

Stenographic Transcript
Before the

COMMITTEE ON
ARMED SERVICES

UNITED STATES SENATE

HEARING TO CONSIDER 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

Tuesday, May 25, 2021

Washington, D.C.

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www.aldersonreporting.com

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2 BE SECRETARY OF THE AIR FORCE, HEIDI SHYU TO BE UNDER
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6
7 Tuesday, May 25, 2021

8
9 U.S. Senate

10 Committee on Armed Services

11 Washington, D.C.

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

16 Committee Members Present: Senators Reed [presiding],
17 Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King,
18 Warren, Peters, Manchin, Duckworth, Rosen, Kelly, Inhofe,
19 Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan,
20 Cramer, Scott, Blackburn, Hawley, and Tuberville.

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

3 Chairman Reed: Let me call the hearing to order.

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

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

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

22 As we consider Mr. Kendall's nomination, I note that he
23 has a wealth of experience in aerospace and defense policy
24 spanning several decades, including his most recent role in
25 government as Under Secretary of Defense for Acquisition,

1 Technology, and Logistics in the Obama administration.

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

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

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

1 these challenges.

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

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

1 progress.

2 Perhaps most importantly, you will be charged with
3 overcoming the Pentagon's so-called "Valley of Death,"
4 ensuring that the Department is able to turn research
5 innovations into real operational capabilities. This will
6 require strengthening connections between research and
7 engineering activities and the Service acquisition programs
8 and defense prime contractors. It will also include
9 investing in, and protecting, the people and infrastructure
10 at organizations like DARPA, the defense labs, and test
11 ranges.

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

18 Ms. Blume, if confirmed as Director of Cost Assessment
19 and Program Evaluation, or CAPE, you will provide
20 independent analytic advice on all aspects of defense
21 programs, including alternative weapon systems and force
22 structures, evaluation of defense programs' performance, and
23 the cost-effectiveness of defense systems. Your many years
24 of analytical experience at the Defense Department and, most
25 recently, the Center for a New American Security, will serve

1 you well in this role.

2 Like the other nominees present today, you will face
3 considerable challenges. In the near term, you will need to
4 work with the Congress to improve the quality and timeliness
5 of reporting critical data on acquisition programs.

6 Hopefully, you can work to establish new, streamlined
7 methods for data sharing that reduce bureaucratic burdens
8 and allows Congress to play its important role of oversight.

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

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

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

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

3 Now let me now recognize Ranking Member Inhofe.

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

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

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

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

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

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

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

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

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

15 Thank you, Mr. Chairman.

16 Chairman Reed: Thank you very much, Senator Inhofe.

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

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

24 Mr. Carter. Thank you, Chairman Reed, Ranking Member
25 Inhofe, distinguished members of the Armed Services

1 Committee. I am so pleased to see you all. I missed each
2 and every one of you.

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

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

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

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

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

1 competitors like China.

2 The duties of the Air Force Secretary are much broader
3 than those of Under Secretary for AT&L, and Frank has
4 demonstrated all of the characteristics needed for that job.
5 His handling of the Acquisition Workforce Initiative
6 emanating from this committee is one example; and the heart
7 -- the heart Frank put into urgent support for troops on the
8 battlefield in Iraq and Afghanistan another; of the care
9 Frank would show for airmen and their families.

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

14 I hope the committee will give Frank its favorable
15 support.

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

24 Every one of the Services has its own unique
25 acquisition and technology needs, and I can that Heidi

1 worked very strongly on behalf of the Army mission and
2 leadership, which had some understandable frustrations with
3 its acquisition system. She was a great help and a great
4 success.

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

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

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

25 Frank, Heidi, and I worked side by side with Lloyd

1 Austin, now our Secretary of Defense, and Kath Hicks, now
2 our Deputy Secretary, so I am confident theirs will be a
3 strong team. I give them my highest recommendation for your
4 consideration.

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

8 Chairman Reed: Well, thank you very much, Mr.
9 Secretary, not only for the introduction but for your
10 distinguished service to the nation.

11 And now it is another pleasure to be able to recognize
12 former Deputy Secretary of Defense, Bob Work, to introduce
13 Ms. Bloom. Mr. Secretary?

14 Mr. Work: Thank you, Chairman Reed, Ranking Member
15 Inhofe, and distinguished members of the committee. It is
16 always an absolute honor to appear before the SASC, but
17 today I am doubly honored to introduce to you, and
18 enthusiastically commend and endorse the Biden
19 administration's nomination to be the Pentagon's next
20 Director of the Office of Cost Assessment and Program
21 Evaluation, Ms. Susanna V. Blume.

22 As you all know, Congress created CAPE as well as the
23 position of Director in the Weapons System Acquisition
24 Reform Act of 2009. It assigned CAPE the mission to provide
25 the Secretary and the Department with timely, insightful,

1 and unbiased analysis on resource allocation and cost
2 estimation problems. CAPE's ultimate role is to deliver the
3 optimal portfolio of Department of Defense military
4 capabilities, through the most efficient and effective use
5 of each taxpayer dollar. And in my judgment, there is
6 absolutely no one more qualified to fill this vital role
7 than Susanna Blume.

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

18 At the time, Ms. Blume worked for now-Deputy Secretary
19 of Defense Kathleen Hicks, who oversaw the DPRI for the
20 Under Secretary for Policy, who coordinated action between
21 OSD and the Department of the Navy. Susanna impressed me
22 from the first moment I saw her in action. It was obvious
23 she was an absolutely superb analyst. She came to meetings
24 armed with facts and figures, and she was determined to get
25 the move of Marines from Okinawa to Guam right. She had an

1 absolute knack for working from high-level strategy through
2 operational alternatives to the discrete budget details.
3 She was cool, confident, articulate, and, I would have to
4 say, she utterly laid waste to anyone who came to meetings
5 unprepared. As a Marine, I recognized and admired her
6 warrior spirit, and I vowed to myself to steal her from
7 Policy and get her on my staff as soon as I possibly could.

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

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

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

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

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

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

3 Chairman Reed: Well, thank you very much, Secretary
4 Work, not only for your introduction but also for your
5 extraordinary service to the nation.

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

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

13 Voice: So moved.

14 Chairman Reed: Is there a second?

15 All in favor?

16 All opposed?

17 The ayes have it. The motion carries.

18 Finally, I ask the committee to consider a list of
19 3,438 pending military nominations. Included in this list
20 is the nomination of General Paul J. LaCamera, U.S. Army, to
21 be Commander of the United Nations Command, Combined Forces
22 Command, and United States Forces Korea. Of these
23 nominations, one nomination is one day short of the
24 committee's requirement that nominations be in committee for
25 7 days before we report them out. No objection has been

1 raised to this nomination and I recommend the committee
2 waive the 7-day rule in order to permit the confirmation of
3 the nomination of this officer before the Senate recesses
4 for the Memorial Day recess.

5 Is there a motion to favorably report this list of
6 3,438 pending military nominations to the Senate?

7 Voice: Motion.

8 Chairman Reed: Is there a second?

9 Voice: Second.

10 Chairman Reed: All in favor say aye, please.

11 The motion carries. Thank you very much.

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

14 Senator Cramer: I do, Mr. Chairman. Thank you. I
15 would just like to be recorded as abstaining on the Wormuth
16 nomination.

17 Chairman Reed: So moved. Your abstention will be
18 noted in the record. Thank you, Senator Cramer.

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

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

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

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

17 I would also like to acknowledge my 6-year-old son,
18 James, who is quite excited about his dad potentially having
19 something to do with the Space Force. James is a big Star
20 Wars fan, and his reaction when being told about his dad's
21 possible new job was, "Dad, there is really a Space Force?"
22 There certainly is a Space Force, and it is a critical
23 contributor to our national security. If confirmed, I will
24 be honored to have a role in making it a success.

25 I would also like to acknowledge my grown-up sons,

1 Scott and Eric, who have supported me throughout my career.
2 I am very proud of them and of their wives, Amy and
3 Jennifer, and of my five grandchildren, who, in alphabetical
4 order, are Caroline, Mackenzie, Madison, Holden, and
5 Jackson.

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

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

25 I then spent about 15 years working in the defense

1 industry before returning to the Pentagon in 2010. It was
2 in 2010 that I discovered how much our potential adversaries
3 had advanced their own capabilities. China had studied our
4 success in the First Gulf War and had embarked on an
5 ambitious military modernization program with the clear goal
6 to defeat the ability of the United State to project power
7 near China. Russia was also modernizing its forces and had
8 increased its emphasis on tactical nuclear weapons.

9 We have made progress against these threats, and our
10 adversaries should never doubt the United States, but there
11 is much still to be done. My hope is that, if confirmed, I
12 will be able to lead the Department of the Air Force in
13 organizing, training, and equipping our nation's air and
14 space forces so that the United States can continue to
15 deter, and if necessary, fight and win, against all
16 adversaries.

17 If confirmed, my priorities would be straightforward
18 and mirror precisely those articulated by Secretary of
19 Defense Austin as they apply to the Department of the Air
20 Force: taking care of our people, mission performance, and
21 building teams. Our military is people first and foremost.
22 The Air and Space Forces are not just equipment and concepts
23 of operation. At its heart, they are the people who
24 operate, create, and support those things. We have to do
25 everything we can to ensure that our people have the

1 training, the equipment, and the support they need to do
2 their jobs, and we have to ensure that they can do those
3 jobs in an environment that treats everyone with dignity and
4 respect and maximizes their potential to grow and to serve
5 the nation.

6 With regard to mission performance, I believe the range
7 and severity of the threats that we face, and will face, the
8 rapid pace of technological innovation, and the need to
9 rapidly harness that technology in new operational concepts
10 demands a sense of urgency and a laser-like focus on getting
11 our choices right.

12 Finally, teamwork is critical, and it covers a lot of
13 territory. Every member of a military family, every member
14 of the total force, active, guard and reserve, the civil
15 servants, and the industry that supports our military are
16 all part of the team. America has an enormous strategic
17 asset in our alliances and partnerships, and one of the key
18 roles of our armed forces is to support American diplomacy.

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

23 I look forward to your questions and thank you again.

24 [The prepared statement of Mr. Kendall follows:]

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1 Chairman Reed: Thank you, Mr. Kendall. Ms. Shyu,
2 please.

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

3 Ms. Shyu: Chairman Reed, Ranking Member Senator
4 Inhofe, and distinguished members of the committee, thank
5 you for the honor to appear before you today. I would like
6 to thank President Biden and Secretary Austin for nominating
7 me to the position of the Under Secretary of Defense for
8 Research and Engineering, and this committee for considering
9 my nomination.

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

17 I came to this country at the age of 11 1/2 from
18 Taiwan, and I am extraordinary grateful for the tremendous
19 opportunities that I have had in my career. In 2012, I had
20 the honor and privilege to be confirmed as the Assistant
21 Secretary of the Army for Acquisition, Logistics, and
22 Technology. In my 5 years in the Pentagon, I had the
23 fortune to work with tremendously dedicated military and
24 civilian personnel and with patriotic contractors across the
25 U.S. This was an experience of a lifetime that I will

1 treasure forever.

2 Today, I am honored to be considered for the position
3 of Under Secretary of Defense for Research and Engineering.
4 The mission of furthering science, technology, and
5 innovation across the Department of Defense could not be
6 more important than it is today. As Secretary Austin has
7 stated, China is the pacing threat for the U.S. military,
8 and the challenges facing our military are both diverse and
9 complex, ranging from sophisticated cyberattacks, to supply
10 chain risks, to hypersonic missiles, to biothreats. To
11 address these challenges, the Department must harness our
12 nation's incredible innovation to stay ahead of our
13 adversaries.

14 Thankfully, there is no shortage of innovation. As a
15 nation, we are able solve incredibly tough problems by
16 working collaboratively towards a common cause. DoD can
17 collaborate more strongly with our Allies and partners to
18 share insights and lessons learned from our combined
19 exercises and experiments. DoD can also work more closely
20 with the commercial and defense industries, as well as its
21 ecosystem of universities, government labs, federally funded
22 research and development centers, and university-affiliated
23 research centers. By working collaboratively, DoD can
24 address our nation's toughest challenges.

25 When collaborating with the commercial sector in

1 particular, DoD should leverage the commercial sector's
2 tremendous investments in research and development and
3 accelerate DoD's ability to incorporate innovative,
4 commercial technologies. Inside the Department, DoD should
5 avoid duplicating private sector research and focus its
6 investments on the innovative technologies that DoD uniquely
7 needs but that the commercial sector is not developing on
8 its own.

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

16 To begin changing this ratio, I believe that several
17 core principles should guide DoD's pivot towards
18 modernization. For example, DoD should prioritize
19 investments in emerging technologies and capabilities such
20 as artificial intelligences, hypersonics, and synthetic
21 biology; create networked systems-of-systems that collect
22 and share information securely, and are robust against cyber
23 and electronic warfare threats; reduce the military's
24 logistics footprint by developing advanced materials and
25 increasing fuel efficiency; design secure, robust, and

1 upgradable software; and widen the pipeline of STEM talent
2 and ensure that the talent is diverse.

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

19 Again, collaboration, across DoD, the private sector,
20 and with allies and partners, is what is required to address
21 the tough technical challenges that are facing our military
22 and this nation. Should I be confirmed, it would be a
23 tremendous honor and privilege to again serve our nation at
24 the Department of Defense and to shape the Department's
25 research and engineering, ensuring that our warfighters are

1 the best equipped and second to none. Thank you.

2 [The prepared statement of Ms. Shyu follows:]

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1 Chairman Reed: Thank you, Ms. Shyu. Ms. Blume,
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1 STATEMENT OF SUSANNA V. BLUME, TO BE DIRECTOR OF COST
2 ASSESSMENT AND PROGRAM EVALUATION, DEPARTMENT OF DEFENSE

3 Ms. Blume: Good morning, Chairman Reed, Ranking Member
4 Inhofe, and distinguished members of the committee. I am
5 deeply honored to be here before you today as President
6 Biden's nominee to be the Department of Defense's Director
7 of Cost Assessment and Program Evaluation.

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

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

23 Last but not least, I would like to thank my family,
24 especially my parents, Karolyn and Peter, who are watching
25 today from home in Pennsylvania. Without their unwavering

1 love and support, I would not be here before you today.

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

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

10 And after leaving the Department, I spent 3 1/2 years
11 at the Center for a New American Security, working on ideas
12 for improving DoD's decision-making processes and mechanisms
13 to drive innovation throughout the Joint Force.

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

20 CAPE can serve these goals in three primary ways. The
21 first is supporting the Secretary and Deputy Secretary in
22 reviewing the Future Years Defense Program. At its heart,
23 this process is about making the defense strategy real,
24 aligning resources to reshape the joint force in service of
25 the nation's strategic objectives.

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

5 And underlying both of these is the heart and soul of
6 CAPE: analysis. In addition to cost and programmatic
7 analysis, CAPE also produces strategic and operational
8 analysis used to inform a wide range of departmental
9 decisions, including development of the National Defense
10 Strategy.

11 And in doing so, CAPE serves the American people by
12 serving the warfighter, ensuring that our soldiers, sailors,
13 airmen, Marines, Guardians, and civilians are appropriately
14 resourced to protect American interests against a rising
15 China, a revanchist Russia, rogue states, and non-state
16 actors.

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

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

23 [The prepared statement of Ms. Blume follows:]

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

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

6 Mr. Kendall: Yes.

7 Ms. Shyu: Yes.

8 Ms. Blume: Yes.

9 Chairman Reed: Have you assumed any duties or taken
10 any actions that would appear to presume the outcome of the
11 confirmation process?

12 Mr. Kendall: No.

13 Ms. Shyu: No.

14 Ms. Blume: No.

15 Chairman Reed: Exercising our legislative and
16 oversight responsibility makes it important that this
17 committee, its subcommittees, and other appropriate
18 committees of Congress receive testimony, briefings,
19 reports, records, and other information from the Executive
20 branch on a timely basis. Do you agree, if confirmed, to
21 appear and testify before this committee when requested?

22 Mr. Kendall: Yes.

23 Ms. Shyu: Yes.

24 Ms. Blume: Yes.

25 Chairman Reed: Do you agree to provide records,

1 documents, and electronic communications in a timely manner
2 when requested by this committee, its subcommittees, or
3 other appropriate committees of Congress, and to consult
4 with the requestor regarding the basis for any good-faith
5 delay or denial in providing such records?

6 Mr. Kendall: Yes.

7 Ms. Shyu: Yes.

8 Ms. Blume: Yes.

9 Chairman Reed: Will you ensure that your staff
10 complies with deadlines established by this committee for
11 the production of reports, records, and other information,
12 including timely responding to hearing questions for the
13 record?

14 Mr. Kendall: Yes.

15 Ms. Shyu: Yes.

16 Ms. Blume: Yes.

17 Chairman Reed: Will you cooperate in providing
18 witnesses and briefers in response to congressional
19 requests?

20 Mr. Kendall: Yes.

21 Ms. Shyu: Yes.

22 Ms. Blume: Yes.

23 Chairman Reed: Will those witnesses and briefers be
24 protected from reprisal for their testimony or briefings?

25 Mr. Kendall: Yes.

1 Ms. Shyu: Yes.

2 Ms. Blume: Yes.

3 Chairman Reed: Thank you all very much. Now let me
4 assume my question period and then recognize the ranking
5 member. Thank you all for your testimony.

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

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

20 Chairman Reed: I presume that would require making
21 sustainment costs one of the critical factors in developing
22 a new system?

23 Mr. Kendall: That is exactly right, Mr. Chairman.

24 Chairman Reed: Thank you. Ms. Blume, in CAPE you will
25 have the responsibility of looking over everyone's shoulder

1 when it comes to sustainment costs, so can you give us some
2 ideas?

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

12 Chairman Reed: Thank you very much. The committee has
13 been focusing some attention on the Planning, Programming,
14 Budgeting, and Execution process, PPBE. It has been with us
15 since the '60s, with Secretary McNamara. It was a model
16 that was appropriate for the Industrial Age, but we are in a
17 post-Industrial Age.

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

21 Ms. Shyu: Absolutely. I think part of the reason why
22 there is a "Valley of Death" for technology is because a lot
23 of the technology programs are being developed by small
24 companies, and once it passes through a certain point, it
25 needs to transition into a program of record. Part of the

1 problem is to transition into a program of record it has to
2 be in the POM ahead of time, and the POM is 2-year process.
3 Therefore, unless you had the foresight 2 years ago to
4 understand that the technology is going to be mature within
5 2 years' time, to plan it into your POM there is a 2-year
6 gap.

7 So if you are putting the POM, because now you like
8 this particular technology you want to put it in the POM, by
9 the time you get the money to buy that technology it is 2
10 years old now. So there is absolutely a gap in terms of our
11 ability to buy the latest technology. If confirmed, I would
12 love to be able to work internally within the Department,
13 with the Services, and come back to Congress with some ideas
14 of how we can bridge this "Valley of Death."

15 Chairman Reed: Thank you. Ms. Blume, your thoughts
16 too.

17 Ms. Blume: Thank you, Mr. Chairman. I share Heidi's
18 concerns that the process, as it exists now, is not
19 necessarily sufficiently agile to keep pace with the current
20 pace of technology development. However, the process also
21 has a lot of merits, in that it is very comprehensive, it is
22 inclusive, it is transparent within the Department. And so,
23 if confirmed, I would look to make adjustments to the
24 existing process, both things the Department can do on its
25 own and things that the Department and the Congress would

1 need to work on together to improve the agility of the
2 process to overcome the "Valley of Death" that Heidi just
3 described.

4 Chairman Reed: Thank you. Mr. Kendall, your comments
5 please.

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

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

22 Chairman Reed: Thank you very much. I thank the
23 witnesses for their testimony. Let me recognize Senator
24 Inhofe.

25 Senator Inhofe: Thank you, Mr. Chairman. Mr. Kendall,

1 it has been said that the Air Force is too small and too old
2 to do what the nation asks it to do, and sending a fourth-
3 generation aircraft to do fifth-generation work is something
4 that is not going to work. I know that the F-35 has been
5 criticized by a lot of very prominent people, and this has
6 concerned me for some time now. The F-35, I believe, is the
7 most capable and cost-effective fighter that is available
8 out there today. It has had problems, but there is no other
9 aircraft that offers the capability and the capacity of the
10 F-35. Now at least that is what we hear from the people who
11 fly them.

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

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

20 Senator Inhofe: Well, the concern I have is that the
21 complaints still come, and they are out there. I remember,
22 I have been around here long enough, I remember back in
23 1997, when we cut the F-22s. At that time that was the
24 first and only fifth-generation fighter we had. And we
25 started out with, I believe it was over 700, I think, and we

1 ended up 187.

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

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

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

21 The key to keeping the cost down in an air fleet is
22 getting the numbers up. There is a very strong correlation
23 between the size of the fleet and the cost to sustain that
24 fleet. So if there were one thing that I think would drive
25 costs down overall it is continuing to buy. I know there is

1 an issue with the total number that has been on the table
2 for some years, what the requirement is. My own view, at
3 this point in time, is that we are well short of that
4 number, and that what we should be working on most is
5 getting the cost down and keeping the procurement at a rate
6 that makes sense.

7 Senator Inhofe: Yeah, I know the chairman covered
8 that, and that is a concern that we all have.

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

10 Ms. Shyu: I sure do.

11 Senator Inhofe: They remembered you too. I was in
12 McAlester -- you have got to hear this now -- I was in
13 McAlester on Saturday, and I had mentioned that Heidi Shyu
14 -- because I knew that they knew you -- was coming back, and
15 they said, "Heidi Shyu is coming back?" The only uniformed
16 officer there was all excited about that, and he was not
17 even there at the time that you were. So I have to say that
18 last Saturday was Heidi Shyu Appreciation Day in McAlester,
19 Oklahoma. Okay?

20 [Laughter.]

21 Ms. Shyu: Thank you.

22 Senator Inhofe: All right. Let me just ask you,
23 because you have a background that you can answer the hard
24 questions to answer, and that would be, in which specific
25 emerging technology areas are we behind or falling behind

1 China and Russia?

2 Ms. Shyu: Senator Inhofe, it has certainly been a huge
3 concern of mine to see how rapidly China has advanced its
4 technology, especially in the area of hypersonics, in space,
5 in AI, in microelectronics. I firmly believe that we, as a
6 nation, need to work collaboratively together across our
7 entire R&E enterprise to solve our toughest challenges,
8 moving ahead. I firmly believe we can once again become a
9 leader in these technology areas if we put a focus on
10 disruptive technologies, and with Congress' help to protect
11 our funding we will be able to get there.

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

15 Thank you, Mr. Chairman.

16 Chairman Reed: Thank you, Senator Inhofe. Senator
17 Shaheen, please.

18 Senator Shaheen: Thank you, Mr. Chairman, and thank
19 you to each of you for your willingness to be considered for
20 these very important positions.

21 Mr. Kendall, as I am sure you are aware, we are making
22 parts for the F-35 in Turkey now, and this Congress has made
23 a statement that we should stop doing that because of
24 Turkey's embrace of the S-400 and the potential for that to
25 compromise our F-35. Do you have a position on that, and do

1 you think it is a good idea for us to continue to
2 manufacture those parts in Turkey?

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

6 Senator Shaheen: And will you -- and I guess I should
7 ask Ms. Blume this too -- will you all do what you can to
8 ensure that that ends as soon as possible?

9 Mr. Kendall: Yes, I will.

10 Senator Shaheen: Ms. Blume?

11 Ms. Blume: Yes, Senator.

12 Senator Shaheen: Thank you.

13 There are reports, Mr. Kendall, that renovating Space
14 Command's current location in Colorado for long-term use
15 rather than moving the command and authorizing new MilCon
16 will save taxpayers dollars and achieve full mission
17 capability 7 years faster than moving to Huntsville,
18 Alabama. Will you commit to this committee that you will
19 give us cost estimates for both relocating Space Command and
20 the potential costs to build a new facility in Huntsville?

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

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

5 Senator Shaheen: And is that something, Ms. Blume,
6 that CAPE would take a look at the analysis of?

7 Ms. Blume: Senator, it is my understanding that both
8 the Air Force and the IG, the DoD IG, are reviewing that
9 decision. Ordinarily, CAPE would not, unless asked to for
10 some reason by the Secretary, and if that happens I am happy
11 to take a look.

12 Senator Shaheen: Thank you. I am just suggesting that
13 it would be helpful for this committee to know what the
14 analysis is and to be able to weigh in with DoD on that,
15 since we are the authorizers of funding.

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

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

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

21 Senator Shaheen: That is great. As you are probably
22 aware. SBIR is set to end its authorization next year, in
23 2022. How important is it, do you think for us to
24 reauthorize that program and keep it going?

25 Ms. Shyu: I think it is very important. I will plead

1 with you to please reauthorize that.

2 Senator Shaheen: Thank you very much. I agree.

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

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

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

24 Mr. Kendall: I am looking forward to doing that,
25 Senator.

1 Chairman Reed: Thank you, Senator Shaheen. Senator
2 Wicker, please.

3 Senator Wicker: I hope you will visit us all over the
4 country, Mr. Kendall.

5 Ms. Blume, good morning to you. You wrote, in 2019,
6 "U.S. military superiority is eroding vis-à-vis China." I
7 agree with that. I think members of this committee agree
8 with that. We need to do something about it. There is an
9 acknowledgement on the floor of the Senate, last week and
10 this week, in the form of the Endless Frontier Act, which
11 acknowledges that our R&D is eroding vis-à-vis China, and we
12 are attempting to address that on the floor.

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

22 Last week, media reports indicated that the budget, to
23 be released this Friday, will include only eight ships,
24 including one destroyer. Now I am sure you are aware, Ms.
25 Blume, that in Section 124 of last year's NDAA, this

1 committee approved a plan to bundle LPDs 31, 32, 33 with LHA
2 9. This was signed into law by the President of the United
3 States, and subsequently the money was appropriated to do
4 just this. It is clear that the congressional intent was
5 for DoD to procure these four amphibious ships in this
6 manner.

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

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

17 Senator Wicker: Right. So are you able to answer yes
18 or no, in my limited time?

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

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

25 I recently completed Air Force Design 2030 efforts to

1 reaffirm the continued requirement for conventional
2 amphibious warships, with the addition of a new class of
3 smaller, light amphibious warships. The Commandant of the
4 Marine Corps has written, "A multiple ship contracting
5 strategy also creates resilience and confidence in our
6 nation's shipyards, supply chains, and highly specialized
7 workforce." Ms. Blume, do you agree or disagree with the
8 Commandant of the Marine Corps on amphibious ships?

9 Ms. Blume: Senator, I agree that multi-ship
10 procurements can provide important stability for our defense
11 industrial base.

12 Senator Wicker: And they can be cost effective.

13 Ms. Blume: Yes, Senator.

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

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

25 Senator Wicker: Well, let me just say that that is the

1 opinion of the regional combatant commanders, the men and
2 women who we have assigned to go out into difficult areas to
3 enforce our national security.

4 Let me just ask you this. In 2016, the Navy identified
5 355 ships as the force structure assessment. That target
6 became U.S. policy in the FY 2018 NDAA. Do you support the
7 congressionally mandated 355-ship fleet goal?

8 Ms. Blume: Senator, I certainly respect that that is
9 the law, and if confirmed, I look forward to working with
10 you and others in the Congress, in a transparent way, to see
11 where the analysis that the new administration will do will
12 take us on that question.

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

15 Chairman Reed: Thank you, Senator Wicker. Let me
16 recognize, via Webex, Senator Gillibrand, please.

17 Senator Gillibrand: Thank you, Mr. Chairman. Mr.
18 Kendall, thank you for our discussion earlier this week. I
19 appreciate it very much.

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

1 it?

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

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

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

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

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

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

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

1 having a final opinion on that.

2 Senator Gillibrand: Thank you. We also talked about
3 one of New York's finest assets, which is the 109th Airlift
4 Wing, which plays a very important role in the Arctic
5 mission and will continue to do so given Russia's interest
6 in the Arctic. However, the LC-130H aircraft flown by the
7 109th are aging and will soon need to be replaced. Given
8 their importance to our Arctic strategy, do you have a view
9 on replacing these aircraft?

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

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

25 Ms. Shyu: Senator Gillibrand, I actually do agree with

1 it. So one of the key areas I would like to focus on is
2 software. Software is absolutely ubiquitous in all of our
3 weapons systems, and we have to think about how we can
4 develop software continuously, and test it continuously, so
5 this way we can ensure the latest capabilities as quickly as
6 possible. So I absolutely do agree with you.

7 Senator Gillibrand: Thank you. Ms. Blume?

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

13 Senator Gillibrand: Thank you. Thank you, Mr.
14 Chairman.

15 Chairman Reed: Thank you, Senator Gillibrand. Now let
16 me recognize, via Webex, Senator Fischer.

17 Senator Fischer: Thank you, Mr. Chairman. Secretary
18 Kendall, I appreciate the experience with our nation's
19 nuclear enterprise that you bring to this role from your
20 previous service in government, and in particular, your
21 understanding of the tight timelines many of our nuclear
22 modernization programs face, most importantly GBSD and the
23 LRSO. And I was happy to see your statement in response to
24 the committee's advanced policy questions that in your view,
25 quote, "The nuclear enterprise is by far the most important

1 and significant responsibility of the Secretary of the Air
2 Force," end quote.

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

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

20 Mr. Kendall: I can commit to do so, Senator. When I
21 left office a few years ago the E-4B issue was looming on
22 the horizon but had not really confronted us yet. But I am
23 aware of it, and the replacements for those aircraft and
24 maintaining the nuclear command and control system is an
25 essential part of our nuclear deterrent, and I would

1 definitely be taking a close look at that.

2 Senator Fischer: Thank you very much. And also,
3 Secretary Kendall, as we discussed on our phone call last
4 week, Offutt Air Force Base continues to rebuild after the
5 2019 floods, and I commend the Air Force's efforts to date,
6 but the work is not over.

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

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

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

25 Understanding that you have been out of government for

1 a while, can you frame the problem as you see it and share
2 some of your thoughts about how, if confirmed as a Service
3 Secretary, you can help address that?

4 Mr. Kendall: Thank you, Senator. If there one reason
5 I would like to come back into government, and hopefully
6 will be confirmed, it is to address that problem. As I
7 mentioned in my opening statement, I became aware of Chinese
8 modernization programs and how successful they have been in
9 2010, and that briefing that you mentioned, I remember it
10 very well. It was a highly classified briefly, and we
11 walked through some of the specific threats.

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

21 Senator Fischer: Very good. Thank you.

22 Secretary Shyu, this committee has made a number of
23 changes, including creating the position for which you are
24 nominated, in order to improve its ability to deliver
25 innovative solutions to the warfighter. But one thing

1 Congress cannot legislate is the culture of the workforce,
2 which witnesses have testified is generally risk averse.

3 Can you talk about the importance of culture and risk
4 tolerance, in particular, when it comes to innovation, and
5 do you believe the Department and the Services need to be
6 perhaps more tolerant of risk?

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

19 Senator Fischer: What happens to innovation then?

20 Ms. Shyu: Well, that is the problem. So they want to
21 see the technology being very mature. So one of the key
22 things that we need to do, when I get into my position, if
23 confirmed, is to help to bridge this "Valley of Death" that
24 we talked about a little earlier. Make sure the technology
25 we test out in labs are tested in a relevant setting,

1 relevant environment, so the program manager will feel more
2 comfortable adopting that technology.

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

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

15 Senator Fischer: Thank you very much.

16 Chairman Reed: Thank you, Senator Fischer. Let me
17 recognize Senator Blumenthal, please.

18 Senator Blumenthal: Thank you, Mr. Chairman. Thank
19 you all for your public service, and thank you for what you
20 will in the future.

21 Ms. Shyu, I was very interested and impressed by your
22 goal of flipping the percentages of sustainment versus new
23 technology, 70/30 percent. I noted, however, that there is
24 no reference in the concepts that you set forth in flipping
25 that ratio and investing more in new technologies, there is

1 no mention of climate change and environmental
2 sustainability. I wonder if you have any thoughts, beyond
3 fuel efficiency -- and I recognize that you mentioned fuel
4 efficiency -- in what the military can do in driving the
5 efforts against climate change forward, because the military
6 has been such a powerful force in innovation and creativity,
7 whether it is the internet or medical devices, and I think
8 there is a real opportunity for the Pentagon to drive
9 innovation here.

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

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

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

24 So there is a lot of innovation that is out there. I
25 also saw a six-person company that has developed any type of

1 fuel as input, and the output is a DC plug. Those are the
2 types of creative, innovative, technologies we need to
3 nurture, and they are struggling, trying to figure out who
4 to talk to in the DoD.

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

10 Senator Blumenthal: It is a matter not only of cost
11 savings but also, obviously, national security --

12 Ms. Shyu: Absolutely.

13 Senator Blumenthal: -- that the Secretary of Defense
14 has told this committee very persuasively, and I would hope
15 that you will work with us, not only in receiving
16 applications but proactively reaching out to companies like
17 the ones that you mentioned, that are in this area.

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

25 Ms. Shyu: Yes, sir. Absolutely. I plan to talk to a

1 number of the small companies, to meet with them, to
2 understand the impediments that they have, and work to
3 resolve those impediments. You are absolutely, 100 percent
4 right. This is a giant fortress. They have no idea where
5 the door is.

6 Senator Blumenthal: Thank you.

7 Secretary Kendall, you and I had a good discussion
8 about the C-130A planes, and I indicated, and I think you
9 agreed, that these planes can play an essential role for our
10 Air National Guard, which have been so important. Our Air
11 National Guard has been at the tip of spear, not only in our
12 wars abroad but also in responding to natural disasters here
13 at home. And I have learned that the C-130A propeller
14 upgrade program has been delayed, possibly delayed again.
15 There is funding for 26 additional propeller hits and spares
16 provided in last year's FY 2021 Defense Appropriations Bill,
17 that have not been executed. The contract expires on July
18 6th, unless there is additional funding put in the contract.
19 I know I am hitting you with this issue somewhat cold, but I
20 would like your commitment that you will come back to me by
21 July 6th, if possible, and I would hope that you would be
22 confirmed, I hope all three of you will be confirmed by
23 then, with an explanation as to what could be done to make
24 sure that the modernization of our C-130 fleet is
25 accomplished, because it is so important. It is a workhorse

1 aircraft, as you well know, and it performs a vital
2 function.

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

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

17 Chairman Reed: Thank you, Senator Blumenthal. Let me
18 recognize, via Webex, Senator Cotton, please.

19 Senator Cotton: -- appearing before the committee
20 today. Congratulations on your nominations.

21 Mr. Kendall, I want to direct most of my questions
22 towards you. First, an issue that has long been a concern
23 of mine, on which I worked with Senator King, is the Air
24 Force shortage of pilots. This is a perennial concern. It
25 drives up operations tempos for our personnel while

1 decreasing their quality of life, causing some of them to
2 leave the force altogether.

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

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

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

21 Senator Cotton: Thank you. One point I would make,
22 and this is something we learned in our sensing sessions
23 with pilots, is that a common solution is putting more money
24 into pilot compensation. Air pilots are never going to turn
25 down bonuses to stay in the Air Force, and we should

1 recognize their service. But at root, we cannot compete
2 against the salaries that private airlines or aviation
3 companies are going to offer pilots. We need to recognize,
4 in my opinion, that these young men and women join the Air
5 Force to fly high-performance aircraft in defense of our
6 nation, and the more we can do to get more pilots in, so
7 they are flying more and doing other routine administrative
8 duties less, the more we can contribute to their quality of
9 life.

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

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

22 I mentioned earlier how we manage risk over time in the
23 Department, and one of the things that I think we should
24 look at is getting rid of some near-term capability in order
25 to have more longer-term capability. But that is a tradeoff

1 that I would be interested in certainly, if I was confirmed.

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

11 One final question, Mr. Kendall. Last December, there
12 was a very concerning report released by the National
13 Commission on Military Aviation Safety. It states that we
14 have lost 224 lives, 186 aircraft, and almost \$12 billion to
15 training accidents in just 7 years. What are your thoughts
16 on what the Air Force can do to prevent such accidents and
17 deaths in the future?

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

24 But I will take a look at that report and I will see
25 what kind of corrective action is necessary and can be

1 implemented, if confirmed.

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

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

12 Mr. Kendall: Thank you.

13 Chairman Reed: Thank you, Senator Cotton. Let me just
14 also thank Senator Hirono for yielding her time at this
15 moment to Senator King. Senator King, please.

16 Senator King: Thank you, Mr. Chairman. Thank you to
17 Senator Hirono.

18 Ms. Blume, on the assumption that you are confirmed --
19 I can make that assumption; you can't -- I would appreciate
20 it if one of your first tasks might be an updated assessment
21 of the sustainment cost of the F-35. The figures that I
22 have seen, which may be outdated, are 40 hours of
23 maintenance for every hour of operation, anticipated only
24 250 hours of operation a year, \$36,000 an hour of cost of
25 flying the airplane. We need to understand where that is

1 now. It may be that we have made some progress on that, but
2 I would appreciate it if you could commit to giving us a
3 comprehensive updated of that issue, and also some thinking
4 about how to do something about it.

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

8 Senator King: Thank you. Thank you very much.

9 Ms. Shyu, we had a wonderful conversation. It strikes
10 me that one of the things that has not been mentioned very
11 much today, that I think is a strategic gap, is both the
12 defense and offense in terms of hypersonic weapons, and I
13 view that as an important part of acquisition over the next
14 5 to 10 years. We have platforms that are very vulnerable
15 to hypersonic weapons, and we need to figure out how to both
16 defend them and also to maintain or develop our own
17 offensive capability in order to serve as a deterrent. This
18 is one area where we do not really have a deterrent. Is
19 that something that you intend to follow up on?

20 Ms. Shyu: Senator, absolutely. A lot of the stuff you
21 are talking about is in the classified arena, so once I get
22 briefed on the latest state of where we are in this area I
23 will be happy to come back and share the results with you.

24 Senator King: Thank you. And maybe in a classified
25 setting we can discuss it more thoroughly. But as I said, I

1 think it is a strategic gap right now. And this is a
2 question, I think, for you, perhaps also for Mr. Kendall.
3 In my view, we should never buy another military system
4 without also buying the IP. We have to be able to print our
5 own parts and not be dependent upon the OEM for parts. And
6 I understand that is one of the sustainment costs is parts
7 and availability of parts. So I hope that all contracts in
8 the future, for an acquisition, whether it is a tank or an
9 airplane or a coffee dispenser, we will also buy the IP so
10 that we will have the ability do our own development of
11 parts. I foresee a day where every ship and every aircraft
12 hangar has a 3D printer that will be capable of supplying
13 many of the parts. Is that something you will see to, Ms.
14 Shyu?

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

22 Senator King: I appreciate that. And, Mr. Kendall,
23 good to see you again. Welcome, and I am delighted that you
24 are willing to take on this challenge.

25 The often say that September 11th was a failure of

1 imagination on the part of this country, that we did not
2 imagine what could happen. We are now imagining cyber in a
3 serious way, and in discussing, for example, the upgrade of
4 the modernization of the nuclear triad, in my view it is
5 really a nuclear quad. It is submarines, air, and missiles,
6 and communications and command and control.

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

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

16 Senator King: Yes, sir.

17 Mr. Kendall: It was a great experience with you.

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

24 At the time I left government I thought we had a
25 reasonable posture there, but I think it is well worth

1 taking a look at, and continuous diligence in that area is
2 what is actually required, because the threats never stop.
3 They keep coming at you.

4 Senator King: Not only do the threats never stop, the
5 wake-up calls never stop, and we are not thoroughly awake.
6 So I hope you will make this a high priority in your work in
7 the Air Force, because a jet fighter is not useful if its
8 command and control and navigational system is knocked out
9 in the first moment of a conflict.

10 Mr. Kendall: I complete agree, Senator, or its
11 logistics support system.

12 Senator King: Correct.

13 Mr. Kendall: There are a lot of attack vectors are
14 possible against our assets, as you are well aware.

15 Senator King: Thank you. Thank you all for your
16 dedication and willingness to come back to work for the
17 American people. Thank you, Mr. Chairman.

18 Chairman Reed: Thank you, Senator King. Let me
19 recognize Senator Rounds, please.

20 Senator Rounds: Thank you, Mr. Chairman. Mr. Kendall,
21 I would like to follow up where Senator King is leaving off.
22 The FY 2020 NDAA, Section 1657, directed each military
23 department Secretary to appoint an independent principal
24 cyber advisor to act as the principal advisor to the
25 Secretary concerned on all cyber matters affecting that

1 department. With the surge in high-profile cyber-attacks
2 against the United States, the need for breaking down the
3 cyber silos is needed now more than ever.

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

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

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

24 You indicated that you would like to have the ability,
25 because of the open architecture that we are building in, to

1 be able to plug-and-play other products that are similar in
2 nature. But the third part to that component is that we do
3 not necessarily purchase the intellectual property rights
4 that go with that to begin with, and I think that is a
5 critical part of that discussion as well. Would you agree?

6 Ms. Shyu: Yes, sir, I do agree.

7 Senator Rounds: Thank you. And Ms. Blume, when Ms.
8 Shyu was talking about the need to be able to basically
9 integrate a more quickly moving process, one in which we can
10 investigate, find, determine, test in the laboratory and
11 then bring back out and implement in the field, when we do
12 that, that sometimes means that we are really good at doing
13 workarounds, meaning if we have got a supply system in place
14 and it is not moving fast enough, we create a new office
15 which accelerates the purchasing, and yet we leave the other
16 one in place, in part because our rules require that we do
17 so.

18 If Ms. Shyu is correct that we need to find a way to
19 more quickly acquire -- and I happen to agree with her. I
20 think the time has come that we, as a government, recognize
21 that the old way of doing business simply does not work
22 anymore -- folks in your position, that actually come back
23 in and look and analyze afterwards, you are going to find
24 that we are moving around systems that are in place today.
25 Are you prepared to work with those individuals to not only

1 find the workaround but to find the appropriate way so that
2 we do not have to work around it anymore but rather to
3 create the system in which the existing infrastructure
4 actually works efficiently in the first place so we do not
5 need the workaround?

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

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

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

24 Senator Rounds: Do you include yourself as one of
25 those senior leaders?

1 Ms. Shyu: Yes, sir, I do.

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

7 Ms. Blume: If confirmed, yes, sir.

8 Senator Rounds: Mr. Kendall?

9 Mr. Kendall: Absolutely, Senator.

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

11 Chairman Reed: Thank you, Senator Rounds. And once
12 again let me thank Senator Hirono for her graciousness and
13 recognize her.

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

21 Ms. Shyu: No.

22 Ms. Blume: No.

23 Mr. Kendall: No.

24 Senator Hirono: Have any of you ever faced discipline
25 or entered into a settlement related to this kind of

1 conduct?

2 Ms. Shyu: No.

3 Ms. Blume: No.

4 Mr. Kendall: No.

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

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

25 You also mentioned that Israel is a country that can

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

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

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

23 I do have a question for Ms. Blume. In 2019, the
24 Missile Defense Review identified the Homeland Defense Radar
25 Hawaii, HDRH, as a requirement for detecting and

1 discriminating against inbound missile threats from an
2 increasingly capable North Korea. Congress appropriated
3 \$133 million for fiscal year 2021 to keep this radar develop
4 on track. Both Admiral Davidson and General LaCamera have
5 testified before this committee in the last 2 months that
6 HDRH would be an important part of the region's layered
7 missile defense system to protect Hawaii and the Lower 48
8 from long-range North Korean missiles.

9 I am concerned that the new administration may cut the
10 radar's funding in this year's budget, based on a CAPE
11 assessment. So I understand that CAPE had gone through an
12 assessment of this radar program and had okayed it in prior
13 years. So was that earlier assessment that gave the go-
14 ahead to HDRH Hawaii wrong, and are you now providing some
15 new assessment that changes the environment and we no longer
16 need this radar for Hawaii?

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

20 Senator Hirono: Should you be confirmed, this is
21 definitely an area of interest to all of the delegation from
22 Hawaii, I can tell you that, so I would really appreciate
23 your paying attention, or looking at this issue. It is
24 really important. I am sure you are aware that we had a
25 scare not too long ago when people of Hawaii thought there

1 actually was a missile headed to Hawaii and there was an
2 extreme fright of all of the people in Hawaii.

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

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

11 Senator Hirono: Thank you.

12 Chairman Reed: Thank you, Senator Hirono. Let me
13 recognize Senator Tillis, please.

14 Senator Tillis: Thank you, Mr. Chairman. Thank you
15 all for being here. Mr. Kendall, thank you for being
16 generous with your time last week.

17 Ms. Blume, Senator Sullivan has already expressed
18 disappointment that I do not have my 680-page proposal for
19 the next-generation handgun. I honestly tried to find it
20 but it is somewhere in a box from my prior office. But I
21 use that as an example, when you are talking about reviewing
22 programs and really trying to stratify them, based on risk
23 and cost. I use it as an example. There is no excuse for
24 10 years to define the next-generation handgun and 5 to 10
25 years to deploy it.

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

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

20 Ms. Blume: Senator, I am certainly familiar with the
21 public reporting on this issue, and perhaps just ever so
22 slightly deeper than that. You know, if confirmed, I would
23 look forward to working with both the Air Force and TRANSCOM
24 in order to make sure that that tanker force is sufficient
25 to need.

1 Senator Tillis: And Mr. Kendall, as I mentioned in our
2 call, I do not want to artificially extend the life of the
3 KC-10. I want the best capabilities in play. But it just
4 seems to me that we really have to take a look at the
5 readiness of KC-46s that are in operation but not fully
6 operational, and weigh that and measure that against the KC-
7 10's capabilities to fill the gaps. I spoke with you about
8 it last week. I just wanted your commitment to take a look
9 at it. It seems like it could be a readiness issue, but I
10 am happy to see a report that definitively answers the
11 question, if the current posture is the correct posture.
12 And I think I got your commitment to look at that last week,
13 and it does seem like it swims a little bit into CAPE's lane
14 as well.

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

20 Senator Tillis: Yeah, I would just like to see a
21 drilled-down report back. Ms. Shyu, you know, I think a lot
22 of the ratios, you talk about flipping a ratio in your
23 opening statement, and I can't remember the exact subject
24 matter. I feel the same way about the DoD's leading role in
25 the past in R&D. I mean, we were the technology lead. Now

1 those ratios have shifted more into the civilian sector. I
2 think that is a reality of the pace and scale of technology
3 today. But I am particularly concerned with making the
4 Federal Government and the DoD an attractive place for
5 digital cyber experts to come and work, and possibly even
6 moving into and out of the DoD to keep their skills fresh.

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

10 Ms. Shyu: Yes, sir. I absolutely do agree with you.
11 I would like to share with you something that, in my
12 experience, has worked very well in terms of attracting new
13 grads. PEI STRI down in Florida has been very, very
14 effective in terms of attracting brand-new talent. They
15 have an internship program, during the summer, 6 weeks, in
16 which they bring interns in to work them, to show what the
17 Army does, in the simulation and modeling world. And what
18 happens is, because they are so closely integrated, they
19 have an opportunity to see what the Army does. They have
20 virtually 99.9 percent retention rate, okay. As soon as
21 they graduate, they enter the PEO and they stay there.
22 There is only 1 loss over 126 people. That is because that
23 person's husband got transferred.

24 But that is exactly the kind of things we need to do to
25 attract young talent, because young talent loves to be able

1 to see that the work they are doing is for a common cause.
2 It contributes to something greater than themselves. I
3 think this is the kind of model we need to do across the
4 board.

5 Senator Tillis: Thank you all. Congratulations on
6 your nominations. Thank you, Mr. Chair.

7 Chairman Reed: Thank you, Senator Tillis. Let me
8 recognize, via Webex, Senator Warren, please.

9 Senator Warren: Thank you, Mr. Chairman, and
10 congratulations to each of you on your nominations.

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

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

25 So, Mr. Kendall, can you commit to ensuring that the

1 quality of education and licensing reciprocity are indeed
2 factored into the strategic basing process going forward?

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

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

18 Senator Warren: Good. Well, one thing that is not
19 formally considered during part of the process is the
20 effects of climate change and extreme weather. A 2019
21 Pentagon analysis found that of all the services, the Air
22 Force's base infrastructure is most at risk for climate
23 change threats such as recurrent flooding, drought,
24 desertification, wildfires, thawing permafrost. Do you
25 think it is worth making that another factor in the

1 strategic basing decision-making process?

2 Mr. Kendall: I am not aware of the extent to which it
3 is risen at the moment, but it should be a consideration,
4 absolutely.

5 Senator Warren: All right, sir.

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

10 Senator Warren: That is terrific. Thank you. On the
11 subject of climate change, there is no way to address the
12 climate crisis without confronting DoD role as the largest
13 consumer of fossil fuel on the planet. Will you commit to
14 using all the tools and authorities at your disposal to make
15 the Air Force more climate resilient and to reduce its
16 carbon footprint whenever possible?

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

1 things that can be done there.

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

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

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

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

23 Mr. Kendall: Senator, again, I have lived in military
24 housing. I know how important it is to families to have
25 quality housing, and it is a fundamental obligation of

1 someone who would be confirmed, potentially, in a position
2 like the Secretary of the Air Force. So the short answer to
3 your question is yes. But what we need to do is have sound
4 contracts and we need to enforce those contracts and ensure
5 that people get the quality housing that they deserve.

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

13 Thank you, Mr. Chairman.

14 Chairman Reed: Thank you, Senator Warren. Let me now
15 recognize Senator Sullivan, please.

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

24 So Mr. Kendall, I want to start with you. The father
25 of U.S. Air Force, Billy Mitchell, in an Armed Services

1 hearing I think in the 1930s, stated, quote, "This place" --
2 and I am not going to mention the place; you are going to
3 mention the place. This is a quiz for you -- "is the most
4 strategic place in the world. Any nation that fully
5 controls this place controls the world." What was this
6 place in Billy Mitchell, the father of the Air Force's
7 statement to the Congress?

8 Mr. Kendall: Senator, I have a suspicion it might be
9 Alaska.

10 Senator Sullivan: Yeah, it was Alaska. My colleagues
11 should know this too. I ask this question about once a
12 week.

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

18 Mr. Kendall: Yes, sir.

19 Senator Sullivan: Each nominee? Are you guys all
20 nodding your head yes?

21 Ms. Blume: Yes.

22 Ms. Shyu: Yes. Looking forward to it.

23 Senator Sullivan: Good. Ms. Blume?

24 Ms. Blume: Yes.

25 Senator Sullivan: Okay. Great. Let me ask, you know,

1 we have not talked a lot about budget, and I am concerned.
2 The Biden administration is having double-digit increases to
3 many Federal agency budgets, but it looks as if they will be
4 requesting a decline, adjusted for inflation, of the budget
5 for DoD. I hope that is not the case, but that is the
6 rumor. We are going to know soon.

7 The National Defense Strategy Commission report,
8 previous two Senate-confirmed SecDefs, and the previous and
9 current Chairman of the Joint Chiefs all stated and agreed
10 with the Commission, of the National Defense Strategy
11 Commission, of a 3 to 5 percent annual real growth to the
12 defense budget. Can I get your commitment -- I know you
13 have to do what the President puts out, you have got to
14 support that, but before that you are going to have to fight
15 for a budget. I think it will be a very disappointing and
16 problematic issue for our nation's national defense if we
17 are increasing the budget of the EPA and the Department of
18 Interior by 15 percent and DoD gets slashed. Can I get your
19 commitment, all three of you, to support and fight for that
20 3 to 5 percent annual real growth that the National Defense
21 Strategy Commission said was needed for our national
22 defense? Mr. Kendall?

23 Mr. Kendall: Senator, rather than try to pick a
24 number, what I can commit to you is that I will fight for
25 the budget that is necessary to fulfill the National Defense

1 Strategy, whatever that may be. If it is 3 percent, yes, if
2 it is 5 percent, if it is 10 percent, I will try to get the
3 money that is needed by the Department of the Air Force, if
4 I am confirmed, so that the Air Force can support combatant
5 commanders as they need to carry out that strategy.

6 Senator Sullivan: Ms. Shyu?

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

11 Senator Sullivan: Ms. Blume?

12 Ms. Blume: Senator, I also commit to advocating for
13 the resources that I believe the Department needs.

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

1 misplaced.

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

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

15 The Secretary of Defense, during his confirmation,
16 committed to me to work with this committee and me to review
17 the Air Force's bed-down of the KC-46. They have moved it
18 from an OCONUS strategy to a CONUS-based posture that I
19 think is more budget-driven than strategy-driven. Can I get
20 your commitment to work with me and this committee on that
21 very important issue that the Secretary of Defense has
22 already committed to?

23 Mr. Kendall: The short answer is yes, Senator. I have
24 not had a chance to look at the bed-down approach that the
25 Air Force is taking to the KC-46, but I would certainly do

1 so and would be happy to work with you on that.

2 Senator Sullivan: Good. Thank you, Mr. Chairman.

3 Chairman Reed: Thank you very much, Senator Sullivan.

4 And now let me recognize Senator Rosen via Webex.

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

16 But now I would like to move on. Mr. Kendall, I would
17 like to talk a little bit about nuclear waste and the Nevada
18 Test and Training Range. Because of the Department of
19 Energy's proposed routes to transport and permanently
20 dispose of high-level nuclear waste at Yucca Mountain, that
21 potentially border the Air Force's Nevada Test and Training
22 Range, NTTR, and Creech Air Force Base. Many other
23 installations that we have across Nevada and across the
24 country that are located in 44 states, nuclear waste may be
25 transported through 44 states in order to come to Yucca

1 Mountain.

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

11 So in 2017, Air Force Secretary Heather Wilson
12 addressed major concerns with the Yucca Mountain project,
13 citing how it could directly impact military readiness. I
14 am going to quote her here. She says, "There is no route
15 across the range that would not impact testing and
16 training." Secretary Wilson's concerns are consistent with
17 those expressed in the House Armed Services Committee in
18 2003 by Air Force Secretary James Roche.

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

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

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

14 Senator Rosen: Thank you. I would like to move a
15 little bit now onto land withdrawal. In FY 2021, the NDAA
16 reviewed the Air Force existing withdrawal of almost 3
17 million acres of public lands for the next 25 years, and
18 included a provision that Senator Cortez Masto and I
19 inserted that mandates an intergovernmental executive
20 committee between the Air Force and the U.S. Fish and
21 Wildlife Service to help improve the administration of and
22 resolve conflicts on jointly managed lands. We have to
23 support military modernization, keep up with current and
24 emerging threats, but we also have to maintain Nevada's
25 natural and cultural resources. This committee is one way

1 to do so.

2 And so as you take on this challenge and you pursue
3 modernization of the range, can you commit to exchanging
4 information, collaborating with local, state, and tribal
5 governments on any proposals to withdraw Nevada's public
6 lands and work with me and the rest of the Nevada delegation
7 on any future land requests, and also will you commit to
8 setting up the intergovernmental executive committee and
9 getting its first meeting scheduled, as the Navy has already
10 done, in Fallon, Nevada?

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

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

23 Senator Rosen: And my time is up but I will look
24 forward to meeting with you, because the intergovernmental
25 executive committee is now mandated. The Navy has already

1 done it. We can follow the template that they have done up
2 in northern Nevada, so you can set one up for the Air Force
3 in southern Nevada. I look forward to working with you and
4 your team on that. Thank you so much.

5 Mr. Kendall: Thank you, Senator Rosen.

6 Chairman Reed: Thank you, Senator Rosen. Let me
7 recognize Senator Scott, please.

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

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

23 Mr. Kendall: If confirmed, the mission of the Air
24 Force that I would be responsible for is to make sure that
25 we equip, train, and support our combatant commanders in

1 order for them to carry out the National Defense Strategy
2 for the Secretary and the President.

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

15 Senator Scott: Thank you. Where do you think we stand
16 today with our ability to defend our interest in the Pacific
17 along with the interests of our allies, with regard to
18 Communist China? Do you believe we are in the position that
19 we can --

20 Mr. Kendall: I do not believe anyone should doubt
21 either our resolve or our capability. You know, Secretary
22 of Defense Austin has talked about agile deterrence and a
23 way to respond in more ways than the enemy may expect, and
24 across different fronts, and I think that is a sound concept
25 and I would support that. And I think, if confirmed, I

1 would work to facilitate the Air Force's role in that.

2 Senator Scott: Do you believe, with the defense budget
3 that the President has proposed, that you will be able to
4 continue to, if you are confirmed, do your job?

5 Mr. Kendall: Senator, I am convinced that President
6 Biden will submit a budget that he thinks is necessary to
7 meet the security obligations of the United States. And
8 there will be tradeoffs within that. It will be difficult.
9 I think that would be true in any level of the budget. But
10 I believe that the funding that I understand the President
11 will request in 2022 is adequate to meet the National
12 Defense Strategy.

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

17 Ms. Shyu: Absolutely. There is a lot of opportunity
18 to do exactly what you are talking about. I will give you
19 an example. One thing that I am very proud that the Army is
20 doing is buying Skydio small UADs. They are basically --
21 you can flip it into the size of a little pack, okay. It is
22 commercial. They sell it to the commercial industry, but
23 Army is buying, I think, 6,000 of them in production right
24 now. So right on point. Instead of redesigning it for a
25 specific purpose, utilize what you can buy off the shelf.

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

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

11 Senator Scott: Have you had any time to look at the
12 ability of our military to talk to each other, and just our
13 communications systems and whether they are compatible
14 enough to allow the transfer of information?

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

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

22 Mr. Kendall: I am sorry, Senator. I did not catch the
23 question.

24 Senator Scott: Did you ever have any experience with
25 the inability to share information rapidly in the military?

1 Mr. Kendall: Sharing information is a fundamental
2 thing that the military is working on right now. A lot of
3 effort is going into, sometimes it is called the "Military
4 Internet of Things." Is that what you are referring to?

5 Senator Scott: Yes.

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

14 Senator Scott: Thank you. Thank you, Mr. Chairman.

15 Chairman Reed: Thank you, Senator Scott. Let me
16 recognize Senator Peters, please.

17 Senator Peters: Thank you, Mr. Chairman, and to each
18 of our nominees, congratulations on your nomination and your
19 willingness to serve our country.

20 Mr. Kendall, Selfridge Air National Guard Base in
21 Harrison Township, Michigan, is in the running to host and
22 F-16 and F-35 FMS mission. This would consist of F-16s and
23 F-35s from the Republic of Singapore and also F-35s from
24 Finland, Poland, and Switzerland. And I know you and I had
25 a chance to speak at length about this mission in a phone

1 call earlier, and my Michigan colleagues and I have also
2 written to Acting Secretary Roth earlier this year and to
3 former Secretary Barrett last fall.

4 And as we discussed, Selfridge is a finalist for this
5 basing decision, and its location clearly exceeds all of the
6 mission requirements. Michigan hosts the largest contiguous
7 joint overland service range airspace complex east of the
8 Mississippi River. Selfridge has extensive flying
9 operations, hosting both the A-10 as well as the KC-135.
10 And as we discussed, from a cost-effective basis, which I
11 know is important to you, Selfridge would require no
12 significant infrastructure upgrades in order to complete
13 this mission. The runway length, the number of aircraft
14 shelters, ramp space are all adequate as they are right now.

15 And, in addition, the folks on the ground in Macomb County
16 have been enthusiastic hosts of this base for over 100
17 years. Not many air bases can say that, that they have been
18 around for over 100 years, and having community support to
19 handle this mission and others.

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

25 Mr. Kendall: Senator, if I am confirmed, I will see to

1 it that all Air Force basing decisions are fair,
2 transparent, and that people are properly informed of the
3 results.

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

7 My next question for you, Mr. Kendall, is that Michigan
8 communities have a number of PFAS-contaminated sites,
9 including the former Wurtsmith and K.I. Sawyer Air Force
10 Base. And what they are dealing with, these communities are
11 dealing with, is a challenge, and they certainly deserve
12 greater transparency and communication about the ongoing
13 remediation efforts that the Air Force is engaged in.

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

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

1 this problem.

2 Senator Peters: And you will commit to pursuing
3 expedited remediation of these sites?

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

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

16 Mr. Kendall: Thank you, Senator.

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

24 My question to you is, if confirmed, will you work with
25 my office to build upon this effort and also work to expand

1 our innovation cooperation with other allies? And maybe
2 related to that, as you mentioned, the Israelis were
3 particularly good. Are there other allies that we should be
4 forming a closer relationship in order to expedite research
5 and development and innovation?

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

10 Senator Peters: Great. Well, thank you. Thank you,
11 Mr. Chairman.

12 Senator Inhofe: [Presiding.] Thank you, Senator
13 Peters. Senator Tuberville.

14 Senator Tuberville: Thank you, Mr. Chairman. Thank
15 you for being here today and thanks for your service. First
16 I would like to thank you, Mr. Kendall and Ms. Blume, for
17 standing by the data of the decision to put Space Command in
18 Huntsville. My colleagues seem to continue to fight that
19 for some reason. The Air Force analysis showed the location
20 at Redstone saves taxpayers millions of dollars, which we
21 all look forward to -- I know you do, Ms. Blume -- and that
22 co-locating Space Command with NASA, Blue Origin, and ULA
23 makes strategic sense. I am proud that Secretary of Defense
24 Austin is supportive of the Air Force's analysis, and it is
25 my hope that the decision, which is good for both national

1 security and the taxpayer, remain a political.

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

7 How should DoD boost our industrial base and secure the
8 United States access to space?

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

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

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

24 Senator Tuberville: Thank you. Ms. Blume, do you
25 think we have problems with how we share data with Congress,

1 in your job coming up, how do you think we can make it
2 better?

3 Ms. Blume: Senator, I think that the way in which the
4 Department shares data with Congress is sometimes a little
5 bit outdated in terms of what modern data collection,
6 tracking, accessibility tools can do for us. And if
7 confirmed, I do look forward to working with the Congress to
8 figure out ways that we can improve that flow of
9 communication.

10 Senator Tuberville: Thank you. Ms. Shyu, I do not
11 know if you have been to Huntsville, Alabama. Have you been
12 to Huntsville?

13 Ms. Shyu: Many times.

14 Senator Tuberville: Yeah. Thank you. As you well
15 know, we do a lot of research there. We have over 1,000
16 defense contractors, and, of course, NASA and Missile
17 Defense, and we want to invite you to come. We talked a
18 little bit earlier about hypersonic missiles. I have seen
19 the work on this, and, of course, we are behind the 8-ball
20 and we need to catch up with that. I would just like to end
21 here -- we are probably running a little bit long on time --
22 but invite all three of you to come to Huntsville. We have
23 the Army Command, Material Command in Huntsville, Ms. Blume.
24 We have spent a lot of money but we ship it everywhere, and,
25 you know, we are proud of what we have there, and all over

1 Alabama, in terms of our seven military bases.

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

5 Senator Inhofe: Thank you, Senator Tuberville.

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

9 I recognize Senator Duckworth.

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

18 Ms. Shyu, if confirmed, you will be the highest-ranking
19 Asian American Native American Pacific Islander civilian in
20 the Department of Defense. I have fought for better
21 representation for the community in this administration, so
22 I was so pleased to see your nomination. If confirmed, I am
23 sure that you will make significant contributions to the
24 Department of Defense. I believe truly that our military is
25 stronger when it draws on the full richness of our

1 population for talent, ideas, and leadership.

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

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

18 The Reserve components have seen unprecedented activity
19 in the last few years, and our air wings are no exception.
20 The Air National Guard's C-130 fleet has provided 68 percent
21 of hurricane support and 42 percent of civil unrest support
22 since FY 2018. These domestic operations are only projected
23 to grow in coming years. In short, our nation relies on our
24 Reserve component's C-130 fleet, composed of hard-working
25 units like the 182nd Air Wing in Peoria -- you knew I was

1 going to throw Illinois in here somewhere, right?

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

11 If confirmed, Mr. Kendall, will you commit to working
12 with the governors and the CAGs of states with Reserve
13 National Guard C-130 wings to ensure that they are able to
14 fulfill their domestic missions and that the Air Force's
15 divestment plans do not eliminate the C-130 capacity that
16 our nation has come to rely on, without at least replacing
17 it with some other flying platform?

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

22 I absolutely can commit to taking all those things into
23 consideration in any tradeoffs we have to make in terms of
24 what fleet we can sustain, and I would agree, certainly, to
25 work with the CAGs and with the states on that to make sure

1 their needs are met.

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

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

20 Mr. Kendall: In general, yes, Senator. I am not sure
21 what activities are underway. That should be something that
22 is going to be reviewed as we build the FY 2023 budget, and
23 hopefully we will be able to provide a plan in conjunction
24 with that. If confirmed, that is some of the things I would
25 look at, overall mobility posture and how the Department of

1 the Air Force supports that.

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

8 Mr. Kendall: I absolutely do.

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

13 Mr. Kendall: I look forward to that as well, Senator.
14 And did you get your Ph.D.? I am curious.

15 Senator Duckworth: I got it on a different topic. I
16 actually got it on the use of electronic medical records,
17 but I am still working on the acquisition reform, and we
18 should talk about future vertical lift as a model on how we
19 operationalize lessons from future vertical lift to other
20 DoD acquisition programs.

21 Mr. Kendall: It is a great topic. Thank you.

22 Senator Duckworth: Thank you. I yield. Oh, I am out
23 of time, Mr. Chairman. You have been very generous.

24 Chairman Reed: [Presiding.] Thank you very much,
25 Senator Duckworth, and now let me recognize Senator Hawley,

1 please.

2 Senator Hawley: Thank you, Mr. Chairman, and thanks to
3 all the witnesses for being here. Congratulations on your
4 nominations.

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

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

20 Senator Hawley: Very good. Thank you for that. Ms.
21 Blume, you wrote, in 2019, that China is investing in
22 capabilities that are designed not to defeat the U.S.
23 military but to hold it at bay long enough for Beijing to
24 achieve their objectives before the U.S. can respond
25 effectively, and you went on to write that the resulting

1 fait accompli would present U.S. policymakers with an
2 appetizing dilemma, risk escalation through a massive
3 counterattack against a nuclear-armed state or accept an
4 armed attack on a U.S. ally or partner and the consequent
5 devaluation of U.S. security guarantees.

6 Can you just tell me, from an analytic perspective, why
7 would it be so difficult for the U.S. to dislodge Chinese
8 forces from Taiwan, in particular, if we fail to deny a fait
9 accompli at the outset?

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

16 Senator Hawley: Given that, would you agree that it is
17 important that we maintain forces forward in the first
18 island chain in order to effectively be postured to defeat,
19 deny a fait accompli?

20 Ms. Blume: Yes, Senator.

21 Senator Hawley: Very good. Mr. Kendall, along those
22 same lines, you said last week that if China initiated an
23 offensive against Taiwan they would try to make it
24 impossible for us to intervene before they had accomplished
25 their objectives, which is a classic fait accompli, in a way

1 that Ms. Blume has described.

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

6 Mr. Kendall: Yes, Senator, I do.

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

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

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

25 Senator Hawley: Very good. I think that is really

1 important and I am really glad to hear you say that.

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

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

19 Senator Hawley: Very good. Thank you.

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

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

6 Senator Hawley: Very good. Thank you, Mr. Chairman.

7 Chairman Reed: Thank you, Senator Hawley. Let me
8 recognize Senator Kelly, please.

9 Senator Kelly: Thank you, Mr. Chairman, and thank you
10 to all our witnesses for being here today.

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

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

25 Mr. Kendall, how would you assess the ability of other

1 fighter aircraft to meet these requirements and conduct
2 close-air support missions?

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

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

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

25 So you have gotten feedback. I have as well, from our

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

9 Mr. Kendall: Same here, Senator.

10 Senator Kelly: I have got a couple more minutes. Ms.
11 Shyu, good to speak with you again. I enjoyed our
12 conversation last week. I know from our past discussions
13 that you share my view of the imperative of bringing
14 advanced semiconductor production capabilities back to our
15 country. It is hard to believe that today that U.S.
16 scientists and industry have to look to China to test
17 advanced capabilities in semiconductors, and it is clear
18 that investing in U.S. semiconductor research and
19 fabrication capability today is going to lead to dividends
20 for our national security in the long term.

21 That is why I am working with colleagues on both sides
22 of the aisle to make sure we fund and support these efforts.

23 A critical element of this work is the National Network for
24 Microelectronics R&D, and it was authorized in last year's
25 defense bill. The network would simultaneously leverage the

1 advanced research capabilities at universities across the
2 country, and it would support American innovation and
3 alleviate supply chain security concerns in today's market.

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

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

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

22 Chairman Reed: Thank you very much, Senator Kelly.
23 Now let me recognize, via Webex, Senator Blackburn.

24 Senator Blackburn: Thank you, Mr. Chairman, and I
25 think somebody was not looking at my camera being on and I

1 got skipped a little bit ago. So thank you for coming back
2 to me.

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

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

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

25 So I am, in general, very supportive of that type of

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

5 Senator Blackburn: And, of course, we know that in
6 order to compete with Beijing and Moscow that that
7 hypersonic capability is going to be important. So what do
8 you understand to be the national security risk of not
9 modernizing these testing facilities, and what roles do you
10 see for preventative maintenance to mitigate some of these
11 risks?

12 Mr. Kendall: Again, you need to take care of the
13 things that you have so that they can function properly and
14 be used to do the tests that are necessary. So both
15 modernization of those facilities and acquiring new, more
16 capable facilities that can do things that existing ones
17 cannot, as well as taking care of the things you already
18 have. There is, obviously, some prioritization that has to
19 happen in all of that, and you have to look carefully at
20 what your expectations are for the future. But it is
21 certainly a high priority.

22 Senator Blackburn: Thank you. Ms. Shyu, thank you for
23 the time last week, and I so enjoyed the conversation about
24 new and innovative partnerships. And we discussed that in
25 the Pathfinder program, that Vanderbilt and the University

1 of Tennessee are participating in.

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

6 Ms. Shyu: Senator Blackburn, it was great chatting
7 with you last week. I absolutely believe the fact that the
8 university is working so closely with the users to develop
9 critical technologies that would have strategic
10 implications, that is absolutely the right way to go,
11 because it is the users who understand where the shortfalls
12 are. And collaborating with the universities as well as
13 small companies is the right step moving forward.

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

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

24 And Mr. Kendall, our Guard in Tennessee has some really
25 top-level talent when it comes to cyberspace, remotely

1 piloted vehicles, the drones. And the 118th ISR Group,
2 along with five other Air National Guard targeting units,
3 provided robust support to the active component Air Force
4 Targeting Enterprise to ensure continuity of the mission
5 during COVID. And what is your view on the role of the MQ-9
6 reaper in great power competition?

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

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

22 Senator Blackburn: Thank you so much. Thank you, Mr.
23 Chairman.

24 Chairman Reed: Thank you very much, Senator Blackburn.
25 Let me thank the panel for your attendance here today but

1 also your willingness to serve the nation once again after
2 your distinguished service previously. You have
3 demonstrated the thoughtfulness and the integrity and the
4 commitment that is essential to be a part of the Department
5 of Defense. I look forward to your confirmations.

6 With that let me adjourn this hearing.

7 [Whereupon, at 12:15 p.m., the hearing was adjourned.]

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