Island University, Brookville, NY
 - 1978-1980
 - M.B.A.
- Army Command and General Staff College, Leavenworth, KS
 - 1984 (est.)
 - Diploma
- Army War College, Carlisle, PA
 - 1991-1994 (est.)
 - Diploma
- Georgetown University Law Center, Washington, DC
 - 2000 -2003
 - J.D.

Employment Record:

List all jobs held since college including title or description of job, name of employer, location of work, and dates of employment.

- United States Army
 - Captain
 - Assignments in graduate school, West Germany, West Point, and Huntsville, AL
 - June 1971 to May 1982
- Department of the Army, U.S. Army Ballistic Missile Defense Systems Command
 - Director, Systems Analysis Office, GS-15
 - Huntsville, AL
 - May 1982 – April 1986
- Department of Defense, Office of Under Secretary for Acquisition
 - Deputy Director of Defense Research and Engineering for Tactical Warfare Programs, Senior Executive Service
 - Pentagon, Washington, DC

- April 1986 – Sept. 1994
- SAIC
 - Vice President
 - Tysons Corner, VA
 - Sept. 1994 to Dec. 1994
- Raytheon Company
 - Vice President of Engineering
 - Lexington, MA
 - Dec. 1994 to Nov 1996
- Independent Consultant
 - Consultant to various clients in Aerospace and Defense
 - Falls Church, VA
 - Dec. 1996 – Dec. 2007
- Renaissance Strategic Advisors
 - Managing Partner
 - Arlington, VA
 - Dec. 2007 to Mar. 2010
- Department of Defense, Office of the Secretary of Defense
 - Under Secretary of Defense for Acquisition, Technology, and Logistics
 - Pentagon, Washington, DC
 - Mar. 2010 – Mar. 2012 (as Principal Deputy) and Mar. 2012 to Jan 2017 (as Under Secretary)
- Independent Consultant
 - Consultant to various clients in Aerospace and Defense
 - Falls Church, VA
 - Jan. 2017 to Present

Honors and Awards:

- Military Awards: Army Commendation Medal, Meritorious Service Medal
- Federal Civilian Awards: Meritorious and Distinguished Presidential Rank Awards, Distinguished Public Service Award (4 wards)
- Academic Awards: Distinguished Cadet, West Point, Rodney Smith Memorial Award, West Point. Cum Laude, Georgetown University Law School.
- Other Awards:
 - Defense Acquisition University Hall of Fame Inductee
 - David C. Aker Award, Defense Acquisition University Alumni Association
 - Greater Washington Government Contracting Public Sector Partner Award
- Singapore Ministry of Defense Distinguished Fellow Award
- American Defense Preparedness Association Gold Medal
- The National Museum of Catholic Art and Library Leadership Award
- Aviation Week and Space Technology Person of the Year Award 2016 (with Ash Carter and Robert Work)

[The Committee on Armed Services requires all individuals nominated from civilian life by the President to positions requiring the advice and consent of the Senate to complete a form that details the biographical, financial, and other information of the nominee. The form executed by Honorable Frank Kendall III in connection with his nomination follows:]

117th CONGRESS, 2020 -- 2021
UNITED STATES SENATE
COMMITTEE ON ARMED SERVICES
ROOM SR-228
WASHINGTON, D.C. 20510-6050
(202) 224-3871

COMMITTEE ON ARMED SERVICES QUESTIONNAIRE
INFORMATION REQUESTED OF CIVILIAN NOMINEES

INSTRUCTIONS TO THE NOMINEE: Answer all questions and provide all requested information. If more space is needed, attach an additional sheet of paper to the Questionnaire and cite the part of the Questionnaire and the question number (e.g., A-9, B-4) to which the continuation of your answer applies. Unless otherwise required, an answer of "yes", "no", or "not applicable" is appropriate.

QUESTIONNAIRE, PART A

NOTE: Information furnished in this part of the Questionnaire will be made available in Committee offices for public inspection prior to the hearing, if any, and will be entered in the hearing record, also available to the public.

BIOGRAPHICAL INFORMATION TO BE MADE PUBLIC

1. **Name (Include any former names you have used):**
Frank Kendall III
2. **Position to which nominated:**
Secretary of the Air Force
3. **Date of nomination:**
April 28, 2021
4. **Education (List names of secondary and higher education institution attended, type of school [vocational, technical, trade school, college, university, military college, correspondence, distance, extension, and on-**

line], dates attended, degree received, and date degree granted):

- Pittsfield High School, Pittsfield, MA, high school, 1963 – 1966, High School Diploma, June 1966
- Rensselaer Polytechnic Institute, Troy, NY, university, 1966-67, no degree
- United States Military Academy, West Point, NY, military academy, 1967-1971, B.S., June 1971
- California Institute of Technology, Pasadena, CA, university, 1971-1973, M.S. Aeronautical Engineering, 1972, A.E. Aeronautical Engineering 1973.
- C.W. Post Center, Long Island University, Brookville, NY, university, 1978-1980, M.B.A. 1980
- Army Command and General Staff College, military, 1984 (est), diploma, June 1984
- Army War College, Carlisle, PA, military, 1991 -1994 (est.), diploma, July 1994
- Georgetown University Law Center, Washington, DC, law school, 2000 -2003, J.D. 2004

5. Employment record (List all jobs held since college, or in the last 10 years, whichever is less, including the title or description of the job, name of employer, location of work, and dates of employment. If the employment activity was military duty, show each change of military duty station as a separate period of employment):

Principal Deputy Under Secretary of Defense for Acquisition, Technology and Logistics, Department of Defense, Pentagon, Washington, D.C. 2010 to 2012

Under Secretary of Defense for Acquisition, Technology and Logistics, Department of Defense, Pentagon, Washington, D.C. 2012 -2017

Independent consultant, Sole Proprietor, Falls Church, VA 2017 -Present

6. Government experience (List any advisory, consultative, honorary, and other part-time service or positions with Federal, State, or local governments, other than those listed in response to question 5, above):

Member, Army Science Board, 1997 to 2004

Member, Defense Intelligence Agency Science and Technology Advisory Board, 1997 to 2004

Consultant, Defense Science Board (various studies, 1994 to 2004)

7. Business relationships (List all positions currently held as an officer, director, trustee, partner, proprietor, agent, representative, or consultant of any corporation, firm, partnership, or other business enterprise, and of any educational or other institution):

Member, Board of Directors, Leidos Holdings, Reston, VA

Member, Board of Directors (Special Security Agreement), Leonardo Electronics USA, Alexandria, VA

Member, Board of Directors (Special Security Agreement), QuEST Defense, Columbus, OH

Consultant, Northrop Grumman Corp., Falls Church, VA

Consultant, Renaissance Strategic Advisors, Arlington, VA

Consultant, Institute for Defense Analysis, Arlington, VA

Consultant, Rand Corporation, Arlington, VA

Part time employee, MBO Associates, Asburn, VA (DARPA consulting contract)

Contributor, Forbes Magazine, Jersey City, NJ

8. Memberships (List all memberships and offices that you currently hold, as well as any memberships and offices you have previously held in professional, fraternal, scholarly, civic, business, charitable and other organizations):

Member, Board of Directors, Center for Victims of Torture, Minneapolis, MN

Member, Board of Directors, Truman National Security Project, Washington, DC

Member, Board of Directors, Truman Center, Washington, DC

Member, Council on Foreign Relations, New York, NY

DC Area Advisory Board, Tahirih Justice Center, Falls Church, VA

Chair, Board of Directors (2006-2010), Tahirih Justice Center, Falls Church, VA

Member Board of Directors (2008-2010) Amnesty International USA, New York, NY

Member, Senior Advisory Group (1998-2008) Amnesty International USA, New York, NY

Member, Sigma Xi, honorary research society (1974 to present)

Member, Phi Kappa Phi, honorary academic society (1980 to present)

Member, New York State Bar (2004 to present)

Member, Virginia State Bar (2006 to present)

9. Political affiliations and activities:

- a. If you have ever been a candidate for, or have been elected or appointed to a political office, list the name of the office(s); whether you were a candidate/elected/appointed; the year(s) during which you were a candidate, or in which the election was held or the appointment was made; and the term of office (if applicable):**

None, other than the two Senate confirmed positions noted under question 5.

- b. List all memberships and offices held in, and services rendered to, all political parties or election committees during the last 5 years:**

Co-chair, volunteer defense policy working group for the Biden for President campaign, (2019-2020)

Member, National Security Leaders for Biden, Biden for President Campaign, (2020)

- c. Itemize all individual political contributions of \$100 or more to any individual, campaign organization, political party, political action committee, or similar entity during the past 5 years. List each individual contribution (not the total amount contributed to the person or entity) over this period:**

Name	Date	Amount
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TOM MALINOWSKI FOR CONGRESS	2020-10-25 0:00:00	\$100.00
ACTBLUE	2020-10-25 0:00:00	\$100.00
BIDEN FOR PRESIDENT	2020-09-24 0:00:00	\$110.84
BIDEN VICTORY FUND	2020-09-24 0:00:00	\$110.84
ELISSA SLOTKIN FOR CONGRESS	2020-07-29 0:00:00	\$200.00
TOM MALINOWSKI FOR CONGRESS	2020-06-17 0:00:00	\$300.00
FRIENDS OF DAN FEEHAN	2020-09-22 0:00:00	\$500.00
EVELYN FOR NY	2020-03-23 0:00:00	\$500.00
CLAIRE RUSSO FOR CONGRESS	2020-04-14 0:00:00	\$500.00
JOSH HARDER FOR CONGRESS	2020-09-22 0:00:00	\$500.00
JOSH HARDER FOR CONGRESS	2020-05-18 0:00:00	\$500.00
TOM MALINOWSKI FOR CONGRESS	2020-06-17 0:00:00	\$700.00
ELISSA SLOTKIN FOR CONGRESS	2020-07-29 0:00:00	\$800.00
BACKPAC	2020-09-07 0:00:00	\$1,000.00
ELISSA SLOTKIN FOR CONGRESS	2020-09-24 0:00:00	\$1,000.00
EVELYN FOR NY	2020-06-03 0:00:00	\$1,000.00
BIDEN FOR PRESIDENT	2020-06-16 0:00:00	\$1,000.00
BIDEN VICTORY FUND	2020-06-16 0:00:00	\$1,000.00
MARK KELLY FOR SENATE	2020-09-21 0:00:00	\$1,000.00
DOUG JONES FOR SENATE COMMITTEE	2020-09-21 0:00:00	\$1,000.00
TOM MALINOWSKI FOR CONGRESS	2020-09-08 0:00:00	\$1,000.00
TOM MALINOWSKI FOR CONGRESS	2020-07-29 0:00:00	\$1,000.00
MONTANANS FOR BULLOCK	2020-09-21 0:00:00	\$1,000.00
AMY MCGRATH FOR SENATE, INC.	2020-09-22 0:00:00	\$1,000.00
CAL FOR NC	2020-09-21 0:00:00	\$1,000.00
SARA GIDEON FOR MAINE	2020-09-21 0:00:00	\$1,000.00
HICKENLOOPER FOR COLORADO	2020-09-21 0:00:00	\$1,000.00
BIDEN FOR PRESIDENT	2020-09-24 0:00:00	\$1,664.16
BIDEN VICTORY FUND	2020-09-24 0:00:00	\$1,775.00
WARNOCK FOR GEORGIA	2020-11-15 0:00:00	\$2,800.00
JON OSSOFF FOR SENATE	2020-11-15 0:00:00	\$2,800.00

THE REED COMMITTEE	2019-07-31 0:00:00	\$500.00
EVELYN FOR NY	2019-12-28 0:00:00	\$500.00
FRIENDS OF DAN FEEHAN	2019-12-22 0:00:00	\$500.00
ANDY KIM FOR CONGRESS	2019-12-02 0:00:00	\$500.00
TOM MALINOWSKI FOR CONGRESS	2019-12-02 0:00:00	\$500.00
JASON CROW FOR CONGRESS	2019-11-08 0:00:00	\$500.00
BIDEN FOR PRESIDENT	2019-08-14 0:00:00	\$800.00
SCOTT COOPER FOR CONGRESS	2019-06-02 0:00:00	\$1,000.00
ELISSA SLOTKIN FOR CONGRESS	2019-03-31 0:00:00	\$1,000.00
WARNER VICTORY FUND	2019-08-30 0:00:00	\$1,000.00
FRIENDS OF MARK WARNER	2019-09-30 0:00:00	\$1,000.00
BIDEN FOR PRESIDENT	2019-04-25 0:00:00	\$1,000.00
BIDEN FOR PRESIDENT	2019-06-15 0:00:00	\$1,000.00
INSERVICENJ	2019-12-02 0:00:00	\$1,000.00
ELISSA SLOTKIN FOR CONGRESS	2019-11-09 0:00:00	\$1,000.00
SHAHEEN FOR SENATE	2019-09-16 0:00:00	\$1,000.00
FRIENDS OF DON BEYER	2019-03-18 0:00:00	\$1,000.00
TOM MALINOWSKI FOR CONGRESS	2019-03-31 0:00:00	\$1,000.00
TOM MALINOWSKI FOR CONGRESS	2019-08-23 0:00:00	\$1,000.00
TOM MALINOWSKI FOR CONGRESS	2018-03-11 0:00:00	-\$2,000.00
BETSY RADER FOR CONGRESS	2018-10-30 0:00:00	\$250.00
ELISSA SLOTKIN FOR CONGRESS	2018-06-30 0:00:00	\$300.00
LEIDOS INC. POLITICAL ACTION COMMITTEE	2018-05-23 0:00:00	\$500.00
FRIENDS OF DAN FEEHAN	2018-03-12 0:00:00	\$500.00
ELISSA SLOTKIN FOR CONGRESS	2018-10-29 0:00:00	\$500.00
ELISSA SLOTKIN FOR CONGRESS	2018-06-30 0:00:00	\$700.00
TOM MALINOWSKI FOR CONGRESS	2018-06-30 0:00:00	\$1,000.00
FOREIGN POLICY LEADERSHIP COMMITTEE	2018-03-18 0:00:00	\$1,000.00
ELISSA SLOTKIN FOR CONGRESS	2018-09-23 0:00:00	\$1,000.00
TOM MALINOWSKI FOR CONGRESS	2018-03-11 0:00:00	\$2,000.00

TOM MALINOWSKI FOR CONGRESS	2018-03-10 0:00:00	\$2,700.00
DCCC	2018-09-23 0:00:00	\$5,000.00
DSCC	2018-08-03 0:00:00	\$5,000.00
ELISSA SLOTKIN FOR CONGRESS	2017-07-14 0:00:00	\$1,000.00
TOM MALINOWSKI FOR CONGRESS	2017-11-28 0:00:00	\$1,000.00
TOM MALINOWSKI FOR CONGRESS	2017-12-04 0:00:00	\$1,000.00
ELISSA SLOTKIN FOR CONGRESS	2017-12-04 0:00:00	\$1,000.00
KAINE VICTORY FUND	2017-12-04 0:00:00	\$1,000.00
KAINE FOR VIRGINIA	2017-12-31 0:00:00	\$1,000.00
DNC SERVICES CORP./DEM. NAT'L COMMITTEE	2016-09-18 0:00:00	\$300.00
HILLARY FOR AMERICA	2016-09-21 0:00:00	\$1,000.00
HILLARY FOR AMERICA	2016-09-18 0:00:00	\$1,700.00
HILLARY VICTORY FUND	2016-09-18 0:00:00	\$2,000.00
DSCC	2016-09-18 0:00:00	\$5,000.00

10. Honors and awards (List all scholarships, fellowships, honorary degrees, honorary society memberships, and any other special recognition received for outstanding service or achievements):

Defense Distinguished Civilian Service Award (four awards)

Presidential Rank Award, Senior Executive Service

Meritorious Rank Award, Senior Executive Service

Meritorious Service Medal, US Army

Army Commendation Medal, US Army

Greater Washington Government Contracting Public Sector Partner Award

Singapore Ministry of Defense Distinguished Fellow Award

American Defense Preparedness Association Gold Medal

The National Museum of Catholic Art and Library Leadership Award

Aviation Week and Space Technology Person of the Year Award 2016 (with Ash Carter and Robert Work)

Defense Acquisition University Hall of Fame Inductee

David C. Aker Award, Defense Acquisition University Alumni Association

Rodney Smith Memorial Award for Excellence in Engineering (USMA 1971)

Four year Army ROTC scholarship (1966)

11. Published writings (List the titles, publishers, and dates of books, articles, reports, or other published materials that you have written or for which you served as co-author or editor, including articles and blogs published on the internet):

2020

Weapons System Sustainment Planning Early in the Development Life Cycle, National Academies of Science, Engineering and Medicine (co-author)
<https://www.nap.edu/read/25756/chapter/1>

2020 October 25

Joe Biden's Greatest And Most Important National Security Challenge: It's Not What You Think, Forbes
<https://www.forbes.com/sites/frankkendall/2020/10/25/joe-bidens-greatest-and-most-important-national-security-challenge-its-not-what-you-think-it-is/?sh=65b325211924>

2020 October 19

The First 100 Days: Toward a More Sustainable and Values-Based National Security Approach, Forbes
<https://www.americanprogress.org/issues/security/reports/2020/10/19/491715/first-100-days-toward-sustainable-values-based-national-security-approach/>

2020 June 11

Let Black Soldiers Know The Military 'Gets It': Rename Bases Named After Confederate Generals, Forbes
<https://www.forbes.com/sites/frankkendall/2020/06/11/its-time-to-rename-the-bases/?sh=7573da7c8e31>

2020 April 29

Cybersecurity Maturity Model Certification: An Idea Whose Time Has Not Come And Never May, Forbes

<https://www.forbes.com/sites/frankkendall/2020/04/29/cyber-security-maturity-model-certificationan-idea-whose-time-has-not-come-and-never-may/?sh=4044911e3bf2>

2020 April 7

It's Time To Put A Military Officer In Charge Of The Fight Against Coronavirus, Forbes
<https://www.forbes.com/sites/frankkendall/2020/04/07/were-at-war-isnt-it-time-we-started-acting-like-it/>

2020 March 31

KC-46 Tanker Problems Call For A Rethink Of Fixed-Price Development Programs, Forbes
<https://www.forbes.com/sites/frankkendall/2020/03/31/should-the-kc-46-tanker-have-been-a-fixed-price-development-program-maybe-not/>

2020 March 22

What Washington Must Do To Protect The Real Defense Industrial Base, The Workers, From Coronavirus
<https://www.forbes.com/sites/frankkendall/2020/03/22/what-the-government-needs-to-do-to-protect-the-real-defense-industrial-base-the-people-who-work-for-defense-companies-and-for-their-supply-chains/?sh=956a633668bc>

2020 January 5

What Are They Thinking In Tehran? Maybe That Having Some Nuclear Weapons Would Be A Good Idea. , Forbes
<https://www.forbes.com/sites/frankkendall/2020/01/05/so-what-are-they-thinking-in-tehran--maybe-that-having-some-nuclear-weapons-would-be-a-good-idea/?sh=22f88de23e85>

2019 December 1

Senior U.S. Military Leaders: It's Time To Step Up And Protect The Institutions That You Lead, Forbes
<https://www.forbes.com/sites/frankkendall/2019/12/01/senior-military-leaders--its-time-to-step-up--and-protect-the-institutions-that-you-lead/?sh=2369466438f7>

2019 March 27

Ellen Lord Is Right On 5G: It Is Time For The U.S. Government To Act. Here's How. , Forbes
<https://www.forbes.com/sites/frankkendall/2019/03/27/ellen-lord-is-right-on-5g-it-is-time-for-the-u-s-government-to-act-heres-how/?sh=17a9f7647359>

2019 January 3

The New Other Transactions Authority Guide: Helpful, But Not Enough, Forbes
<https://www.forbes.com/sites/frankkendall/2019/01/03/the-new-other-transactions-authority-guide-helpful-but-not-enough/?sh=116a6cc441cf>

2018 December 23

James Mattis: The Surprise Statesman, Forbes

<https://www.forbes.com/sites/frankkendall/2018/12/23/james-mattis-the-surprise-statesman/?sh=71cb29407b1d>

2018 November 21
Placing American Values First: Why The White House Statement On Saudi Arabia Is Such An Embarrassment, Forbes
<https://www.forbes.com/sites/frankkendall/2018/11/21/placing-american-values-first-why-the-white-house-statement-on-saudi-arabia-is-such-an-embarrassment/?sh=1b3bea486305>

2018 September 12
Boeing And The Navy Place A Big, Risky Bet On The MQ-25 Unmanned Air Vehicle, Forbes
<https://www.forbes.com/sites/frankkendall/2018/09/12/boeing-and-the-navy-place-a-big-and-risky-bet-on-the-mq-25-unmanned-air-vehicle/?sh=19bcc0cc4bbd>

2018 September 1
John McCain; Great American, Forbes
<https://www.forbes.com/sites/frankkendall/2018/09/01/john-mccain-great-american/?sh=275d67d913d2>

2018 March 20
Five Myths About Pentagon Weapons Programs, Defense One
<https://www.defenseone.com/ideas/2018/03/five-myths-about-pentagon-weapons-programs/146803/>

2017 January
Getting Defense Acquisition Right , Defense Acquisition University
<https://dod.defense.gov/Portals/1/Documents/pubs/Getting-Acquisition-Right-Jan2017.pdf>

This book contains everything I published while I was Under Secretary of Defense for AT&L. The book is largely an anthology of articles published primarily by Defense Acquisition University in "Defense, AT&L Magazine" between 2011 and 2017.

1997
Program Manager Magazine Article on Ethics in Government Procurement, Defense Systems Management College
No record found online

1993 March
The Military Technological Revolution, Journal of Strategic Studies
<https://apps.dtic.mil/dtic/tr/fulltext/u2/a263426.pdf>

12. **Speeches** (Provide the Committee with two copies of any formal speeches you have delivered during the last 5 years—of which you have copies—in which you addressed matters relevant to the position to which you have been nominated).

I have no texts of speeches I have given. I always speak from rough notes extemporaneously.

COMMITMENTS IN FURTHERANCE OF CONGRESSIONAL OVERSIGHT

NOTE: In order to exercise their legislative and oversight responsibilities, it is important that this Committee, its subcommittees, and other appropriate committees of Congress timely receive testimony, briefings, reports, records—including documents and electronic communications, and other information from the executive branch. A simple “yes” or “no” response is appropriate.

13. Do you agree, if confirmed, and on request, to appear and testify before this Committee, its subcommittees, and other appropriate Committees of Congress?

Yes

14. Do you agree, if confirmed, to provide this Committee, its subcommittees, other appropriate Committees of Congress, and their respective staffs such witnesses and briefers, briefings, reports, records—including documents and electronic communications, and other information, as may be requested of you, and to do so timely?

Yes

15. Do you agree, if confirmed, to consult with this Committee, its subcommittees, other appropriate Committees of Congress, and their respective staffs, regarding your basis for any delay or denial in providing testimony, briefings, reports, records—including documents and electronic communications, and other information requested of you?

Yes

16. Do you agree, if confirmed, to keep this Committee, its subcommittees, other appropriate Committees of Congress, and their respective staffs apprised of new information that materially impacts the accuracy of testimony, briefings, reports, records—including documents and electronic

communications, and other information you or your organization previously provided?

Yes

- 17. Do you agree, if confirmed, and on request, to provide this Committee and its subcommittees with records and other information within their oversight jurisdiction, even absent a formal Committee request?**

Yes

- 18. Do you agree, if confirmed, to respond timely to letters to, and/or inquiries and other requests of you or your organization from individual Senators who are members of this Committee?**

Yes

- 19. Do you agree, if confirmed, to ensure that you and other members of your organization protect from retaliation any military member, federal employee, or contractor employee who testifies before, or communicates with this Committee, its subcommittees, and any other appropriate committee of Congress?**

Yes

[The nominee responded to Parts B-F of the committee questionnaire. The text of the questionnaire is set forth in the Appendix to this volume. The nominee's answers to Parts B-F are contained in the Committee's executive files.]

SIGNATURE AND DATE

I hereby state that I have read and signed Parts A and B of the foregoing Senate Armed Services Committee Questionnaire, and that the information provided therein and in any document appended thereto, is, to the best of my knowledge and belief, current, accurate, and complete.



This 18th day of May, 2021

[Nomination of Honorable Frank Kendall III was reported to the Senate by Chairman Reed on June 10, 2021, with the recommendation that the nomination be confirmed. The nomination was confirmed by the Senate on July 26, 2021.]

[Prepared questions submitted to Honorable Heidi Shyu by Chairman Reed prior to the hearing with answers supplied follow:]

QUESTIONS AND RESPONSES

DUTIES AND QUALIFICATIONS

Question. Section 133a of title 10, U.S. Code, provides that the Under Secretary of Defense for Research and Engineering (USD(R&E)) shall be appointed from civilian life from among persons who have an extensive technology, science, or engineering background and experience with managing complex or advanced technological programs.

What is your understanding of the duties and functions of the Under Secretary of Defense for Research and Engineering?

Answer. It is my understanding that the USD(R&E) serves as the principal staff assistant and advisor to the Secretary and Deputy Secretary of Defense for all matters regarding the DOD Research and Engineering (R&E) Enterprise, defense R&E, technology development, technology transition, developmental prototyping, experimentation, and developmental testing activities and programs, and unifying defense R&E efforts across the DOD.

The USD(R&E) also serves as the Chief Technology Officer of the Department with the mission of advancing technology and innovation. USD(R&E) also advises the Secretary of Defense on all matters related to research; engineering; manufacturing; developmental test and evaluation; and technology development, innovation, and protection activities and programs in the DOD and occurring internationally.

Question. What background and experience do you possess that qualify you to perform these duties?

Answer. As an industry and government leader in research and engineering, I have developed a broad understanding of the science, technology, innovation ecosystems, platform integration, and flight testing that will be essential to this role. Over the course of my career, I have managed research, technology and engineering programs on a broad range of technologies, including electronic protection, advanced radar systems, electronic warfare systems, unmanned combat vehicles, and major

Intelligence, Surveillance & Reconnaissance systems in the defense industry. My previous service in government as the Assistant Secretary of the Army for Acquisition Logistics and Technology gave me a deep understanding of the Department's approach to managing research and technology, since I was the Principal Science Advisor to the Secretary of the Army as well as the Army Acquisition Executive for 12 Program Executive Offices spanning across Aviation, Ground Combat Systems, Combat Support/Combat Service Support, Ammunition, Tactical Command & Control, Computers, Chemical & Biological Defense, Intelligence & Electronic Warfare Systems, Enterprise Information Systems, Missile & Space, Soldier Systems, Simulation, Training & Testing and demil of chemical weapons. My 10 years of experience serving on the Air Force Scientific Advisory Board (AFSAB) gave me a broad understanding of the key challenges to the Air Force. As a member of the AFSAB, I participated in the annual S&T quality review of the Air Force Research Laboratory and participated and led studies on behalf of the Chief of Staff of the Air Force and the Secretary of the Air Force. Since leaving the Army, I have served on the boards of several small start-up companies and gained insight into struggles of small innovative companies in doing business with the DOD.

RELATIONSHIPS

Question. Please describe your understanding of the relationships and areas of collaboration between the USD(R&E) and the following officials and organizations:

The Under Secretary of Defense for Acquisition and Sustainment.

Answer. Although they have important missions independent of one another, USD(R&E) and USD(A&S) are two offices that absolutely must work closely together to ensure that DOD is able to rapidly insert the latest technologies into the next generation of weapons systems. If confirmed, I am committed to working in close collaboration with USD(A&S) to ensure that DOD makes real progress on its modernization priorities.

Question. The Under Secretary of Defense for Policy.

Answer. USD(R&E) supports the policy development process, particularly on matters of missile defense and our research and engineering programs with our allies and partners. Both the President and the Secretary of Defense have made clear working closely with our Allies is a critical element of our national security. They are an absolute force multiplier when it comes to science and technology and if confirmed, I am committed to working closely with my counterparts in Policy to ensure we maintain and expand our science and technology partnerships around the globe.

Question. The Under Secretary of Defense for Personnel and Readiness.

Answer. One of the keys elements of the Department's efforts to modernize and build a culture of innovation is its people. USD(R&E) and USD(P&R) must work closely together to make sure that DOD makes the best use of its hiring flexibilities and is recruiting a workforce that reflects the Nation's diversity. Additionally, USD(R&E) will continue to partner with USD (P&R) in the development and fielding of training capabilities to meet the needs of the warfighter.

Question. The Director of Operational Test and Evaluation.

Answer. If confirmed, I will work with the Director of Operational Test and Evaluation to enhance the effectiveness, suitability, and survivability of DOD systems. I will communicate frequently with the Director to discuss strategic test and evaluation (T&E) policy and review the status of current collaboration efforts that include developing a joint strategic plan, publication of an Office of the Secretary of Defense (OSD) T&E Oversight List, development of T&E Guidebooks to address common T&E areas supporting the Adaptive Acquisition Framework pathways, and publication of updated joint T&E cybersecurity policy.

Question. The Directors of the Defense Intelligence Agencies.

Answer. The Under Secretary of Defense for Research and Engineering (USD(R&E)) works closely through the Under Secretary of Defense for Intelligence and Security (USD(I&S)) to communicate the intelligence needs of the research and engineering enterprise to the Directors of the Defense Intelligence Agencies, and also to the wider intelligence community, in order to make informed technology development and protection decisions.

Question. The Director of the Defense Advanced Research Projects Agency (DARPA).

Answer. The Defense Advanced Research Projects Agency falls under the purview of the Under Secretary of Defense for Research and Engineering and receives broad guidance and direction from that office. I am committed to ensuring that DAPRA, one of the crown jewels of the Department of Defense, continues to have the support it needs to conduct the kind of breakthrough research that led to the mRNA-based

vaccine for COVID-19. I am committed to help to accelerate DARPA's innovation into the Services.

Question. The Director of the Defense Innovation Unit (DIU).

Answer. The Defense Innovation Unit (DIU) falls under the purview of the Under Secretary of Defense for Research and Engineering and receives broad guidance and direction from that office. The DIU plays an important role as the gateway through which many of firms on the cutting edge of technology first come into contact with the Department of Defense. I am committed to ensuring that DIU continues to play an important role the Department's innovation ecosystem and bring forth new dual-use technologies and products to the Services.

Question. The Director of the Defense Microelectronics Activity.

Answer. The Defense Microelectronics Activity (DMEA) is a small, but critical, organizational element providing reliable microelectronics to the Department of Defense (DOD). The Defense Microelectronics Activity (DMEA) was part of USD(R&E) until January 2021 when DMEA was transferred and placed under the authority, direction and control (ADC) of the USD(A&S). If confirmed, I will work closely with USD(A&S) and the Director of the DMEA to maintain, and sustain our legacy systems, and to seamlessly transfer and integrate microelectronics quantifiable assurance standard developed under the Trusted and Assured Microelectronics program under the USD(R&E).

Question. The Administrator of the Defense Technical Information Center.

Answer. On behalf of USD(R&E), the Defense Technical Information Center (DTIC) administers Science and Technical policy (S&T), captures the results of research into a central base of knowledge, and delivers that knowledge to the community. DTIC reaches across Service and Agency silos to connect people and activities. On behalf of the USD(R&E), DTIC operates Information Analysis centers which manage research and development contracts that support research and analysis services to DOD and ensures its protection.

Question. The Director of the Test Resource Management Center.

Answer. The Director of the Test Resource Management Center duties are fulfilled by the Director, Defense Research and Engineering for Advanced Capabilities, who is a direct report to the USD(R&E). TRMC is charged with oversight over the Department's testing and range facilities. If confirmed, look forward to providing direction to ensure the TRMC is able to accomplish its departmental roles and responsibilities supporting DOD modernization.

Question. The Director of the Joint Artificial Intelligence Center.

Answer. The JAIC was formed in 2018 to accelerate the fielding and adoption of mature artificial intelligence (AI) technologies, while the Office of USD(R&E) is responsible for advancing and maturing AI technologies for DOD. The JAIC, as well as the Services' software development teams, DIU, and other rapid prototyping offices, are utilizing mature AI technologies to provide new capabilities for the Department as it modernizes its information technologies and weapon systems. USD(R&E) and the broader S&T enterprise are focused on maturing emerging AI technologies by leveraging deep learning and neural networks to unlock more efficient and effective capabilities. If confirmed, I look forward to collaborating with JAIC to help ensure that promising AI technologies are rapidly fielded and adopted.

Question. The Director of the Defense Digital Service.

Answer. The Defense Digital Service's (DDS) mission is to implement breakthrough technologies and methodologies to better government services, strengthen national defense, and care for service members and their families. Through the Principal Director (PD) for Cyber, OUSD(R&E) is assisting DDS with a new operational technology (OT) initiative, which will greatly enhance the resilience of DOD critical infrastructure systems. The PD for Cyber has had longstanding relationships with members of the DOD S&T community who are addressing OT security and resiliency challenges. If confirmed, I will ensure that USD(R&E) continues to collaborate with DDS, in order to advance its mission of implementing breakthrough technologies.

Question. The Director of the Space Development Agency.

Answer. The Space Development Agency currently falls under the purview of the Under Secretary of Defense for Research and Engineering and receives broad guidance and direction from that office. However, as currently planned, the agency will transfer to the Space Force in fiscal year 2023. Until that transfer takes place, I will work to ensure the agency continues to have the support it needs to execute its mission to enhance space superiority.

Question. The Director of the Missile Defense Agency.

Answer. The Missile Defense Agency (MDA) falls under the purview of the Under Secretary of Defense for Research and Engineering and receives broad guidance and direction from that office. I look forward to working closely with the director of MDA

to ensure we maintain a robust multi-layered missile defense system capable of defending the homeland and our forward deployed forces as well as our allies.

Question. The Service Acquisition Executives.

Answer. If confirmed, I would work closely with the Secretaries of the Military Departments and the Service Acquisition Executives. Technology maturation, mission engineering, and systems engineering efforts are areas where it is critical for USD(R&E) and the services to have close relationships to ensure that technology is efficiently transitioned to meet warfighting capability. If confirmed, I will also work with the Service Acquisition Executives through USD(R&E)'s Independent Technical Risk Assessments and Developmental Test Sufficiency Assessments of Service acquisition programs.

Question. The Service Science and Technology Executives.

Answer. The Director of Defense Research and Engineering for Research and Technology (DDRE(R&T)) chairs the Science and Technology (S&T) executive committee (EXCOM) composed of the S&T executives from the Services and Agencies. The S&T EXCOM provides a forum to unify and coordinate DOD S&T strategy, budget, and execution decisions. Through the S&T EXCOM, USD(R&E) oversees, coordinates, and aligns investments to maximize the Department's resources, avoids unnecessary duplication, and creates the future capabilities required by the nation.

Question. The Joint Requirements Oversight Council

Answer. USD(R&E) serves as the principal advisor to the Secretary and Deputy Secretary of Defense for all matters regarding the DOD research and engineering enterprise, to include technology development and transition, developmental prototyping, experimentation, and developmental testing; while unifying defense R&E efforts across the Department. This includes advising the Joint Requirements Oversight Council (JROC) on matters within the USD(R&E) authority and expertise to provide mission-based analysis to inform requirements, warfighting concepts, capabilities-based assessments, concepts of operation, and other matters related to USD(R&E)'s Mission Integration Management (MIM) responsibilities as outlined in section 855 of the Fiscal Year 2017 NDAA. I understand that USD(R&E)'s support to the JROC focuses on technology issues related to linking joint warfighting concepts to prototyping, experimentation, capability development and fielding, and associated budget priorities. If confirmed, I will work closely with the JROC to synchronize warfighting concepts, technologies, requirements, capabilities, and programs to guide decisions focused on the end-to-end mission.

Question. The Committee on Foreign Investment in the United States

Answer. The Office of USD(R&E) is responsible for providing expertise in the technical and technology portion of the CFIUS case reviews. Additionally, USD(R&E) subject matter experts review cases associated with the long-term technology modernization priorities and help the Defense Technology Security Agency to determine technology protection strategies which strike a proper balance between allowing U.S. industry to compete overseas while retaining control over technologies which enable U.S. military advantage.

Question. The Defense Science Board.

Answer. The Defense Science Board falls under the purview of the Under Secretary of Defense for Research and Engineering and receives broad guidance. That direction includes providing study topics of interest to the Defense Science Board. It is my understanding that the Secretary is currently conducting a zero based review of the Department's boards. Should the Secretary decide to maintain the board, I look forward to working with its staff to re-constitute its membership and put it to work in support of the Department's innovation efforts.

Question. The Defense Innovation Board.

Answer. The Defense Innovation Board falls under the purview of the Under Secretary of Defense for Research and Engineering and receives broad guidance and direction from that office. That direction includes the review of annual study plans, personnel and culture, technology and capabilities, practices and operations. It is my understanding that the Secretary is currently conducting a zero based review of the Department's boards. Should the Secretary decide to maintain the board, I look forward to working with its staff to re-constitute its membership and put it to work in support of the Department's innovation efforts.

Question. Federally Funded Research and Development Centers.

Answer. USD(R&E) has the responsibility for setting the policy for DOD's ten Federally Funded Research and Development Centers (FFRDCs). In addition, the USD(R&E) is the primary sponsor for the MITRE National Security Engineering Center (NSEC), the Massachusetts Institute of Technology Lincoln Laboratory, and the Carnegie-Mellon University Software Engineering Institute. USD(R&E) collaborates with the entire Department to ensure that the FFRDCs are focused on the

Department's priorities while also ensuring that they maintain the requisite core competencies to enable the Department's studies, system engineering, and R&D.

Question. The Commanding General of Army Combat Capabilities Development Command.

Answer. The Commanding General of the Army Combat Capabilities Development Command is responsible for ensuring that the Army's S&T enterprise investments are unified and coordinated to meet Army's capabilities needed for the future. If confirmed, I will work closely with the Army Combat Capabilities Development Command to collaborate DOD S&T with the Army's S&T.

Question. The Chief of Naval Research.

Answer. The Chief of Naval Research is responsible for ensuring that the Navy's S&T enterprise investments are unified and coordinated to meet Navy's capabilities needed for the future. If confirmed, I will work closely with the Chief of Naval Research to collaborate DOD S&T with the Navy's S&T.

Question. The Commander of the Air Force Research Laboratory.

Answer. The Commander of the Air Force Research Laboratory is responsible for ensuring that the Air Force's S&T enterprise investments are unified and coordinated to meet Air Force's capabilities needed for the future. If confirmed, I will work with the Commander of the Air Force Research Laboratory to collaborate DOD S&T with the Air Force's S&T.

Question. The Director of the White House Office of Science and Technology Policy.

Answer. The USD(R&E) works in close collaboration with the White House Office of Science and Technology Policy to ensure the Department of Defense's science and technology efforts fit within broad administration policy. This includes national priorities like the fielding of 5G technology and ensuring the nation's access to microelectronics.

RELATIONS WITH CONGRESS

Question. What actions would you take to create a productive and mutually beneficial relationship between the office of the USD(R&E) and the Congress generally, and this Committee, in particular?

Answer. If confirmed, I am committed to maintaining a close working relationship with Congress in general and this Committee in particular. I will make myself and my staff available to you and your staff when requested. I will also commit to regular briefings and updates on the programs, activities, and initiatives being undertaken by the office of the USD(R&E) and seek out regular interaction with you and your staffs.

OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING

Question. What is your vision for the Office of the USD(R&E)?

Answer. The White House's Interim National Security Strategy states that "America must reinvest in retaining our scientific and technological edge" and "seize the opportunities that advances in technology present." The Office of the USD(R&E) is DOD's primary means for achieving these ends.

My vision is to work collaboratively with universities, commercial & defense industry, FFRDCs & UARCS and other DOD organizations, across the Services and our Allies to rapidly deliver innovative technical solutions to solve the toughest problems for National security. I see my role in setting the overarching DOD strategy for technology, address critical warfighting challenges by delivering innovative technology solutions to stay ahead of our threats.

If confirmed, I plan to seek not only to enable scientific breakthroughs but also to leverage these investments to train the next generation of technologists—a cadre of preeminent scientists and engineers who reflect our Nation's diversity.

Question. If confirmed, what recommendations, if any, would you make regarding changes to the organization, management, and resourcing of the Office of the USD(R&E) so as better to execute its duties and responsibilities?

Answer. The Office of the USD(R&E) was established in 2018; as such, its organization, management, and resources were constructed to meet the then-current objectives in National Defense. If confirmed, I will review the Office's organization, management, and resources in the context of a new national defense strategy. I will also review these items in the context of the Secretary's and Deputy Secretary's priorities, which include developing innovative operational concepts, prototyping and experimenting with new capabilities, and fielding cutting-edge capabilities to the force.

Question. Subordinate elements of the Office of the USD(R&E) are led by Directors—as opposed to the Senate-confirmed Assistant Secretaries of Defense who lead most subordinate elements in other Under Secretary-level offices in DOD? Does the

lack of ASDs in the Office of the USD(R&E) affect mission accomplishment, in your view?

Answer. DOD is a hierarchical institutional where rank and position matter, and where directors may not enjoy the same authority and influence as Senate-confirmed Assistant Secretaries. If confirmed, I will review USD(R&E)'s organizational structure, assess impacts mission effectiveness, and communicate recommendations to Congress.

Question. Are there other assets, including staffing and resources that you believe the Office of the Under Secretary of Defense for Research and Engineering requires to optimize mission accomplishment?

Answer. The Office of USD(R&E) sets priorities and policies for DOD's science and technology (S&T) investments and develops roadmaps to guide the development and fielding of critical technologies, including artificial intelligence and biotechnology. Among other responsibilities, the Office also sets priorities and policies for developmental prototyping and engineering and performs independent technical risk assessments for select acquisition programs. These activities, while critical, are focused primarily on implementation. If confirmed, I will review the Office's ability not only to implement the above activities, but also to shape DOD's technical trajectory. Just as DOD employs military strategists, it should look to the Office of the USD(R&E) to serve as the military's technology strategists.

Question. If confirmed, how would you ensure effective collaboration between your office, the Office of the Under Secretary of Defense for Acquisition and Sustainment, and the Services?

Answer. DOD is challenged to divest from legacy platforms and to shift its investments toward modern, innovative systems. To address this challenge, the Offices of USD(R&E) and USD(A&S), as well as the military services, must work collaboratively and leverage each other's strengths and experiences. USD(R&E) offers its technical insight, vision and expertise for the future, as well as its expertise in identifying and mitigating technical risks in programs. USD(A&S) offers innovative contracting, program management experiences and knowledge of the defense industrial base. The military services, in turn, offer program management execution expertise, fielding and weapon system utilization. If confirmed, I look forward to sharing USD(R&E)'s technical expertise with its USD(A&S) and military service partners to rapidly transition critical technologies to meet the Service's needs. I look forward to working closely with USD(A&S) to establish joint town-hall style meetings and joint press conferences as an example of close collaboration.

Question. If confirmed as USD(R&E), you would be vested with somewhat less statutory directive and decision making authority than previous Under Secretaries for Acquisition, Technology, and Logistics.

If confirmed, how would you guide the Defense Department's overall approach to research, engineering, and technology—given powers and authorities provided you?

Answer. USD(R&E) has the authority to set policies and supervise research, engineering, technology development, technology transition, developmental prototyping, experimentation, and developmental test. If confirmed, I will: Assess if we are organized in the most efficient way to accelerate transition of technologies into critical capabilities needed by the Services; increase sharing of technologies across the Service Labs; establish metrics for the DOD labs, FFRDCs and UARCs to assess transition successes; increase outreach to small companies and commercial companies to enable them to easily do business with the DOD; work collaboratively with USD(A&S) and DOT&E to ensure modern testing methodologies are utilized from development testing to operational testing; increase technology sharing and joint testing with our Allies to increase lessons learned; grow our STEM workforce by creating more opportunities for fellowships and internships; maintain balance between basic and applied research.

Question. In your view, should the USD(R&E) be vested with additional statutory powers and authorities? Please explain your answer.

Answer. If confirmed, I will review USD(R&E)'s statutory powers and authorities. If additional authorities are needed, I will brief Congress to seek its approval and any requisite authorities.

MAJOR CHALLENGES AND PRIORITIES

Question. What are the major challenges that confront the next USD(R&E), in your view?

Answer. The next USD(R&E) will be challenged to advance technologies and leverage the incredible amount of innovation that exists across this Nation and work collaboratively across the commercial and defense industries, universities, FFRDCs

& UARCs, and Allied partners to rapidly deliver technical solutions to our warfighters to counter near-Peer threats.

Question. If confirmed, what would you do to address each of these challenges?

Answer. If confirmed, I would focus DOD's research and development investments on the innovative technologies that DOD uniquely needs but that the commercial sector is not developing on its own. At the same time, I would leverage the commercial sector's tremendous investments and accelerate DOD's ability to incorporate innovative commercial technologies.

Question. If confirmed, what broad priorities would you establish in terms of issues that must be addressed by the USD(R&E)?

Answer. Today, sustainment makes up 70% of total weapon system cost, with development and procurement making up 30%. If confirmed, I would strive to change this ratio and invest more in the development of new technologies that can reduce our sustainment cost. If confirmed, I would seek to prioritize investments in emerging technologies of advanced materials that can increase strength, reduce weight, increase reliability, reduce maintenance, increase power density, and fuel efficiency. These advanced materials have the tremendous opportunity to reduce the logistics footprint and maintenance. Other priorities include advanced manufacturing technologies such as additive manufacturing which can significantly reduce the need for our supply chain storage.

Another critical area that I will focus on is providing mission assurance: technologies that can provide software assurance, supply chain assurance, trust of Artificial Intelligence/Machine Learning, trusted autonomy, and design of robustness and security into our highly networked complex weapon systems.

Question. In your view, what technologies do you consider the highest priorities for development in the DOD, based upon the ability of each to contribute to DOD mission accomplishment in the short- and longer-terms?

Answer. USD(R&E) has identified 11 technology areas as modernization priorities. If confirmed, I will review these technology areas in the context of the forthcoming national defense strategy and assess the completeness of these priorities. After my assessment, I will brief the SASC on a potentially updated list of priorities.

Question. If confirmed, how would you connect your technology strategies and plans with the efforts of other DOD components?

Answer. USD(R&E)'s technology strategies and plans should connect with the efforts of other DOD components through concepts and capabilities. If confirmed, I will ensure that USD(R&E) supports technology-informed concept development, facilitates rapid prototyping and experimentation, and champions innovation technologies to cross the "valley of death" and transition into programs for the Services.

Question. What scientific fields do you consider the most important for shaping and developing the new technologies, concepts, and capabilities that will be most relevant for future warfighting and defense missions?

Answer. USD(R&E) has identified 11 technology areas as modernization priorities. If confirmed, I will review these technology areas in the context of the forthcoming national defense strategy and assess potential gaps. I will gladly brief the SASC on my findings and recommendations.

Question. In your view, are any technology areas that should be added or removed from the current list of DOD's modernization priorities? If so, please explain your rationale.

Answer. If confirmed, I will review DOD's modernization priorities in the context of the forthcoming national defense strategy. I will pay close attention to technology areas where the commercial sector is leading and where DOD could simply implement the commercial technologies instead of developing the Defense-unique capabilities. I will also evaluate critical technology areas not being developed by the commercial industry that the DOD uniquely needs to meet mission capabilities.

CHIEF TECHNOLOGY OFFICER

Question. If confirmed as USD(R&E), you would serve as the Chief Technology Officer (CTO) of the Department of Defense.

What do you perceive to be the current role of the CTO of the Department of Defense?

Answer. The CTO's current role is to advise the Secretary of Defense on research, engineering, manufacturing, developmental test and evaluation, technology development, innovation, and technology protection activities occurring within DOD, as well as internationally.

Question. Should the role of the CTO be modified in any way to enhance its effectiveness?

Answer. The Deputy Secretary recently chartered an Innovation Steering Group, which is led by USD(R&E) and which reports to the Deputy's Management Action Group (DMAG). This new governance body strengthens USD(R&E)'s ability to advise the Secretary and Deputy Secretary on matters related to science, technology, and technology transition. The Innovation Steering Group has the potential to enhance USD(R&E)'s role as DOD's CTO. If confirmed, I will leverage the Innovation Steering Group to amplify USD(R&E)'s voice as CTO, and will also look for other opportunities to enhance the CTO's effectiveness.

Question. Given the growing role of information technology and software in military capabilities, what do you understand to be the differences in roles, responsibilities, and authorities between the DOD Chief Information Officer and the CTO?

Answer. The CIO advises the Secretary on enterprise information technology whereas the CTO advises the Secretary on a wide range of emerging technologies needed to meet the capabilities that the Services need to stay ahead of our adversaries.

Question. Do you believe the position of USD(R&E) currently possesses adequate authorities to exercise the responsibilities of a CTO? Please explain your answer.

Answer. If confirmed, I will review the authorities needed for the DOD CTO. If additional authorities are needed to increase the effectiveness of the CTO, I will inform the SASC and undertake steps necessary to request the needed authorities.

INVESTMENT IN SCIENCE AND TECHNOLOGY

Question. If confirmed, what metrics would you use to assess the suitability of the size and portfolio of investments made under the defense science and technology (S&T) program?

Answer. If confirmed, I will work with the Intelligence Community to understand where threats are heading, and work the Services to understand their vision, mission and capability shortfalls. I will assess the DOD S&T portfolios to see if the research areas are well mapped in addressing the capability shortfalls and stay ahead of the threats. I will establish metrics to assess technology transitions into programs.

Question. In your view, should the Secretary of Defense's Defense Planning Guidance include guidance on minimum funding levels for the science and technology programs of the Military Departments? Please explain your answer.

Answer. Yes. Defense S&T investments represent a down-payment on our Nation's future security. As such, I believe that the Defense Planning Guidance should include guidance on minimum S&T funding levels.

Question. Do you believe that the Defense Planning Guidance should include guidance on minimum investment levels for Military Department research and testing infrastructure? Please explain your answer.

Answer. DOD's infrastructure resources are scarce. If confirmed, I will evaluate options to ensure that DOD makes necessary investments in research and testing infrastructure. These options may include providing guidance on minimum investment levels in the Defense Planning Guidance.

Question. What role should the USD(R&E) play in the detailed development and coordination of Military Department and Defense Agency/Field Activity S&T investment strategies, programs, and budgets, in your view?

Answer. USD(R&E) should continue to lead the Reliance 21 S&T executive committee (EXCOM), which was chartered to coordinate, synchronize, and align Military Department, Defense Agency/Field Activity S&T portfolios. The Reliance 21 EXCOM includes the Service S&T executives and representatives of the Joint Staff and Defense Agencies/Field Activities.

Question. What role should the USD(R&E) play in the development and coordination of Military Department research and test infrastructure investment strategies, programs, and budgets, in your view?

Answer. USD(R&E) should continue to lead the Reliance 21 S&T executive committee (EXCOM), which was chartered to coordinate, synchronize, and align Military Department and Defense Agency/Field Activity S&T portfolios, to include laboratories and test facilities. The Reliance 21 EXCOM includes the Service S&T executives and representatives of the Joint Staff and Defense Agencies/Field Activities. Through the Test Resource Management Center (TRMC) USD(R&E) also ensures the readiness of test and evaluation (T&E) infrastructure and workforce to support DOD modernization. If confirmed, I look forward to supporting the development and coordination of Military Department research and test infrastructure investment strategies, programs, and budgets, through this governance structure.

Question. What S&T areas do you consider underfunded by the DOD?

Answer. If confirmed, I will evaluate DOD's S&T portfolio in the context of the forthcoming national defense strategy and Administration priorities to assess areas that may be underfunded.

Question. In your judgment, will the funding levels in these areas affect the Department's ability to meet the threats of the future?

Answer. If confirmed, I will evaluate the funding level across the DOD technology portfolios to enable the Services to rapidly operate in a highly contested environment consistent with the National Defense priorities.

Question. If confirmed, what factors would you consider in assessing whether the Department's S&T investment strategy strikes the appropriate balance between funding innovative, disruptive technologies and addressing near-term operational needs and military requirements?

Answer. High fidelity models and wargaming can provide insight into the effectiveness of innovative disruptive technologies vs near-term systems to meet operational needs. With these results, a collective informed decision can then be made to balance near-term needs vs the potential of a disruptive capability.

Question. If confirmed, how would you work to ensure that the Department's leadership is aware of the successes resulting from science and technology programs and organizations in supporting defense missions?

Answer. Annual S&T reviews across the Services can provide the statistics on the program transition metrics. Successful transition of a technology into a program will be a key measure.

BASIC RESEARCH

Question. Given the continuing nature of basic research and the broad implications and applications of discovery-focused and innovation-focused sciences, what criteria would you use to measure the success of DOD basic research programs and investments, if confirmed?

Answer. Basic research is the early and an essential part of DOD's entire research ecosystem. Traditional metrics involving schedules and planned milestones do not apply, given basic research's high-risk and exploratory nature. The success of basic research can only be measured long term when basic research progresses into advanced research and into a prototype then into a program.

Question. What concerns do you have, if any, about current levels of funding for Department of Defense basic research? How would you plan to address those concerns, if confirmed?

Answer. The Council on Competitiveness, the National Academies of Science, and other experts recommend the percentage allocated to basic research be at least 20% of the total S&T budget. In the fiscal year 2021 Congressional appropriation, the proportion allocated for basic research is below 16%, and has been steadily decreasing for the over the past 5 years. If confirmed, I will work with the Secretary and Deputy Secretary to evaluate options for and assess the implications of various basic research funding levels. If deemed appropriate, I will undertake steps necessary to request the resource levels needed to make basic research investments using the recommended share of its total budget.

Question. If confirmed, what steps, if any, would you take to increase efforts in unfettered exploration, which has historically been a critical enabler of the most important breakthroughs in military capabilities?

Answer. The DOD plays an essential role in supporting unfettered scientific exploration. As the Nation faces problems of unprecedented complexity and scale, DOD must continue to play this essential role. As I understand it, the Vannevar Bush Faculty Fellowship (VBFF) program exemplifies the type of DOD-sponsored, far-reaching, exploratory research with transformative potential that is highly prized by the academic community. The Multi-University Research Initiative (MURI) is another example for multi-disciplinary research. I believe that DOD should sustain basic research activities not only with the appropriate level of funding, but also with policies, guidelines, and oversight that promote the conduct of basic research, and embedding it into the entire S&T ecosystem at DOD. If confirmed, I will support the DOD S&T ecosystem's ability to pursue such unfettered exploration and revolutionary breakthroughs, unconstrained by near-term objectives.

Question. If confirmed, how would you ensure that DOD's basic and applied research programs are executed in a manner consistent with National Security Decision Directive 189?

Answer. As I understand it, the Department has been well-served by the open research environment in fundamental research established by National Security Decision Directive - 189 (NSDD-189). The implementation of NSDD-189 at the Department has been made through previous USD(R&E) Memoranda and broadly defines

fundamental research at the Department as basic and applied research performed at universities, or basic research performed at defense labs and in industry. If confirmed, I would continue to promote the execution of fundamental research free from restrictions on publications or participation by individuals such as foreign nationals.

Question. What efforts would you make, if confirmed, to enable the Department to benefit from open innovation in fundamental research, while protecting such research from undue foreign interference?

Answer. Fundamental research generally involves areas of research that are speculative in nature and without a single, well-defined application in mind. As such, fundamental research benefits from open collaboration and the perspectives of exceptional researchers, regardless of their country of origin or citizenship. There is a long history of foreign-born scientists and engineers training and working in the United States, and they make essential contributions to our preeminence in science, engineering and technology today. Maintaining U.S.'s lead will require us to continue to attract and retain the best scientific talent globally. DOD should promote openness and transparency in fundamental research and promote collaboration to continue to develop the best ideas. The application of research for specific military uses should be protected from undue foreign interferences. If confirmed, I will work with the interagency, academia, and Congress to balance the openness and security of fundamental research that has military applications and to ensure that top research talent continues to view the U.S. as the research destination of choice.

Question. If confirmed, what are your ideas for working with the academic community to limit undue foreign influence on university research programs, and limit unwanted foreign access to research expertise and results, without creating a chilling effect on the open and collaborative nature of the research community?

Answer. I believe that the academic community and DOD should work collaboratively to solve the problem of undue foreign influence on university research programs. If confirmed, I will work with the National Academy of Sciences and with other interested agencies to implement consistent policies and procedures that U.S. government agencies, as well as the academic community, can implement in order to target specific behaviors which are counter to open and transparent international norms for research and intellectual property development.

Question. In your view, what steps could the USD(R&E) put in place to ensure that regulations pertaining to Department-funded university research are consistently applied by DOD and well understood by the university community?

Answer. I understand universities have communicated to DOD that inconsistencies in fundamental research designations and the application of fundamental research policy have resulted in research delays. In an era of increasing international competition for scientific breakthroughs, DOD cannot afford these delays. If confirmed, I will work with Department stakeholders, the DOD Components, the National Academy of Sciences and the academic community to review and, if necessary, to update DOD's fundamental research policy. Important considerations may include keeping basic and applied research open at universities, providing clear guidelines for research conducted under grants, cooperative agreements, contracts, and ensuring that policy is consistent across the Department.

Question. If confirmed, what steps would you take to protect U.S. research and intellectual property from undue foreign influence, without unjustly singling out researchers from certain nations?

Answer. For early-stage basic research, the innovative ideas and approaches are most readily available from academia. To protect this research, DOD should promote transparency through disclosures of actual or potential conflicts of interest and commitment. DOD should encourage universities to promote education and training in scientific ethics to include research integrity, conflicts of interest and commitment. Early-stage researchers who fulfill these requirements accurately and completely should be welcomed in the defense research enterprise. Once applications for basic research are identified or work becomes more sensitive, DOD should transfer research to cleared facilities or DOD labs where appropriate controls can be maintained. If confirmed, I will work to promote research security by providing tight protections around DOD's most sensitive work. I will also promote openness and transparency in basic research to ensure that DOD has access to breakthrough science, regardless of national origin.

EXPANDING THE DOD ACADEMIC RESEARCH BASE

Question. If confirmed, what steps would you take to increase DOD research engagement with Historically Black Colleges and Universities and other Minority-serving Institutions?

Answer. If confirmed, I will commit to strengthening DOD's engagements with Historically Black Colleges and Universities and Minority-Serving Institutions (HBCUs/MIs). HBCUs/MIs are vital to DOD modernization priorities and are an important source of diverse science, technology, engineering, and mathematics (STEM) talent. I will continue to support investments in HBCUs/MIs through funding opportunities for research and equipment grants as well as through cooperative agreements to establish additional centers of excellence in defense priority areas. In addition, I will support programs that bring HBCU/MI students and faculty into DOD research facilities to engage in research efforts alongside DOD staff. These may include summer internships for students and faculty fellowships, including sabbaticals, to facilitate relationships, exposure to state-of-the-art equipment and instrumentation, and the opportunity for both students and faculty to work with DOD scientists. I will seek opportunities to expand these and other initiatives and strengthen DOD's outreach efforts to HBCUs/MIs.

Question. If confirmed, what steps would you take to increase DOD engagement with universities participating in the Defense Established Program to Stimulate Competitive Research?

Answer. If confirmed, I will ensure that the Department continues to increase engagement with universities in the Defense Established Program to Stimulate Competitive Research (DEPSCoR). DOD should also continue participating in the EPSCoR Interagency Coordinating Committee, which serves as a working group for inter-agency coordination and communication and meets on a regular basis to coordinate federal EPSCoR and EPSCoR-like programs. DOD should also continue participating in conversations with the EPSCoR Foundation to receive feedback from the EPSCoR community and to provide funding opportunity announcements.

Question. If confirmed, what steps would you take to increase the funding for and quality of fundamental research at defense laboratories?

Answer. Our defense laboratories are a key component of the Department's research and engineering ecosystem and it is critical that they remain at the cutting edge of research. If confirmed, I will commit to reviewing the ongoing work of the labs to ensure they remain at the fore front of the science and technology in regard to the research that we are doing in the Department.

Question. If confirmed, what would you do to expand DOD's academic research base to include more researchers from the social sciences, medical sciences, management and business schools, and other disciplines relevant to defense missions?

Answer. Defense missions are increasingly impacted by the social and medical sciences, as well as by management and business disciplines. Cyber, AI, bio-threats, autonomous vehicles, climate and environmental change, acquisition programs, etc.—are all complex interdisciplinary problems that need to be informed by social, medical information, management, and business disciplines. If confirmed, I will expand the research base by increasing inter-disciplinary research areas to enhance DOD's ability to solve complex problems.

SCIENCE AND TECHNOLOGY ACTIVITIES OF CIVILIAN AGENCIES

Question. Do you believe that Department of Defense and other national security missions benefit from robust funding for scientific research in civilian agencies? Please explain your answer?

Answer. I believe that DOD and other national security missions do benefit significantly from our Federal partners' funding for scientific research. Federal basic scientific research, in areas such as quantum science and biotechnology for example, provides fundamental discoveries and insights that stimulate novel concepts and ideas for the Department to conduct applied research and technology development towards future military capabilities. Federal applied scientific research advances National capabilities, such as weather forecasting, vaccine development, or earth system monitoring and prediction technologies, that the Department can build on or directly leverage to address its specific needs for the Joint Force, our Service Members, and their dependents.

Question. How do the following civilian science agency activities support Department of Defense missions?

- A. National Science Foundation basic science funding
- B. National Aeronautics and Space Administration (NASA) research hypersonics and other space research and NASA testing facilities
- C. National Institutes of Health medical research and vaccine development activities
- D. National Institute of Standards and Technology cybersecurity, quantum science, and manufacturing research programs

Answer. I understand that DOD collaborates with NSF, NASA, NIH and NIST in various research areas and that these civilian agencies provide important support for DOD missions. For example:

- NSF funds basic research in critical technology areas such as artificial intelligence and quantum science. NSF also coordinates basic research policies and grant management procedures.
- NASA supports DOD missions through a series of partnerships and joint projects, particularly in materials and advanced manufacturing; position, navigation, and timing (PNT); propulsion; communication; space intelligence, surveillance, and reconnaissance (ISR); space situational awareness; and space resilience.
- DOD closely partners with NIH and leverages its medical research and vaccine development activities to advance DOD military medical capabilities, particularly by building upon and advancing the foundational health and medical discoveries that arise from NIH investments. The Department's core medical research and development activities are focused on advancing military health system and operational medical capabilities in medical simulation and information systems, military infectious diseases, military operational medicine, combat casualty care, and medical countermeasures against chemical, biological, radiological, and nuclear threats. Where NIH has investments in these focus areas, DOD program managers communicate with their NIH colleagues to identify promising advances and breakthroughs that could be incorporated into future DOD investments from applied research and advanced technology development through system development and demonstration.
- The NIST research activities in the areas of quantum sensing based timing (i.e., the next generation atomic clocks) are very well coordinated and collaborative with the DOD's efforts in this area. For example, the Joint Quantum Institute at the University of Maryland, was established collaboratively by NIST and Army Research Lab to not only perform scientific research in this area, but also establish a local STEM talent pipeline for both organizations. Furthermore, the value of NIST Cybersecurity S&T to the DOD cannot be overstated. Through the establishment of standards and authoring of special publications, NIST baselines cybersecurity for the entirety of the federal government. Several of the DOD's core cybersecurity constructs tie back directly to NIST.

Question. If confirmed, how would you work with other federal agencies and the Office of Science and Technology Policy to improve coordination of research activities and harmonization of research funding decisions?

Answer. In today's trans-disciplinary research and engineering landscape, inter-agency partnerships are critical to innovation. The White House Office of Science and Technology Policy's National Science and Technology Council provides a robust and highly effective framework for identifying, developing, and shaping shared federal research priorities and objectives and for fostering interagency partnerships on the full range of S&T topics that are relevant DOD. If confirmed, I will ensure the Department and its deep bench of technical subject matter experts maintain an active role in the NSTC and its subordinate entities, as well as other OSTP initiatives to foster innovation and collaboration in federal research and development. Additionally, the Department and the Military Services routinely engage federal agencies in bilateral and multilateral partnerships on research and development for shared mission objectives. If confirmed, I will engage with my interagency counterparts as well as with my colleagues within the Department to sustain existing areas of co-operation and to identify and advocate for new or expanded partnerships.

TECHNOLOGY STRATEGY

Question. What weaknesses, if any, do you perceive in the current Defense S&T strategic planning process?

Answer. An effective S&T strategy should balance longer-term investments in basic research and scientific discovery with nearer-term opportunities to transition technology and modernize existing systems. A S&T strategy should also enable flexibility and the ability rapidly shift and adapt as new priorities, as well as new knowledge, emerges. If confirmed, I will evaluate DOD's current S&T strategic planning process focusing on improving the balance between near- and long-term technology investments.

Question. What do you believe to be the key attributes of a good technology strategic plan and how could these attributes be carried through effectively to the DOD programming and budgeting purposes?

Answer. A good technology strategic plan should have a clear vision of the future, well-defined long-term goals and near-term objectives, defined key performance indi-

cators with which to measure progress over time, and milestones to assess technology progress and options. If confirmed, I will ensure that USD(R&E) leverages these attributes to translate its technologic strategic plans into programs and budgets.

Question. If confirmed, how would you ensure reliance on technology strategic plans as foundational elements of the budget, planning, and programming process?

Answer. USD(R&E) currently has principal directors for each of its 11 modernization priorities, who are responsible for ensuring that science, technology, engineering, prototyping, and demonstration investments are effectively leveraged and fully aligned with DOD's priorities. If confirmed, I will assess if the modernization priorities are well aligned with the new Defense strategy or if modifications are needed. I will ensure that principal directors, as well as other staff within USD(R&E), collaborate closely with OSD CAPE, Comptroller, and military services to ensure that technology strategic plans are foundational elements of the budget, planning, and programming process.

TECHNOLOGY TRANSITION

Question. How would you assess the effectiveness of current transition processes and systems?

Answer. The Advanced Capabilities directorate within USD(R&E), which oversees prototyping and experimentation activities, transitions ~80% of its prototypes to the military services or the warfighter. While this is an impressive metric, I believe that we can and should do more to increase not only the rate of transition, but also the volume of capabilities transitioned. If confirmed, I will support efforts to enable more technologies to bridge the "valley of death" by expanding prototyping and joint experimentation initiatives.

Question. In your view, what challenges exist in technology transition in DOD?

Answer. A number of things can cause technology to not transition: innovative technologies may not be mature enough for program managers to take the risk in incorporating them into a program of record. The technology may be demonstrated in a laboratory environment but not in a relevant operational environment. Or, the technology may be mature but there doesn't fulfill a requirement identified by a Service. This is where the "valley of death" usually occurs.

Question. What would you do, if confirmed, to address each of these challenges?

Answer. Funding to further mature and demonstrate a promising technology in a relevant environment should be made available to bridge the valley of death. If confirmed, I will seek out promising technologies and increase prototyping and experimentation to reduce technical risks in order to improve technology transition into programs.

Question. As compared to other technologies, do you believe that a different methodology is needed to transition software capabilities from research to operational use?

Answer. Yes. Modern software development uses DevSecOps methodology. Namely, continuous development and continuous testing. This is contrary to legacy software practices which follow a very linear process of development then testing. In order to rapidly transition the latest software, we need to have an open architecture that isolates the software from the hardware then allows rapid user testing.

Question. What is your understanding of the role of the USD(R&E) in facilitating communication between technical communities, acquisition personnel, and end users to support or speed technology transition?

Answer. USD(R&E) should play a critical role in bridging the technical communities to the acquisition community and the end users. The technical community informs the acquisition community and the end users the art-of-possible based on the emerging technologies. USD(R&E) should also inform them on the maturity of the technology and the associated risks. Lastly, USD(R&E) should also inform the acquisition community & the end users on trade space opportunities, and experiments needed to mature the technology.

Question. What are your views as to whether DOD's approach to and processes for funding technology transition must be changed? What sort of changes, if any, would you recommend, if confirmed?

Answer. DOD has several authorities that help accelerate technology transition, including "year of execution" prototyping programs and Other Transaction Authorities for more agile contracting. If confirmed, I will assess these authorities, as well as related policies and programs, to identify opportunities to increase technology transition. For example, one opportunity might be to create a flexible, robust, and non-specific 6.4 funding line that could be used to as a bridge to help mature technologies so that they can transition to a programs of record.

COMMERCIAL TECHNOLOGIES

Question. What steps would you take to make appropriate use of commercial technologies for the benefit of DOD institutions and the warfighter?

Answer. The DOD should leverage the commercial sector's tremendous amount of investments in research and development and accelerate DOD's ability to incorporate innovative commercial technologies. If confirmed, I will promote and enhance communication and collaboration between DOD and commercial industry.

Question. If confirmed, what steps would you take to transition appropriate commercial technologies to acquisition programs or capabilities that are fielded at scale with one or more Military Services?

Answer. The commercial sector is a proven source of remarkable rapid innovation. If confirmed, I will strengthen the dialog with innovative companies in the private sector and seek to understand impediments that they have to work with the DOD, then work to remove these impediments.

Question. What do you believe to be the most significant barriers to Program Executive Offices or prime contractor adoption and transition of new technologies, including but not limited to commercial technologies, into acquisition programs? What should be done to address such barriers, in your view?

Answer. I believe the biggest barrier to PEOs and prime contractors in adopting new technologies is the perceived risk associated with something new. PEOs and typical defense contractors are risk-adverse since they do not want to be delayed on a program or increase the cost of the program due to unforeseen technical risks. Often, careers depend on how well they execute on cost, schedule and performance of a program that they manage.

Question. What steps does the Department need to take to ensure that sustainment and life cycle costs for commercial technologies are understood and controlled as early in the decision cycle as is feasible?

Answer. USD(R&E) has important responsibilities to ensure that sustainment and life cycle costs for commercial technologies are understood and controlled as early in the decision cycle as feasible. Technologies have a natural life cycle and become obsolete at the end of their life cycle. The Department needs to understand this natural life cycle of every technology and incorporate this information into the program plan and plan for upgrades to avoid obsolescence in sustainment.

Question. What are the downsides, if any, to the use of commercial technologies and services by the Department of Defense?

Answer. Commercial technologies will become obsolete much faster than the typical defense system life cycle. As a result, the DOD must incorporate a modular open system that isolates the hardware from the software to enable rapid insertion of the latest technology to avoid obsolescence.

Commercial components are not tested at the same level as MILSTD components. This could potentially create failures when operating at extreme conditions.

Question. In your view, would there be benefit to the Department's establishment of a comparative testing program for domestic commercial technologies—perhaps a program modeled on the successful Foreign Comparative Testing program?

Answer. While there are a number of programs within the Department that search for innovative domestic technologies and when appropriate, seek to develop them further, none of these programs is explicitly designed to fund or conduct comparative testing activities. I believe it would be beneficial to have an equivalent testing program for domestic commercial technologies, assuming it is funded sufficiently to attract hundreds or thousands of U.S. commercial innovations and at the same time to effectively evaluate them. Modeling such a program on the existing Foreign Comparative Test (FCT) process would be a natural choice, since the FCT program has been a tremendous success story, benefiting both the DOD and the U.S. industrial base for 40 years since its inception.

SYSTEMS ENGINEERING AND PROTOTYPING

Question. Does the Department of Defense have sufficient systems engineering expertise in its current workforce and contractor base?

Answer. It typically takes a decade to train a system engineer, so experienced system engineers are both essential and hard to obtain. In my experience, the lack of quality experienced system engineers can result in poor architecture, poor program planning and it does result in poor program execution. The DOD does not have sufficient in-house systems engineering expertise and relies upon contractors, including FFRDCs, as a supplement.

Question. What do you predict would be the impact of further reductions in DOD personnel allocations to the ability of the USD(R&E) to execute assigned systems engineering missions?

Answer. I understand that USD(R&E) is experiencing a shortage of expertise in certain key areas (e.g., systems engineering, software development) and that additional cuts to its existing engineering workforce could have a negative impact on USD(R&E)'s mission. If confirmed, I will assess the USD(R&E) workforce and its alignment to mission, and will identify opportunities to address any shortfalls USD(R&E)'s technical workforce.

Question. What changes, if any, do you believe should be made in the Department's systems engineering organizations and practices?

Answer. I recognize the need to modernize systems engineering processes to leverage digital engineering and model-based systems engineering, as well as to facilitate rapid and iterative "design-test-fix" cycles. I also recognize that while DOD needs to be more flexible in its approach in systems engineering, it is also critical to retain fundamental engineering rigor. If confirmed, I will identify opportunities to balance between engineering rigor and flexibility and to modernize DOD's approach to systems engineering.

Question. What role does prototyping play in efforts to increase the success of the Department's acquisition efforts?

Answer. Prototyping and experimentation help drive down technical and integration risk, validate designs, obtain warfighter feedback, and inform requirements definition. Prototyping and experimentation can also help DOD explore emerging technologies early, in order to assess military utility. Prototyping and experiments allow DOD to "fail fast" before large investments are made. Ultimately, these activities help harness innovation, accelerate acquisition, and deliver capability more quickly.

Question. If confirmed, how would you work to increase the breadth and scope of systems engineering projects and prototyping efforts undertaken by the Department and its contractor base?

Answer. Performing systems engineering up front reduces the risk of programs failing to meet its performance objectives. If confirmed, I will seek solid systems engineering analysis and trade-space be performed prior to a program start. Prototyping critical technologies early on reduces program risk in engineering design and manufacturing. I will assess and encourage prototyping activities to reduce program risks.

VENTURE CAPITAL

Question. In your view, what role should venture capital firms play in the Department's investments in developing technologies, including in the Small Business Innovation Research program?

Answer. Venture capital must remain free to pursue leads and interest as the market dictates, not to address DOD prerogatives. That said, venture capital firms motivate early-stage companies to continue innovating and by provide them with resources to grow their products and services and this, when coincident with DOD interests, has the indirect benefit, from a DOD angle, of helping to develop and sustain a healthy industrial base. DOD can even signal areas of interest that might spur the coincidence of interest. Venture capital can help the Department accelerate product development and efficiently deliver breakthrough, war-winning capabilities.

Question. What advantages and disadvantages do you see in the use of venture capital strategies?

Answer.

Advantages:

- Venture capital strategies provide start-ups with resources, access to connections and valuable business networks, and guidance as the companies' grow.
- The use of venture capital can help the Department accelerate product development and efficiently deliver breakthrough, war-winning capabilities.
- Venture capital protects small and new companies from predatory investments by reducing industry's need to accept foreign investment when they need capital to continue growing.

Disadvantages:

- Venture capitalists may need strong demand signals from the government in order to accept the investment risk.
- There is a potential to lose some company autonomy, since investors may want to participate in company decision processes or to control some aspects of company business.

Question. Should the Department decide to use venture capital strategies, what steps do you believe should be taken to ensure that Department funds are invested in technologies and companies that properly reflect national defense priorities, avoid the potential for conflicts of interest by industry partners, and to ensure that the Department's investments are not diluted?

Answer. The Department can play a liaison role in bridging venture capital firms to promising small businesses.

Question. What other strategies do you intend to employ, if confirmed, to ensure that the nation's most innovative companies work on the Department's research and engineering programs?

Answer. If confirmed, I will work with the services and Small Business Innovation Research (SBIR) program to identify the most innovative companies and engage with them to understand their challenges in working with the DOD. I will work with the Services to resolve the impediments to their problems and garner support to help them to transition their technologies to the Services.

BENEFICIAL OWNERSHIP CONCERNS

Question. What concerns do you have regarding foreign beneficial ownership of DOD contractors and subcontractors, especially those with venture capital funding?

Answer. If confirmed, I will work with DCSA to ensure that companies with foreign ownership have a proper Special Security Agreement (SSA) structure in place to prevent sensitive information be released to foreign owners.

Question. If confirmed, what steps would you take to ensure continuous monitoring and assessment of the beneficial ownership of DOD contractors and subcontractors?

Answer. If confirmed, I will work closely with USD(A&S) to ensure appropriate reporting of DOD contractor ownership, in accordance with section 223 of Fiscal Year 2021 NDAA, "Disclosure of Funding Sources in Applications for Federal Research and Development Awards."

OPERATIONAL ENERGY AND ENERGY RESILIENCE

Question. The Department defines operational energy as the energy required for training, moving, and sustaining military forces and weapons platforms for military operations, including the energy used by tactical power systems, generators, and weapons platforms. Today, DOD energy requirements are projected to increase exponentially due to technological advances in weapons systems and distributed operations over longer operating distances.

If confirmed, how would you lead the Department in harnessing innovations in operational energy in order to reduce contested logistics vulnerabilities for warfighters?

Answer. If confirmed, I will work closely with the USD(A&S), the Joint Staff, Services, Combatant Commands, the S&T community, and industry to identify opportunities to reduce the military's logistics footprint by developing advanced materials to dramatically reduce size and weight and increase fuel efficiency. I will also explore resilient, secure, and cost effective energy solutions, to include sustainable and renewable sources, that can reduce DOD's reliance on legacy energy sources while still meeting the warfighters needs.

Question. In what specific domains, if any, do you believe the Department needs to improve the incorporation of energy considerations and alternative energy resources?

Answer. I believe that the Department should incorporate energy considerations and alternative energy sources in the formal weapon system requirements process. If confirmed, I will work with the Joint Staff and USD(A&S) to ensure that requirements address the energy efficiency of weapon system platforms, especially throughout their life cycle.

Question. How can the Department's acquisition systems better address requirements related to the use of energy in military platforms to decrease risks to warfighters?

Answer. Through the requirements process, the Department can specify requirements for both the energy efficiency and operational risk of military platforms. Performing tradeoffs through rigorous systems engineering early in the acquisition life cycle, the Department can determine the optimal means for meeting requirements for both operational energy and decreasing risk to our warfighters.

Question. In your view, what steps should be taken to render "energy supportability that reduces contested logistics vulnerabilities" a key performance parameter in the requirements process, as compared to the "check the box" consideration it is today?

Answer. If confirmed, I will work closely with the Joint Staff and across the logistics enterprise to assess the contested logistics vulnerabilities and develop technical solutions to reduce the risks.

READINESS AND RESOURCE IMPACTS FROM EXTREME WEATHER

Question. Over the last few years, damage from extreme weather events have resulted in billions worth of damage to DOD installations, ranging from three hurricanes in 2017 with over \$1.3 billion in damage to 2018 with roughly \$9 billion in damage at Tyndall Air Force Base, Camp Lejeune, and Offutt Air Force Base.

Based on these readiness and resource impacts, do you believe it necessary to use more resilient designs in DOD infrastructure? If so, and if confirmed, how would you recommend that DOD better incorporate extreme weather resilience into engineering and designs?

Answer. Yes. If confirmed, I will work with USD(A&S), who is the lead for DOD installations, to identify areas in which USD(R&E) can support the engineering and design of more robust DOD infrastructure.

Question. How can the Department better use existing authorities on extreme weather mitigation granted by Congress in recent NDAA's?

Answer. I understand that Congress, through recent NDAA's, has been supportive of DOD's climate resilience efforts. For example, NDAA requirements incorporate climate considerations into building codes and mandate installation resilience planning. If confirmed, I will ensure that DOD continues to invest in innovative research and engineering to develop new tools and capabilities which can enhance DOD's efforts to leverage these new authorities.

INTERNATIONAL RESEARCH COOPERATION

Question. In your view, how should increased globalization of defense technology affect the Department of Defense's research and technology development and investment strategy?

Answer. DOD needs to strike a careful balance across the goals of promoting US innovation base health, strengthening alliances, and controlling the spread of cutting-edge technology for military superiority. For critical technologies and programs, for example, DOD can apply appropriate protections that prevent technologies from falling into the wrong hands. DOD can also establish procedures to reinforce the integrity of our research enterprise. DOD can engage with the broader S&T community and its stakeholders to provide improved threat awareness, inform necessary controls, and develop best practices that can be institutionalized across the DOD S&T enterprise. DOD can also support the free exchange of ideas that is critical to U.S. research institutions and can support those institutions by expanding opportunities for international S&T partnerships. If confirmed, I will take these and other steps in order to development and investment strategy that strikes the proper balance between promoting and protecting critical technologies.

Question. What do you perceive to be the most significant obstacles to effective international research and development cooperation, and, if confirmed, how would you address those obstacles?

Answer. Currently, I am not aware of any substantive issues facing USD(R&E)'s ability to pursue international partnerships in S&T and I understand that USD(R&E) recently released a "DOD International S&T Engagement Strategy." If confirmed, I will review this strategy, assess obstacles that may impede its implementation, and work to expand international collaboration in S&T.

Question. How would increased international technology cooperation and procurement of foreign goods and services affect our domestic defense industrial base, in your opinion?

Answer. DOD's international partners have similar defense and security objectives and are investing their own R&D dollars to increase their capabilities. By increasing technology cooperation, DOD can pool its investments and leverage expertise and ideas that increase the U.S.'s industrial base capabilities. Additionally, international partners garner a greater understanding and appreciation of U.S. industry through participation in international armaments cooperation programs. If confirmed, I would continue the close collaboration between USD(R&E) and USD(A&S) on these and other international efforts.

Question. What best practices should govern Departmental monitoring and assessment of the research capabilities of our global partners and competitors, and of the global commercial sector?

Answer. DOD could conduct a data-driven assessment of global research capabilities by leveraging the enormous amount of open-source data, engaging with international and private sector partners, and working with the intelligence community to identify promising research trends and developments.

TEST AND EVALUATION

Question. What are your views on the adequacy and effectiveness of the Department of Defense's development and operational test and evaluation activities?

Answer. Thorough testing of a system in an operationally realistic environment is critical for informing acquisition decision making, identifying programmatic opportunities to apply additional engineering and risk mitigation resources, and ensuring operational readiness. I believe that DOD still has work to do to align its test activities with the new Adaptive Acquisition Framework and to ensure that test and evaluation processes are properly structured to assess software-intensive systems, new capabilities such as artificial intelligence-enabled autonomous systems, and to leverage new systems engineering approaches such as digital engineering.

Question. What modifications would you recommend to the test and evaluation processes in the Department to more efficiently and quickly develop and deliver operationally effective and suitable technologies to the warfighter?

Answer. I believe that the test community should be engaged earlier and continuously in programs as it undergoes design and development. If confirmed, I will work closely with USD(A&S) and DOT&E to adopt more modern testing methodologies.

Question. What role do you believe OSD should play in developmental test and what type of organizational structure and staffing is required to effectuate this role?

Answer. I believe that DOD needs to execute enough testing to ensure that warfighters are equipped with affordable, effective, suitable, and survivable systems. Such testing must be commensurate with the urgency of deploying a capability. I also believe that test and evaluation should be thought of as a continuum—breaking down the stovepipes that have traditionally constituted contractor testing, developmental testing, and operational testing. Early successful mission-based evaluation will be a critical enabler to assessing operational effectiveness earlier in the testing lifecycle and will provide more confidence that operational testing has completed successfully. If confirmed, I will review and implement an appropriate organizational structure to ensure that developmental test and evaluation is properly staffed and resourced and has the necessary authorities to achieve these and other objectives.

Question. The Department continues to streamline its acquisition processes to increase the speed of policy and oversight decision-making and to enhance organizational alignment, yet three test organizations remain separate within OSD. Industry generally maintains only a single organization for all of its test & evaluation—a model of agility for the assessment of weapon systems.

What are your views on the proposal to realign OSD Developmental Test and DOT&E organizations, together with the Test Resource Management Center, under the auspices of a single leader? Please explain your answer.

Answer. If confirmed, I will review previous proposals to improve test and evaluation, including organizational restructuring, and will advance strategies that accelerate delivering high-quality, suitably-tested, technologically-superior capabilities to our warfighters.

SMALL BUSINESS ISSUES

Question. If confirmed, how would you work to ensure that the Small Business Innovation Research (SBIR) program is an integral part of DOD modernization strategies and activities?

Answer. If confirmed, I would continue to leverage the nearly \$2B annual investment in America's innovative small businesses via the SBIR/STTR programs to help achieve DOD's modernization goals. Through the DOD SBIR/STTR program, small businesses are already contributing to important areas of modernization. If confirmed, I would seek to understand the impediments to transitioning from Phase 1 to Phase 2 and the difficulties in making Phases 2 contract awards by engaging with small companies and then working with the Services address the situation.

Question. If confirmed, how might you modify the SBIR program to improve the transition of S&T capabilities into acquisition programs?

Answer. I understand that the DOD SBIR/STTR program is piloting the OSD Transition SBIR/STTR Technology (OTST) Program to incentivize SBIR/STTR technology transition into programs of record. I also understand that efforts may be underway to modify SBIR/STTR authorities to allow additional Phase II awards and to provide DOD more flexibility in funding levels. These steps could enable further maturation of technologies so they can be inserted and integrated into a program of record or fielded systems. If confirmed, I will review these and other initiatives and promote opportunities to leverage the innovation inherent in small businesses.

Question. If confirmed, how might you modify the SBIR program to improve its ability to attract non-traditional defense contractors, such as small startup companies, as participants?

Answer. Non-traditional defense contractors may require more assistance understanding proposal submission requirements, completing pre-contracting activities, enhancing cybersecurity, and understanding foreign disclosure requirements. If confirmed, I would increase opportunities to educate non-traditional contractors and provide assistance to them to do business with DOD.

Question. If confirmed, what steps would you take to improve DOD's consideration of intellectual property rights as an incentive for small business to engage with the Department?

Answer. Retention of intellectual property (IP) rights is an important consideration for small businesses when engaging with DOD. If confirmed, I would explore steps to improve DOD's treatment of IP rights.

Question. What emphasis would you place, if confirmed, on participation by the acquisition community in setting research priorities for the SBIR program and in incorporating new technologies and methods into existing programs of record?

Answer. If confirmed, I would explore opportunities to help SBIR/STTR technologies bridge the "valley of death" into existing programs. An example of prior transition successes: the prime contractor worked closely with the SBIR program offices and established an Industry Day with small companies. The prime contractor then stated the technical challenges that they have and requested ideas from small companies. The prime then worked closely with the small companies on creating the SBIR phase 1 contract and then the phase 2 contract. Subsequently, the technology was successfully transitioned into a program of record.

DEFENSE LABORATORIES

Question. What is your overall assessment of the technical capabilities and quality of Defense laboratories relative to their peers at the Department of Energy, and in Federally Funded Research and Development Centers (FFRDCs), industry, and academia—both foreign and domestic?

Answer. If confirmed, I will perform an assessment of the technical capabilities and quality of the Defense laboratories.

Question. What do you believe to be the most effective management and human resources approaches for personnel at these Defense laboratory facilities?

Answer. If confirmed, I will take a look at the effectiveness of the human resources approaches for personnel at the Defense laboratory facilities.

Question. If confirmed, would you support increased delegation of operating authority to lab directors? Please explain your answer.

Answer. If confirmed, I would support increased delegation of operating authority. I believe that delegation of authority to the lab directors has been an effective management tool for increasing lab director flexibility, creativity, and effectiveness. Furthermore, I would encourage the lab directors to further delegate their authorities to increase flexibility and creativity.

Question. If confirmed, what specific steps, if any, would you take to improve the quality, technical capabilities, and mission performance of the Defense laboratories?

Answer. If confirmed, I will perform an assessment of the quality, technical capabilities and mission performance of the Defense laboratories.

WORKFORCE ISSUES

Question. What is your perception of the particular workforce challenges confronting the USD(R&E)?

Answer. Created in February 2018, USD(R&E) is still a relatively new organization that is working to establish roles and responsibilities, define processes, and chart its course. Complicating matters, USD(R&E) has been without confirmed leadership since July 2020. If confirmed, I am committed to providing the leadership, vision, and consistency that USD(R&E)'s workforce deserves.

Question. How do personnel authorities applicable to the Office of the USD(R&E) compare to the human resources flexibilities available to the DARPA and the Defense laboratories? Should these flexibilities be expanded to apply also to the Office of the USD(R&E) and other research and engineering components of the DOD? Please explain your answer.

Answer. I understand that the Defense laboratories and DARPA have a number of personnel flexibilities that enable these organizations to compete in a highly competitive technical market to attract and retain critical technical talent and remain at the cutting edge. I also understand that these authorities may not be applicable to USD(R&E), which operates under the Acquisition Demonstration program. That

said, I believe additional authorities may benefit USD(R&E) and other technical components of DOD to attract top talent. If confirmed, I will review opportunities to improve DOD's ability recruit and retain technical talent through all means, including by potentially leveraging new human resources flexibilities.

Question. With a view to improving productivity, performance, and mission accomplishment, how would you work with the personnel policy and management communities in the Office of the Secretary of Defense and the Military Departments to enhance the human resources flexibilities available to DOD labs, test ranges, and other research and engineering components of the DOD?

Answer. If confirmed, I will take a look at personnel policies with an eye to increasing flexibilities available to the DOD Labs, test ranges and other research & engineering components of the DOD.

Question. How would you work with the DOD lab, test range, and other research and engineering components of the DOD to maximize utilization of human resources flexibilities currently in place or newly authorized?

Answer. If confirmed, I would work with my counterparts in USD(P&R) as well as with the Service Acquisition Executives to ensure that they maximize the utilization of flexibilities available to them. I will also coordinate with my counterparts to ensure that, where appropriate, human resources flexibilities guidance is coordinated and consistent throughout the DOD.

Question. What is your assessment of the diversity of the workforce comprising the research and engineering organizations of the Department of Defense?

Answer. Women and minorities have been historically under-represented in both national security and in science, technology, engineering, and mathematics (STEM) fields. The diversity of professionals who work at the intersection of both national security and STEM has historically been quite poor. If confirmed, I am committed to strengthening DOD's STEM workforce by taking steps to increase its diversity.

Question. How do you think improvements in workforce diversity would improve the productivity, performance, and mission accomplishment of such organizations? Please explain your answer.

Answer. USD(R&E)'s effectiveness is dependent on its ability to attract the most talented workforce from across this nation. USD(R&E) must provide opportunities for a diverse workforce since diversity provides different ideas that enrich our innovation. The United State of America is known for its innovation based on its ability to attract a diverse population.

Question. What steps, if any, would you take, if confirmed, to increase diversity in the research and engineering organizations of the Department of Defense?

Answer. If confirmed, I will explore opportunities to increase diversity in the Department of Defense.

Question. Some research and engineering organizations, including DARPA and DIU, have different challenges in increasing diversity due to their need for more experienced, mid-career talent. In your view, are there meaningful steps these organizations can and should take to improve diversity notwithstanding?

Answer. Yes. Organizations like DARPA and DIU can take steps to ensure that they consider a diverse pool of candidates for all positions. For example, these organizations could proactively recruit diverse candidates, leverage hiring flexibilities to access diverse talent at universities, industry, and federally funded research and development laboratories (FFRDCs), and build networks of diverse, early-career candidates who might be interested in working for these organizations later.

JOINT ALL-DOMAIN COMMAND AND CONTROL

Question. The Joint Staff J6 leads a cross-functional team (CFT) for Joint All-Domain Command and Control (JADC2), which overlays and integrates similar but Service-specific multi-domain command and control and targeting initiatives. The J6 has received support from the Principal Director for Fully Networked C3 in the Office of the USD(R&E), as well as from the Director for Mission Integration. Among the major objectives of the JADC2 initiative are interoperability across platforms and systems of all the Services, in all domains, coupled with decision aids geared to vastly increasing the speed and scale of sense- and decision-making.

What are your views as to the importance of the JADC2 CFT and the ways in which the Office of the USD(R&E) can and should assist in furthering the objectives of this initiative?

Answer. If confirmed, I will look into the JADC2 program and assess opportunities to assist them to achieve their objective.

SPACE ISSUES

Question. Given that one purpose underlying the creation of the U.S. Space Force was to consolidate space activities, section 956 of the Fiscal Year 2020 National Defense Authorization Act (NDAA) as clarified by section 1601 of the NDAA for fiscal year 2021, requires transfer of the Space Development Agency (SDA) from the USD(R&E) to the Space Force, effective October 1, 2022.

If confirmed, what steps would you take to effectuate the timely transfer of the SDA to the Space Force?

Answer. If confirmed, I am committed to work closely with the Space Force leadership and the Director of SDA to ensure a smooth, orderly, and on time transition as called for in the Fiscal Year 2021 NDAA.

Question. Prior to the creation of Space Force, the Government Accountability Office commented on the functional overlap of myriad DOD space entities.

Answer. Yes, it is my understanding that DOD has a myriad of space entities including SDA, the Space Force, Air Force Space & Missile Command, Space RCO, and the Missile Defense Agency. A review of these organizations' role and responsibilities and missions may be helpful to ensure alignment with warfighter needs, identify opportunities to reduce duplication, and to encourage inter-organizational collaboration.

Question. What is your understanding of the relationship between the Office of the USD(R&E) and the Space Force? How can the USD(R&E) best support space research and engineering, without duplicating functions properly assigned to the Space Force?

Answer. As with USD(R&E)'s role in relation to the other services, USD(R&E)'s role with the Space Force is to support its research and engineering efforts and also serve to synchronize and de-conflict those efforts with others being conducted elsewhere in the Department.

MISSILE DEFENSE AGENCY

Question. If confirmed, what steps would you take to expedite the Missile Defense Agency's shift in focus to research and development and divestiture of management responsibilities for existing weapon systems to the Military Departments?

Answer. If confirmed, I will work with MDA director to shift its focus towards research and development and work to enable transition of its existing weapons systems to the Military Departments.

Question. What specific missile defense systems should be transferred to the Military Departments, in your view?

Answer. If confirmed, I will work with the director of MDA to assess production missile defense systems that should be transferred to the Military Departments.

Question. Given the findings and recommendations set forth in a recent Government Accountability Office report (GAO-21-314) what are your views on the Missile Defense Agency's current developmental and operational testing function? If confirmed, which, if any, of GAO's recommendations would you implement, and why?

Answer. If confirmed, I will work with the Director of MDA to assess the current Developmental & Operational testing functions and review GAO's recommendations before forming an opinion.

DEFENSE ADVANCED RESEARCH PROJECTS AGENCY (DARPA)

Question. What adjustments would you expect to make, if confirmed, in the current style of DARPA research program management and investment strategy?

Answer. DARPA has an enduring mission to make pivotal investments in breakthrough technologies for national security. Working with innovators inside and outside government, DARPA has repeatedly delivered on that mission, recently demonstrated by early investments in mRNA research which are being applied to the COVID fight today. I believe DARPA's authorities and funding allow it the flexibility to explore new areas of discovery and to rapidly pivot to emerging threats. If confirmed, I would carefully review DARPA's approach and portfolio to see how its programs align with national defense priorities and address not only near-term threats but also those on the horizon and beyond.

Question. What is the appropriate relationship between DARPA and the Military Service S&T programs and laboratories?

Answer. DARPA should have a strong understanding of the Military Service S&T programs and robust working relationships with the laboratories. DARPA participates as a member of the Science and Technology (S&T) Executive Committee as well as the Reliance 21 Communities of Interest where Military Service S&T programs as well as DARPA programs are reviewed and discussed. DARPA should also

keep the Services and laboratories informed of its S&T programs to prevent duplication of effort and to seek technical and programmatic assistance in the execution of and transition of technologies to the Services.

Question. What is the appropriate relationship between DARPA and Military Department acquisition programs?

Answer. DARPA should have strong relationships with the Military Department acquisition and requirements communities to facilitate transition of DARPA technologies to programs of record. DARPA should be aware of Service's capability gaps, acquisition programs and understand opportunities to transition.

Question. If confirmed, what steps would you take to improve DARPA's effectiveness in transitioning successful programs and innovations to the Services?

Answer. If confirmed, I will work closely with DARPA and the Services to understand the impediments to transition and collaborate on a transition path.

Question. Is there value in assessing and endeavoring to increase the diversity of the DARPA program management workforce? Please explain your answer.

Answer. Yes, there is significant value in assessing and working to increase the diversity of the workforce across the Department. If confirmed, I will review ways to increase underrepresented community participation across the USD(R&E) ecosystem, and support DARPA in its initiatives to increase the diversity of its program management workforce.

DEFENSE INNOVATION UNIT (DIU)

Question. What is your assessment of the effectiveness of the DIU in transitioning capabilities into operational use?

Answer. I understand that in 2020, DIU increased its technology programs transition to the Services from 35% in 2019 to 43%. This transition means that the Service procured the DIU developed systems. Part of its success is attributed to early transition planning, securing support from DOD partner organizations' leadership, and fostering acquisition and operator involvement earlier in projects. If confirmed, I will work to ensure DIU continues to increase the transition rate.

Question. What do you believe to be is the appropriate management framework for the DIU? Should DIU continue under current reporting chains or align under a new construct? Please explain your answer.

Answer. If confirmed, I will review the DIU reporting chain to ensure maximum synergy between the multiple prototyping organizations within USD(R&E) and throughout the Services.

Question. What is your assessment of DIU's effectiveness in partnering with the Services to support development and transition of commercial technologies?

Answer. If confirmed, I will review challenges that prevent greater commercial technology transition, which may include securing funding within a budget cycle when a project is successful and incentivizing programs to insert commercial technologies.

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) EDUCATION

Question. Do you agree with the premise of some that the Department of Defense specifically, and the Nation as a whole, are facing a crisis in STEM education?

Answer. I do agree with the premise that there is a crisis in STEM education, particularly for the Department of Defense. National security requires that the U.S. have access to a substantial, high quality STEM workforce, which is adept at navigating an increasingly high-tech, digital, and connected world. At the graduate level, there is an insufficient number of U.S. citizens being trained and receiving advanced degrees in technical and engineering areas. The work of energizing the future workforce through STEM education begins at the K-12 level, and if confirmed, I will seek to maximize the effectiveness of DOD's STEM education investments.

Question. In your view, how have deficiencies in STEM education affected the Department's ability to execute its missions?

Answer. Deficiencies in STEM education have limited the ability of young people to discover and pursue the key fields which undergird the future technologies of the Department. The presence of fewer students and researchers entering science, technology, engineering, and mathematics fields also limits the breadth and frequency of breakthroughs in critical technology areas. The Department of Defense has to compete with commercial and defense industries for the limited pool of STEM talent. All of these deficiencies hurt the Department's ability to execute its missions.

Question. What role do you think the Department should play in supporting STEM education writ large?

Answer. DOD is the primary funding source of engineering and math research and education programs in the U.S. and, therefore, plays a significant role sup-

porting STEM education. I believe that DOD has a responsibility to examine its current balance between education, recruitment, and management to see if these investments address technical workforce needs. The science and engineering challenges DOD faces today are highly complex and often intersect with more than one scientific discipline. DOD should think about how to ensure that our research funding encourages an interdisciplinary approach. Engaging foreign-born STEM graduates is also an important component to addressing DOD's workforce needs, and therefore, reviewing immigration challenges and considering options to streamline accesses or statuses is prudent and may even be necessary.

Question. What role should the Department play in supporting STEM education opportunities for service members?

Answer. The Department can encourage service members to take advantage of the educational opportunities and STEM programs available to them. If confirmed, I will work with USD(P&R) to identify possible synergies in supporting further STEM education opportunities for service members.

Question. What role should the Department play in supporting STEM education opportunities for dependents of service members?

Answer. Military dependents could benefit from DOD's various STEM education programs. The Department is uniquely positioned to provide meaningful STEM education opportunities for dependents of service members through formal and informal STEM activities. If confirmed, I will seek to leverage the scientists, engineers, laboratories, and engineering centers across DOD's STEM enterprise to appropriately support STEM opportunities for military children.

Question. What role should the Department play in other K-12 STEM educational activities?

Answer. Preparation of a capable, STEM-literate workforce of the future starts with improving K-12 STEM education in the U.S. In 2016, China produced 4.7 million STEM graduates, compared to 568K in the United States at the undergraduate level. This gap is significantly amplified by the fact that the U.S. continues to lag in math and science proficiency at the secondary level. Engagement at all levels of the STEM pipeline is critical, starting with increasing interest in elementary students in sciences. STEM outreach for high school students leads to higher retention, when students do pursue STEM degrees at the college level. As the largest employer of scientists and engineers across the federal landscape, the Department is uniquely positioned and should play a significant role in supporting STEM education through formal and informal activities which leverage the USD(R&E) enterprise and support students throughout all levels of the STEM pipeline.

JASON

Question. If confirmed, would you support a proposal to transfer management of the JASON scientific advisory group to the Office of the USD(R&E)? Please explain your answer.

Answer. Yes, if confirmed, I would support transferring oversight of the JASON scientific advisory group to USD(R&E). The JASON scientific advisory group was established as an eminent cadre of senior scientists, engineers, and technical experts across various disciplines who support DOD through short-term, technically based studies. These studies provide technical recommendations that help DOD formulate new research programs and review current programs. These functions align with the statutory role of the Office of USD(R&E) and would provide very valuable synergy, if managed by USD(R&E).

MANUFACTURING

Question. What role should DOD play in investing in manufacturing innovation and ensuring that the resultant innovations are adopted into defense industry and the organic industrial base?

Answer. DOD should further its manufacturing innovation ecosystem by leveraging existing authorities under the DOD Manufacturing Technology Program to stimulate the early development of manufacturing processes and the adoption of enterprise business practices, as well as providing concurrent support for science and technology development. To increase its national impact and accelerate the adoption of technology, DOD should also continue its close partnership with the DOD Manufacturing Innovation Institutes and use these institutes as mechanisms for unifying the DOD, Federal agency, state/local government, and private-sector communities to collaboratively tackle manufacturing technology challenges for the benefit of the Nation and the warfighter.

Question. What is your assessment of the performance and impacts of the DOD Manufacturing Technology program, including the Manufacturing Institutes?

Answer. The DOD Manufacturing Technology Program is an ambitious program that meets cross-cutting defense manufacturing needs beyond the ability of any single service to address. If confirmed, I will assess the successes that MII has achieved and seek to continue the innovation institutes. I will review the ManTech program's long-term engagement strategy with the MIIs to help ensure maximum effectiveness.

MICROELECTRONICS

Question. If confirmed, specifically what steps would you take to ensure that the Department of Defense has assured access to the microelectronics it requires for defense systems?

Answer. If confirmed, I will work with my team in USD(R&E) and DARPA, as well as with USD(A&S), our counterparts across all interested federal agencies, and industry to ensure that the Department retains continued access to state-of-the-art and radiation-hardened microelectronics, which are essential to DOD's most critical missions. Microelectronics are an essential element of much of what the Department does and I look forward to working with the team to find new opportunities to keep the Department on the cutting edge of these technologies.

Question. What is your assessment of the Department of Defense's microelectronics needs, to include both legacy, state-of-the-practice, and state-of-the-art?

Answer. It is my understanding that the Department is currently working on a comprehensive microelectronics strategy, as directed by the Fiscal Year 2021 NDAA, which will capture the needs of the Department for legacy, state-of-the practice, and state-of-the-art microelectronics. If confirmed, I will work with my colleagues, USD(A&S), DARPA to complete that strategy and ensure that it is provided to Congress in a timely fashion.

Question. If confirmed, what steps would you take to ensure that the Nation has an effective microelectronics research enterprise?

Answer. If confirmed, I will continue to seek out opportunities to advance USD(R&E) and DARPA's strong relationships with industry, academia, the Services' labs and other interested agencies. The task is difficult and reliance on DOD alone misplaced: DOD represents just over 1% of the microelectronics market. We depend on the commercial market to stay at the cutting edge.

Question. What role should the Department of Defense play in supporting the commercial microelectronics industry?

Answer. If confirmed, I will support the Administration's ongoing effort to ensure a robust domestic microelectronics industry that can support the commercial and national security needs of the nation.

Question. What role should the Department of Defense play in working with the interagency regarding domestic production of microelectronics?

Answer. It is my understanding that the USD(R&E) is an integral part of the interagency efforts to address matters relating to microelectronics research, development, manufacturing, and policy to develop a national strategy on microelectronics research, development, manufacturing, and supply chain security. If confirmed, I will pursue opportunities to promote domestic production of microelectronics important for meeting DOD needs.

Question. Should the Department of Defense be dependent on foreign sources of microelectronics for its systems and programs?

Answer. Due to the national security implications of microelectronics, the United States should remain a world leader in state-of-the-art microelectronics technology and manufacturing. . Military unique integrated circuits used in critical weapon systems should be designed and fabricated by from secure sources either within the United States or from our closest trusted allies.

Question. There is a shortage in strategic radiation hardened microelectronics required for the ongoing nuclear modernization?

Answer. If confirmed, I will look into whether we have a shortage of RADHARD microelectronics required for nuclear modernization.

Question. If confirmed, what steps would you recommend to correct this unique deficiency?

Answer. I will work with my colleagues in the Department and in industry to gain a full understanding of the current situation and identify what steps are needed.

Question. Section 276 of the fiscal year NDAA requires the Secretary of Defense to submit to the President by June 1, 2021, a strategy for microelectronics that includes innovative models of public-private partnerships for managing the execution of the strategy, including consideration of establishing a semiconductor manufacturing corporation. The same law requires that the strategy address the need for

funding and other forms of support for the development, demonstration, prototyping, and scale up of new microelectronics technologies.

If confirmed, what steps would you take to prioritize the development and implementation of this strategy? How would you proposed to partner with the Under Secretary for Acquisition & Sustainment on this issue?

Answer. If confirmed, I will work with my USD(A&S) counterpart to make sure the Department is on track to submit the strategy called for in the NDAA.

SOCIAL SCIENCE AND MANAGEMENT RESEARCH

Question. In your view, what benefits would defense missions derive from increases in DOD-funded research in the social, information, and management sciences?

Answer. Increasingly, we have seen how areas important to the Department—such as cyber, AI, autonomy, insider threat behaviors, cross-domain deterrence, climate and environmental change, etc.—are complex interdisciplinary problems that need to be informed by social, information, and management science. By funding research in social, information, and management sciences, the Department can better guide cross-discipline research in areas that focus on DOD needs.

Question. What are your specific ideas for enabling engagement between the DOD science and technology community and outside academic experts in areas such as business, management, and public administration, to perform research, participate in personnel exchange programs, and provide technical expertise to support the Department's efforts to improve its management and business practices?

Answer. A challenge to outside academic experts performing research within DOD is in facilitating access to data that may be classified and require clearances. If confirmed, I will explore options for aggregating and anonymizing data for researchers to use. I will also explore personnel exchange programs that would both facilitate opportunities for academic researchers in business, management, and public administration to hold clearances for purposes of conducting research that is informed by an appreciation of the challenges of the DOD mission space. This would also provide DOD administrators the opportunity to spend time within academic environments, generating opportunities for integrating external best practices upon their return to the Department.

SEXUAL HARASSMENT

Question. In responding to the 2018 DOD Civilian Employee Workplace and Gender Relations survey, 17.7 percent of female and 5.8 percent of male DOD employees indicated that they had experienced sexual harassment and/or gender discrimination by “someone at work” in the 12 months prior to completing the survey.

What is your assessment of the current climate regarding sexual harassment, gender discrimination, and other harassment in the Office of the USD(R&E)?

Answer. The existence of sexual harassment, gender discrimination, and other harassment within our ranks is deeply disturbing and the conduct is unacceptable. These actions destroy good order and discipline and foster a climate that is inconsistent with the dignity and respect that our workforce deserves. The Department must continue its work to eliminate sexual harassment, gender-based discrimination, and any other form of harassment. The Department must ensure consistent incident tracking, ensure responsiveness, and provide training for the workforce to improve outcomes and strive for workforce stability. If confirmed, I would review previous workforce assessments including climate surveys, OPM Federal employee viewpoint survey results, and any other documentation that would give me insight into the USD(R&E) organization and help me make informed decisions on next steps to mitigate, and hopefully eliminate, sexual harassment, gender discrimination, and any other harassment within the Office of USD(R&E).

Question. If confirmed, what actions would you take were you to receive or become aware of a complaint of sexual harassment, discrimination, or other harassment from an employee of the Office of the USD(R&E) or an employee of an organization over which the USD(R&E) exercises authority, direction, and control?

Answer. If confirmed, I would immediately reiterate to the workforce of the importance of equality and diversity as well as the Department's zero tolerance for harassment. Second, I would further reiterate my expectations of professional conduct to all employees, to include contractors. More importantly, I would take the complaint seriously and immediately contact the appropriate office to initiate an investigation to gather all facts, conduct the necessary interviews, collected appropriate information, and address the complaint within the specified guidelines of DOD regulations and policies.

CONGRESSIONAL OVERSIGHT

Question. In order to exercise legislative and oversight responsibilities, it is important that this committee, its subcommittees, and other appropriate committees of Congress receive timely testimony, briefings, reports, records—including documents and electronic communications, and other information from the executive branch.

Do you agree, without qualification, if confirmed, and on request, to appear and testify before this committee, its subcommittees, and other appropriate committees of Congress? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to provide this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs such witnesses and briefers, briefings, reports, records—including documents and electronic communications, and other information, as may be requested of you, and to do so in a timely manner? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to consult with this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs, regarding your basis for any delay or denial in providing testimony, briefings, reports, records—including documents and electronic communications, and other information requested of you? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to keep this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs apprised of new information that materially impacts the accuracy of testimony, briefings, reports, records—including documents and electronic communications, and other information you or your organization previously provided? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, and on request, to provide this committee and its subcommittees with records and other information within their oversight jurisdiction, even absent a formal Committee request? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to respond timely to letters to, and/or inquiries and other requests of you or your organization from individual Senators who are members of this committee? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to ensure that you and other members of your organization protect from retaliation any military member, federal employee, or contractor employee who testifies before, or communicates with this committee, its subcommittees, and any other appropriate committee of Congress? Please answer with a simple yes or no.

Answer. Yes.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JACK REED

SPACE DEVELOPMENT AGENCY

1. Senator REED. Ms. Shyu, the Fiscal Year 2020 National Defense Authorization Act (NDAA) (Public Law 116–92) created the Space Force to consolidate disparate functions of space throughout the Department of Defense (DOD). In response to that mandate, section 1601 of the Fiscal Year 2021 National Defense Authorization Act (Public Law 116–283) requires the Space Development Agency to be an element of the Space Force, effective on October 1, 2022. Will you ensure this happens on time, according to the law?

Ms. SHYU. Yes, I will do all that is in my authority to effect a timely transition of the SDA.

BALANCING THE NEEDS OF OVERSIGHT AND SPEED

2. Senator REED. Ms. Shyu, in your respective positions, you will be responsible for development and accurately estimating costs, as well as oversight of programs.

These activities require data and analysis, and take time. The activities also are part of a process, which needs to move faster. How will you balance these competing needs?

Ms. SHYU. Prior to product development, it is critical to develop a detailed cost model of the proposed concept. That cost model should encompass all of the anticipated components in the design and is initially populated by “engineering cost estimate.” As the development progresses, the cost model should be continuously updated by “supplier quotes” then by “actuals.” As a function of time, the cost model becomes more accurate as the design of the system under development matures and the “engineering estimate” is updated with actual component cost. Once a prototype is built, an accurate cost model is then available.

HYPERSONICS

3. Senator REED. Ms. Shyu, should you be confirmed, your Principal Director for Hypersonics, Mr. Mike White, has stated that the testing of hypersonics technologies will dramatically increase over the next several years. Can you tell the committee if the Department has the testing infrastructure to successfully implement the strategic direction for hypersonics?

Ms. SHYU. If confirmed, I will look into the testing infrastructure for hypersonics, assess its sufficiency and provide my assessment back to the Committee.

TESTING AND KEY TECHNOLOGIES

4. Senator REED. Ms. Shyu, in light of the previous question and your response regarding the increase in testing and the Department’s testing infrastructure, where does reusable flight testing fit into your plans for advancing the key technologies?

Ms. SHYU. If confirmed, I plan to conduct a comprehensive look at our test infrastructure and assess our current capabilities and planned improvements. If there are testing capability gaps, I plan to identify technology options and the associated costs and risks to close that gap.

KEY MODERNIZATION PRIORITIES—HYPERSONICS

5. Senator REED. Ms. Shyu, your predecessor in the position for which you are nominated identified a number of key modernization priorities. Can you tell the committee where one of those—hypersonics—will fit into your set of priorities for the Department?

Ms. SHYU. Hypersonic systems provide critical deterrence capability for this nation. If confirmed, it will remain a priority area consistent with the current National Defense Strategy (NDS) and upcoming update to the NDS.

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

RISK TAKING IN RESEARCH AND DEVELOPMENT

6. Senator HIRONO. Ms. Shyu, the position you are filling was created with the expectation that one would take risks, press the technology envelope, test and experiment, and have the latitude to fail, as appropriate. If confirmed, what policies or procedures would you implement to help foster a culture of risk-taking and an appropriate tolerance for failure within DOD?

Ms. SHYU. There appear to be successful pockets of risk taking innovation at the DOD, but we must do more to ensure that DOD has a strong culture of innovation across its entire workforce and within the military services. If confirmed, I would look to emulate successful innovation practices from across the private sector, academia, our allies and partners, as well as do more of what DOD is already doing well.

The USD(R&E) is chartered to develop technologies from basic research (6.1) through to prototyping (6.4). 6.1 research to 6.4 prototyping is inherently risky since we are maturing brand new technologies. If confirmed, I will encourage lab experimentation to prototype development and testing early on to reduce technical risks for potential insertion into acquisition programs. USD(R&E) needs to collaborate with USD(A&S) and the Services to identify and transition the most promising technologies that bring increased capabilities to our warfighters. This joint collaboration can identify additional technology maturation that is needed prior to inserting into a program of record.

7. Senator HIRONO. Ms. Shyu, what policies or procedures would you implement to increase DOD collaboration and engagement with leading-edge technology companies that have not historically been a part of DOD's innovation ecosystem?

Ms. SHYU. If confirmed, I plan to review how USD(R&E) communicates with both conventional defense contractors as well as how the DOD does outreach to companies that are new to the DOD innovation ecosystem. It will be important to understand the perspective and challenges facing small business and start-ups. If confirmed, I would develop an engagement strategy including a sequence of round-table engagements with commercial and non-traditional defense entities. Listening and understanding are the first steps to taking actions to remove impediments to collaboration and to engaging with leading-edge technology companies.

QUESTIONS SUBMITTED BY SENATOR ELIZABETH WARREN

ETHICS

8. Senator WARREN. Ms. Shyu, I have long been concerned with the influence of money in politics and the cozy relationship between powerful special interests, corporations, and lawmakers and government officials—including the relationship between defense contractors and the Pentagon. In 2018, I introduced the Anti-corruption and Public Integrity Act, legislation to strengthen Federal laws governing conflicts of interest, recusals, and the revolving door between government and industry. In May 2019, I introduced a companion bill focused on the Defense Department, the Department of Defense Ethics and Anti-corruption Act. If enacted, the following requirements would apply to all senior DOD officials: (1) Four-year cooling off period for all senior DOD officials before they can seek compensation from a DOD contractor; (2) Extension of the existing prohibition on retired general and flag officers from lobbying DOD to 4 years; (3) Heightened recusal standard for DOD employees that would prohibit them from participating in any matter that affects the financial interests of their former employer for 4 years; and (4) A ban on senior DOD officials owning any stock in a major defense contractor and a ban on all DOD employees from owning any stock in contractors if the employee can use their official position to influence the stock's value. (This was adopted in the Fiscal Year 2020 NDAA.)

In response to my request at his hearing, Secretary Lloyd Austin committed to recusing himself from all matter involving Raytheon for the duration of his government service, not seeking a waiver from that recusal, and to not seek compensation from a defense contractor for a period of 4 years post government service. Will you make the same commitments as Secretary Austin?

Ms. SHYU. I have no financial interests in the Raytheon company. I do continue to participate in a pension plan, the value of which is not based on Raytheon's financial performance, and my right to receive this previously earned benefit is unconditional and enforceable under the law. I have made extensive ethics commitments as requested by the Office of Government Ethics and documented in a written Ethics Agreement, which I have signed. My Ethics Agreement and the President's Ethics Pledge will require me, if confirmed and appointed, to recuse myself for a period of two years from participating personally and substantially in any particular matter involving specific parties in which I know that a former employer or client identified in my Ethics Agreement is a party or represents a party, unless I am first authorized to participate by the appropriate ethics official. If confirmed, I agree to extend this term of my Ethics Agreement from two years to four years. I will ensure that I have a robust screening process in place to help implement these recusals. I have no intention to seek a waiver and no expectation that it will be required, but if unanticipated circumstances were to arise, I would consider available alternatives to a waiver before seeking one and would consult very carefully with DOD ethics officials.

I have promised to abide by the extensive post-government employment ethics rules required by Federal law and the Biden Administration. I have faithfully complied with post-Government employment requirements following my prior service and will seek any post-government employment in full compliance with the applicable ethics rules.

9. Senator WARREN. Ms. Shyu, will you recuse yourselves from matters involving the companies you listed as compensating you for consulting, corporate board services, or other matters on your Office of Government Ethics Form 278 and on post government employment?

Ms. SHYU. My Ethics Agreement and the President's Ethics Pledge will require me, if confirmed and appointed, to recuse myself for a period of two years from par-

ticipating personally and substantially in any particular matter involving specific parties in which I know that a former employer or client identified in my Ethics Agreement is a party or represents a party, unless I am first authorized to participate by the appropriate ethics official. If confirmed, I agree to extend this term of my Ethics Agreement from two years to four years. I will ensure that I have a robust screening process in place to help implement these recusals. The screening arrangement does not create any exceptions, waivers, or modifications to my Ethics Agreement, but rather provides guidance to Department personnel to assist in implementation of my ethics requirements. I can pledge to you that I will be mindful of not only the legal requirements that govern my conduct, but also of the need to ensure that the public has no reason to question my impartiality, and I will consult with the Department's ethics officials should any questions arise. I will always place the good of our country and the men and women in uniform above all other interests.

10. Senator WARREN. Mr. Kendall and Ms. Shyu, will you refrain from seeking a waiver on these recusals?

Ms. SHYU. I have no intention to seek a waiver and no expectation that it will be required, but if unanticipated circumstances were to arise, I would consider available alternatives to a waiver before seeking one and would consult very carefully with Department ethics officials. If I am privileged enough to be confirmed, I can pledge to you I will be mindful of not only the legal requirements that govern my conduct but also of the appearances to ensure that the public has no reason to question my impartiality and I will consult with Department ethics officials on these issues and require everyone who serves with me to ensure public service is and will remain a public trust.

11. Senator WARREN. Mr. Kendall and Ms. Shyu, will you not seek compensation from a defense contractor for a period of 4 years post government employment?

Ms. SHYU. I have promised to abide by the extensive post-government employment ethics rules required by Federal law and the Biden Administration, just as I have complied with the applicable ethics rules throughout my career in public service and private industry. These statutory and Administration provisions set forth comprehensive restrictions relating to acceptance of compensation from defense contractors, as well as communicating back to the Federal Government on behalf of any future employers and clients. I believe that these existing rules are appropriate and sufficient to protect the public interest. If confirmed, I will carry out the responsibilities of the Under Secretary of Defense for Researching and Engineering honorably and will fully comply with all applicable post-government employment restrictions, as I have done during previous transitions from public service to the private sector.

QUESTIONS SUBMITTED BY SENATOR GARY PETERS

FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTERS

12. Senator PETERS. Ms. Shyu, you have extensive experience with the DOD Federally Funded Research and Development Centers (FFRDCs) and I trust you are familiar with the three-legged stool idea (distinct roles for government, industry, and FFRDCs) introduced by Secretary Ashton Carter. I want to talk about one piece of that—the independent analysis provided by studies and analysis FFRDCs. This uniquely American capability is used by the Department of Defense and military services and results in analysis and material that help inform discussions with Congress and the public that is critical to ensuring leaders across our national security apparatus can make the best decisions for our national security and our servicemembers. Long-term trusted advisors like these can shine a light on critical departmental challenges and potential solutions based solely on where the data takes them, and provide independent and objective analysis to DOD to support policy development and decision-making, something that is needed now more than ever. This expertise has been critical in addressing numerous challenges, including helping to address long-term, strategic competition and serious personnel challenges like sexual assault. Do you agree with this assessment and can you share with me how you envision your role in ensuring an environment where this kind of analysis is widely available and most effectively used?

Ms. SHYU. I firmly believe that FFRDCs have an important role to play. Independent analysis is an essential aspect of the decision-making process that should be fully utilized in the DOD to inform leaders. In my prior position as the Army

Acquisition Executive, I frequently leveraged FFRDCs to provide me an independent perspective on technologies, programs and potential options.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

ARMED FORCES READINESS

13. Senator SULLIVAN. Ms. Shyu, over several years this Committee has worked tirelessly to restore military readiness—across each of our services—to levels that would enable our success in a conflict. We’ve had some success, but there is STILL a lot of work to do. If you have not done so already, I recommend that every senior defense leader read T.R. Fehrenbach’s “This Kind of War”, which provides a cautionary tale of our Nation’s failure to adequately fund and train our Armed Forces before the Korean War. The consequences were steep and American servicemembers paid with their lives. If confirmed, each of you—based on your positions—will invariably make decisions that directly or indirectly impact readiness. Accordingly, will you commit—if confirmed—to work with this committee and within the Department to ensure the readiness failures we endured in the Korean War do not happen again?

Ms. SHYU. Yes.

STRATEGY DRIVEN BUDGET

14. Senator SULLIVAN. Ms. Shyu, the National Defense Strategy Commission report, the two previous Senate-confirmed Secretaries of Defense, and the previous and current Chairman of the Joint Chiefs of Staff have all stated the need for sustained 3 to 5 percent annual real growth to the Defense budget to implement the NDS, increase much-needed readiness, and advance long-overdue modernization. To further emphasize the need for consistent and increased funding, the NDS Commission report stated, “America is very near the point of strategic insolvency, where its ‘means’ are badly out of alignment with its ‘ends.’” This critical situation is negatively compounded by the Biden administration’s proposal for a topline that does not keep pace with inflation. With these facts in mind, and understanding your ability to influence the budget will be limited to future year submissions, will each of you commit to advocating for a strategy-driven budget vice a budget-driven strategy?

Ms. SHYU. If confirmed, I will commit to advocating for a strategy-driven budget, consistent with the policies of the President, the Secretary of Defense and the NDS.

MISSILE DEFENSE

15. Senator SULLIVAN. Ms. Shyu, Secretary Lloyd Austin has stated, “Defense of the Homeland is a key priority for DOD and missile defense is a central component of this mission.” Deputy Secretary Kathleen Hicks agreed by saying, “Defense of the Homeland is a top priority for DOD and the Homeland missile defense system is an essential component to that mission.” Would you agree with the statements made by Secretary Austin and Deputy Secretary Hicks, and do you support robust funding for its modernization? Please elaborate on your views of missile defense and its contributions to our national security.

Ms. SHYU. I agree with Secretary Austin and Deputy Secretary Hicks that defending the homeland is a top priority. A layered missile defense strategy is a critical deterrent against sophisticated long-range missiles.

16. Senator SULLIVAN. Ms. Shyu, in Admiral Philip Davidson’s statement for the record—presented to this committee during the U.S. Indo-Pacific Command (INDOPACOM) posture hearing—he highlighted that: “... North Korea will remain our most immediate threat.” Admiral Davidson went on to state, “Pyongyang maintains a diverse and growing missile inventory, and North Korea unveiled several new ballistic systems ... including two SLBMs [submarine-launched ballistic missile] and an ICBM [intercontinental ballistic missile].” Finally, Admiral Davidson concluded that, “Pyongyang’s missile research and development efforts ... are consistent with the regime’s stated objective of being able to strike the U.S. Homeland.” Provided this characterization, and the very real and growing missile threat posed by North Korea, will you commit to prioritizing and accelerating modernization and fielding of our homeland missile defense systems to include the Next Generation Interceptor?

Ms. SHYU. If confirmed, I will commit to prioritizing the development of our layered missile defense strategy consistent with the NDS. I will review the Missile Defense Agency’s portfolio of research and development activities to ensure the United

States has the capabilities, including the Next Generation Interceptor, that are required to defend the homeland against a potential missile strike from North Korea.

QUESTIONS SUBMITTED BY SENATOR KEVIN CRAMER

MISSILE DEFENSE AGENCY AND SPACE DEVELOPMENT AGENCY

17. Senator CRAMER. Ms. Shyu, last year's NDAA, specified a pretty clear line of effort to further missile defense against hypersonic and weapons. It specified the Missile Defense Agency to develop a sensor payload to detect and track hypersonic and ballistic missiles from places like Russia and China, and the Space Development Agency to integrate the sensor into its satellites and space architecture. Given both agencies will be under your supervision, if confirmed as the Under Secretary for Research and Engineering (R&E), can I get your commitment that you will follow the law and congressional intent to avoid duplication and quickly field a system to protect our troops from hypersonic and ballistic missiles in theater?

Ms. SHYU. If confirmed, I will commit to reviewing the Space Development Agency as well as the Missile Defense Agency. I will follow the law and congressional intent to avoid duplications and quickly field a system to protect our troops from hypersonics and ballistic missiles.

QUESTIONS SUBMITTED BY SENATOR MARSHA BLACKBURN

EMERGING TECHNOLOGY TRANSITION

18. Senator BLACKBURN. Ms. Shyu, do you see opportunities for the Pathfinder model, which enables academic researchers to co-design technology with warfighter insights, to grow and to deliver emerging technologies at the speed of relevance?

Ms. SHYU. The Pathfinder model seems promising in that it allows researchers and users to co-design technologies collaboratively. This can enable a product to be designed quickly with operation in mind. If confirmed, I will review this model and look for areas where it can be more broadly applied.

QUESTIONS SUBMITTED BY SENATOR TOMMY TUBERVILLE

HYPERSONICS

19. Senator TUBERVILLE. Ms. Shyu, what specific advancements in hypersonics do you believe the Department of Defense should be focused on to meet the threats that face the United States? Please explain your answer.

Ms. SHYU. If confirmed, I will work to ensure that DOD hypersonics efforts are aligned with the NDS. If confirmed, I will assess current hypersonics efforts and once briefed on all programs including classified efforts, provide more detail in the appropriate setting.

[The nomination reference of Honorable Heidi Shyu follows:]

NOMINATION REFERENCE AND REPORT

PN488

AS IN EXECUTIVE SESSION,
SENATE OF THE UNITED STATES,
April 28, 2021.

Ordered, That the following nomination be referred to the Committee on Armed Services:

Heidi Shyu, of Virginia, to be Under Secretary of Defense for Research and Engineering,
vice Michael D. Griffin, resigned.

_____, 2021.
(Date)

Reported by Mr. Reed _____
(Signature)

with the recommendation that the nomination be confirmed.

**☐ The nominee has agreed to respond to requests to appear and testify before any
duly constituted committee of the Senate.**

[The biographical sketch of Honorable Heidi Shyu, which was
transmitted to the Committee at the time the nomination was re-
ferred, follows:]

Bio
Heidi Shyu

Education:

- University of New Brunswick
 - 1972 - 1976
 - BS Mathematics
- University of Toronto
 - 1976 – Feb. 1978
 - MS Mathematics
- University of California, Los Angeles (UCLA)
 - 1978 – 1981
 - MS Systems Science (part of EE now)
- University of California, Los Angeles (UCLA)
 - 1981 – 1982
 - Degree of Engineer
- University of New Brunswick
 - 2017
 - Doctor of Science (Honorary)

Employment Record:

List all jobs held since college including title or description of job, name of employer, location of work, and dates of employment.

- Hughes Aircraft Company
 - Member of Technical Staff
 - May 1978 – 1983, Canoga Park, CA & El Segundo, CA
 - Staff Engineer
 - 1983 – 1985, El Segundo, CA
 - Senior Staff Engineer
 - 1985 – 1987, El Segundo, CA
 - Scientist/Engineer
 - 1987 – Jun. 1989, El Segundo, CA
- Grumman Corporation
 - Principal Engineer
 - Jun. 1989 – July 1990, Melbourne, FL
- Litton Corp.
 - Senior Staff Engineer
 - Aug. 1990 – Nov. 1991, San Jose, CA
- Unemployed
 - Nov. 1991 – May 1992, San Bruno, CA
- Hughes Aircraft Company

- Project Manager
 - May 1992 – Jan. 1995, El Segundo, CA
 - Laboratory Manager, Electromagnetic Systems
 - Jan. 1995 – Jul. 1997, El Segundo, CA
 - Director, Joint Strike Fighter Antenna Technologies
 - Jul. 1997 – Dec. 1999, El Segundo, CA
- Raytheon
 - Director, Joint Strike Fighter Integrated Radar/Electronic Warfare
 - Dec. 1999 – Jun 2001, El Segundo, CA
 - Director, Joint Strike Fighter
 - Jun 2001 – Dec 2001, El Segundo, CA
 - Senior Director, Unmanned Air Vehicles Programs
 - Jan. 2002 – Oct. 2002, El Segundo, CA
 - Vice President, Unmanned & Reconnaissance Systems
 - Oct. 2002 – Dec. 2003, El Segundo, CA
 - Vice President & Technical Director
 - Jan. 2004 – Jan. 2007, El Segundo, CA
 - Corporate Vice President of Technology & Research
 - Jan. 2007 – Jun. 2009, Waltham, MA
 - Vice President of Technology Strategy
 - Jun. 2009 – Oct. 2010, El Segundo, CA
- U.S. Army
 - Principal Deputy Assistant Secretary of the Army (Acquisition, Logistics & Technology)
 - Nov. 2010 – Jun 2011, Pentagon
 - Acting Assistant Secretary of the Army (Acquisition, Logistics & Technology)
 - Jun 2011 – Sep. 2012, Pentagon
 - Assistant Secretary of the Army (Acquisition, Logistics & Technology)
 - Sep. 2012 – Jan. 2016, Pentagon
- Heidi Shyu Inc.
 - CEO
 - Feb. 2016 – present, Arlington, VA
- Aerospace Corp.
 - Member, Board of Trustees
 - Mar 2016 – present
- Roboteam North America
 - Chairman, Board of Advisors
 - Jan 2017 – Jan 2021
- Concurrent Technologies Corp.
 - Member, Board of Advisors
 - Apr. 2018 – Feb. 2019
- US Chamber of Commerce Aerospace & Defense Export Council
 - Member, Board of Advisors (unpaid)
 - Apr. 2018 - present

- VK Integrated Systems
 - Member, Board of Advisors
 - Jul. 2018 – present
- UCLA Dean's Executive Board
 - Member, Board of Advisors (unpaid)
 - Oct. 2018 - present
- Catalyze Dallas
 - Member, Board of Advisors
 - Jan. 2020 – present
- Plasan North America
 - Chairman, Board of Advisors
 - Jun 2020 – present
- Levitate Capital
 - Member, Board of Advisors
 - Jun 2020 - present
- Auterion Government Solutions
 - Member, Board of Advisors
 - Sep 2020 – present
- Linse Capital
 - Member, Board of Advisors
 - Feb 2021 – present
- Carnegie Mellon University Software Engineering Institute
 - Member, Technical Advisory Group (unpaid)
 - Jun 2016 – present

Honors and Awards:

- Federal Civilian Awards:
 - Dept of Defense Medal for Distinguished Public Services, 2016
 - Dept of the Army Medal for Distinguished Civilian Services, 2016
 - Dept. of the Air Force Decoration for Exceptional Civilian Service, 2010
- Academic Awards:
 - University of New Brunswick, Honorary Doctor of Science, 2017
 - UCLA Engineering Alumni Professional Achievement Award, 2014
 - Hughes Fellowship, 1978 - 1982
 - University of Toronto Fellowship, 1976 – 1977
 - New Brunswick Post-Graduate Scholarship, 1976 – 1977
 - University Special Undergraduate Scholarship, 1974 – 1976
 - Atlantic Provinces Inter-University Committee Scholarship 1974

- N. Myle Brown Science Award, 1973
- Other Army Awards:
 - General Brehon B. Somerville Medal of Excellence, 2016
 - Military Intelligence Corp. Knowlton Award, 2016
 - National Infantry Assoc. Order of Saint Maurice, 2016
 - Army Aviation Assoc., The Knight of the Honorable Order of Saint Michael, 2015
- Professional Association Awards:
 - American Institute of Aeronautics & Astronautics (AIAA) Honorary Fellow 2021
 - National Academy of Engineering, 2019
- Raytheon Awards:
 - Raytheon Hero Award, 2001
 - Raytheon Corporate Excellence in Technology Award, 2000
- Hughes Aircraft Company Awards:
 - Superior Performance Award, 1986, 1987, 1988

[The Committee on Armed Services requires all individuals nominated from civilian life by the President to positions requiring the advice and consent of the Senate to complete a form that details the biographical, financial, and other information of the nominee. The form executed by Honorable Heidi Shyu in connection with her nomination follows:]

117th CONGRESS, 2020 -- 2021
UNITED STATES SENATE
COMMITTEE ON ARMED SERVICES
ROOM SR-228
WASHINGTON, D.C. 20510-6050
(202) 224-3871

COMMITTEE ON ARMED SERVICES QUESTIONNAIRE
INFORMATION REQUESTED OF CIVILIAN NOMINEES

INSTRUCTIONS TO THE NOMINEE: Answer all questions and provide all requested information. If more space is needed, attach an additional sheet of paper to the Questionnaire and cite the part of the Questionnaire and the question number (e.g., A-9, B-4) to which the continuation of your answer applies. Unless otherwise required, an answer of "yes", "no", or "not applicable" is appropriate.

QUESTIONNAIRE, PART A

NOTE: Information furnished in this part of the Questionnaire will be made available in Committee offices for public inspection prior to the hearing, if any, and will be entered in the hearing record, also available to the public.

BIOGRAPHICAL INFORMATION TO BE MADE PUBLIC

1. Name (Include any former names you have used): Heidi Shyu
Shyu Ruo-Bing, Hedy McIntosh, Heidi McIntosh, Heidi Chan
2. Position to which nominated: Under Secretary of Defense (Research & Engineering)
3. Date of nomination: 28 April, 2021
4. Education (List names of secondary and higher education institution attended, type of school [vocational, technical, trade school, college, university, military college, correspondence, distance, extension, and on-line], dates attended, degree received, and date degree granted):

Fredericton High School, 1971 – 1972, high school diploma, June 1972

University of New Brunswick, 1972 – 1976, BS Mathematics, May 1, 1976
 University of Toronto, 1976 – Feb 1978, MS Mathematics, Feb. 23, 1978
 UCLA, 1978 – 1981, MS Engineering, Jun. 19, 1981
 UCLA, 1981 – 1982, Degree of Engineer, Dec. 17, 1982
 University of New Brunswick, Honorary Doctor of Science, May 17, 2017

5. Employment record (List all jobs held since college, or in the last 10 years, whichever is less, including the title or description of the job, name of employer, location of work, and dates of employment. If the employment activity was military duty, show each change of military duty station as a separate period of employment):

Title	Employer	Location	Dates	
Principal Deputy Assistant Secretary of the Army (Acquisition, Logistics & Technology)	U.S. Army	Pentagon	11/8/2010 6/3/2011	–
Acting Assistant Secretary of the Army (Acquisition, Logistics & Technology)	U.S. Army	Pentagon	6/3/2011 9/25/2012	–
Assistant Secretary of the Army (Acquisition, Logistics & Technology)	U.S. Army	Pentagon	9/26/2012 1/31/2016	–
CEO	Heidi Shyu Inc.	5424 3 rd St. S, Arlington, VA 22204	2/8/2016 present	–

6. Government experience (List any advisory, consultative, honorary, and other part-time service or positions with Federal, State, or local governments, other than those listed in response to question 5, above):

NONE

7. Business relationships (List all positions currently held as an officer,

director, trustee, partner, proprietor, agent, representative, or consultant of any corporation, firm, partnership, or other business enterprise, and of any educational or other institution):

Member, Board of Trustees	Aerospace Corp.
Member, Board of Advisors	VK Integrated Systems
Member, Board of Advisors	Catalyze Dallas
Member, Board of Advisors	Levitte Capital
Member, Board of Advisors	Auterion Government Solutions
Member, Board of Advisors	Linse Capital
Consultant	Boeing
Consultant	Dedrone
Consultant	Dynetics
Consultant	GE
Consultant	Immersive Wisdom
Consultant	Lumenium
Consultant	Mercury Systems, Inc.
Consultant	Sechan
Consultant	Raytheon
Consultant	SAIC
Consultant	Syracuse Research Corp.
Consultant	Unified Business Technologies
Consultant	Yulista
Chairman, Board of Advisors	Plasan North America
Member, Board of Advisors	UCLA Dean's Executive Board
Member, Technical Advisory Group	Carnegie Mellon Univ. Software Engineering Institute
Member, Board of Advisors	U.S. Chamber of Commerce Aerospace & Defense Export Council
CEO	Heidi Shyu Inc.
Chairman of the Board of Advisors	Corp Ten International
Member, Board of Advisors	Levitte Acquisition Corp

8. Memberships (List all memberships and offices that you currently hold, as well as any memberships and offices you have previously held in professional, fraternal, scholarly, civic, business, charitable and other organizations):

Association of U.S. Army (AUSA)	Member
American Institute of Aeronautics &	Honorary Fellow

Astronautics (AIAA)	
National Academy of Engineering (NAE)	Member
Air Force Scientific Advisory Board	Former member, vice chair, chairman
U.S. Chamber of Commerce Aerospace & Defense Export Council	Member of the Board of Advisors

9. Political affiliations and activities:

- a. If you have ever been a candidate for, or have been elected or appointed to a political office, list the name of the office(s); whether you were a candidate/elected/appointed; the year(s) during which you were a candidate, or in which the election was held or the appointment was made; and the term of office (if applicable): NO
- b. List all memberships and offices held in, and services rendered to, all political parties or election committees during the last 5 years: NONE
- c. Itemize all individual political contributions of \$100 or more to any individual, campaign organization, political party, political action committee, or similar entity during the past 5 years. List each individual contribution (not the total amount contributed to the person or entity) over this period: NONE

10. Honors and awards (List all scholarships, fellowships, honorary degrees, honorary society memberships, and any other special recognition received for outstanding service or achievements):

American Institute of Aeronautics & Astronautics (AIAA) Honorary Fellow, 2021
National Academy of Engineering, 2019
Honorary Doctor of Science from University of New Brunswick, Canada 2017
Dept of Defense Medal for Distinguished Public Service, 2016
Dept of the Army Medal for Distinguished Civilian Service, 2016
General Brehon B. Somerville Medal of Excellence, 2016
Military Intelligence Corp. Knowlton Award, 2016
National Infantry Assoc. Order of Saint Maurice, 2016
Army Aviation Assoc., The Knight of the Honorable Order of Saint Michael, 2015
UCLA Engineering Alumni Professional Achievement Award, 2014
Dept. of the Air Force Decoration for Exceptional Civilian Service, 2010
Raytheon Hero Award, 2001
Raytheon Corporate Excellence in Technology Award, 2000
Hughes Aircraft Company Superior Performance Award, 1986, 1987, 1988

N. Myles Brown Science Award 1973
 Hughes Fellowship 1978 – 1982
 University of Toronto Fellowship 1976 – 1977
 New Brunswick Post-Graduate Scholarship 1976 – 1977
 University Special Undergraduate Scholarship 1974 – 1976
 Atlantic Provinces Inter-University Committee Scholarship 1974

11. Published writings (List the titles, publishers, and dates of books, articles, reports, or other published materials that you have written or for which you served as co-author or editor, including articles and blogs published on the internet):

Date	Topic	Organization
2001	Sensor Technologies for Difficult Targets	AF Scientific Advisory Board
2002	Predictive Battlespace Awareness to Improve Military Effectiveness	AF Scientific Advisory Board
2003	Unmanned Aerial Vehicles in Perspective: Effects, Capabilities and Technologies	AF Scientific Advisory Board
2004	Networking to Enable Coalition Operations	AF Scientific Advisory Board
2004	Operationalizing Space Launch	AF Scientific Advisory Board
2004	Human Systems Integration in Air Force Weapon Systems Development & Acquisition	AF Scientific Advisory Board
2005	Air Force Operations in Urban Environment	AF Scientific Advisory Board
2005	Domain Integration	AF Scientific Advisory Board
2005	Persistence at "Near Space" Altitudes	AF Scientific Advisory Board
2005	Systems of Systems Engineering for Air Force Capability Development	AF Scientific Advisory Board
2006	Air Defense Against UAVs	AF Scientific Advisory Board
2006	Space Survivability	AF Scientific Advisory Board
2006	System Level Experimentation	AF Scientific Advisory Board

2007	Technology Options for Improving Air Vehicle Fuel Efficiency	AF Scientific Advisory Board
2007	Theater Ballistic Missile Assessment	AF Scientific Advisory Board
2007	Implications of Cyber Warfare	AF Scientific Advisory Board
2007	Operational Utility of Small Satellites	AF Scientific Advisory Board
2007	Use & Sustainment of Composites in Aircraft	AF Scientific Advisory Board
2007	Aircraft Operation in GPS-Jammed Environment	AF Scientific Advisory Board
2007	Thermal Management Technology Solutions	AF Scientific Advisory Board
2008	Defending and Operating in a Contested Cyber Domain	AF Scientific Advisory Board
2008	Kinetic Precision Effects	AF Scientific Advisory Board
2008	Implications of Spectrum Management for the Air Force	AF Scientific Advisory Board
2008	Airborne Tactical Laser Feasibility for Gunship Operations	AF Scientific Advisory Board
2009	Rapid On-Orbit Checkout of Space Systems	AF Scientific Advisory Board
2010	Next Generation Electronic Warfare	AF Scientific Advisory Board

12. Speeches (Provide the Committee with two copies of any formal speeches you have delivered during the last 5 years—of which you have copies—in which you addressed matters relevant to the position to which you have been nominated).

Date	Topic	Organization
04/08/2021	DoD Acquisition Process	University of Southern CA Project Management Course
10/29/2020	Perspective on Army Modernization	U.S. Chamber of Commerce Defense & Aerospace Export Council

01/28/2020	Considerations for Army Robotics Strategy	Board on Army RDT&E, Systems Acquisition, and Logistics (BARSL)
12/04/2019	Focusing on the Road Ahead: Readiness, Modernization and Reform	AUSA Army Acquisition & Contracting Hot Topics
06/07/2019	Acquisition Innovation in Space & Network	GLAC Space & Network Symposium
04/24/2018	Smart Contracting Reform	AUSA Contracting Symposium
07/19/2017	Current Fiscal Conditions Affecting Acquisition, Logistics, and Technology to Support the National Strategy & Implications for Strategic Leaders	Army War College
07/17/2017	Army Modernization Panel	CSIS
12/01/2016	Defense Market Outlook: Challenges for the Next Administration	CSIS

COMMITMENTS IN FURTHERANCE OF CONGRESSIONAL OVERSIGHT

NOTE: In order to exercise their legislative and oversight responsibilities, it is important that this Committee, its subcommittees, and other appropriate committees of Congress timely receive testimony, briefings, reports, records—including documents and electronic communications, and other information from the executive branch. A simple “yes” or “no” response is appropriate.

13. Do you agree, if confirmed, and on request, to appear and testify before this Committee, its subcommittees, and other appropriate Committees of Congress? YES
14. Do you agree, if confirmed, to provide this Committee, its subcommittees, other appropriate Committees of Congress, and their respective staffs such witnesses and briefers, briefings, reports, records—including documents and electronic communications, and other information, as may be

requested of you, and to do so timely? YES

15. Do you agree, if confirmed, to consult with this Committee, its subcommittees, other appropriate Committees of Congress, and their respective staffs, regarding your basis for any delay or denial in providing testimony, briefings, reports, records—including documents and electronic communications, and other information requested of you? YES
16. Do you agree, if confirmed, to keep this Committee, its subcommittees, other appropriate Committees of Congress, and their respective staffs apprised of new information that materially impacts the accuracy of testimony, briefings, reports, records—including documents and electronic communications, and other information you or your organization previously provided? YES
17. Do you agree, if confirmed, and on request, to provide this Committee and its subcommittees with records and other information within their oversight jurisdiction, even absent a formal Committee request? YES
18. Do you agree, if confirmed, to respond timely to letters to, and/or inquiries and other requests of you or your organization from individual Senators who are members of this Committee? YES
19. Do you agree, if confirmed, to ensure that you and other members of your organization protect from retaliation any military member, federal employee, or contractor employee who testifies before, or communicates with this Committee, its subcommittees, and any other appropriate committee of Congress? YES

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[The nominee responded to Parts B-F of the Committee questionnaire. The text of the questionnaire is set forth in the Appendix to this volume. The nominee's answers to Parts B-F are contained in the Committee's executive files.]

SIGNATURE AND DATE

I hereby state that I have read and signed Parts A and B of the foregoing Senate Armed Services Committee Questionnaire, and that the information provided therein and in any document appended thereto, is, to the best of my knowledge and belief, current, accurate, and complete.



This 19th day of May, 2021

[The nomination of Honorable Heidi Shyu was reported to the Senate by Chairman Reed on June 10, 2021, with the recommendation that the nomination be confirmed. The nomination was confirmed by the Senate on July 22, 2021.]

[Prepared questions submitted to Ms. Susanna V. Blume by Chairman Reed prior to the hearing with answers supplied follow:]

QUESTIONS AND RESPONSES

DUTIES

Question. What is your understanding of the duties and functions of the Director of Cost Assessment and Program Evaluation (CAPE)?

Answer. CAPE provides decision support and independent analysis to the Secretary and Deputy Secretary of Defense. It does so through three primary lines of effort: programmatic decision support during the DOD's annual Program Budget Review process, independent cost assessment and oversight of Analyses of Alternatives to support the acquisition community, and leadership in the Department's analytic community.

Question. What recommendations, if any, do you have for changes in the duties and functions of the Director of CAPE, as set forth in section 139a of title 10, United States Code, and in Department of Defense (DOD) regulations pertaining to functions of the Director of CAPE?

Answer. I believe the duties and functions entrusted to the Director of CAPE, and set forth by section 139a of title 10 and DOD regulations, are critical to the effective management and resource prioritization within the Department. Although I do not have any recommendations for changes at this time, if confirmed, I look forward to working with Department leadership and the Congressional Defense Committees to ensure the Director of CAPE continues to have the authorities and resources necessary to effectively execute the organization's mission.

QUALIFICATIONS

Question. What background and experience do you have that you believe qualify you for this position?

Answer. As Deputy Chief of Staff for Programs and Plans to then-Deputy Secretary of Defense Bob Work, working closely with the Director of CAPE and the Under Secretary of Defense, Comptroller, I supported the Secretary and Deputy Secretary on every critical programmatic decision made during that three year period. After leaving government, I went to the Center for a New American Security where my researched focused on the core functions of CAPE, developing recommendations for using the Department's programming process to align the size and shape of the Joint Force with the defense strategy.

Question. Specifically, what background and experience do you have in the acquisition of major weapons systems?

Answer. As Deputy Chief of Staff for Programs and Plans to then-Deputy Secretary of Defense Bob Work, I worked very closely with the Under Secretary for Ac-

quisition, Technology, and Logistics to support the Secretary and Deputy Secretary on the most difficult acquisition challenges facing the Department. During my time as Director of the Defense Program at the Center for a New American Security, I did significant research on the history of defense acquisition reform efforts and developed ideas and recommendations for future reform efforts.

Question. What leadership and management experience do you possess that you would apply to your service as Director, CAPE, if confirmed?

Answer. For the first three months of the Biden Administration, I performed the duties of the Director, CAPE, leading the organization through a challenging transition. Prior to that, I was Director of the Defense Program at the Center for a New American Security, where I successfully led my team through a period of substantial growth despite the COVID-19 pandemic.

MAJOR CHALLENGES AND PRIORITIES

Question. If confirmed, what broad priorities would you establish?

Answer. If confirmed as Director of CAPE, my top priority would be supporting the Secretary and the Deputy Secretary in making the most difficult programmatic decisions they face using rigorous independent analysis. I would also continue to build CAPE's cost analysis capability, focusing on sustainment costs and emerging technologies. Last but not least, I would work to build the Department's joint analytic capability, ensuring that future DOD leaders have the best information possible when making difficult choices.

Question. In your view, what are the major challenges you would confront if confirmed as Director of CAPE?

Answer. In my view, the biggest challenge facing any Director of CAPE is effectively prioritizing the organization's relatively small, but extremely talented workforce against the full range of difficult analytic problems facing the Department. Doing so requires a relentless focus on the highest priority challenges facing the Secretary and Deputy Secretary of Defense.

Question. If confirmed, what management actions and timelines would you establish to address each of these challenges?

Answer. Effective prioritization of CAPE's bandwidth will require relentless focus on the highest priority challenges facing the Secretary and Deputy Secretary of Defense. If confirmed, I look forward to working with the Secretary and Deputy Secretary and the Congress to make sure CAPE has the resources, workforce, and expertise it needs to fulfill its mission.

Question. Do you believe the CAPE office would benefit from periodic outside expert reviews of CAPE's capabilities, processes, and decisions? Please explain your answer.

Answer. Any organization could benefit from outside expert review, but the purpose and objectives of such a review should be very clearly defined from the outset, otherwise the result can be the generation of solutions in search of problems. In my experience, outside expert review is most useful during times of significant institutional turmoil or change. If confirmed, I would be open to soliciting an outside expert review of CAPE tailored to specific objectives, should circumstances warrant it. More broadly, I welcome the views of outside experts on a wide range of specific issues facing CAPE, and if confirmed, intend to solicit those views as a routine practice in the course of CAPE's work.

Question. If confirmed, how would you plan to rebuild in OSD the analytical capability and expertise that has been lost—as documented in the assessment and recommendations of the National Defense Strategy Commission?

Answer. If confirmed, rebuilding the Department's joint analytic capability would be a high priority for me. DOD has significant analytic talent, capacity, and capability. However, there are gaps, especially at the joint and defense-wide level. My priority, if confirmed, would be to work with core stakeholders in the analytic community to resolve known gaps in joint analysis and better integrate quantitative analysis with war-gaming, experimentation, and exercises. I also believe that more work is needed on data collection, knowledge management, and modeling. If confirmed, I would work with the Department's leadership to advance analytic capability that directly supports senior leader decision making.

Question. If confirmed, how do you plan to balance the Director of CAPE's competing roles of representing independent and realistic analyses and supporting the President's Budget priorities at the same time?

Answer. One of CAPE's primary responsibilities is ensuring that decisions on the President's Budget priorities are underpinned by independent and rigorous analyses. If executed correctly, the two should not be in conflict. If confirmed, I would work to ensure that this is the case.

Question. To what extent should CAPE be involved in policy or political judgments, in your view?

Answer. CAPE's mission is to provide independent, unbiased, rigorous analysis to the Secretary and Deputy Secretary of Defense. CAPE does not make policy decisions, but its independent analysis can be used by policy makers to inform their decisions.

Question. Do you believe the functions assigned to CAPE on the dissolution of the DOD Chief Management Officer position are appropriate for performance by CAPE?

Answer. As I understand it, Deputy Secretary Hicks is still reviewing the previous Administration's recommendations for the dissolution of the CMO organization. If confirmed, I look forward to supporting the Deputy Secretary in those deliberations. In my view, there are functions previously performed by CMO that could be appropriately reassigned to CAPE.

Question. In your view, does CAPE have an adequate number of appropriately skilled personnel to perform these functions?

Answer. I believe that the Deputy Secretary's review will allow for the transfer of personnel and resources to support any new functions assigned to CAPE.

Question. In your view, does the Director of CAPE have a role to play in promoting civilian control over the military?

Answer. Yes.

Question. If so, how do you view that role?

Answer. The Director of CAPE is responsible for providing independent analysis to the Secretary and Deputy Secretary of Defense, giving the senior-most civilian leadership of the Department unbiased information on which to base their decisions. In doing so, CAPE supports the Secretary of Defense in meaningfully reviewing and making decisions on Service resource requests, ensuring that the Future Years Defense Program is aligned with his and the President's priorities and the defense strategy.

RELATIONS WITH CONGRESS

Question. For years, CAPE made available its independent analyses, recommendations, and analysts to Congressional members and staff to help Congress understand the choices and tradeoffs being made by the DOD.

What are your views on the state of the relationship between the Director of CAPE and the Senate Armed Services Committee in particular, and with the Congress in general?

Answer. If confirmed, my intent is for CAPE to have a transparent, direct, and responsive relationship with Congress. I will ensure that the CAPE staff understands that timely and accurate communication with the oversight committees is critical to me and my vision for CAPE.

Question. Should the Director of CAPE be authorized to have more direct and independent communications with the Congress, similar to the Director of Operational Test and Evaluation?

Answer. I believe that CAPE presently has sufficient authority to communicate with Congress, but if this Committee or others are not receiving what they need from CAPE, I would welcome a conversation about how to ensure that CAPE can provide any necessary information, if confirmed.

Question. How do you plan to balance your concurrent but competing roles of representing independent and realistic analyses and supporting the President's Budget priorities?

Answer. One of CAPE's primary responsibilities is ensuring that decisions on the President's Budget priorities are underpinned by independent and rigorous analyses. If executed correctly, the two should not be in conflict. If confirmed, I would work to ensure that this is the case.

Question. If confirmed, what actions would you take to sustain a productive and mutually beneficial relationship with the Congress?

Answer. If confirmed, I am committed to an open and transparent relationship with Congress and would deliver timely responses to requests for information. I would also be open to receiving feedback on how CAPE can better support Congress's oversight of the Department.

THE PLANNING, PROGRAMMING, BUDGETING, AND EXECUTION (PPBE) PROCESS

Question. In 1961, then-Secretary of Defense Robert McNamara created the framework of the current PPBE process. As the core decision making process by which the Department of Defense (DOD) decides how and on what it spends its money, the PPBE process operates to connect strategic objectives with resources.

While the process has undergone some changes in the intervening decades, it remains essentially intact.

Do you believe the PPBE process needs to be reformed? If so, how?

Answer. Every process has room for improvement. The current PPBE process has many merits; it is inclusive of stakeholders across the defense enterprise; it is comprehensive in its scope; and it creates multiple opportunities to inject rigorous analysis into the decision-making process. However, I do believe that there are changes that the Department and Congress can make to build more flexibility and agility into an already robust process. If confirmed, I look forward to working with the Secretary, the Deputy Secretary, and the defense oversight committees to define and implement appropriate and necessary updates.

Question. What changes would you recommend, if any, to the PPBE process with a view to improving resourcing decisions within DOD to help the Department take advantage of emerging technologies or address emerging threats?

Answer. I believe the PPBE process needs to become more agile to accommodate the dynamic technological and threat environments facing the Department. There are multiple ways to build additional agility into the process, some within the control of the Department, while others will require close cooperation with Congress to implement. If confirmed, I look forward to working with other DOD leaders, and the defense oversight committees to define and implement solutions in this space.

Question. In your view, is the PPBE process flexible enough to enable DOD to make programmatic changes within the annual budget cycle?

Answer. I believe this is an area where the current PPBE process could be improved. If confirmed, I look forward to working with the Deputy Secretary, the Comptroller, and Congress to build additional flexibility into the process.

Question. The current PPBE process is largely driven by bottom-up programming from the Military Departments. You have previously written in support of proposals to give the Secretary of Defense and the Deputy Secretary of Defense additional control over allocation of resources by reserving a certain amount of resources for their allocation at the end of the process. What do you view as the pros and cons of such proposals?

Answer. A resource reserve provides the Secretary and Deputy Secretary with flexibility to respond to strategic shifts and emerging priorities by allocating resources later in the PPBE process; this comes at the cost of limiting programmatic options for the Military Departments earlier in the process. Because of this tension, it is important to strike the right balance between limiting options and providing flexibility. If confirmed, I am committed to working with the Deputy Secretary and other Department leaders to strike this balance and ensure the PPBE process is responsive and effective.

COST ASSESSMENT PRACTICES

Question. In your opinion, what factors cause differences in the cost estimates calculated by CAPE and the non-advocate cost assessment reflected in the service cost positions?

Answer. Cost estimates prepared by different organizations should rarely produce identical results. Cost estimates necessarily require subject matter expertise which can lead to different assumptions, different evaluations of program risk, and different cost estimating relationships, which taken together affect the results of cost estimates. However, I would note that since the passage of WSARA in 2009, there have been fewer than ten life cycle cost estimates where the difference between the CAPE independent cost estimate and the service cost position has exceeded 10%. In fact, the median difference between CAPE and service cost estimates has been 2.0% over that time period. The Department has increased collection of actual cost data from contractors, which has improved the realism and accuracy of all DOD cost estimates. If confirmed, I intend to continue to emphasize this in order to produce realistic cost estimates.

Question. Some assert that the accuracy of cost estimates could be improved by estimating the range of costs, rather than a set cost estimate? What is your view of such proposals?

Answer. I believe that representing a range of costs is appropriate in some cases, especially for programs in their early phases. For example, prior to Milestone A, a program's cost data may be of poor quality, the program may be poorly defined, or there may be ambiguity on assumptions which could affect the cost estimate. For cases like these, I would support including a range of costs in estimates.

Question. If confirmed, what actions would you take to increase the fidelity and accuracy of independent cost estimates for major defense acquisition programs?

Answer. There is opportunity to improve the fidelity and accuracy of independent cost estimate for major defense acquisition programs, especially in the area of operations and sustainment cost estimating. If confirmed, I would support CAPE's current efforts to improve its cost data collection systems, historical cost reporting systems, and continue development of the new Enterprise Visibility and Management and Oversight of Operating and Support Cost (EVAMOSOC) database to be able to better track and assess O&S costs and improve cost estimation over a system's life cycle.

Question. In your view, what more strategic data planning and collection is required across the Department to provide better independent cost estimates?

Answer. It is my understanding that CAPE is continuing to make strides improving the collection, accessibility, and timeliness of cost data. Particularly with recent implementation of the FlexFile concept that provides government analysts access to data provided directly from contractor internal business systems in modern, machine-readable files. Additionally, CAPE continues to improve the Cost Assessment Data Enterprise (CADE) system, and updates internal DOD Instructions and Manuals as needed to ensure standardized reporting processes and consistent cost data collection across the newly available Adaptive Acquisition Framework (AAF) pathways. Despite these proactive steps to pre-emptively adapt many processes, I anticipate further requirements for change as the Services fully implement the AAF. If confirmed, I look forward to working with the Services and Defense-wide agencies to ensure we adapt data planning and data collection as necessary.

Question. If confirmed, how would you resource and champion the CAPE and cost community workforce and the Cost Assessment Data Enterprise to ensure sufficient capacity and capability, continued partnership, unity of effort, and sharing of data across the cost and acquisition communities?

Answer. Section 139a of title 10 gives the Director of CAPE the responsibility to lead the development of improved analytical skills, competencies, tools, and data in support of cost assessment. CAPE has a long history of successfully collaborating across the Department in the advancement of these goals. If confirmed, I would continue this work to advance the state of the art in each of these areas.

Question. What major shortfalls do you perceive in the Department's ability to estimate program development, procurement, and life-cycle costs?

Answer. I see opportunities where improvements in the collection of O&S cost data, expansion of the cost data collection for middle tier Acquisition programs, software costing, and additional education and training of the cost assessment workforce could improve the Department's ability to estimate program costs. If confirmed, I look forward to pursuing improvements in each of these areas.

Question. What steps would you take to address these shortfalls, if confirmed?

Answer. If confirmed, I would support the continued development and expansion of the Enterprise Visibility and Management and Oversight of Operating and Support Cost (EVAMOSOC) to capture O&S costs. I would also focus on updating education and training related to new acquisition pathways and new data and analytic capabilities. I would explore approaches to estimating software costs that are better suited to the structure of those programs. Finally, I would consider whether the Department should levy more traditional cost estimating approaches for middle-tier acquisition programs.

Question. If confirmed, what specific steps would you take to implement the direction from Congress in the Joint Explanatory Statement accompanying the Fiscal Year 2021 National Defense Authorization Act (NDAA) to the Director, CAPE, the Defense Digital Service, and the directors of developmental test and operational test and evaluation, to incorporate lessons learned from the implementation of sections 873 and 874 of the Fiscal Year 2018 NDAA, and sections 215 and 869 of the Fiscal Year 2019 NDAA in the development of guidance and oversight procedures for managing, estimating, and assessing software programs?

Answer. If confirmed, I would work to ensure CAPE continues to identify new sources of data to determine meaningful, informative cost estimating relationships for assessing software programs. I would also ensure that meaningful cost estimates are produced as early as possible to inform milestone decision authority decision making, working with the acquisition community to develop a process to permit meaningful and timely input. I would also examine whether CAPE's current approach to developing software cost estimates is suited to the structure of those programs.

Question. If confirmed, to what extent would you ensure CAPE uses improved metrics and cost estimation assumptions in a recognition that software must be continually maintained and developed to meet warfighter and DOD institutional needs?

Answer. If confirmed, I commit to looking at whether CAPE's current approach to estimating software costs is suited to the structure of those programs. I would

also ensure that CAPE continues to work with USD(A&S) and the Service Cost Agencies to identify, develop, and implement improved metrics and cost estimation assumptions for evaluating software programs.

PROGRAM EVALUATION

Question. The Director of CAPE is responsible for the review, analysis, and evaluation of programs for executing approved strategies and policies, and for assessments of alternative plans, programs, and policies with respect to the acquisition programs of the Department of Defense.

What is your view of the significance of independent review, analysis, and evaluation of programs, and assessments of alternative programs, to the effective management of the Department of Defense?

Answer. Effective management of the Department entails ensuring programs align with strategy and are cost-effective. Independent reviews play key roles in this process. CAPE's analyses of program alternatives provide Department leadership with independent comparative assessments of performance, cost, and schedule risks to help inform acquisition decisions. CAPE's independent cost estimates further refine Department understanding of cost and schedule risks to help inform program resourcing decisions.

Question. Do you see the need for any changes or improvements to the organization, process, or methodology used by the Department for such review, analysis, and assessments?

Answer. Every process and organization has room for improvement. If confirmed, I am committed to continual evaluation of CAPE and its processes, making adjustments where warranted.

Question. In your view, does the Director of CAPE have the staffing, authority, access to information, and resources needed to carry out this function?

Answer. I believe CAPE currently has the necessary authorities to execute its functions. I also believe that CAPE generally has access to the data it needs, however, there is certainly room for improvement in the way the Department collects and manages data. Improvement in this space consistent with the Deputy Secretary's Five Data Decrees would make it easier and more efficient for CAPE to meet its analytic objectives. If confirmed, I am committed to assessing these needs, and advocating for any additional resources necessary to ensure CAPE continues to effectively accomplish its missions.

Question. In your view, how should the Director of CAPE interact with service acquisition executives, program executive officers, program managers, and other program officials in preparing independent evaluations of major defense acquisition programs?

Answer. If confirmed, I am committed to closely collaborating with Service Acquisition Executives and their staffs in a fully transparent manner. Collaboration and transparency are important to building lasting partnerships that ensure independent assessments are based on common datasets and include the equities and perspectives of all stakeholders.

Question. What role should the Director of CAPE play in assessing and evaluating management, business, and organizational functions, initiatives, and activities within the Defense Department?

Answer. CAPE has long played a key role in providing independent analyses and assessments of Departmental reform initiatives. If confirmed, I am committed to working with the Deputy Secretary of Defense and other Department leaders to ensure CAPE continues to provide independent evaluations of Departmental reform efforts.

Question. If confirmed, what safeguards will you put in place to ensure CAPE does not advocate policy or pre-judge a policy decision more properly in the purview of other DOD officials?

Answer. CAPE fulfills a critical independent evaluator role in the Department. CAPE makes no decisions; rather it provides independent analysis and alternatives to the Department's decision makers for their consideration. In this role, CAPE informs Department acquisition and resourcing deliberations by examining multiple alternatives and ensuring the costs, benefits, risks, and perspectives of all stakeholders are fully articulated for each option. If confirmed, I am committed to ensuring CAPE continues to function as a non-advocate provider of independent analysis while collaborating closely with all stakeholders.

TECHNOLOGY MATURITY

Question. The Navy spent approximately \$1 billion on 10 Remote Multi-Mission Vehicles (RMMVs), semi-submersible Unmanned Surface Vehicles (USVs), prior to cancelling the program in 2016, primarily due to unacceptable reliability.

What is your understanding of the RMMV program?

Answer. My understanding is that RMMV was a component of the Mine Counter-measure (MCM) module for the Littoral Combat Ship. It is my understanding that Navy cancelled this program after encountering multiple significant issues with both reliability and performance.

Question. What lessons learned should DOD take from the RMMV program, in your view?

Answer. Although I have limited familiarity with the reasons for this program's cancellation, I believe DOD should ensure proposed investments are grounded in analysis complete with assessments of operational utility, cost-benefit, and technological risk. Additionally, robust analysis should not end at program initiation. DOD should continually assess programs to ensure performance, cost, and schedule goals are met for continued return on investment.

Question. Based on the RMMV experience, do you believe that critical, but unproven subsystems for large unmanned vessels should be prototyped and proven prior to procurement of an entire large unmanned system? Please explain your answer.

Answer. Prototyping and land-based testing can be critical components of a successful acquisition program. With regards to large unmanned vessels, I am committed to a rigorous Analysis of Alternatives to ensure the operational and technological risks associated with those systems are well understood prior to full-rate production.

The committee understands that, based primarily on an CAPE-led analysis, the Navy's Fiscal Year 2020 budget request included procurement of 10 Large Unmanned Surface Vessels (LUSVs) in the Future Years Defense Program at a cost of approximately \$3.1 billion. Although LUSVs may have performed well in analysis, they do not currently exist as envisioned. LUSVs evolved from conceptual analysis to a large budget plus-up for production without a rigorous technology risk assessment or engineering development plan to guide development. The Committee understands that Strategic Capabilities Office (SCO) USVs, intended to provide risk reduction for the Navy LUSV program, have demonstrated less than one week of continuous operation, as compared to the minimum Navy requirement of 30 days, and are approximately 25 percent of the size by tonnage of a Navy LUSV. These key shortfalls mean SCO USV lessons learned will have limited applicability to the Navy LUSV program.

Question. How should CAPE analysis and recommendations inform budget requests regarding new capabilities that do not exist?

Answer. I believe that CAPE plays a critical role in helping the Department strike the right balance between the imperative to deliver advanced capabilities to the warfighter in a timely manner and the desire to reduce technological risk in new programs. I cannot speak to the decisions behind the fiscal year 2020 budget request, but if confirmed I intend to ensure that CAPE analyses seek this balance.

Question. How important is it, in your view, for the Department to mature its technologies with research and development funds before these technologies are incorporated into product development programs?

Answer. I believe maturation of new technologies is critical to the success of programs. Targeted and robust R&D funding, combined with rigorous prototyping and experimentation, can reduce risk before technologies are incorporated into programs.

Question. What role do you see for the Director of CAPE in ensuring that key components and technologies to be incorporated into major acquisition programs meet the Department's technological maturity goals?

Answer. Technology maturity of components is a key factor in major acquisition programs. If confirmed, I will work with the Under Secretary for Acquisition and Sustainment, the Under Secretary for Research and Engineering, the Director of Operational Test and Evaluation, the Services and others to ensure that technology components have a robust prototyping, testing, and experimentation plan. If programs are unable to reach an adequate level of maturity, changes can be made as part of the acquisition or annual Program Budget Review processes.

Question. If confirmed, how would you approach the task of ensuring that any CAPE recommendation is technologically mature and technically sound, or reflects a plan to achieve this level of knowledge, prior to including the program to which it applies in a budget request?

Answer. If confirmed, I will ensure that CAPE works with Under Secretary for Acquisition and Sustainment, the Under Secretary for Research and Engineering, the Director of Operational Test and Evaluation, the Services and others to ensure that promising technologies have robust prototyping, testing, and experimentation plans. If programs are unable to reach an adequate level of maturity, changes can be made as part of the acquisition or annual Program Review processes.

Question. When CAPE identifies a new, promising concept that may entail new platforms or capabilities, how should the Department ensure there is a rigorous engineering-based process to transition the concept into a DOD acquisition program?

Answer. New, promising concepts, regardless of their origin, can be assessed through Analyses of Alternatives (AOA), requirements documents, and work conducted by relevant program offices. CAPE works closely with other OSD components and the Services throughout the AOA process to ensure promising technologies have a robust prototyping, testing, and experimentation plan as concepts are transitioned into a DOD acquisition program. CAPE writes AOA guidance, co-chairs priority reviews, and determines analytic sufficiency.

Question. What do you envision as the most effective relationship between the Director of CAPE and the Undersecretary of Defense for Research and Engineering (USD(R&E)) in regard to obtaining technology readiness assessments and other engineering-based knowledge to inform CAPE recommendations on concept development, new acquisitions (e.g., LUSVs), or changes to existing acquisitions?

Answer. I envision a transparent and collaborative relationship between CAPE and R&E to assess technology readiness and other engineering-based knowledge for concept development, new acquisitions, or changes to existing acquisitions. This would include assessments throughout the Program Review and acquisition processes in addition to more informal and frequent exchanges.

Question. If confirmed, what changes to the Director of CAPE–USD(R&E) relationship or other Director of CAPE relationships would you consider to improve the technical foundation of concept development, new acquisitions, or changes to existing acquisitions recommended by CAPE?

Answer. In conducting its independent analyses, CAPE must work very closely with organizations across the DOD enterprise, including USD(R&E). If confirmed, I intend to work openly and transparently with other OSD components, the Services, the Joint Staff, and Combatant Commands to ensure that CAPE's analysis is fully informed by the expertise resident in all of these organizations.

Question. Section 8669b of title 10, U.S. Code, established a Senior Technical Authority for each class of naval vessels.

What is your understanding of the requirements of section 8669b?

Answer. The establishment of an independent Senior Technical Authority represents an important step to establish, monitor, and approve technical standards for each class of naval vessel to ensure their timely production, and to monitor systems engineering, technology, and ship integration risks.

Question. If confirmed, how would you work with Senior Technical Authorities to ensure they are able both to comply fully with their statutory duties for naval vessels and to inform CAPE analysis of the technical aspects of naval vessels?

Answer. If confirmed, I will work with the Navy to ensure that the CAPE staff is well-connected with the Senior Technical Authorities and has all the necessary information to provide Department leadership independent assessments of naval programs.

ACQUISITION PROCESS

Question. What is your understanding of the role of the Director of CAPE in the acquisition process?

Answer. CAPE's role is to provide acquisition support on cost analysis and analysis of alternatives (AOA). CAPE prepares independent cost estimates of major weapons systems as well as leadership and support of the broader DOD cost community, ensuring that acquisition decisions are informed by realistic cost estimates. CAPE also provides guidance for and assessments of AOAs, ensuring that decision makers consider trade-offs among effectiveness, suitability, and life-cycle costs (or total ownership costs, if applicable) of alternatives that satisfy established capability needs among a comprehensive set of potential materiel solutions. CAPE's expertise in cost analysis ensures that acquisition decisions are based on a realistic understanding of the resources available, and that the Department remains a good steward of taxpayers' dollars while providing critical capabilities to warfighters.

Question. What is your view of the significance of sound, unbiased cost estimating throughout the acquisition process?

Answer. Credible schedule forecasts and cost estimates are essential to managing successful acquisition programs. Realistic cost and schedule estimates are foundational to having a predictable program that delivers as promised and has the necessary resources to fully implement the acquisition program.

Question. What is your understanding of the role of the Director of CAPE in the requirements development and resource-allocation processes?

Answer. In my view, the Director of CAPE plays key roles in both processes. CAPE participates as an advisor in the Joint Requirements Oversight Council process run by the Joint Staff to develop requirements. The Under Secretary of Defense (Comptroller)/Chief Financial Officer and the Director of CAPE share the leadership of resource allocation processes that lead to the annual President's Budget submission and the Future Years Defense Program.

Question. Do you see the need for any additional processes or mechanisms to ensure coordination between the budget, acquisition, and requirements systems of the Department of Defense and to ensure that appropriate trade-offs are made between cost, schedule, and performance requirements early in the acquisition process?

Answer. I believe the current processes and authorities are sufficient, if paired with very close coordination among OSD components, the Joint Staff, and the Services. If confirmed, I intend to pursue an intensely collaborative approach to ensure that decision makers are supported by rigorous analysis when considering these trade-offs.

Question. If confirmed, how would you ensure that CAPE provides analytical options for decision makers so that they can make informed, data driven choices on acquisition programs?

Answer. Supporting DOD's decision makers with data-driven analyses and options is the core business of CAPE. If confirmed, I would continue CAPE's long tradition of rigorous independent analysis while also continuously seeking to improve upon it by looking for ways to improve access to and quality of data, seeking out new analytic approaches, methodologies, and models, and applying CAPE's analytic talent to the Secretary's highest priorities.

Question. What role do you see for the Director of CAPE in controlling cost growth on the Department's major defense acquisition programs?

Answer. CAPE's role is both prepare independent cost estimates and to provide leadership across DOD's cost community, ensuring that acquisition decisions are informed by realistic estimates of a program's total cost. To this end, CAPE expanding and improving its ability to estimate sustainment cost, building a new sustainment cost database (EVAMOS) which will be available to the cost community across DOD.

Question. What role do you see for the Director of CAPE in performing CAPE functions for middle tier acquisition programs and other adaptive acquisition pathway efforts?

Answer. It is my understanding that CAPE participates in the Middle Tier Acquisition governance board to assist in steering and providing oversight of Middle Tier Authorities for acquisition programs. CAPE also prepares and approves cost data collection plans for Middle Tier Prototyping and Fielding programs. In addition, CAPE has updated internal DOD Instructions and Manuals to align its processes with each of the acquisition pathways for consistency with proper timelines and requirements. If confirmed, I would work closely with Departmental leadership to ensure that middle tier acquisition programs and the use of other adaptive acquisition pathways meet the need to innovate rapidly, but in a way that continues to make the best use of taxpayer dollars.

FINANCIAL MANAGEMENT AND AUDITABILITY

Question. What is your understanding and assessment of the Department of Defense's efforts to achieve a clean financial statement audit?

Answer. The Department's audit effort is led by the Under Secretary of Defense (Comptroller) Chief Financial Officer. My understanding is that DOD has made considerable progress in auditability over the past several years, but still has much work to do before all components can achieve a clean audit opinion.

Question. Especially for the purposes of cost control and program evaluation, how would the Department of Defense benefit during the process of undertaking full financial statement audits, and what further benefits would accrue once the Department is able to achieve and maintain a clean financial statement audit?

Answer. The ability to produce quality analysis is wholly dependent on availability and accessibility of quality data. Any initiative in the Department to improve data collection and consolidation will benefit CAPE and the DOD analytic commu-

nity, and the process of working towards a clean financial statement audit should improve both the quality and accessibility of financial data across DOD.

Question. If the Department of Defense improves its internal controls and achieves a clean audit, do you expect the Department would also improve its ability to control acquisition costs and estimate costs of development, procurement, and sustainment of systems and services? Why or why not?

Answer. I expect the high fidelity data associated with a clean audit would improve the Department's ability to estimate and manage costs across the acquisition lifecycle. Better data on actual incurred costs will enable better management on programs in real time and should improve the data sets available for estimating costs on new programs in the future.

Question. In your view, what impediments hinder the Department's ability to achieve a clean audit and if confirmed, how would you lead CAPE in helping to address these impediments?

Answer. A clean audit opinion for the DOD is difficult due to the sheer size and complexity of the organization. There are many factors that complicate a DOD audit, not all of which can be resolved by simply increasing resources dedicated to the process. However, if confirmed I would work closely with the DOD Comptroller to evaluate any resource requests necessary to enable audits are thoroughly considered during the annual Program Budget Review process.

Question. In your view, how can CAPE's efforts to improve data collection and analysis contribute to broader efforts to improve financial management in the Department of Defense?

Answer. CAPE's data collection and distribution efforts, such as Cost Assessment Data Enterprise (CADE), improve the accessibility and usability of high quality data for financial, programmatic, and operational analysis across the Department.

DATA

Question. What is your assessment of the Defense Department's ability to efficiently collect data on its systems and processes to inform analysis and decision making?

Answer. My view is that the Department has made considerable progress in this area over the past several years, though much work remains to be done. I believe the Department has a robust approach underway to address financial and cost data. Those efforts need to be sustained and expanded to address other critical factors the Department's leaders need when making important decisions. Operational, personnel, readiness, and force development all deserve additional attention to ensure efficient data collection. If confirmed, I am committed to working with the Chief Data Officer to improve data collection, accessibility, and use in decision making in accordance with the Deputy Secretary's Five Data Decrees.

Question. If confirmed, what initiatives will you undertake to improve the Department's use of data in its processes?

Answer. CAPE collects and uses data to support its core mission of producing independent cost, program, and strategic analyses. If confirmed, I am committed to reinforcing CAPE's focus on data driven analysis. I would also want to partner with the Chief Data Officer and other stakeholders to set priorities for data reform efforts, revise data policies, and identify necessary resources to ensure data is managed as a strategic resource.

Question. What are the barriers that prevent the Department from collecting the data it needs to analyze and improve its processes and programs?

Answer. There are technical, policy, and cultural barriers that prevent DOD from fully maximizing the utility of its data. In my experience, a few examples include limitations of legacy IT systems, complications due to classification and need-to-know requirements, and cultural resistance to change.

Question. If confirmed, what steps would you take to help the Department overcome these barriers?

Answer. If confirmed, I would work closely with the Chief Data Officer and other stakeholders to prioritize data reform efforts, revise and enforce data policies, and identify investments needed to ensure data is available to people, processes, and platforms.

Question. In your view, what areas of DOD operations and management would benefit from improvements in the use of data, with a view to improving the Department's mission execution or management processes?

Answer. I believe the regular use of data to underpin operational and management decisions at the Department level is critical. There have been significant efforts to improve the use of data for such decisions, which is encouraging. Budget transparency, personnel management, strategy implementation, force management,

and acquisition program management are all areas that I believe could benefit from continued progress in this area.

Improved data and software infrastructure for better decision making and analyses and warfighting is a major priority for Congress. The Director of CAPE is the leader of the Department's cost and program analysis community.

Question. If confirmed, how would you prioritize improved strategic data collection and improved software infrastructure in both the cost and program analysis communities, and in the conduct of strategic reviews of the Services' investments?

Answer. If confirmed, I would look to build on the success of CAPE's CADE database, which has improved the accuracy of cost estimates not just within CAPE, but across the DOD cost community. I would continue to support development of CAPE's new sustainment cost database, EVAMOS. More broadly, I would work with DOD's Chief Data Officer to improve data collection, accessibility, and use across the Department in accordance with the Deputy Secretary's Five Data Decrees.

WORKFORCE

Question. If confirmed, how would you view your role as the Director of CAPE in leading and spearheading improvements in and development of the cost and program analytical community across the Department?

Answer. If confirmed as the Director of CAPE, I would continue to build the analytical skills and cost competencies of the Department's analytical workforce to advance data driven decision support, with particular focus on the education and training of the analytical and cost assessment workforces.

Question. Does CAPE currently have the resident capacity and capability in its workforce to adequately meet all assigned mission tasks, while providing personnel with adequate professional development opportunities?

Answer. CAPE's workforce is incredibly talented, but the organization's ability to provide in-depth decision support to the Department's senior-most leadership is limited by the organizations current manning. If confirmed, I would support a sustainable and executable growth path for CAPE.

Question. In your view, does DOD as a whole have sufficient capability and capacity in its cost and program analytical workforce?

Answer. DOD has significant analytic talent, capacity, and capability, much of it resident in the Services, but there are gaps, especially at the joint and defense-wide level.

Question. Where might the Department improve in this area, in your view?

Answer. In my view, the Department could better integrate quantitative analysis with war-gaming, experimentation, and exercises. I also believe that more work is needed on data collection, knowledge management, and modeling. If confirmed, I would work with the Department's leadership to advance analytic capability that directly supports strategic decision making.

Question. The Joint Staff has repeatedly indicated that it does not possess the analytical capacity or capability to carry out certain tasks assigned to it. In your view, is it an appropriate use of CAPE resources to devote workforce time to meet those Joint Staff shortfalls?

Answer. It is my understanding that CAPE's workforce is already stressed to execute the tasks assigned to it, and does not at present have excess capacity. I also do not believe CAPE is, or should be, the only organization capable of providing analytically rigorous decision support to DOD's most senior leaders. If confirmed, I would direct CAPE's finite analytic resources towards the Secretary and Deputy Secretary's highest priorities.

Question. If confirmed, what would be your priorities for improvement in the quality and expertise of the cost and program analytical community?

Answer. CAPE is a leader of the analytical and cost community, working with all of DOD's analytic organizations to identify analytic priorities, coordinate work plans, improve tools, improve data availability, and manage knowledge. Together, the analytic community has identified opportunities to improve the analytic institution in areas such as security, knowledge management, and availability of data and tools in new domains such as cyber. If confirmed, my priority will be improving education and training, data collection and accessibility, and ensuring the community has access to more powerful analytic tools.

Question. What is your assessment of the diversity of the CAPE workforce? If confirmed, what specific efforts would you undertake to diversify CAPE's workforce and what benefit would you hope to derive from each such effort?

Answer. CAPE has improved the diversity of its workforce in recent years, but work remains to be done in this area. Creating a diverse workforce takes constant attention and if confirmed, I would be committed to supporting diversity in the

CAPE organization. I would prioritize two areas: first, recruitment to ensure diversity across the organization and second, providing a supportive and inclusive environment where all employees have the opportunity to gain experience, grow, and be rewarded based on merit. It is my belief that the organization will benefit from the creativity and alternative views that come from a workforce comprised of people with diverse backgrounds and perspectives.

SPACE ACQUISITION

Question. According to a study by the Government Accountability Office (GAO), fragmented leadership has undermined the Department of Defense's ability to deliver space capabilities to the warfighter on time and on budget. Fractured decision-making and many layers of bureaucracy have been long-time sources of concern in this regard.

Do you believe the Department's existing space acquisition structure is sufficient?

Answer. The Department's space acquisition structure incorporates many of the same checks and balances as acquisitions in other capability areas. The recent Adaptive Acquisition Framework reforms provide options to streamline some of these layers of bureaucracy where appropriate. The use of this Framework is still evolving and, if confirmed, I would work with other Department leaders to evaluate improvements to DOD's space acquisition structure.

Question. What is your opinion on the congressionally directed changes in this structure since the stand-up of the U.S. Space Force?

Answer. The consolidation and elevation of space acquisition responsibilities in the Space Force places a needed spotlight on these critical and complex capabilities. If confirmed, I look forward to working with acquisition and programming officials of the Space Force.

Question. What additional changes are necessary and appropriate, in your view?

Answer. With the Adaptive Acquisition Framework, the Department has a wider range of options for executing space acquisition programs. Within this range of options, the Department should seek the right balance between speed and oversight. If confirmed, I would work with the Office of the Undersecretary of Defense for Acquisition and Sustainment and the U.S. Space Force to identify what acquisition practices are unnecessary barriers and may be slowing the process, and which provide a valuable assessment of technical, cost, and/or schedule risks.

Question. When would you expect the Space Alternative Acquisition Report to be transmitted to Congress?

Answer. It is my understanding that the Space Force is the lead for this report. If confirmed, I will ensure that CAPE does what it needs to do to support timely delivery to Congress.

Question. In your view, how might CAPE studies and assessments support more competition in the launch of Department of Defense payloads?

Answer. It is my understanding that the Space Force's National Security Space Launch program office maintains a portfolio of launch options to ensure the Department can cost effectively procure launches for its mission-critical payloads while also encouraging the development of a range of smaller, new providers. As the launch market matures, CAPE studies may have a role in assessing the technical maturity of new entrants, estimating the range of payloads that may be good candidates for expanded launch competition, or validating expected cost savings from new contracts.

DEPARTMENT OF DEFENSE INFORMATION TECHNOLOGY (IT) PROGRAMS

Question. If confirmed, what steps would you take to promote changes in Department of Defense efforts to improve the development and deployment of major IT systems and IT service acquisition programs?

Answer. If confirmed, I would work with DOD Chief Information Officer, Under Secretary of Defense for Acquisition and Sustainment, and the Services, to assess best practices and incorporate them into the DOD acquisition process for IT systems and services.

Question. If confirmed, how would you endeavor to shape DOD efforts to undertake business process reengineering before initiating new business systems, and IT program development and deployment?

Answer. Business process reengineering is a critical foundation of any new business and IT system. It is my understanding that the Office of the Under Secretary of Defense for Acquisition and Sustainment has established business process reengineering as a required component of the Business Capability Acquisition Cycle process. The execution of these efforts rely on a firm understanding of business requirements, creative thinking, and a willingness to embrace change. If confirmed,

I would work with the Under Secretary of Defense for Acquisition and Sustainment and other Department leaders to ensure business process reengineering is an integral part of assessing any new business system.

Question. Will you commit that, if confirmed, you will assess the development and deployment of defense business IT systems and report back to this Committee on the findings and recommendations resulting from your assessment?

Answer. If confirmed, I commit to working with other Department leaders to assess the development and deployment of defense business IT systems and report findings and recommendations to Department leadership, the Office of Management and Budget, and the Congressional Defense Committees, as appropriate.

Question. If confirmed, what steps would you take to ensure that business IT systems developed or deployed by DOD are sufficiently aligned with best commercial business practices?

Answer. If confirmed, I would work to increase awareness within the Department of recommended commercial practices, and consider critical tradeoffs between commercially available solutions and DOD unique requirements. While some best practices are most effectively enforced through contract language, CAPE can play a critical role in guiding DOD's IT programs toward better practices and outcomes through effective program oversight and reporting requirements.

INDUSTRIAL BASE

Question. In your view, how should CAPE factor the health and viability of the industrial base when developing cost estimates?

Answer. A healthy industrial base is essential to U.S. national security, and in order to produce accurate cost estimates, CAPE analysts must have a thorough understanding of the defense industrial base.

SCIENCE AND TECHNOLOGY

Question. What is your understanding and assessment of the role that Department of Defense science and technology programs and organizations have played and will play in developing capabilities for current and future defense systems?

Answer. DOD S&T programs and organizations have and will continue to play a central role in developing current and future defense capabilities. Nearly every revolutionary advance in U.S. military capability has origins in the DOD S&T programs that fund research in federal, academic, and industrial laboratories. The key role of S&T investment is to develop the next generation of emerging and disruptive technology that will enable the rapid delivery of superior capabilities to the warfighter.

Question. If confirmed, what metrics would you use to judge the value of the DOD level of investment in science and technology programs?

Answer. If confirmed, I would work to ensure that the S&T investment is both adequate in meeting the Department's mid- and long-term strategic goals, and balanced between a robust basic research program, applied research, and advanced technology development. CAPE would continue analyzing the value of DOD S&T investment levels through metrics such as cost effectiveness, technological risk, potential operational benefit, and impact in developing the U.S. Science, Technology, Engineering, and Math (STEM) workforce for defense and national security.

Question. What role can research and technology programs that develop new methodologies or capabilities in areas like cost analysis, data analytics, and operations research play in developing new tools, techniques, and processes for use by the Director of CAPE?

Answer. Programs that develop new and more effective ways of conducting cost assessments and operations research play the role of key enablers for CAPE's mission to provide timely, insightful, and impartial analysis. If confirmed, I would ensure that the CAPE team has access to the latest analytical tools and techniques to help DOD leadership make smarter, timely decisions in an increasingly complex national security environment.

Question. Are there any specific programs on which DOD should focus in this regard?

Answer. From what I understand, the Department writ large, and CAPE in particular, are pushing forward with a number of initiatives to improve the quality of data, the ease of collection, the analysis of that data, and the visualization for senior leadership. If confirmed, I would work closely with other organizations including DOD's Chief Data Officer to push the Department forward in this area consistent with the Deputy Secretary's Five Data Decrees. CAPE also continuously develops new analytic approaches and models, and if confirmed, I would seek to continue this

practice and ensure that CAPE's innovations in this area are shared across the Department.

Question. Should the Office of Cost Assessment and Program Evaluation dedicate greater resources to assessing future enabling capabilities (e.g., cyber forces and capabilities, artificial intelligence warfighting applications, biotechnology)? Please explain your answer.

Answer. If confirmed, I would evaluate CAPE's priorities and distribution of resources for assessing future enabling capabilities. CAPE's people are its most valuable asset in providing insightful analysis for decision support. Taking guidance from the Secretary and Deputy Secretary and working with the CAPE leadership team, if confirmed I would determine if it is necessary to reallocate limited resources to meet the goals and future direction of the Department, including key enabling capabilities, or advocate for additional resources to fully address these issues.

Question. Do extant Office of Cost Assessment and Program Evaluation operations research capabilities and methods lend themselves to these kinds of analyses?

Answer. Yes, I believe so. CAPE has a strong track record of analyzing future enabling capabilities across the organization. If confirmed, I would examine the use of current tools to address these issues, identify any gaps, and develop new capabilities and methods as necessary.

Question. If confirmed, how would you plan to build and maintain a team of experts and the methodological toolkits to effectively assess the rapidly evolving emerging technologies that will be critical to the future warfighter?

Answer. If confirmed, I would work to maintain the culture of CAPE, which is characterized by a desire to rapidly acquire new knowledge across emerging technological fields. CAPE's highly talented workforce is capable of assessing new technologies and their potential impacts on future operations. I would continue CAPE's tradition of hiring talented professionals who have demonstrated analytical ability and expertise across many different emerging technical fields.

Question. How can advanced commercial- and government-developed data collection, management, and analytics techniques and systems be used to support the activities of the Director of CAPE?

Answer. CAPE's core competencies in cost assessment and program evaluation depend on advanced data collection and analytical techniques. A combination of strong analytical talent and data management systems are fundamental to CAPE's ability to quickly and effectively answer critical questions needed to shape and implement the Secretary of Defense's priorities and direction.

CYBER

Question. Offensive cyber operations offer the potential to disrupt adversary command and control, deter adversary senior leadership, and nullify adversary kinetic operations; our own cybersecurity vulnerabilities could allow adversary cyber forces to achieve the same effects.

How does the Office of Cost Assessment and Program Evaluation assess whether broad mission areas like cyber demand more or less investment?

Answer. It is my understanding, that in general, CAPE provides analysis and options to balance performance and risk within individual mission areas (e.g. cyber) and across multiple mission areas (e.g. non-kinetic and kinetic approaches) in the context of supporting warfighting objectives.

Question. Does the Office of Cost Assessment and Program Evaluation have a role in assessing the costs and benefits of major policy and regulatory measures—for example, the Cybersecurity Model Maturity Certification program?

Answer. As I understand it, CAPE supports this kind of decision when directed by the Secretary of Deputy Secretary.

Question. If the office does not currently have a role in these types of assessments, should it?

Answer. If confirmed, I plan to learn more about these processes and determine if and how CAPE could add value.

Question. In your view, does the office have the relevant expertise and technical capability to execute such assessments?

Answer. CAPE personnel have a broad range of expertise and deep technical ability. With those attributes, CAPE personnel are able to collaborate with subject matter experts to leverage additional expertise and provide independent technical assessments.

COMMAND CLIMATE SURVEY

Question. Will you commit that, if confirmed, you will administer a command climate survey to the Office of Cost Assessment and Program Evaluation?

Answer. My understanding is that CAPE leadership, as a matter of long standing practice, routinely surveys the CAPE workforce on the organization's climate. If confirmed, I will continue this practice.

Question. Will you commit that, if confirmed, you will brief the Senate Armed Services Committee on the results of the command climate survey you administer and any actions you plan to take in response to those results?

Answer. If confirmed, I would be happy to share the results of any command climate survey that I may administer and brief the committee on any follow up actions that I may take.

SEXUAL HARASSMENT

Question. In responding to the 2018 DOD Civilian Employee Workplace and Gender Relations survey, 17.7 percent of female and 5.8 percent of male DOD employees indicated that they had experienced sexual harassment and/or gender discrimination by "someone at work" in the 12 months prior to completing the survey.

What is your assessment of the current climate regarding sexual harassment, gender discrimination, and other harassment in the Office of Cost Assessment and Program Evaluation?

Answer. I am not presently aware of any issues involving harassment or discrimination within CAPE. If confirmed, I would immediately seek to validate this understanding, and act swiftly if there are issues of which I am not presently aware. Further, I would ensure that CAPE leadership and staff understand my commitment to maintaining an inclusive workplace that is welcoming and supportive of all team members.

Question. If confirmed, what actions would you take were you to receive or become aware of a complaint of sexual harassment, discrimination, or other harassment from an employee of the Office of Cost Assessment and Program Evaluation?

Answer. If I were to be confirmed as the Director of CAPE and became aware of a complaint of discrimination or harassment of any kind, I would immediately notify the appropriate Human Resources and Equal Employment Opportunity offices and launch an independent inquiry into the complaint. I would take complaints of this nature very seriously, enforce accountability at all levels, leverage opportunities to train and educate leaders and the staff, and reiterate my stance that this kind of behavior has no place in the workplace or anywhere else. I would also ensure that CAPE has workplace policies and practices in place that promote respect, civility, and inclusion for all, leveraging the work of CAPE's existing Diversity and Inclusion Working Group.

CONGRESSIONAL OVERSIGHT

Question. In order to exercise legislative and oversight responsibilities, it is important that this committee, its subcommittees, and other appropriate committees of Congress receive timely testimony, briefings, reports, records—including documents and electronic communications, and other information from the executive branch.

Do you agree, without qualification, if confirmed, and on request, to appear and testify before this committee, its subcommittees, and other appropriate committees of Congress? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to provide this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs such witnesses and briefers, briefings, reports, records—including documents and electronic communications, and other information, as may be requested of you, and to do so in a timely manner? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to consult with this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs, regarding your basis for any delay or denial in providing testimony, briefings, reports, records—including documents and electronic communications, and other information requested of you? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to keep this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs apprised of new information that materially impacts the accuracy of testimony, briefings, reports, records—including documents and electronic communications, and other information you or your organization previously provided? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, and on request, to provide this committee and its subcommittees with records and other information within their oversight jurisdiction, even absent a formal Committee request? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to respond timely to letters to, and/or inquiries and other requests of you or your organization from individual Senators who are members of this committee? Please answer with a simple yes or no.

Answer. Yes.

Question. Do you agree, without qualification, if confirmed, to ensure that you and other members of your organization protect from retaliation any military member, federal employee, or contractor employee who testifies before, or communicates with this committee, its subcommittees, and any other appropriate committee of Congress? Please answer with a simple yes or no.

Answer. Yes.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JACK REED

BALANCING THE NEEDS OF OVERSIGHT AND SPEED

1. Senator REED. Ms. Blume, in your respective positions, you will be responsible for development and accurately estimating costs, as well as oversight of programs. These activities require data and analysis, and take time. The activities also are part of a process, which needs to move faster. How will you balance these competing needs?

Ms. BLUME. Striking this balance is absolutely critical to ensuring U.S. military preeminence in the coming decades. DOD must field new capabilities on relevant timelines, but failure to exercise appropriate oversight in the process could result in delays, wasted resources, and failed programs. The use of new acquisition processes holds the promise of quicker and lower cost acquisition efforts that would benefit the Department, but they do require changes in Department processes. CAPE has already updated its instructions and manuals to align processes with the relatively shorter time horizons associated with many of the new acquisition pathways.

Additionally, CAPE is continuing to make investments in important data systems which help to speed data collection and cost estimating for the entire DOD cost analysis community. The Cost Assessment Data Enterprise (CADE) increases analyst productivity and effectiveness by collecting, organizing, and displaying data in an integrated web-based application, which improves data quality, reporting compliance, and provides a single, authoritative source for the data across the Department. CAPE also recently awarded a contract for the design, development, and operation of the Enterprise Visibility and Management and Oversight of Operating and Support Cost (EVAMOS) system, which will enable the Department to better track and assess O&S costs to improve cost estimation over a system's life cycle.

If confirmed, I will continue to support CAPE's investments in these important data systems and I look forward to working with A&S, the Services, and Defense-wide agencies to address any further requirements for changes to systems and policies as the Services fully implement the Adaptive Acquisition Framework and to ensure appropriate oversight.

ACQUISITION PROGRAM REPORTING

2. Senator REED. Ms. Blume, congressional oversight of acquisition programs has long relied on Selected Acquisition Reports, which provide consistent summary level cost, schedule, and performance data on DOD's costliest weapon programs. Given the Department's new Adaptive Acquisition Framework and the risks and requirements of the various pathways, in your opinion, what are the key elements of program performance that are needed to perform effective oversight on DOD's acquisition programs in each pathway?

Ms. BLUME. As users of the Selected Acquisition Reports, CAPE has a vested interest in the availability of SAR-like data. It is my understanding that CAPE has been supporting the A&S-led Data Implementation Group (DIG) to determine what data should be included in the dashboard that the Department is developing to replace the SARs.

I also think that as the Department moves beyond SARs, it is important that we continue to collect, aggregate, and report data in way that allows us to evaluate the cost, schedule, and performance of the total system on a continuous basis. Even though a major system may be comprised of efforts in multiple pathways, with hardware and software being on different pathways for example, we must bring the information together in a way that allows the Department and Congress to evaluate the lifecycle cost of the complete system.

If confirmed, I will continue to support the DIG to ensure that DOD develops a method to collect and report information to assess the cost, schedule, and performance of the total capability of major systems, regardless of the number of pathways they use, both for internal use and to support Congressional oversight.

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

RADOMES

3. Senator SHAHEEN. Ms. Blume, the North Warning System is a joint United States and Canadian early-warning radar system for the atmospheric air defense of North America. It provides surveillance of airspace from potential incursions or attacks from across North America's polar region. Currently, the individual radars are protected from the harsh arctic environment with radomes that utilize technology more than 50 years old that delaminate and require regular replacement and repainting to maintain operations, which is very costly.

Section 1651 of the Fiscal Year 2021 National Defense Authorization Act (NDAA) requires a report to Congress that includes an assessment of the North Warning System, including the operational integrity of its infrastructure and of its current technology compared with technology deemed necessary, as well as a plan for mitigating vulnerabilities and modernizing the capabilities of the North Warning System.

Early year this year the Air Force provided my staff with an update on the report and indicated that CAPE is taking the lead on this study. Will you commit to providing me with an update on CAPE's review of new technology to replace existing radomes and when the final report may be completed and submitted to this committee?

Ms. BLUME. Section 1651 of the Fiscal Year 2021 National Defense Authorization Act (NDAA) requires a report to Congress that includes an assessment of the North Warning System, including the operational integrity of its infrastructure and of its current technology compared with technology deemed necessary, as well as a plan for mitigating vulnerabilities and modernizing the capabilities of the North Warning System.

Early year this year the Air Force provided my staff with an update on the report and indicated that CAPE is taking the lead on this study. Will you commit to providing me with an update on CAPE's review of new technology to replace existing radomes and when the final report may be completed and submitted to this committee?

I am not familiar with CAPE's specific role on this report, but if confirmed I commit to working with other DOD components to provide an update on this critically important issue.

QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

HOMELAND DEFENSE RADAR—HAWAII

4. Senator HIRONO. Ms. Blume, the 2019 Missile Defense Review identified the Homeland Defense Radar—Hawaii (HDR-H) as a requirement for detecting and discriminating against inbound missile threats from an increasingly capable North Korea. Congress appropriated \$133 million for fiscal year 2021 to keep its development on track. Both Admiral Philip Davidson, at the time the Commander of U.S. Indo-Pacific Command (INDOPACOM), and General Paul LaCamera, who was just confirmed as the Commander, United States Forces Korea, have testified before this committee in the last 2 months that HDR-H would be an important part of the region's layered missile defense system to protect Hawaii and the continental United States (CONUS) from long-range missiles from North Korea. How do you square our military commanders' position on the importance of HDR-H with CAPE's [Cost Assessment Program Evaluation] assessment?

Ms. BLUME. Defending Hawaii is critically important, not only because of its military value, but more importantly because of the Americans who live there. The

question is how best to do so. It is my understanding that the HDR-H was designed to work in tandem with another radar system, the Pacific Radar, to enhance the defense of Hawaii against projected North Korean ICBM threats. However, the Pacific Radar has been indefinitely delayed and there is no clear path to delivering the system. As a result, the DOD tasked CAPE with assessing the ability of HDR-H to enhance the defense of Hawaii in the absence of the Pacific Radar. It is my understanding that CAPE's study, delivered to Congress in September 2020, indicated that HDR-H alone could provide some limited benefits to the defense of Hawaii under certain conditions, as indicated by the Commanders. However, the system could not fulfill the original intent of the program, and its ability to enhance the defense of Hawaii would be significantly decreased without the corresponding capabilities of the Pacific Radar.

5. Senator HIRONO. Ms. Blume, since 2017, DOD has spent over \$225 million dollars on HDR-H. What is the Department's plan to ensure that there is detection protection for Hawaii just as there is for Alaska and CONUS from long-range missiles from North Korea?

Ms. BLUME. The Department continuously monitors the threat from North Korea and adjusts its defensive strategies accordingly to provide the best defense of the entire United States. Existing sensor systems are sufficient to enable the Ground-Based Midcourse Defense (GMD) system to provide defense of Hawaii against simple ICBM threats from North Korea, just like the rest of the U.S. As the threat continues to evolve, the Department may need to invest in other capabilities to ensure that Hawaii is provided with adequate protection.

6. Senator HIRONO. Ms. Blume, how does detection protection for Hawaii compare with Alaska and CONUS without HDR-H?

Ms. BLUME. It is my understanding that the Ground-Based Midcourse Defense system, as it exists today, is able to provide comparable levels of protection to Hawaii and the rest of the United States. Existing sensing capabilities are sufficient for countering the simple ICBM threats currently fielded by North Korea. Initial detection of launches is provided by satellite assets, and current ground-based sensors provide sufficient tracking data to enable successful engagement of a North Korean ICBM launched towards anywhere in the U.S., including Hawaii.

7. Senator HIRONO. Ms. Blume, how would detection protection for Hawaii compare with Alaska and CONUS with HDR-H?

Ms. BLUME. As the North Korean threat becomes increasingly complex, additional investments may be required to ensure that Hawaii is provided with comparable protection to the rest of the U.S. If confirmed, I commit to working transparently with Congress on how to best protect Hawaii from missile threats.

CONTRACT SERVICES TRANSPARENCY IN THE BUDGET

8. Senator HIRONO. Ms. Blume, Congress had previously directed that the Department of Defense provide better transparency over contract services expenditures in its budget submission. (see title 10 U.S. Code sections 235, 2329 and 2330a). As early as a 2016 audit, the Government Accountability Office (GAO) pointed out that CAPE was not including in its programming guidance direction for defense components to include their projections of requirements and expenditures for contract services over the Future Year Defense Program. (see GAO-16-119). In February of this year, the GAO pointed out that CAPE and the DOD Comptroller still had not provided satisfactory plans for addressing this problem. (GAO-21-267R). If confirmed, what steps will you take to ensure CAPE starts including in its programming guidance and program prioritization processes transparency relating to requirements the defense components plan to fulfill with contracted services?

Ms. BLUME. Transparency of requirements for contract services expenditures is an important element in ensuring the most effective use of taxpayers' dollars. If confirmed, I will work with the Deputy Secretary, OSD, and Service leadership to ensure Congress has the appropriate visibility into contract services requirements. This effort will require participation from the entire acquisition community because oversight and assessment of contract services crosses the boundaries of many portfolios and areas of expertise.

9. Senator HIRONO. Ms. Blume, what steps will you take to ensure these requirements comply with limitations on privatization incorporated into the total force management policies required by title 10 U.S. Code section 129a?

Ms. BLUME. If confirmed, I will consult with and incorporate the advice of the Under Secretary for Personnel and Readiness, the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense (Comptroller) to ensure the appropriate guidelines and procedures are taken into account. I would ensure that any changes that might be considered will be examined from the perspective of achieving needed capabilities both at the best price and in the most appropriate fashion.

10. Senator HIRONO. Ms. Blume, the Deputy Secretary of Defense in her private capacity last year wrote in a March 2020 “Foreign Affairs” article entitled, “Getting to Less: The Truth About Defense Spending,” the following: “Predictably, for example, even though Congress directed the Defense Department to cut \$10 billion through administrative efficiencies between 2015 and 2019, the Pentagon failed to substantiate that it had achieved those savings. The reason those efforts rarely succeed is that they merely shift the work being done by civilian employees to others, such as military personnel or defense contractors.” If confirmed as Director of CAPE, what steps will you take to avoid these types of accounting tricks on supposed savings in the future?

Ms. BLUME. If confirmed, I pledge to work with Department leadership to ensure future reform efforts are realistic and fully documented in order to enable more effective oversight. For example, I would work with the Under Secretary of Defense (Comptroller) to ensure that Components achieve directed efficiencies. On a case-by-case basis, CAPE could also work with Comptroller and others to assess whether it is more cost effective to do certain types of work with civilian employees, military personnel, or contractors.

QUESTIONS SUBMITTED BY SENATOR GARY PETERS

TRANSPARENCY IN CONTRACTS

11. Senator PETERS. Ms. Blume, Congress had previously requested that the Department of Defense provide better transparency over contract services expenditures in its budget submission. (see title 10 U.S. Code sections 235, 2329 and 2330a). As early as a 2016 audit, the Government Accountability Office (GAO) pointed out that CAPE [Cost Assessment Program Evaluation] was not including in its programming guidance, direction for defense components to include their projections of requirements and expenditures for contract services over the Future Year Defense Program. (see GAO-16-119). In February of this year, the GAO pointed out that CAPE and the DOD Comptroller still had not provided satisfactory plans for addressing this problem. (GAO-21-267R). If confirmed, how will you ensure CAPE begins including in its programming guidance and program prioritization processes, transparency over requirements defense components plan to fulfill with contracted services?

Ms. BLUME. Transparency of requirements for contract services expenditures is an important element in ensuring the most effective use of taxpayers’ dollars. If confirmed, I will work with the Deputy Secretary, OSD, and Service leadership to ensure Congress has the appropriate visibility into contract services requirements. This effort will require participation from the entire acquisition community because oversight and assessment of contract services crosses the boundaries of many portfolios and areas of expertise.

12. Senator PETERS. Ms. Blume, what steps will you take to ensure these requirements comply with limitations on privatization incorporated into the total force management policies required by title 10 U.S. Code section 129a?

Ms. BLUME. I will consult with and incorporate the advice of the Under Secretary for Personnel and Readiness, the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense (Comptroller) to ensure the appropriate guidelines and procedures are taken into account. I would ensure that any changes that might be considered will be examined from the perspective of achieving needed capabilities both at the best price and in the most appropriate fashion.

ADMINISTRATIVE EFFICIENCIES

13. Senator PETERS. Ms. Blume, the Deputy Secretary of Defense in her private capacity last year wrote in a March 2020 “Foreign Affairs” article entitled, “Getting to Less: The Truth About Defense Spending,” the following: “Predictably, for example, even though Congress directed the Defense Department to cut \$10 billion through administrative efficiencies between 2015 and 2019, the Pentagon failed to

substantiate that it had achieved those savings. The reason those efforts rarely succeed is that they merely shift the work being done by civilian employees to others, such as military personnel or defense contractors.” How can we avoid encouraging such manipulations in the future?

Ms. BLUME. If confirmed, I pledge to work with Department leadership to ensure future reform efforts are realistic and fully documented in order to enable more effective oversight. For example, I would work with the Under Secretary of Defense (Comptroller) to ensure that Components achieve directed efficiencies. On a case-by-case basis, CAPE could also work with Comptroller and others to assess whether it is more cost effective to do certain types of work with civilian employees, military personnel, or contractors.

QUESTIONS SUBMITTED BY SENATOR ROGER WICKER

COMMITMENT TO A 355-SHIP NAVY

14. Senator WICKER. Ms. Blume, in December 2016, the Navy released a force-structure goal that calls for achieving and maintaining a fleet of 355 ships of certain types and numbers. The 355-ship goal was made policy by section 1025 of the Fiscal Year 2018 National Defense Authorization Act. The Fiscal Year 2018 NDAA passed the House by a vote of 344–81 and the Senate by a vote of 89–8.

Since 2019, the Navy and DOD have been working to develop a new force-level goal to replace the current 355-ship force-level goal. The conclusion of this work and the release of its results to Congress have been delayed repeatedly since late-2019. The Future Naval Force Study conducted last year called for a number “far above” the Navy’s 355 ship target.

The Chief of Naval Operations, Admiral Michael Gilday, said on April 27, 2021, “Recently I was asked by a member of Congress what my North Star is with respect to numbers right now . . . That’s 355. I still think that’s a really good target.”

On May 25, 2021, you testified that you understand that 355 ships is in law but you stopped short of supporting that goal. Do you agree with Congress and the Navy that 355 ships are needed in today’s fleet to deter and counter America’s adversaries?

Ms. BLUME. I agree that a robust, highly capable and sustainable Navy is essential to U.S. national security and believe that the Biden administration is committed to ensuring U.S. maritime superiority for years to come through deliberate investment in shipbuilding, subsystems, weapons, manning, and sustainment.

If confirmed, I am committed to fulfilling CAPE’s mandate, which is to provide independent analysis to the Secretary and Deputy Secretary on this and many other topics. Given CAPE’s statutory responsibilities, it would not be appropriate for me to pre-judge where this analysis may lead.

AMPHIBIOUS SHIPS

15. Senator WICKER. Ms. Blume, on May 25, 2021, you testified that “a robust, and highly capable, and sustainable Navy is critical to U.S. national security.” You added that multi-ship procurements can “save the taxpayers money” and “provide badly needed stability for the defense industrial base.”

The bundling strategy outlined by section 124 of the Fiscal Year 2021 NDAA would make our Navy more capable, save the taxpayers an estimated \$700 million, and provide stability for the defense industrial base. The most recent Future Years Defense Plan included LPDs 31, 32, and 33 as well as LHA 9. Does the Department of Defense still plan to procure all four of these ships?

Ms. BLUME. If confirmed, I am committed to understanding the details behind these programs as well as the cost implications of the multi-ship procurement. As with all ship classes, we will carefully evaluate the amphibious program requirements and will pursue the strategy that meets the long-term warfighting need in the most cost and operationally effective manner possible.

16. Senator WICKER. Ms. Blume, if the Department of Defense still plans to procure all four of these ships, do you support doing so in a manner that saves \$700 million and provides stability to the defense industrial base?

Ms. BLUME. As noted above, if confirmed I commit to understanding the current plan and the merits of this contracting approach. In general, I support measures that save the taxpayer money and provide the industrial base with the stability it needs to plan effectively.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

ARMED FORCES READINESS

17. Senator SULLIVAN. Ms. Blume, over several years this Committee has worked tirelessly to restore military readiness—across each of our services—to levels that would enable our success in a conflict. We’ve had some success, but there is STILL a lot of work to do. If you have not done so already, I recommend that every senior defense leader read T.R. Fehrenbach’s “This Kind of War”, which provides a cautionary tale of our Nation’s failure to adequately fund and train our Armed Forces before the Korean War. The consequences were steep and American servicemembers paid with their lives. If confirmed, each of you—based on your positions—will invariably make decisions that directly or indirectly impact readiness. Accordingly, will you commit—if confirmed—to work with this committee and within the Department to ensure the readiness failures we endured in the Korean War do not happen again?

Ms. BLUME. Yes, I agree military readiness across each of our Services is critical to providing both credible deterrence and, if needed, the warfighting capability to succeed in conflict. If confirmed, I will work with all stakeholders, including Congress, to assess military readiness levels and ensure appropriate resourcing for readiness.

STRATEGY DRIVEN BUDGET

18. Senator SULLIVAN. Ms. Blume, the National Defense Strategy Commission report, the two previous Senate-confirmed Secretaries of Defense, and the previous and current Chairman of the Joint Chiefs of Staff have all stated the need for sustained 3 to 5 percent annual real growth to the Defense budget to implement the NDS, increase much-needed readiness, and advance long-overdue modernization. To further emphasize the need for consistent and increased funding, the NDS Commission report stated, “America is very near the point of strategic insolvency, where its ‘means’ are badly out of alignment with its ‘ends.’” This critical situation is negatively compounded by the Biden administration’s proposal for a topline that does not keep pace with inflation. With these facts in mind, and understanding your ability to influence the budget will be limited to future year submissions, will each of you commit to advocating for a strategy-driven budget vice a budget-driven strategy?

Ms. BLUME. Yes, if confirmed, I will work with all stakeholders across the Department to ensure the national security and defense strategies drive the resourcing deliberations that result in our annual budget submissions.

GREAT POWER COMPETITION IN THE ARCTIC

19. Senator SULLIVAN. Ms. Blume, given the National Defense Strategy’s focus on great power competition and increased Russia and Chinese activity in the Arctic, would you agree that the Arctic is an emerging front-line for great power competition and rivalry? Please elaborate.

Ms. BLUME. I agree the Arctic is a vital region for the national security of the United States, and its importance will continue to increase as the environment becomes more operationally relevant for a longer portion of the year. Due to the likely increase in commercial traffic and presence of natural resources, I believe the Arctic has the potential for greater activity by our most capable rivals. If confirmed, I will work with all stakeholders, including Congress, to assess the capabilities and resources required to protect U.S. interests in the Arctic.

20. Senator SULLIVAN. Ms. Blume in your personal opinion, what makes Alaska an important strategic region for the United States, and why would our adversaries want to limit our presence and power projection capabilities in the Arctic region? Please elaborate.

Ms. BLUME. Alaska is a vital strategic region of the United States because it is the gateway to both the Arctic and the Pacific. Alaska is a critical component of our ability to project power and defend the Homeland from capable rivals and a rogue nation.

MISSILE DEFENSE

21. Senator SULLIVAN. Ms. Blume, Secretary Lloyd Austin has stated, “Defense of the Homeland is a key priority for DOD and missile defense is a central component of this mission.” Deputy Secretary Kathleen Hicks agreed by saying, “Defense of the Homeland is a top priority for DOD and the Homeland missile defense system is an essential component to that mission.” Would you agree with the statements made

by Secretary Austin and Deputy Secretary Hicks, and do you support robust funding for its modernization? Please elaborate on your views of missile defense and its contributions to our national security.

Ms. BLUME. I agree with Secretaries Austin and Hicks that Homeland defense is a key priority for the DOD. To maintain a strong Homeland defense, all elements of our Homeland missile defense system must be regularly assessed against the threat and updated to reflect changes in technologies and the threat environment. Homeland missile defense is one component of Homeland defense that has and will continue to play an important role in dealing with missile threats.

QUESTIONS SUBMITTED BY SENATOR TOMMY TUBERVILLE

UNIFIED FACILITIES CRITERIA

22. Senator TUBERVILLE. Ms. Blume, the 2016 Unified Facilities Criteria (UFC) and 2019 update removed portable fire extinguishers from military installation requirements. Numerous studies have demonstrated that extinguishers increase safety and reduce costs of fire damage at a minimal cost to taxpayers. The Fiscal Year 2020 NDAA included language attempting to address this problem, but the Department did not comply. If confirmed, will you ensure our servicemembers have the same level of protection of all Americans and ensure extinguishers are in place across DOD—thus complying with the intent of this body in the Fiscal Year 2020 NDAA?

Ms. BLUME. Although CAPE does not oversee the Unified Facilities Criteria program, if confirmed, I will work with the appropriate Department stakeholders to ensure DOD building criteria protects our service members and is in compliance with all applicable laws in a cost effective manner.

[The nomination reference of Ms. Susanna V. Blume follows:]

NOMINATION REFERENCE AND REPORT

PN360

AS IN EXECUTIVE SESSION,
SENATE OF THE UNITED STATES,
April 15, 2021.

Ordered, That the following nomination be referred to the Committee on Armed Services:

Susanna V. Blume, of the District of Columbia, to be Director of Cost Assessment and Program Evaluation, Department of Defense, vice Robert Daigle, resigned.

_____, 2021.
(Date)

Reported by Mr. Reed _____
(Signature)

with the recommendation that the nomination be confirmed.

□ The nominee has agreed to respond to requests to appear and testify before any duly constituted committee of the Senate.

[The biographical sketch of Ms. Susanna V. Blume, which was transmitted to the Committee at the time the nomination was referred, follows:]

Bio
Susanna V. Blume

Education:

- The George Washington University Law School
 - September 2007 – May 2010
 - Juris Doctor
- The Johns Hopkins University School of Advanced International Studies (SAIS)
 - August 2006 – May 2009
 - Master of Arts, International Studies
- Johns Hopkins University
 - September 2001 – January 2005
 - Bachelor of Arts, History of Art

Employment Record:

- Department of Defense, Pentagon, Washington, DC
 - Senior Advisor to the Secretary of Defense, January 2021 – present
 - Performing the Duties of the Director, Cost Assessment and Program Evaluation, January 2021 – April 2021
- Biden-Harris Transition, Washington, DC
 - Volunteer/Uncompensated, August 2020 – January 2021
- Center for a New American Security, Defense Program, Washington, DC
 - Senior Fellow and Director, July 2019 – January 2021
 - Fellow/Senior Fellow, August 2017 – July 2019
- Bain & Company, Washington, DC
 - Independent Advisor, February 2020 – January 2021
- National Security Commission on Artificial Intelligence, Arlington, VA
 - Special Government Expert, June 2019 – January 2021
- Renaissance Strategic Advisors, Arlington, VA
 - Independent Senior Advisor, October 2018 – January 2021
- National Security Action, Washington, DC
 - Issue Lead, November 2019 – December 2020
- Department of Defense, Office of the Deputy Secretary of Defense, Pentagon, Washington DC
 - Deputy Chief of Staff for Programs and Plans, May 2016 – July 2017
 - Special Assistant, July 2014 – May 2016
- Department of Defense, Office of the Under Secretary of Defense for Policy, Pentagon, Washington, DC
 - Senior Advisor to the Principal Deputy Under Secretary of Defense for

- Policy, July 2013 – July 2014
 - Advisor for Global Defense Posture, Office of the Deputy Assistant Secretary of Defense for Plans, September 2010 – July 2013
 - Intern, May 2010 – September 2010
- National War College, Washington, DC
 - Research Assistant, August 2009 – April 2010
- Department of Defense, Office of the Under Secretary of Defense for Policy, Pentagon, Washington, DC
 - Intern, Office of the Deputy Assistant Secretary of Defense for Cyber Policy, June 2001 – August 2009
- Department of State, Office of the Coordinator for Counterterrorism, Washington, DC
 - Intern, June 2008 – August 2008
- Department of Defense, Office of the Under Secretary of Defense for Policy, Pentagon, Washington, DC
 - Intern, Support to Public Diplomacy, May 2007 – November 2007
- Office of Senator Robert Menendez, Washington, DC
 - Intern, January 2007 – April 2007
- Conflict Resolution Services, Allentown, PA
 - Administrative assistant, November 2005 – July 2006
- Law Offices of Mark C. Van Horn, Esq., Allentown, PA
 - Administrative assistant, March 2006 – June 2006
- Transport Accident Commission, Melbourne, Australia
 - Temporary administrative assistant, September 2005 – October 2005
- Johns Hopkins University Office of Development, Baltimore, MD
 - Administrative assistant, January 2005 – May 2005

Honors and Awards:

- Department of Defense Distinguished Civilian Service Award, December 2017
- Phi Beta Kappa, May 2005

[The Committee on Armed Services requires all individuals nominated from civilian life by the President to positions requiring the advice and consent of the Senate to complete a form that details the biographical, financial, and other information of the nominee. The form executed by Ms. Susanna V. Blume in connection with her nomination follows:]

117th CONGRESS, 2020 -- 2021
UNITED STATES SENATE
COMMITTEE ON ARMED SERVICES
ROOM SR-228
WASHINGTON, D.C. 20510-6050
(202) 224-3871

COMMITTEE ON ARMED SERVICES QUESTIONNAIRE
INFORMATION REQUESTED OF CIVILIAN NOMINEES

INSTRUCTIONS TO THE NOMINEE: Answer all questions and provide all requested information. If more space is needed, attach an additional sheet of paper to the Questionnaire and cite the part of the Questionnaire and the question number (e.g., A-9, B-4) to which the continuation of your answer applies. Unless otherwise required, an answer of "yes", "no", or "not applicable" is appropriate.

QUESTIONNAIRE, PART A

NOTE: Information furnished in this part of the Questionnaire will be made available in Committee offices for public inspection prior to the hearing, if any, and will be entered in the hearing record, also available to the public.

BIOGRAPHICAL INFORMATION TO BE MADE PUBLIC

1. **Name (Include any former names you have used):**
 - Susanna Vreeland Blume
2. **Position to which nominated:**
 - Director, Cost Assessment and Program Evaluation
3. **Date of nomination:**
 - April 15, 2021
4. **Education (List names of secondary and higher education institution attended, type of school [vocational, technical, trade school, college,**

university, military college, correspondence, distance, extension, and on-line], dates attended, degree received, and date degree granted):

- The George Washington University Law School
 - September 2007 – May 2010
 - Juris Doctor
 - The Johns Hopkins University School of Advanced International Studies (SAIS)
 - August 2006 – May 2009
 - Master of Arts, International Studies
 - Johns Hopkins University
 - September 2001 – January 2005
 - Bachelor of Arts, History of Art
- 5. Employment record (List all jobs held since college, or in the last 10 years, whichever is less, including the title or description of the job, name of employer, location of work, and dates of employment. If the employment activity was military duty, show each change of military duty station as a separate period of employment):**
- Department of Defense, Pentagon, Washington, DC
 - Senior Advisor to the Secretary of Defense, January 2021 – present
 - Performing the Duties of the Director, Cost Assessment and Program Evaluation, January 2021 – April 2021
 - Biden-Harris Transition, Washington, DC
 - Volunteer/Uncompensated, August 2020 – January 2021
 - Center for a New American Security, Defense Program, Washington, DC
 - Senior Fellow and Director, July 2019 – January 2021
 - Fellow/Senior Fellow, August 2017 – July 2019
 - Bain & Company, Washington, DC
 - Independent Advisor, February 2020 – January 2021
 - Renaissance Strategic Advisors, Arlington, VA
 - Independent Senior Advisor, October 2018 – January 2021
 - National Security Action, Washington, DC
 - Issue Lead, November 2019 – December 2020
 - Department of Defense, Office of the Deputy Secretary of Defense, Pentagon,

Washington DC

- Deputy Chief of Staff for Programs and Plans, May 2016 – July 2017
 - Special Assistant, July 2014 – May 2016
- Department of Defense, Office of the Under Secretary of Defense for Policy, Pentagon, Washington, DC
 - Senior Advisor to the Principal Deputy Under Secretary of Defense for Policy, July 2013 – July 2014
 - Advisor for Global Defense Posture, Office of the Deputy Assistant Secretary of Defense for Plans, September 2010 – July 2013
- 6. **Government experience (List any advisory, consultative, honorary, and other part-time service or positions with Federal, State, or local governments, other than those listed in response to question 5, above):**
 - National Security Commission on Artificial Intelligence, Arlington, VA
 - Special Government Expert, June 2019 – January 2021
- 7. **Business relationships (List all positions currently held as an officer, director, trustee, partner, proprietor, agent, representative, or consultant of any corporation, firm, partnership, or other business enterprise, and of any educational or other institution):**
 - None.
- 8. **Memberships (List all memberships and offices that you currently hold, as well as any memberships and offices you have previously held in professional, fraternal, scholarly, civic, business, charitable and other organizations):**
 - Laundry Lofts Condominium Owners' Association, Washington, DC
 - President, November 2015 – October 2019
- 9. **Political affiliations and activities:**
 - a. If you have ever been a candidate for, or have been elected or appointed to a political office, list the name of the office(s); whether you were a candidate/elected/appointed; the year(s) during which you were a candidate, or in which the election was held or the appointment was made; and the term of office (if applicable):
 - Not applicable

b. List all memberships and offices held in, and services rendered to, all political parties or election committees during the last 5 years:

- None.

c. Itemize all individual political contributions of \$100 or more to any individual, campaign organization, political party, political action committee, or similar entity during the past 5 years. List each individual contribution (not the total amount contributed to the person or entity) over this period:

- BIDEN FOR PRESIDENT 10/13/2020 \$300.00
- BIDEN FOR PRESIDENT 10/4/2020 \$250.00
- BIDEN FOR PRESIDENT 9/22/2020 \$100.00
- BIDEN FOR PRESIDENT 8/30/2020 \$100.00
- BIDEN FOR PRESIDENT 8/11/2020 \$100.00
- BIDEN FOR PRESIDENT 7/16/2020 \$250.00
- HILLARY FOR AMERICA 10/27/2016 \$375.00
- HILLARY FOR AMERICA 9/30/2016 \$100.00
- HILLARY FOR AMERICA 9/16/2016 \$100.00
- HILLARY FOR AMERICA 9/6/2016 \$100.00
- HILLARY FOR AMERICA 7/31/2016 \$100.00
- HILLARY FOR AMERICA 7/23/2016 \$100.00
- HILLARY FOR AMERICA 7/19/2016 \$100.00
- HILLARY FOR AMERICA 7/14/2016 \$100.00
- HILLARY FOR AMERICA 6/9/2016 \$100.00

10. Honors and awards (List all scholarships, fellowships, honorary degrees, honorary society memberships, and any other special recognition received for outstanding service or achievements):

- Department of Defense Distinguished Civilian Service Award, December 2017
- Phi Beta Kappa, May 2005

11. Published writings (List the titles, publishers, and dates of books, articles, reports, or other published materials that you have written or for which you served as co-author or editor, including articles and blogs published on the internet):

- Blume, Susanna V., and Molly Parrish. "Investing in Great-Power Competition: Analysis of the Fiscal Year 2021 Defense Budget Request." Washington, DC: Center for a New American Security, July 09, 2020,

- <https://www.cnas.org/publications/reports/investing-in-great-power-competition>.
- Blume, Susanna V. "Trump, Racism, and the Military." *InkstickMedia.com*. June 05, 2020, <https://inkstickmedia.com/trump-racism-and-the-military/>.
 - Blume, Susanna V. "Let them Work from Home." *DefenseOne.com*. April 02, 2020, <https://www.defenseone.com/ideas/2020/04/let-them-work-home/164324/>.
 - Blume, Susanna V., and Molly Parrish. "Interservice rivalries: A force for good." *DefenseNews.com*. January 21, 2020, <https://www.defensenews.com/opinion/commentary/2020/01/21/interservice-rivalries-a-force-for-good/>.
 - Ratner, Ely, Daniel Kliman, Susanna V. Blume, Rush Doshi, Chris Dougherty, Richard Fontaine, Peter Harrell, et al. "Rising to the China Challenge: Renewing American Competitiveness in the Indo-Pacific." Washington, DC: Center for a New American Security, January 28, 2020, <https://www.cnas.org/publications/reports/rising-to-the-china-challenge>.
 - Blume, Susanna V., and Mikhail Grinberg. "The state of acquisition is in need of better coordination." *DefenseNews.com*. January 02, 2020, <https://www.defensenews.com/opinion/commentary/2020/01/02/the-state-of-acquisition-is-in-need-of-better-coordination/>.
 - Blume, Susanna V., and Molly Parrish. "Make Good Choices, DoD: Optimizing Core Decisionmaking Processes for Great-Power Competition." Washington, DC: Center for a New American Security, November 20, 2019, <https://www.cnas.org/publications/reports/make-good-choices-dod>.
 - Blume, Susanna V. "Strategy to Ask: Analysis of the 2020 Defense Budget Request." Washington DC: Center for a New American Security, May 29, 2019, <https://www.cnas.org/publications/reports/strategy-to-ask>.
 - Blume, Susanna V. "What Congress Should Do with the 2020 Defense Budget." Washington DC: Center for a New American Security, May 22, 2019, <https://www.cnas.org/publications/commentary/what-congress-should-do-with-the-2020-defense-budget>.
 - Blume, Susanna V., and Chris Dougherty. "What to Expect When You're Expecting a Defense Budget Masterpiece." *WarOnTheRocks.com*. March 08, 2019, <https://warontherocks.com/2019/03/what-to-expect-when-youre-expecting-a-defense-budget-masterpiece/>.

- Blume, Susanna V. "Dear Pentagon: It's Not How Big Your Budget Is. It's How You Use It." *Foreign Policy*. January 10, 2019, <https://foreignpolicy.com/2019/01/10/pentagon-defense-budget-trump/>.
- Blume, Susanna V. "Numbers Game: How the Air Force is following the Army and Navy's bad example." *DefenseNews.com*. September 20, 2018, <https://www.defensenews.com/opinion/2018/09/20/numbers-game-how-the-air-force-is-following-the-army-and-navys-bad-example/>.
- Blume, Susanna V., and Lauren Fish. "The Bottom Line: Analysis of the 2019 Defense Budget Request." Washington DC: Center for a New American Security, June 01, 2018, <https://www.cnas.org/publications/reports/the-bottom-line>.
- Blume, Susanna V. "What's Wrong with the Defense Department's 2019 Budget Request—and What Congress Can Do To Fix It." *WarOnTheRocks.com*. May 15, 2018, <https://warontherocks.com/2018/05/whats-wrong-with-the-defense-departments-2019-budget-request-and-what-congress-can-do-to-fix-it/>.
- Blume, Susanna V. "The True Cost of Trump's National Defense Strategy: Why the Budget Won't Be Enough to Cover Everything." *Foreign Affairs*. February 19, 2018, <https://www.foreignaffairs.com/articles/united-states/2018-02-19/true-cost-trumps-national-defense-strategy?cid=int-fls&pgtype=hpg>.
- Blume, Susanna V. "The new defense budget: what you need to know." *Axios.com*. February 12, 2018, <https://www.axios.com/what-you-need-to-know-about-the-defense-budget-1518101917-6279a35e-417f-4e30-b9a9-0cd5c6662c39.html>.
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COMMITMENTS IN FURTHERANCE OF CONGRESSIONAL OVERSIGHT

NOTE: In order to exercise their legislative and oversight responsibilities, it is important that this Committee, its subcommittees, and other appropriate committees of Congress timely receive testimony, briefings, reports, records—including documents and electronic communications, and other information from the executive branch. A simple "yes" or "no" response is appropriate.

13. Do you agree, if confirmed, and on request, to appear and testify before this Committee, its subcommittees, and other appropriate Committees of Congress?
 - Yes.
14. Do you agree, if confirmed, to provide this Committee, its subcommittees, other appropriate Committees of Congress, and their respective staffs such

witnesses and briefers, briefings, reports, records—including documents and electronic communications, and other information, as may be requested of you, and to do so timely?

- Yes.
15. Do you agree, if confirmed, to consult with this Committee, its subcommittees, other appropriate Committees of Congress, and their respective staffs, regarding your basis for any delay or denial in providing testimony, briefings, reports, records—including documents and electronic communications, and other information requested of you?
- Yes.
16. Do you agree, if confirmed, to keep this Committee, its subcommittees, other appropriate Committees of Congress, and their respective staffs apprised of new information that materially impacts the accuracy of testimony, briefings, reports, records—including documents and electronic communications, and other information you or your organization previously provided?
- Yes.
17. Do you agree, if confirmed, and on request, to provide this Committee and its subcommittees with records and other information within their oversight jurisdiction, even absent a formal Committee request?
- Yes.
18. Do you agree, if confirmed, to respond timely to letters to, and/or inquiries and other requests of you or your organization from individual Senators who are members of this Committee?
- Yes.
19. Do you agree, if confirmed, to ensure that you and other members of your organization protect from retaliation any military member, federal employee, or contractor employee who testifies before, or communicates with this Committee, its subcommittees, and any other appropriate committee of Congress?
- Yes.

16

[The nominee responded to Parts B-F of the committee questionnaire. The text of the questionnaire is set forth in the Appendix to this volume. The nominee's answers to Parts B-F are contained in the Committee's executive files.]

I hereby state that I have read and signed Parts A and B of the foregoing Senate Armed Services Committee Questionnaire, and that the information provided therein and in any document appended thereto, is, to the best of my knowledge and belief, current, accurate, and complete.



This 4th day of May, 2021

[The nomination of Ms. Susanna V. Blume was reported to the Senate by Chairman Reed on June 10, 2021, with the recommendation that the nomination be confirmed. The nomination was confirmed by the Senate on July 30, 2021.]

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