

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 2020

WEDNESDAY, MARCH 13, 2019

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:00 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Richard Shelby (chairman) presiding.
Present: Senators Shelby, Collins, Murkowski, Blunt, Moran, Hoeven, Boozman, Durbin, Leahy, Tester, Udall, Schatz, and Baldwin.

DEPARTMENT OF DEFENSE

DEPARTMENT OF THE AIR FORCE

OFFICE OF THE SECRETARY

STATEMENT OF HON. DR. HEATHER WILSON, SECRETARY

OPENING STATEMENT OF SENATOR RICHARD C. SHELBY

Senator SHELBY. The committee will come to order. This morning I am pleased to welcome Secretary Wilson and General Goldfein to review the Air Force budget request for 2020. Secretary Wilson congratulations on being named the sole finalist, in other words, the next President of the University of Texas, El Paso. We appreciate your participation here today. We also appreciate your service as a congressman, as Rhode Scholar, everything that goes with it. And you have had the complete package and you are going to continue doing things, I know, for the country. We will hear from you again in other capacities.

The Air Force budget request for 2020 is \$165.6 billion, an increase of \$9.8 billion over the amounts enacted in 2019. And while we are here today to focus on the budget request, we are also interested in hearing about how the Air Force is executing the 2019 funds, which we thought were pretty robust, but needed.

The National Defense Strategy Commission recently stated that the Air Force will be at the forefront of the next conflict regardless of where it occurs or which adversary it features. That is a long time. I think they are correct in that assessment. The country expects that the Air Force will invest in a lethal force that will be able to confront our adversaries of the future, and it cannot fail to maintain a ready force today. This committee will scrutinize the budget request that we received to ensure that it supports the more than 20,000 airman deployed around the globe in 180 loca-

tions, and that it adequately addresses the long-term challenges posed to us by China and Russia.

Today we look forward to understanding how your 2020 budget request reflects the priorities, your priorities, to include the creation of the space force, the addition of operational squadrons, and what types of aircraft comprise those squadrons, the modernization of our nuclear capabilities, and further development of hypersonic weapons. Secretary Wilson, General, we appreciate your service to the country.

[The statement follows:]

PREPARED STATEMENT OF SENATOR RICHARD C. SHELBY

The Subcommittee will come to order.

This morning, I am pleased to welcome Secretary Wilson and General Goldfein to review the Air Force budget request for fiscal year 2020.

Secretary Wilson, congratulations on being named the sole finalist to become the next President of the University of Texas at El Paso. We appreciate your participation here today and your continued service over the next months to ensure a smooth transition.

The Air Force budget request for fiscal year 2020 of \$165.6 billion is an increase of about \$9.8 billion over the amounts recently enacted. While we are here to focus on this budget request, we are also interested in hearing about how the Air Force is executing fiscal year 2019 funds, which were provided on time.

The National Defense Strategy Commission recently stated that the Air Force will be at the forefront of the next conflict regardless of where it occurs or which adversary it features. I think they are correct in that assessment.

The country expects that the Air Force will invest in a lethal force that will be able to confront our adversaries of the future, and it cannot fail to maintain a ready force today.

This Committee will scrutinize the budget request that we have received to ensure that it supports the more than 21,000 Airmen deployed around the globe at 180 locations, and that it adequately addresses the long-term challenges posed by China and Russia.

We look forward to understanding how your fiscal year 2020 budget request reflects your priorities and initiatives to include the creation of the Space Force, the addition of operational squadrons and what types of aircraft comprise those squadrons, the modernization of our nuclear capabilities, and further development of hypersonic weapons.

Secretary Wilson and General Goldfein, we appreciate your service and look forward to hearing how your budget balances all of these important priorities.

Senator SHELBY. Now I turn to the Vice Chairman, Senator Durbin, for his opening remarks. Thank you.

STATEMENT OF SENATOR RICHARD J. DURBIN

Senator DURBIN. Thanks a lot, Mr. Chairman, and Madam Secretary, and General Goldfein. Thank you for being with us today. And I just learned as I sat down here about the next step in your career. I wish you the very best, whatever your final decision may be. You brought real skill and dedication to your job as Secretary of the Air Force, and you have overcome whatever is left of House careers that both of us brought to our next endeavor and made the very, very best of it.

Let me tell you that I believe that we are facing a critical budget cycle. We do not want to return to sequestration. I do not believe that is healthy for this Nation, certainly not for our defense. But I also have to quickly add that I do not believe dreaming up \$174 billion in OCO (Overseas Contingency Operations) funds is the answer. I believe that that is short-sighted, both in terms of our deficit and in terms of our budgeting.

If there is someone in the Administration who believes that we can dramatically short-change non-defense spending and look the other way at \$174 billion OCO, they just did not look at the results in the last election. We need a bipartisan answer to the future of this budget process. One that serves our Nation and one that serves our National Defense. I will not go into a long riff about the wall and what it might involve. I am sure that will be discussed at length in many other different places. I would also raise the question about the whole concept of the space force. This to me is an idea that needs to be thoroughly vetted and carefully reviewed before we stand up another branch of our military. Is this in the best interest of America's National Defense? Is it going to necessarily involve an investment in bureaucracy which comes with it, which may be uncontrollable?

The late John McCain spoke of many times about the possibility that we are putting more people in the Pentagon than we are in field. We need to make sure that whatever we are doing, we are consciously avoiding overspending where it is unnecessary, and consciously spending taxpayers' dollars in the name of National Defense in a thoughtful way.

So, I look forward to that conversation. Thank you for being here.

Senator SHELBY. Secretary Wilson, yours and the General's opening statement will be made part of the record in its entirety. You proceed as you wish. Welcome again.

SUMMARY STATEMENT OF HON. DR. HEATHER WILSON

Secretary WILSON. Thank you, Mr. Chairman. With the opening statement in the record, I will just summarize a few points, if I might.

The Air Force budget proposal that we have put forward is driven by the National Defense Strategy and the priority mission set out in that strategy. I would highlight probably three major things for you and then answer any questions that you might have for us. The first is that this budget focuses on building a more lethal and ready Air Force. We are more ready for combat operations today than we were 2 years ago. Readiness first and foremost is about people and their training. We have closed the gap on the maintainer shortage that we faced 2 years ago when we were 4,000 maintainers short, and now we have to season those young Airmen and make them into masters of their craft.

The fiscal year 2020 budget continues the steady increase in air strength, with an addition of 4,400 personnel. It also adds in funds to hire more civilians, particularly focused on depot level maintenance, to make sure that our equipment is in condition to be able to fight. And we have stopped the decline in the number of pilots and increased funds for the training of those pilots. With respect to readiness of our equipment, we are modernizing across the board with the F-35, the KC-46, the B-21 bomber, the nuclear deterrent, the T-X trainer, and of course our helicopters. So, we have modernization going on across the board. It has to be cost-effective modernization, but tomorrow's modernization, or today's modernization results in tomorrow's improvements in readiness.

So, the first thing, again, we are doing is building that more lethal and ready force. We are also trying to fill tomorrow's Air Force

faster and smarter, taking advantage of the authorities that the Congress has given us since 2016 and 2017 to improve Air Force acquisition. We cannot win this contest against near-peer adversary with an acquisition system from the cold war. And so, we are speeding up the way in which we do things. Delegating authorities to the services works. We have more control over our major programs, and we are taking advantage of the new authorities to prototype an experiment, which you have given us. Last week, we had our inaugural pitch day in New York City. We did this both to engage small, innovative companies, but also to change the way the Air Force does business with those companies. You know, we ended up contracting in a single day with 51 companies. The average time for contract award was 15 minutes and the length of the contract was one page. We are fielding tomorrow's Air Force faster and smarter.

The third thing I would highlight is that our fiscal year 2020 budget builds on our advances made in fiscal year 2019, and further accelerates our ability to operate in space. There is a 17 percent increase in space funding over fiscal year 2019 for about \$14 billion on classified Space Programs. The Department of Defense recently submitted legislation to establish the Space Force as a new service within the Department of the Air Force. This proposal capitalizes on the Air Force being the best in the world in space, and given the new era of strategic competition, it is a move that would posture us for the future.

In closing, this budget includes funds with an emergency clause for Tyndall Air Force Base, and I would ask that, Mr. Chairman, I know you are looking at and trying to craft a supplemental to deal with some of these terrible storms that have hit the Southeastern part of the United States. We look forward to working with you on that because that supplemental will be vital to recovery of Tyndall Air Force Base.

Senator SHELBY. You say Tyndall?

Secretary WILSON. Yes, sir. Tyndall Air Force Base recovery. And finally, I thank all of you for the certainty that you have provided us in fiscal year 2019. We started out this year with a budget at the beginning of the year, and at the end of the first quarter, we looked at the financials and we had executed about a quarter of our program in the first quarter of the year. Sequestration would erase all of the gains that we have made together over these last 3 years, and we look forward to working with all of you to make sure that that does not happen. The Air Force will compete, deter, and win. That is our job, and we look forward to working with you to make sure that that continues to be the way the Air Force does business.

Thank you, sir.

Senator SHELBY. General Goldfein.

STATEMENT OF GENERAL DAVID L. GOLDFEIN, CHIEF OF STAFF

General GOLDFEIN. Chairman Shelby, Ranking Member Durbin, and distinguished members of the committee. What an honor it is to, once again, represent your Airmen, 685,000 Active Guard Reserve and civilians who stand the watch and provide top cover for the Nation and our joint and allied teammates.

This hearing is the first public gathering since Secretary Wilson announced her pending departure from the Air Force, and I want to say publicly on behalf of all Airmen and their families, what an honor it has been to work with her every day to make our Air Force more lethal and more ready. These past 2 years have been the most rewarding of my career, and this budget reflects the culmination of our work together to build the Air Force we need to compete, to deter, and if deterrent fails, to fight and win. And I want to state for the record that we are a better Air Force because of the leadership and the vision of our Secretary, Dr. Heather Wilson.

Chairman, I went to war for the first time as a young Captain flying F-16s out of Shaw Air Force Base in South Carolina, just a few days after Saddam Hussein invaded his neighbor in Kuwait. We were the second squadron of 34 that deployed forward out of 134 fighter squadrons in the inventory. At that time, we had 401 operational squadrons and 945,000 Active Guard Reserve and civilian Airmen in the Air Force that formed the fist the Nation needed. 401 operational squadrons to defeat a middleweight, non-nuclear power who threatened his neighbor in the region that posed little threat to our homeland and our way of life. Today, we have 312 operational squadrons, down from 401. We have just 55 squadrons of Fighters, down from 134. And we have 685,000 Airmen, down from 945,000. We are not the Air Force of Desert Storm, yet it is articulate in the National Defense Strategy, today we face a significantly different global security environment. China and Russia are nuclear powers, and Russia continues to violate treaties as it rebuilds and grows its nuclear capacity and capability.

When my predecessor, General Tony McPeak, was the Chief in 1991, he and his fellow joint Chiefs were focused on supporting a single Combatant Commander, Joe Norman Schwarzkopf the Commander of U.S. Central Command. Today, should deterrence fail, and we find ourselves defending our Nation against a major power, as the Chief, Secretary Wilson and I will be simultaneously supporting at least three Combatant Commanders who will be simultaneously asking for air, space and cyber power. First Geographic Combatant Commander will request forces to support his campaign, which may include back field for the fighters, tankers, and command-and-control forces he will place on nuclear alert given his role as the Supreme Allied Commander of a Nuclear Alliance. The next call I expect to receive will be from U.S. Strategic Command and he will tell me how many bombers, tankers, and command control forces he will need to execute his nuclear deterrence plan for protecting not only the homeland, but also our allies and partners. And the third call will be from Northern Command, which will tell me how many fighters, tankers, ISR, and C-2 aircraft he will need to execute his plan to defend the homeland. And the Air Force will be asked to support these missions simultaneously, not sequentially, while at the same time maintaining a global presence to deter any rogue Nation who might take advantage of our situation as we simultaneously maintain campaign pressure on violent extremism.

This is the stark difference between fighting a middleweight rogue nation without nuclear weapons versus competing, deterring,

and if deterrence fails, fighting and winning a peer fight. It is why Secretary Wilson and I continue to articulate in every forum that the Air Force is too small for what the Nation is asking us to do. And it is why as you said Chairman, the National Defense Strategy Commission stated, regardless of where the next conflict occurs or which adversary features, the Air Force will be at the forefront. With your support, this budget request will continue to rebuild the readiness and lethality of the Air Force, which you supported last year with an on-time appropriation following a damaging sequester and years of budget uncertainty, all while the Air Force executed continuous combat operations.

Sir, history does not always repeat, but it does rhyme now and then. My father fought as a young F-4 Pilot in Vietnam, and he and many of his peers stayed in and rebuilt the Air Force his son needed to fight and win in Desert Storm. My daughter and my nephew are young Airmen today, and with your support, we will rebuild the Air Force they need to fight and win in this era of great power competition.

Thank you for the opportunity to testify. We look forward to your questions.

[The statement follows:]

PREPARED STATEMENT OF DR. HEATHER WILSON AND
GENERAL DAVID L. GOLDFEIN

STRATEGIC ENVIRONMENT

Great power competition remains the central challenge to U.S. prosperity and security. A rapidly growing China and resurgent Russia aim to coerce their regional neighbors, undermine long-standing alliances, and displace American influence from critical regions around the globe. These great power competitors are challenging U.S. dominance in all warfighting domains: air, land, sea, space, and cyberspace. Additionally, they are confronting us with threats below the level of open conflict, through information warfare, ambiguous or denied proxy operations, and subversion.

To face these challenges, the United States Air Force must compete, deter, and win across the five priority missions of the National Defense Strategy:

- Defend the homeland,
- Provide a safe, secure, and effective nuclear deterrent,
- Defeat a powerful conventional enemy, while we
- Deter opportunistic aggression, and
- Disrupt violent extremists in a cost-effective manner.

In fiscal year 2020, we will continue to build a more lethal and ready Air Force, while fielding tomorrow's Air Force faster and smarter.

AN AIR FORCE IN DEMAND

Last year, Congress appointed an independent and bipartisan National Defense Strategy Commission to study the global security environment and forces necessary to prevail in an era of great power competition. Their conclusion unequivocally stated: "regardless of where the next conflict occurs or which adversary it features, the Air Force will be at the forefront."

As the joint force prepares for peer conflict, the Air Force continues to be in very high demand. Our Airmen perform strategic and vital missions in all domains, across the spectrum of conflict, and from 65 feet below ground to our highest geosynchronous orbits.

More than 21,000 Airmen are deployed around the globe, employing unrivaled air, space, and cyber power from over 179 locations. Last year, our Airmen conducted more than 50,000 sorties and 3,400 precision airstrikes alongside joint and partner forces in the campaign to defeat ISIS. In Afghanistan, the Air Force executed 44,400 sorties in support of our Afghan partners, and targeted Taliban and extremist networks with more weapons than any time in at least 5 years. Our mobility forces transported over 1.25 million personnel, 1 billion pounds of warfighting equipment and supplies, and evacuated more than 5,400 patients for critical medical care. To

bolster allies and partners, we increased NATO interoperability and readiness through the European Deterrence Initiative, and Air Force bombers flew over 60 sorties through our Continuous Bomber Presence in the Indo-Pacific. Airmen also delivered 152,000 short tons of relief supplies across Southwest Asia, supporting those who are displaced and suffering, and demonstrating U.S. commitment to building a stable and peaceful region.

The Air Force also performs global, strategic, and critical missions from our homeland. We maintain our nuclear force at the highest state of readiness: last year our Airmen conducted 16,425 intercontinental ballistic missile alert tours and 350 missile convoys across three missile wings and five states. In space, we operate 80 satellites that provide communications, command and control, missile warning, nuclear detonation detection, weather, and the Global Positioning System (GPS) for the world. Our Airmen also support a global intelligence, surveillance, and reconnaissance (ISR) network, and last year completed nearly 57,000 missions, collected over 437,000 hours of full motion video, and produced over 1 million intelligence products for our warfighters and policymakers. Every day, our Airmen stand ready on a moment's notice to intercept airborne threats to our homeland, and they defend Air Force and Department of Defense networks from our adversaries' persistent cyberattacks.

We can only meet these demands with predictable budgets driven by the National Defense Strategy. In fiscal year 2019, the Department of Defense received its first on-time appropriation in over a decade. That agreement required substantial effort by the Congress, and we are grateful for your support and confidence.

However, continued budgetary uncertainty threatens to disrupt the progress we are making. Substantial budget cuts would erase the gains we made over the last 3 years and inflict substantial damage to our national defense. In 2013, in the wake of sequestration, we were forced to stand down one-third of our combat flying squadrons. We cancelled large-scale exercises and lost over one million work-hours of depot maintenance.

Despite nearly 30 continuous years of combat, no enemy in the field has done as much to harm the readiness of the Air Force than the combined impact of artificial spending restrictions, worsened by operating for 10 of the last 11 years under continuing resolutions of varied and unpredictable duration.

Let's be clear. We cannot fully implement the National Defense Strategy to protect America's vital national interests with unpredictable and constrained budgets. We must come together to find a way forward.

THE AIR FORCE WE NEED HAS 386 OPERATIONAL SQUADRONS

The National Defense Strategy calls on us to compete, deter, and win against near-peer competitors and across a wide spectrum of priority missions.

Last year, in Congressional testimony, you asked us what we needed to implement the National Defense Strategy—not "What is the Air Force we can afford?" but "What is the Air Force We Need?" We didn't know, and we should know. You put that question in the 2018 National Defense Authorization Act, when Congress directed us to study the forces and capabilities we require to implement this strategy.

Using our current operational plans and future defense planning scenarios projected into the 2025–2030 timeframe, we conducted thousands of simulations and wargames to answer this question. Our analysis produced an unmistakable conclusion: the Air Force is too small for what our Nation needs. We currently have 312 operational squadrons—the clenched fist of American air and space power. To implement the National Defense Strategy and prevail over our highest priority competitors, our Air Force needs 386 operational squadrons.

To put this in context, at the height of the Cold War, in 1987, the Air Force had 401 operational squadrons. Four years later it would combat the Iraqi military in Operation Desert Storm, and decisively defeat Saddam's forces in just 43 days. Despite a shrinking budget and force size, the Air Force continued flying combat missions in the region, and added significant new demands and missions in the wake of 9–11.

The independent and bipartisan National Defense Strategy Commission also asserts the need for greater capacity in an era of great power competition. We cannot credibly face our future with the Air Force of today, evolved over two decades for counterinsurgency and counterterrorism operations. We must grow and meet our adversaries from a position of strength.

Our study also shows more of the same isn't the best answer. The Air Force we need must evolve to incorporate advanced technology and wield cutting-edge capa-

bilities in new and innovative ways. Together with our joint partners, we are developing Multi-Domain Operations as our new warfighting framework.

While our land, sea, air, space, and cyber forces have become more joint and coordinated, they are not sufficiently integrated for the future fight. Multi-Domain Operations will integrate U.S. and allied forces across all warfighting domains. This concept will rely on a joint and interconnected network of sensors, weapons, and platforms. Forces will rapidly share information and present our warfighting commanders unprecedented levels of knowledge. With information superiority, we will simultaneously converge warfighting effects from all domains and produce intractable dilemmas for our adversaries.

Ultimately, Multi-Domain Operations will be executed by our operational squadrons, the combat power of the Air Force. Not all squadrons are the same size, and not all squadrons fly airplanes. The National Military Strategy directs a balanced “boxer’s stance” of military readiness, and our operational squadrons form the clenched fist of American resolve. But a fist is nothing without the power of the body—our supporting squadrons—behind it. These squadrons repair our aircraft, manage and secure our infrastructure, keep our logistics and supplies flowing, and support our Airmen and their families. Our operational and supporting squadrons will fight together, so they must grow and modernize together.

AMERICA IS BUILDING A MORE LETHAL AND READY AIR FORCE

Our National Defense Strategy directs a more lethal and ready force, prepared to defeat our adversaries in high-end combat. This past year, we focused the additional resources provided by Congress on our pacing squadrons, the 204 operational squadrons required in the opening days of a peer fight. With these resources, we are more ready for major combat operations today than we were 2 years ago. More than 90 percent of our pacing squadrons are ready to “fight tonight” with their lead force packages—the first Airmen to deploy at the beginning of a conflict. When we include their follow-on forces, these pacing squadrons are on track to reach 80 percent readiness before the end of fiscal year 2020, 6 years faster than originally projected. As our front-line squadrons meet their readiness goals, we will also ensure the remainder of our operational squadrons reach the 80 percent readiness mark by 2022, as we continue to build toward the 386 operational squadrons we require.

People and Training. Readiness recovery is first and foremost about people. Recently authorized increases in end strength helped eliminate a shortage of 4,000 Active Duty maintainers. In 2 years we closed this gap and are working to build expertise in these young Airmen. While Air National Guard and Air Force Reserve maintainers still face manning challenges, our fiscal year 2020 budget continues this end strength growth by adding 4,400 Airmen and 5,143 civilians to the Total Force.

To address our aircrew shortage, we are implementing initiatives to increase the number of pilots we train, season them in operational units, and retain experienced aircrews.

Last year we produced 1,211 pilots, 146 more than originally expected. This budget builds on our progress and will produce 1,480 pilots in 2020. We are also exploring how to use new technologies in our “Pilot Training Next” program, where we are using virtual reality and more simulators to train pilots better and faster. As we season these young Airmen, some of our new Active Duty pilots will begin their flying careers with a Guard or Reserve squadron and benefit from the deep experience we have there. We are also pursuing quality of life and quality of service reforms to retain our aircrew. Our new Talent Marketplace gives Airmen greater transparency on their assignment process, and we are reducing the number of year-long deployments to improve stability and reduce the burden on families.

Our Airmen are shifting their focus to great power competition, and we must train and equip them for the high-end fight. This budget proposal includes funds to modernize our live and virtual ranges and infrastructure to provide relevant and realistic training capabilities against our most advanced threats. The Nevada Test and Training Range, the Joint Pacific Alaska Range Complex, the Utah Test and Training Range, the Space Test and Training Range, and several smaller range complexes will receive targeted funding to better replicate the capabilities of our peer adversaries. We are exploring ways to expand contract adversary air—aircrews who are trained to fly as “bad guys”—from a single test case to up to three locations, freeing our Airmen to practice their own skills rather than spend time simulating the skills of our adversaries. This budget includes 1.1 million peacetime flying hours, the maximum amount of sustainable training, to prepare our Airmen to fight alongside allies and partners as vital members of our joint force.

Cost-Effective Maintenance and Logistics. We are focusing on innovative ways to maintain and supply our aging fleets. Last year, a team of Airmen conducted a de-

tailed sustainment review and produced 45 recommendations to ensure our aircraft and equipment are ready to meet Combatant Commander timelines. We are fielding innovative technologies to streamline supply chains, drive engineering improvements, and manage our fleets. We are using data to make our maintenance personnel more efficient and effective, and we are testing analytic tools and monitoring sensors to match industry best-practices, known as “conditions based maintenance.” By being able to better predict when a part will fail, we can improve readiness while saving time and money—initial tests on several E-3 and C-5 components show the potential to reduce up to 30 percent of unscheduled maintenance. And we’re making reforms cost-effectively. Our Oklahoma Depot is now completing major repairs on our KC-135 fleet 40 percent faster and at half the cost of recent industry contract proposals.

A ready force needs a modernized logistics system to power it. Last year, we established the Rapid Sustainment Office to improve readiness and drive down the cost of repairs by using advanced manufacturing technologies. Through partnerships with universities and industry, this office is identifying emerging technologies that can reduce the cost of maintaining our weapons systems.

We will scale these reforms across the Air Force. This budget includes \$16.4 billion in weapon system sustainment to support our home station and deployed fleets. We are striving to achieve 80 percent Mission Capable Rates in our F-16, F-22, and F-35 fleets by the end of this fiscal year. We will continue to focus on supply inventory, increasing our maintenance capacity, enhancing our training and proficiency, and moderating our operational tempo to help our maintainers meet this goal.

Aviation Safety. We will not compromise safety as we prepare our Airmen and align resources for great power competition. Last year, the Air Force experienced an uncharacteristic increase in in-flight mishaps and fatalities for manned aircraft. The safety of our Airmen remains a top priority, so we initiated several actions to bolster our mishap prevention programs, including additional safety training and operational pauses to discuss risk. Our mishap rates are decreasing toward historic averages, and we will continue to improve these programs over the next fiscal year. We are thankful for Congress’ support and interest in this important issue. We look forward to working closely with our joint teammates and the newly created National Commission on Military Aviation Safety, established by Congress in the 2019 National Defense Authorization Act.

A Safe, Secure, and Effective Nuclear Deterrent. The Air Force provides two-thirds of our nuclear triad and 75 percent of our nuclear command, control, and communications capability. We demand the highest standard of readiness from the Airmen who manage and safeguard our nuclear enterprise. The triad remains the ultimate guarantor of American, allied, and partner security, and underpins America’s military power and diplomacy worldwide. As our adversaries continue to modernize and expand their nuclear weapons and delivery systems, the National Defense Strategy, Nuclear Posture Review, and National Defense Strategy Commission all reaffirm America’s need for a modernized triad of air, sea, and land-based nuclear weapons, tied together by a resilient command and control architecture. These forces deter nuclear and non-nuclear strategic attack, assure our allies and partners, achieve our objectives if deterrence fails, and hedge against an uncertain future. Today, we perform these missions with the smallest and oldest nuclear enterprise in our history. It is imperative that we sustain our existing triad and replace these aging systems. Our budget proposal fully funds our major nuclear modernization programs.

Our Ground Based Strategic Deterrent will replace the aging Minuteman III intercontinental ballistic missile, first deployed in 1970. These ground-based missiles are the most responsive leg of the triad, given their long range and constant state of readiness.

Our Long Range Standoff Weapon will replace the Air Launched Cruise Missile and improve bomber lethality and survivability through 2060. Our modernized B-52, B-2, and upcoming B-21 bombers are the most visible and flexible leg of the triad. They can be deployed to signal resolve, and their sustained flight times and ability to be recalled increase stability and Presidential decision-making time.

Finally, we are modernizing our nuclear command and control system to ensure the President has uninterrupted access to his leadership team and command of nuclear forces, under all conditions, without fail.

Since the end of the Second World War over 70 years ago, every President and every Congress has supported the nuclear triad as a vital element of our national defense. We must continue to do so.

Modernization. America’s potential adversaries are rapidly fielding capabilities that approach our own. We must retain our technological edge and equip our Airmen with highly advanced and lethal tools to prevail in high-end combat.

As we design our future Air Force, we are examining different operating concepts to frustrate our opponents and defeat them in combat. We will need systems that can penetrate contested environments or remain outside these zones and employ long-range weapons and effects. We are investing \$1.5 billion to test and prototype game-changing technologies to cement our warfighting advantage, including hypersonic weapons, directed energy, and adaptive jet propulsion. Our next-generation penetrating bomber, the B-21 Raider, is proceeding on schedule and building on 3 years of successful development. It will be able to deliver both gravity bombs and the Long Range Standoff Weapon to hold adversary targets at risk around the world. High-end conflicts will require the long-range capability of an advanced bomber fleet, and the B-21 is central to the expanded bomber capacity and capability we need.

Our aerial refueling capability underwrites the global nature of Air Force power and enables the rapid deployment of aircraft. We recently welcomed our first KC-46 tankers and are proposing to buy 12 more KC-46 tankers in fiscal year 2020.

The future fight will require a robust network architecture and battle management system. This budget funds our continued transition to the Advanced Battle Management System, a family of systems that will fuse data from multiple platforms across all warfighting domains. Nearly every system on the battlefield will contribute data to this network, and through advanced analytics, commanders will understand the battlespace and be able to direct forces faster than our adversaries. To develop the capability for successful Multi-Domain Operations, we are upgrading legacy command and control nodes and have established an architecture to ensure the many programs that must connect and share information will work together. We are also upgrading and modernizing our electronic warfare systems, organizations, and analysis capability to dominate the electronic spectrum.

We remain committed to the dual-capable F-35 and its game-changing capabilities, including its ability to deliver nuclear weapons, and will continue purchasing 48 aircraft each year. No other weapons system is designed to fuse information and make split-second decisions inside defended enemy airspace. As the quarterback in the air fight, this aircraft combines the capabilities of our joint, allied, and partner teammates to deter or defeat our adversaries.

While budget increases are making a significant difference and restoring the readiness of the force, our analysis indicates that we must purchase additional aircraft in the future to fully implement the National Defense Strategy. Our current fighter force of 55 squadrons is too small.

At the same time, our F-15C fleet is aging, with two-thirds of the fleet past its certified service life. This fleet is expensive to maintain, and F-15C capability against advanced threats is diminishing over time. Our budget proposes to replace the F-15C with a modernized successor by purchasing the F-15EX. We propose to buy 80 aircraft over the next 5 years. This decision allows us to benefit from foreign partner investments in the F-15 line to begin cost-effectively replacing our F-15C fleet.

Cyber Dominance. Every day, Airmen encounter sophisticated and persistent adversaries in cyberspace, some of whom are now peer competitors in this domain. To meet this challenge, we are producing innovative cyber capabilities to repel these threats, defend our networks, and support Combatant Commanders around the globe. These capabilities also strengthen domestic cybersecurity efforts, and helped counter adversary attempts to interfere in last year's election.

Our fiscal year 2020 budget submission advances how we train and equip cyber forces for Multi-Domain Operations. We are investing in new capabilities to identify network threats and vulnerabilities, and are designing countermeasures to mitigate risks to our weapon systems. Last May, our Cyber Mission Forces achieved operational capability 4 months faster than predicted. We will continue leading joint efforts to supply these Airmen with a new, integrated cyberspace operations suite, the Unified Platform. To fully harness this capability, the Joint Cyber Command and Control system will provide Combatant Commanders cyber situational awareness and battle management of these forces. We face an increasingly contested cyber domain, and these investments will provide the tools we need to prevail in both competition and conflict.

Accelerating Defendable Space. Our adversaries have recognized the advantages we gain from operating in space, and are developing capabilities to deny us the use of space in crisis or war. They are developing weapons that can blind or jam satellites with directed energy and electronic warfare, target ground sites and infrastructure through cyber-attacks, or physically destroy or damage our satellites with missiles or dual-use, on-orbit spacecraft. While we all would prefer that space remain free of conflict, we will deter and defeat these threats in order to secure the satellite constellations that power our military forces and civil societies.

In January of 2018, we transitioned the National Space Defense Center from an experimentation and planning office with weekday business hours to an around the clock operations center to protect and defend our assets and interests in the space domain. In July, we transitioned the Joint Space Operations Center to a Combined Space Operations Center, integrating the efforts of allies, partners, and commercial industry.

In the 2019 budget, we proposed a significant change to our space plans. With the support of Congress, we added nearly \$1 billion to the fiscal year 2019 Air Force space program. Our fiscal year 2020 budget builds on our advances and further accelerates efforts to protect and defend our ability to operate in space. We propose a \$14 billion investment in our space portfolio in fiscal year 2020, a 17 percent increase over our fiscal year 2019 budget. It frames our warfighting approach and changes how we prototype and field innovative space technologies to stay ahead of our competitors. This budget includes \$55 million for the demonstration of technology for a proliferated satellite constellation. In partnership with the Defense Advanced Research Projects Agency, we will assess the future of small, low-cost platforms.

The Department of Defense recently submitted legislation to establish the Space Force as a new armed service within the Department of the Air Force. This legislation would consolidate missions from across the Department into a single Space Force. It would establish a civilian Under Secretary of the Air Force for Space and a Chief of Staff of the Space Force who would be a member of the Joint Chiefs of Staff. This proposal capitalizes on the Air Force being the best in the world at space, and given the new era of strategic competition, is the right move to posture us for the future.

Finally, we are devoting greater time and resources to train and develop our space operators as true warfighters. They will be the cornerstone of U.S. Space Command, our newest Combatant Command.

WE ARE FIELDING TOMORROW'S AIR FORCE FASTER AND SMARTER

An era of great power competition demands we rethink the way we buy things. China is innovating faster than we are, and fielding game-changing forces. We cannot win this contest with an acquisition system from the Cold War. We must move fast to stay competitive, and we are fundamentally transforming what we buy, how we buy it, and from whom we buy it.

The 2016 and 2017 National Defense Authorization Acts restored responsibility for acquisition to the Services, and granted us new authorities to accelerate prototyping and fielding. With these authorities, we are changing the way we buy things to get capability from the lab bench to the warfighter faster.

Our experience shows that delegating authority works. Last summer we set a goal to strip 100 years of unnecessary schedule from our program plans. So far, we have saved over 78 years and are closing in on our milestone.

Three contributing factors are making us faster. The first is prototyping. For example, in hypersonics, we are leveraging available technology from across the Department of Defense to build, fly, and buy our Nation's first operational boost-glide weapon 5 years earlier than anticipated. For our Next-Generation Overhead Persistent Infrared Missile Warning satellites, we are competitively prototyping a new sensor, retiring this key risk nearly a year earlier, while also strengthening the industrial base for future programs.

The second contributing factor to increase speed is the use of tailored acquisition strategies. We have empowered our workforce to structure decisions around the specific needs of their programs, as opposed to the generic milestones of the traditional acquisition process. Recently, our F-15 Eagle Passive/Active Warning Survivability Systems split its Milestone C decision into two tailored reviews, accelerating fielding by 18 months at no additional cost.

The third major effort to increase speed to the warfighter is agile software development. The decades-old "waterfall" process for developing software is too slow, very expensive, and often doesn't work at all. We are making a wholesale shift to agile development, putting acquirers and operators together to make rapid incremental software improvements. We proved the concept with a new tool to plan air refueling at the Combined Air Operations Center at Al Udeid Air Base, where we command the air war against ISIS, Al Qaeda, and the Taliban. Our agile software tool saved the Air Force millions of dollars in fuel each month, reduced the requirement by two tankers and ten aircrews, and delivered a modern software planning tool to operators in months, not years.

We established the Kessel Run Experimentation Laboratory to continue applying agile development for the warfighter and stood up a Program Executive Office Dig-

ital to develop and proliferate best practices across the Air Force. So far, major programs like F-22, the Unified Platform for cyber warfare, and the Protected Tactical Enterprise System are reaping the benefits of shifting to agile development, accelerating delivery of tools to the warfighter.

Using authorities given to us by Congress is not just faster, it's giving us better results. We are able to find design flaws earlier in the development period, fix them faster, and ultimately save money with better products. Our B-52 Commercial Engine Replacement Program will use digital models of new engines to compare their performance, with greater levels of confidence in the results. Not only will we save more than 3 years from normal development timelines, we expect to achieve up to 30 percent greater fuel efficiency by prototyping these models.

Our recent Light Attack Experiment was conducted under these authorities and taught us important lessons we would not have learned through a traditional acquisition process. This experiment sought to test whether an existing commercial aircraft could perform as a combat capable and cost-effective platform to support the global campaign to counter violent extremism. Key to the experiment was the development of an intelligence gathering and information sharing network that will improve interoperability with allies and partners. Based on available aircraft that met experimental criteria, we focused last year on only one aircraft type and intend to expand the experiment in this budget to include additional aircraft types (rotary, unmanned, turbojet) and improved technologies. Additionally, we intend to continue our close partnership with industry and allies to further this technology as we determine the best strategy going forward. We remain committed to developing a cost-effective and increasingly networked counter-violent extremist capability to deepen these partnerships and directly support the National Defense Strategy.

We are also committed to competition. The Air Force saved over \$15 billion dollars through robust competition with the National Security Space Launch, Global Positioning Satellite IIRF, the UH-1N helicopter replacement, and the T-X jet trainer.

Our Space Enterprise Consortium is removing barriers to entry for small business and non-traditional vendors, and these companies now make up nearly 80 percent of the Consortium's 235 partner organizations. By removing bureaucracy and giving authority to our Program Managers, our Space and Missile Systems Center is awarding prototype contracts in 90 days, twice as fast as traditional contracting.

Technology is evolving faster than ever before, and we are acquiring the intellectual property, data, and software rights to keep pace with this change. When we retain ownership, contractors must compete to sustain and improve these systems, producing better performance and lowering costs. We have already secured these rights in our UH-1 helicopter replacement and T-X jet trainer programs, and we will continue pursuing these ownership rights to flexibly modernize our force.

As we increase competition we are leading innovative approaches to contracting with small businesses and start-ups, and last year we awarded over \$1 billion to such companies. By law, we must spend \$660 million through our small business innovation and technology transfer programs, and want to make partnering with the Air Force easy and energizing. We created a new mechanism to get dollars into the hands of small businesses faster than before. By combining government credit card payments with one-page contracts, we created a small-dollar contracting process that will "pay in a day." Last November, we sought to award 50 small business contracts in 50 hours. We surpassed our expectations and more than doubled our goal, awarding 106 contracts in only 42 hours.

We just completed our inaugural Pitch Day to build on this success. We invited entrepreneurs and start-ups to pitch revolutionary solutions to Air Force problems. During the two-day event, 51 businesses won contracts and were immediately paid up to \$158,000, often within 15 minutes of their presentations. America's small businesses and start-ups are engines of innovation, and we are developing creative ways to employ their talents.

These authorities do not sidestep key decisions or oversight, and we will not sacrifice quality for speed. Early prototyping informs the Department of Defense and Congress about a program's feasibility before making costly decisions to buy it. We are mindful of the trust placed in us, and re-committed to giving you more transparency about how we are using new authorities than what is required for traditional procurement. We will soon release our second annual report on acquisition, giving you all our results, and we will provide you reports on our prototypes and experiments three times a year.

AN AIR FORCE TO COMPETE, DETER, AND WIN

The United States faces an increasingly complex global security environment, characterized by overt challenges to the free and open international order and the re-emergence of long-term, strategic competition between nations. To meet these challenges, the Air Force is evolving to project unmatched power through the air, space, and cyber domains. We are prioritizing our readiness to fight tonight and are on track to meet our readiness goals. The new authorities Congress has given us are allowing us to field tomorrow's Air Force faster and smarter. We must rebuild the capacity we lost and field a force that will compete, deter, and win for the American people.

EFFECTS OF SEQUESTRATION

Senator SHELBY. Thank you. Secretary Wilson, the 2020 President's Budget Request includes \$718 billion for the Department of Defense, but to comply with the Budget Control Act, the Department has requested a large amount for an overseas Contingency Operate, OCO. In your written statement, you say that the Air Force cannot fully co-implement the National Defense Strategy with a constrained budget, and I think that is a given. How would sequestration spending levels impact your current operations and your efforts to restore readiness and modernization of weapons systems? Be as specific as you can in this open hearing.

Secretary WILSON. Mr. Chairman, our adversaries around the world have not done as much to damage the United States Air Force as sequester did and going through sequester again would be devastating to this Force. It would undermine the advances that we have made in the last 3 years. And just even go back to look at what happened when it happened before, it basically meant the grounding of about a third of the Air Force. There was a million hours of maintenance that did not get done in our depots, and we are still digging out from under the impact of sequester. If we did it again, the cuts would be deeper, and the impact would be more lasting.

HYPERSONIC WEAPONS

Senator SHELBY. General Goldfein, 2019 Defense Appropriations Act included additional funding to accelerate and to bolster several areas prioritized in the National Defense Strategy, including hypersonic weapons, microelectronics, and test evaluation of infrastructure. We understand a lot of that is difficult to talk about in this setting today, but what could you tell us in an open hearing that what you are doing with that?

General GOLDFEIN. Sir, I will start and the Secretary I know has been very active with her fellow Secretaries on working together across the services on these issues, especially in the business of hypersonics. So, we have investment in this budget, in next generation of air dominance. We have investment in this budget in networking the future of warfare to ensure that every sensor and every shooter are connected, and then it brings our asymmetric advantage to the fight so we can produce multiple dilemmas for an adversary. It has money in this budget to work on directed energy, and it has money in this budget that takes us from a purely defensive posture in space, to also bringing offensive capability. And I will turn over to the Secretary on hypersonics.

Secretary WILSON. Mr. Chairman, I think hypersonics is a good example of where we are doing things faster and smarter by working together with the other services. The three Service Secretaries get together quite often. In one of our first meetings, we decided to sign a memorandum of understanding on hypersonics. Navy had funded the test of a warhead on an Army system with an Army shell that they work pretty well, but the Air Force had better rockets. So, what we are doing for a Hypersonics Program is we are testing the Army shellers, the outside of the system, with Air Force rockets, and we are designing this with all three services involved so that it could be dropped off an aircraft, launched from the ground, or launched from the deck of a ship. By doing this jointly and using best technology, going fast, learning from each other, we have accelerated the deployment of a hypersonic weapon by 5 years.

Senator SHELBY. And you eliminate some stove pipes there that you do not need them.

Secretary WILSON. Yes, sir.

KC-46 TANKERS

Senator SHELBY. Secretary Wilson, the KC-46 tankers. We understand that the Air Force has accepted the first KC-46 tankers earlier this year, but two deficiencies, I understand, remain outstanding. What is the Air Force's plan to resolve these, dealing with the deeper matter, and ultimately recapitalize aging the tankers fleet because the tankers are very important to project force, as you know.

Secretary WILSON. Mr. Chairman, our budget includes purchase of the next, I think it is 12 KC-46 tankers in fiscal year 2020. We have accepted the first tankers and brought them into both Oklahoma and Kansas. There are two critical deficiencies that we are working on. One had to do with the stiffness of the boom for light aircraft, and particularly the A-10, which is a very light aircraft. The boom actually met international standard, so it met the standards and that is actually the first change on this program that the Air Force has requested is a redesign of one of the actuators on that boom so that it can accept lighter aircraft. That was at our expense. The Remote Vision System has some issues with it, in the acuity of the system, and the Air Force and Boeing have reached agreement on what the technical parameters have to be for that fix, and it will be done at Boeing's expense.

Senator SHELBY. You think that is going to be worked out in the next year?

Secretary WILSON. They are working on the technical design. Now, it will not actually be all back into all the systems, probably—

Senator SHELBY. But the boom is actually key to refueling, is it not General?

General GOLDFEIN. Yes, sir. And I will tell you that having been a receiver of getting fuels in some really bad places on the world, I went out and flew the airplane and put it through the wringer. And there were four criteria I was looking at. Number one, how does it fly? Number two, how does it communicate? Number three, how does it defend itself? And then four, how does it tank? Because

we bought us commercial stock 767 aircraft, we got a lot of great capability when it comes to how it flies. And what I was very interested in is, how stable it is for receivers, its ability to communicate. What I am perhaps most excited about as we look at network warfare, the future, is the fact that there are 13 additional stations where we can place community nodes in the future to take full advantage of that capability.

When it comes to defending itself, it has defensive capabilities that do not exist on the KC-10 and the KC-135. And then last issue was what the Secretary talked about, which is its ability to tank, and those areas that they are working—I mean, we are tough customers and we did not accept a single airplane until the company agreed to fix the deficiencies that they had. And we are going to continue to be tough customers and hold them to account.

Senator SHELBY. Well it is imperative that the system work, for the warfighter, is it not?

General GOLDFEIN. Absolutely.

Secretary WILSON. Mr. Chairman, if I could add, while there is a deficiency in the Remote Vision System, it is one that we are working around and where the warfighter said, you know, if we go to war next week, we want to have this in our hands, not sitting on the ramp because it actually tanks—it is better than our current tankers when it is hardest to tank, at night, in bad weather, without lights out. It is hardest in bright sunlight, which is when it is easiest tank.

SPACE FORCE

Senator SHELBY. Madam Secretary, Senator Durbin already touched on this a little bit in his opening statement, Space Force. The Department of Defense has submitted a legislative proposal that will go to the Armed Services committee, concurrent with the President's budget request for 2020 to begin the establishment of the U.S. Space Force as a separate military service within the Department of the Air Force. Can you explain the reasoning behind the change, in particular the need to address current and future space risk, and what does this do to the Air Force? Is this important to do? A lot of people believe that the Air Force is space, you know, that it is about space. You want to get into that a little bit?

Secretary WILSON. Mr. Chairman, the United——

Senator SHELBY. Maybe you do not want to, but——

[Laughter.]

Secretary WILSON. Yes, sir. Mr. Chairman, the United States is the best in the world in space, and our adversaries know it. And they are seeking to develop the capabilities to deny us the use of space in crisis or in war. This year we are standing up a Combatant Command to be able to fight and win in space. And we had a Combatant Command before 9/11, and that will help us I think change back to a war-fighting mentality in space and recognize the threats that are emerging. We also, and you also, have approved significant changes in programs based on threat and the strategy that we put forward in fiscal year 2019, and we are asking for another boost in fiscal year 2020, a 17 percent increase in the space budget.

American policy is to maintain American dominance in space so that space capabilities are available to the joint warfighter, and so that we deter and attack. We have developed the strategies in order to implement that. The organizational change put forward in the President's proposal, elevates and enhances the influence of space leaders in the Pentagon for the long haul. I think all of these things taken together are the right move for the country. There is a risk always that, you know, I am particularly interested in space. Have been and spent probably about a third of my time on space related matters because of the emerging threat. You never know whether that is going to be sustained over time.

And I think one of the fears, and it is probably a legitimate fear, is that organizationally, space is smaller than its significance within the Pentagon bureaucracy. And I think that is something that we should consider as we evaluate the President's proposal, that this will elevate and institutionalize space as a member of the Joint Chiefs of Staff, and within undersecretary in the United States Air Force.

Senator SHELBY. Senator Durbin.

Senator DURBIN. Thanks very much, Mr. Chairman. I want to follow up on that because last year I kept hearing this conversation about a Space Force, the satellites, and I thought to myself, I do not know enough about this. I went and had a classified briefing and I invite all the members of the committee here, and I would hope that you will—I would be glad to return to do it again. It was a fascinating moment to understand exactly what we rely on in space when it comes to satellites, and their vulnerability. The things that we have come to take for granted in our lives, global positioning, weather, on and on where satellites play critical role, and we are vulnerable, as the Secretary said.

They are not just targets, they can be weapons, but at the same time they can be vulnerable in times of conflict. And the basic question we have to ask is whether or not this is part of the Air Force that needs to be somehow separated as the Marine Corps is separated within the Secretary of the Navy's jurisdiction. Can you help me, Madam Secretary, understand by perspective the numbers we are talking about. How many civilian and military personnel are part of the Air Force today?

Secretary WILSON. Thank you, Mr. Chairman. Let me start out with equipment. We have 80 satellites. The United States Air Force operates 80 satellites. The Navy has 13 more, and a communications satellite system called MUOS that they operate, of those 80, 31 are GPS. So, most people do not know this, but the blue dot on your phone is provided by the United States Air Force. By a squadron of 40 Airmen in Colorado Springs, Colorado, average age 22, which is just terrifying to all of us. But so, we provide GPS to the world.

Satellite communications, we do for the joint Force, weather, as you mentioned, as well as missile warning. We have eight missile warning satellites. So, if you see on the television the, you know, launch of missile from some rouge State and you see the arch of that missile launch, we initially detect that and then detect it where it is going from Space Center. So that is what we do. It in-

volves about 15,000 people total, Army, Navy, and Air Force. About 90 percent of those currently are United States Air Force.

Senator DURBIN. And in the Air Force itself, how many civilian and military employees? I am told it is over 800,000—

Secretary WILSON. 685,000.

Senator DURBIN [continuing]. Military, and then there is civilian. And civilian, 685,000?

Secretary WILSON. Active Guard, Reserve, and civilian.

Senator DURBIN. So, 685,000, your complement of military and civilian in the Air Force, and about 15,000, you think, in terms of those who are directly responsible for the Space Force responsibility we have discussed?

Secretary WILSON. Yes, sir.

Senator DURBIN. Is that, about right?

Secretary WILSON. Yes, sir.

Senator DURBIN. Okay. And I might say to my colleagues here, what we are talking about is creating a bureaucracy, let's be very blunt about it, a bureaucracy to command these 15,000 people within the Air Force. What does that mean? I mean, how many Generals are we talking about? Three stars, one star. How much brass do we have to create under this proposal?

Secretary WILSON. Mr. Chairman, the legislative proposal does say that there would be a Chief of Staff for the Space Force and the remainder of what the structure is, is really left, has a lot of wide discretion from the Secretary of Defense and the Secretary of the Air Force. I think it is reasonable to presume that there are—if you are going to have a four star, you have to have a certain number of four, and three, and two, and one stars underneath it in order to support the—

Senator DURBIN. Can you give me any kind of idea of what we are talking about in terms of bureaucracy that needs to be created on top of what we currently have?

General GOLDFEIN. Sir, I will tell that we were in a robust debate, as you might imagine, within the Department to get after the President's guidance, and we were debating everything from initial guidance, which was separate Secretary, separate Department, all the way to a sort of a JAG Corps, Medical Corps. Where we landed, which is a separate service within the Department of the Air Force is recognizable from war funding standpoint. As soon as the decision was made, which is just part of the legislative proposal being issued, given to Congress, we put together the directive by the Acting Secretary of Planning team led by a two-star General. They are now working through all of the details associated with the questions you are asking—How many generals? How many people? Where will they reside?—and that planning team has been up and operating now for a few weeks.

Senator DURBIN. I say to my colleagues, think about this, think about what we are going to ask you to do to create this new bureaucracy, over 15,000 people who are doing, I think most of us would agree, an extraordinary job already. We are told that the bureaucracy that we would create would cost \$2 billion over the next 5 years. And that is just an estimate, as General Goldfein said. There are experts that are looking carefully at this. But we ought to be asking ourselves, are we just dazzled by this notion of a

Space Force? Is this going to make it safer with \$2 billion spent on new equipment, better equipment, more training for those who operate equipment, be a better investment in National Defense than a "Space Force"?

We have the responsibility along with the Armed Services committee to ask that question. If the late John McCain were here, I think I know his answer to it. He basically pushed back against the creation of brass and bureaucracy saying let's put it into the capabilities and readiness so the people serving our Nation are ready. So, I do not want to rain on the Space Force parade, but I do think we are going to have a cold day of reckoning here in terms of whether this is something which we will come to regret when we look at if your bureaucracy which may be rivaling the number of people it is supposed to be serving.

Senator SHELBY. Well, Senator Durbin. And before calling Senator Moran. He is asking some serious questions here. Ultimately, the Armed Services committee will first work on this, but ultimately, we are going to fund it or not fund it, right? Right here in this committee. Senator Moran.

Senator MORAN. Chairman Shelby, thank you very much. General, thank you for your presence. Heather, Secretary, it is an honor to have you in front of us once again. I knew when I met you, we were classmates of 1996 arriving in the House of Representatives, that someday you would be President, and now it is apparently coming true so congratulations. Secretary, you indicated in your testimony before the subcommittee last year five key changes to confront the reemergence of great power competition in support of our National Defense strategy. And among those five was light attacker aircraft.

LIGHT ATTACK AIRCRAFT

Your goal, which you have reiterated many times was, "fielding a force of U.S. light attack aircraft" by using "rapid fielding and rapid procurement strategies," and you highlighted in your comments today about the rapidity, of the ability to now for the Air Force to contract. For several years, light attack aircraft has served as the sort, in my mind, of the proof concept as to whether the Air Force could use the tools that you have been given to field a force of light attack aircraft. Those tools are rapid acquisition authority that Congress provided you, ample funding provided by the Appropriations Committee for testing and experimentation on two turbo-prop platforms that you selected, the industry partners' investment of their own capital to help the Air Force meet requirements during this multi-year experiment process.

When the Director of Operational Test and Evaluation released a report just last December, 4 months ago, indicating the Air Force "intends to procure 359 aircraft for 8 operational squadrons and 3 flying training units." We thought, I thought that the rapid acquisition process with industry partners worked for our warfighters and for our allies, and that the light attack was proof that this process could work. However, it appears to me that there is no request for dollars, for procurement, in this budget and it seems to me that there is a schizophrenia at the Air Force about light attack.

The messages are mixed, and I am hoping that you will be able to tell me that you expect or requesting something more than additional study, dollars for experimentation, and that we are ready to move forward with the right light attack aircraft procurement process. Is there such a request?

General GOLDFEIN. Senator, I will take that and then turn over to Secretary if she had any comments. You correctly stated that this is all about supporting the National Defense Strategy and it is important to talk about the strategy against violent extremism, and then how we use the authority you gave us to get at experimentation and prototype correctly in support of that strategy. The long term strategy against violent extremism is to drive violence down to the point where it can be managed within the borders of governed nations. And so, what we did was we looked at three core principles when we started this experiment.

And the core principles was number one, this is about allies and partners, this is about how do we get more allies and partners in with us because my International Air Chiefs tell me, I have got violence, I am dealing with it inside my borders, I cannot afford an F-16, I am not going to get an F-35, I need something and it has got to be interoperable so we can join you in this fight. And this is a fight from the Philippines to Nigeria, into the Central and South America. So, they need—this needs to be about allies and partners.

The second core principle is this needs to be a mix of capabilities that are interoperable because some of the Air Chiefs tell me, I need a turboprop, some of them tell me I need a turbojet, some of them want rotary-wings, some of them want manned and unmanned. What ties it all together is an intelligence-gathering and information sharing network that allows them to be interoperable with us and with each other. And the third core principle is that we from the beginning said this has to be additive. There is no area across the United States Air Force that we can trade for this because we are doing this directly in support of the strategy. So, we took the authorities that you gave us to work through this experiment, and the two companies that joined us have been spectacular. We put money towards it, they put money towards it, but when we got to the end of the experiment period, the question we had was do we have the strategy right? Do we have the interoperability right to be able to put forward a request for proposal to be able to get the allies and strategy—the allies and partners where we need them to be.

And our determination was that we were not there yet. So, what you will see in this budget is money that we are going to use to procure a small number of aircraft from the two companies that have been with us so far. We are going to place a detachment of those at Nellis Air Force Base, where we do conventional training, and detachment of those where we do Special Operations at Hurlburt. The United States Marine Corps has already said they are joining us. We are going to invite allies and partners, and with the authorities you have given us now that we own those prototypes, we will continue to experiment to build the interoperable network that we have already advanced and get allies and partner and bring more capabilities to bear so that when we get to 2022

through 2024, which is where we have laid procurement money in, we will be able to make a smarter acquisition decision.

And when you compare what we have done, compared to a normal timeline for acquisition that would take 5 to 10 years, we are 2 years into this and the companies that have been with us have been spectacular, and we look procuring a small number and taking it to the next step.

Senator MORAN. What are those numbers, both aircraft numbers and dollared up numbers?

General GOLDFEIN. The money that we have laid is \$35 million in 2020. There is about, I believe, \$400 million in 2022 to 2024 for procurement. How much and what we buy depends on how the experiment goes, and we are hoping that we will get a low-cost point for the ones we want to buy this year with the 2019 money so we can advance the experiment.

Senator MORAN. I would highlight, General, the importance of those turboprops for our allies.

General GOLDFEIN. Absolutely.

Senator MORAN. The simplicity of our ability to field this mission with their assistance.

General GOLDFEIN. Yes, sir.

Senator MORAN. Or providing them assistance, is related to the type of aircraft that is purchased.

Secretary WILSON. There is only one thing that I would add to General Goldfein's comments and that is one other thing we are doing this year is getting one of the industry groups to really do a good global market analysis for what is the demand out there for different kinds of aircraft, manned, unmanned, helicopters, turbo-prop, in some cases turbojet. We know that there are countries with F-5s that want to get rid of those. So that we really understand what the allies want so that what we do enables them to be able to buy something somewhere.

Senator MORAN. Madam Secretary, General, did you do this all in the right order? This is the necessity—this is necessary for us to be at this point and still making that decision, that determination, as compared to earlier in the process?

Secretary WILSON. I am not sure I understand your question.

MARKET DETERMINATION

Senator MORAN. Why is it that we are now at this point making that market assessment, determining what the market should bear, can bear, as compared to making that determination prior to the beginning of this process for—we are now at the stage in which I thought we would be a procurement. We are still at the study stage of trying to determine what we should purchase.

Secretary WILSON. I actually think we are beyond that. We are going to be buying aircraft to continue the prototyping and experimentation. In the second year of the prototyping and experimentation, we were able to put a fully exportable, low-cost network onto these aircraft so that the tactical air controller on the ground can touch an iPad and it shows up in the cockpit of the aircraft, so that you are communicating among nodes. And we have done it in a way that does not require—there is no export controls at all. So, I think we have made a lot of progress. I do not think we were

ready to make a procurement decision, and we decided in particular we need to get more of our allies and partners involved in this from the get-go or it may not work.

Senator MORAN. Thank you both.

Senator SHELBY. Senator Tester.

MALMSTROM FACILITY

Senator TESTER. Thank you, Mr. Chairman. And I want to thank you, Secretary Wilson and General Goldfein for being here. Thank you for service and thank you to the Airmen that you represent, service also. So, in order to maintain the effectiveness of our nuclear deterrent, it is your job to identify the resources that are required to maintain and modernize those nuclear assets. We have been working with the Air Force for years to secure funding for a new weapons generation facility at Malmstrom.

Now, the current facility is deteriorating. Giant cracks in the walls are getting bigger and I am sure you know that because of that, the deteriorating infrastructure has created numerous safety and logistical and security challenges, and that munitions operations will remain at risk due to inefficiencies and failing infrastructure there at Malmstrom. We are talking about a facility at which ICBM (intercontinental ballistic missile) Warhead are maintained and stored. So, I believe, as I think you do, that there is urgency here. Secretary Wilson, will this project be included in Air Force 2020 budget request?

Secretary WILSON. Senator, the fiscal year 2020 budget does include \$235 million for the weapons storage facility there at Malmstrom. It is based on the design that we used at F.E. Warren, although there is a few things that are different, including of course labor rates there and also soil conditions. So that is a little more expensive, but it is based on the same design.

Senator TESTER. That is good. And so, the construction cost went from \$200 million to \$235 million and what was the reason for that increase?

Secretary WILSON. Sir, two things. First of all, labor rates are different in Montana compared to Wyoming. And the second is there is some differences in the soil, so we have to do some differences in the construction.

Senator TESTER. Okay, I have got it. I would have hoped, and this is just a side comment, I would hope that the way this is being staggered with Wyoming and then in Montana, and North Dakota that we would gain some efficiencies there, but it does not appear that that is the case.

Secretary WILSON. We will gain some efficiencies by using the same design or the same basic design, but there's a lot of things that go into cost, and we put \$235 million into the budget because we expect that it is going to be more expensive for those two reasons.

Senator TESTER. So, if \$3.6 billion across all military construction accounts to reprogram say for a border wall, then I would imagine this project would be further delayed. Is that fair?

Secretary WILSON. Sir, I do not think—this is in the fiscal year 2020 proposed President's budget. So, it is not an item that has already been—

Senator TESTER. So, if money is pulled out of this year's budget, you do not think it would shift twenties down?

Secretary WILSON. The budget that we have put forward, sir, has \$235 million for this military construction project.

Senator TESTER. Okay, and so if money was pulled out of this year's budget for military construction in this line item, it would not shift? We are still in line to have it happen regardless of what happens?

Secretary WILSON. That is my understanding as to how the entire Defense Department budget was put together and presented to you all yesterday, or Monday.

MONTANA NATIONAL GUARD C-130S

Senator TESTER. Ok, that's good if it doesn't happen. I would think that if money is not there, it will be back filled with the next year's budget. But, I could be wrong on that.

The Montana National Guard is flying some of the oldest C-130s in the Air Force. C-130Hs, they have not received all their upgrades. There is issues with this, separate schools, parts availability, additional training requirements for Pilots and maintainers, moving from the J's to the H's. These are all challenges for guard units. Flying aircraft is different from the Active Duty component, so not to put you on the spot, but what is your expectations for the 130Js? And since our airplanes in Montana Air Guard have not received all the updates as others have, would we be in the queue first?

General GOLDFEIN. Sir, you know, I mentioned in the opening statement that I went to Desert Storm. You know, we learned a truly valuable lesson out of Desert Storm because I was flying the newest F-16s and the Birmingham International Guard showed up at the same base flying the oldest F-4s.

Senator TESTER. Yes.

General GOLDFEIN. And what we learned when we looked across our Active Guard, you know, team was that we had not outfitted the guard with the latest technology and our interoperability suffered as a result.

Senator TESTER. Bingo.

General GOLDFEIN. And so, we reversed that coming out of Desert Storm and that is why you see us now fielding new weapons systems across the Active and the Guard. But when we do so, we also take into account that our most experienced maintainers and operators are in the International Guard. Very often they come from the Active Duty to the National Guard.

Senator TESTER. Sure, that is right.

General GOLDFEIN. And so, their ability to be able to manage weapons systems is somewhat different based in our experience levels. So, we do have planned—right now there is not additional C-130Js in the budget. We are upgrading the C-130Hs, and if more money were to become available, the C-130Js is something we would definitely look at.

Senator TESTER. Well, I would think that it would be, and I know you guys have a lot of priorities. We just talked about the missile priorities with the ICBMs. But it would seem to me that this would also be a priority. As we all want a strong force, there is recruit-

ment opportunities from folks who are going out of the Active Military and going into the Guard. And if in fact those folks have to go get retrained to fly on 130H and we all love Little Rock, Boozman is not here. We all love Little Rock, but the truth is that they might decide, I am just going to go a different direction then and not stick with it. So, I would hope that this could become more of a priority. Thank you guys for what you do. Appreciate it.

General GOLDFEIN. Senator, if I could just say to, again to speak to your folks in Montana and elsewhere flying a C-130 and I was Air Component Commander and Central Command for 2 years, and I never once had to tell one of my joint teammates no when it came to delivering critical supplies or personnel where they were needed. And we did that with the C-130 fleet.

Senator TESTER. Yes, I got it. It is a great mission. It is a great mission, I do not need to tell you how all these planes are. Thank you.

Senator SHELBY. Senator Hoeven.

HUEY REPLACEMENT

Senator HOEVEN. Thank you, Mr. Chairman and just to follow up on Senator Tester's point, the point that you were making general for the ICBM fields, they are flying Huey's out there. So, and that is your Active Duty forces are flying Huey helicopters out in the missile fields. So, when Senator Tester talks about the importance of both the facilities and the new aircraft for our missileers, you realize it is very important when they are flying aircraft that is far older than the people flying them—far older.

Secretary WILSON. Senator, in fact though, I think it was in September, September or October we did choose the follow on aircraft to replace the Huey's, so that decision was made and the fiscal year 2020 budget buys four replacement test articles, fiscal year 2020. So, we are beginning replacement of the Huey.

Senator HOEVEN. And those aircraft are?

Secretary WILSON. I am sorry, sir?

Senator HOEVEN. And they are what?

Secretary WILSON. I never remember the numbers. So, what is it?

Senator HOEVEN. UH-60 Black Hawk.

Secretary WILSON. It is not the 60, but I will—

Senator HOEVEN. Well, that is the right pick.

[Laughter.]

Secretary WILSON. I will mess up the number so I will—

[The information follows:]

MH-139.

Senator HOEVEN. No, you will not. We are going to really miss you. We are disappointed that you are leaving. You have done a phenomenal job, and you are going to be dearly missed. Hopefully we are going to keep General Goldfein around for a good long while yet, but best wishes to you. But we really appreciate your service and we will miss you greatly. You have been tremendous. How are we doing on catching up on the pilot shortage that we talked about?

PILOT SHORTAGE

Secretary WILSON. We have actually in the end of—we looked at the numbers at the end of the year. We ended up producing a few more pilots than we anticipated and kind of stopped the slide. Next year in the fiscal year 2020 budget, we are going to increase the number going through pilot training, and we hope that our continued efforts at pilot retention and the support for pilots trying to reduce the number of 365-day overseas tours, trying to give pilots more control, implementing our new talent management system so people get more say in their next assignment, and more control over their lives, that those will help with retention, but we also need to increase production. So, it is production, seasoning, and retention. If we continue on this path, producing about 1500 pilots a year, we think we will close the gap and have the number of pilots we need by fiscal year 2023, fiscal year 2024 timeframe.

Senator HOEVEN. Even with the increased commercial airline hiring and so forth?

Secretary WILSON. Yes, sir we do, and part of it is we are going to have to produce more pilots. So, we are going to have to produce about 1500 pilots a year, rather than about 1100. We can do that in a way with our current infrastructure, and then we have to really focus on the quality of life, quality of service.

General GOLDFEIN. Senator, I also want to thank you because, you know, I have talked a lot about this which is this is the national shortage of pilots. To not only in Military Aviation but also commercial and business aviation. And so, we are also doing incentives to get America's youth flying again. Civil Air Patrol, putting money into the Junior ROTC, University of North Dakota, other avenues where we are trying to get more pilots produced to be able to fulfill the requirement across the Nation, and so I just want to thank you for your work on that.

Senator HOEVEN. That is appreciated, and I think the reason you are starting to make traction or get traction is because you are looking at all of these avenues to draw people into the pilot ranks and I really commend you for it. Arctic Mission, how are we doing on reaching out in the Arctic Mission?

ARCTIC MISSION

General GOLDFEIN. So, we—Secretary Wilson and I have put out an Op-Ed on that because the Air Force has got a significant footprint in the Arctic Mission. First and foremost, in Homeland Defense and making sure that we have the assets that are up there that would be able to detect the threats so we can protect the homeland. For power projection. If you take a look at Alaska, by the time we complete the bid for F-35s, it will be the State with the most number of 5th-gen, high-end assets here that can launch as a platform into the Arctic. And it is also about domain awareness. It is about making sure that we have the weather forecasting and make sure we have the space situational awareness.

So, we are very heavily invested in the Arctic, and we are working right now with our partners, our Arctic partners, Canada, Finland, Norway, and Sweden on Arctic challenge exercise to ensure

that we further advance our military capabilities to protect that region.

Senator HOEVEN. Well in North Dakota we speak fluent Canadian, so if we can help you, you let us know.

[Laughter.]

MODERNIZATION OF NUCLEAR TRIAD

Senator HOEVEN. Last question I have goes to the nuclear triad. It is incredibly important, and we need to update it and modernize it. I would like your thoughts in that regard.

Secretary WILSON. Senator, nuclear weapons and nuclear deterrents have helped to keep the peace for over 70 years, and the Air Force has two of the three legs of the triad as well as about 75 percent of nuclear command, control, and communication. Those legs of the triad are in need of modernization, both the replacement of the Minuteman Missile, but also the replacement of the Cruise Missile. These are systems that are, you know, the Minuteman, the first stage of the Minuteman that is in silos today was built in 1970. So, we need to upgrade these systems and our budget includes the funds for the continued work on the modernization of the nuclear deterrent, as well as the upgrading of the nuclear command, control, and communication.

Senator HOEVEN. And the LRSO, incredibly important for the safety of our aircraft fleet and pilots, right, and as we face more sophisticated air defense systems?

General GOLDFEIN. Yes, sir. And of course, it is all in support of the strategic, the STRATCOM Commander's mission. And I will share with you, sir, that you knew, Secretary Mattis, when he first came in from Stanford, he had some serious questions about the nuclear enterprise and then to the process of our going through the nuclear posture review, he became an advocate for all three legs of the triad. And I will share with you the same advice I gave him and then gave recently to Secretary Shanahan. There are two things that I would advise in terms of military advice.

Number one, I would never advise us to unilaterally disarm our nuclear enterprise when our adversaries are arming theirs and building more capacity and capability. That makes no sense to me that we would ever go down that path. The second advice is we should never, and I got to be careful here to stay on unclassified terms, but I would never advocate or recommend that we place ourselves in a position we would no longer have a second strike capability, because potential adversaries are calculating whether they can defeat us, and we want them to enter into their calculus that we can always respond no matter what they do. And with the triad we can.

Senator HOEVEN. Thank you. Again, thank you, Madam Secretary, very much.

Senator SHELBY. Thank you, Senator Hoeven. Senator Schatz.

WALL CONSTRUCTION

Senator SCHATZ. Thank you, Mr. Chairman. Secretary, I want to echo the phrase from this panel. You have been an exemplary as Secretary of the Air Force and we are going to miss you. You have been nonpartisan and bipartisan, easy to work with on the level.

Really appreciate your service. I want to follow up a little bit on what Senator Tester was talking about with respect to the way the MILCON \$3.6 billion may be raided for the purpose of constructing a wall on the southern border of the United States. First question I have is has the Secretary of Defense or anybody else asked you to begin the work of producing a list of projects to delay?

Secretary WILSON. First of all, we do not have a list of projects from Homeland Security that are necessary to support the mission along the border, and we have not identified specific Air Force projects that could be impacted. And of course, as you know, we request our military construction based on priority and military need.

Senator SCHATZ. I get that Homeland Security has to ask—that they have to initiate a request and then they have to make a determination about where wall being built would be in furtherance of the admission of the troops on the border. I get that part. After that determination is made, and after there is a funding requirement that becomes a delta, the assumption is this is going to be \$3.6 billion, it may be less. But, I think you would be wise to start preparing as you look at your list of funded but un-obligated MILCON projects to see how you prioritize them and whether or not you can afford to move any of those to the right to delay or defund. Has that process begun at all?

Secretary WILSON. We have not identified specific Air Force projects that could be impacted.

Senator SCHATZ. So that process has not begun?

Secretary WILSON. And I think, you know, the Secretary, the Acting Secretary of Defense has asked his colleague at Homeland Security to identify what projects from the Homeland Security's perspective are necessary to support the mission.

Senator SCHATZ. Right, but that is not the question I am asking.

Secretary WILSON. That would then trigger some guidance, presumably from the Second or Secretary of Defense, that we do some work as services, but we have not identified specific Air Force projects that could be impacted.

Senator SCHATZ. Okay. And, so I get it. So, you have not done that work yet. And at the time that you do that work, will you be transparent with the Congress with respect to your criteria for moving stuff to the right or defunding or delaying, and will you let us know where you are in the process so that it does not become a black box?

Secretary WILSON. Yes.

Senator SCHATZ. Thank you. Is the expectation, let us say it is \$2 billion that gets raided for MILCON. Is the expectation that the Congress then "backfields the money," in other words appropriates the money to the same project twice?

Secretary WILSON. I do not know. And I think part of that is we do not know yet what the requirement will be from the Department of Homeland Security and how much we are talking about here, and whether there is other funds that might be reprogrammed. So, I just do not know.

Senator SCHATZ. It just seems like this about to be, among other things, a fiscal train-wreck because right—Senator Tester was talking about his \$230 million priority for his home State to safely house ICBMs, as I understand it. That is in the 2020 budget re-

quest. So, assuming that everything that the Democrats are saying happens to be correct with respect to our inclination to so called backfield, in other words to appropriate money twice, then whatever falls off your list, if Tester's project—if everything that is in the 2020 President's budget does not fall off the list, then if it falls off the list, it is not actually first in line for the following year. It is really falling off a cliff. And I guess the question is, among all of the funded but un-obligated MILCON projects for the Air Force, is there anything that you see that is not essential for readiness?

Secretary WILSON. We request military construction based on priority and military need. Some of it is readiness, some of it is just straightforward modernization that you have got to house new aircraft and so it is all necessary.

Senator SCHATZ. Right. And given that the Department of Defense articulated to us that there is \$100 billion shortfall in MILCON overall, and given that we have always done MILCON on a bipartisan basis and that whenever you ask for something, we know that it is on the level. My question is very straightforward, which is, is there anything on your list that you think you do not need?

Secretary WILSON. No.

Senator SCHATZ. Thank you.

Senator SHELBY. Thank you, Senator Schatz. Senator Boozman.

Senator BOOZMAN. Thank you, Mr. Chairman. And it is a real pleasure to join the committee working with you and your very capable staff, and Ranking Member Durbin also very capable staff. That is the great thing about being on these, you know, these subcommittees. It is all about taking care of the military in a very, very bipartisan way and we certainly appreciate your leadership in that regard. General Goldfein, again, thank you so much for all that you do, and not only now but have done through your career. Secretary Wilson, it has been a real pleasure serving with you in the House, and now serving with you now in our different capacities.

And I know that nobody has worked any harder than you, or have, and nobody is any more knowledgeable. And we really do appreciate you, again, for the many, many different ways that you have served your country. One of the things I would like to ask about, you know, we—I think there is concern about light attack. You know, Secretary Moran—I am sorry not Secretary, Senator Moran, got into that a little bit. I would like to ask about the situation despite, you know, a perceived shift. One of the requirements that is continued to be highlighted is building partner capacity. You mentioned that earlier and certainly is something we have all met that comes up all the time. Objective in the National Defense strategy, the Guard State Partnership Program, is an existing way we can achieve the critical mission of building partnership capacity.

GUARD STATE PARTNERSHIP PROGRAM

Assuming that we do move forward with light attack at some point, what role do you see the Guard playing and how can the Air Force take advantage of these existing State Guard partnerships?

Secretary WILSON. Mr. Senator, I will start out and then maybe General Goldfein might want to add. State partnership program is a wonderful program and probably we do not talk about it enough and the tremendous difference that it makes. It is a partnership between State Guards and countries. It was started after the fall of, the collapse of the Warsaw Pact and the emergence of new democracies in Eastern Europe, but it is now expanded where there are 70 different state partnership programs.

And they have a number of advantages, one of which is that in many countries the military is much more like the National Guard where it has National Defense but also civil society kind of functions so more similar to the National Guard. But also, their relationships are enduring, and people are in the Guard for their entire career and they create deep relationships of trust with our partners and allies in other Air Forces. So, I think there is tremendous opportunity there with allies and partners generally, whether it is in light attack or in other things. I will just leave you this one story.

The Chief and I were in the Middle East and we went to Jordan and met with the Air Chief there, and some of you may remember that Jordan has F-16s. And some of you may remember that one of their pilots had ejected over Isis occupied territory in Syria, and was captured, and put in a cage, and burned alive, and tortured, Jordanian pilot. The Jordanians planned retaliatory strike. That retaliatory strike was led by a Major in the Colorado National Guard who was on exchange with the Jordanian Air Force. They did not forget that it and it deepens a partnership that is career-long. Very useful.

General GOLDFEIN. Sir, I will just add that, you know, one of the first meetings I had in the opening weeks after becoming Chief was at the State Department with the Deputy Secretary of State. And I had a discussion with him about the role of the Internet—my role as International Air Chief when it comes to coalition-building and sustainment, and whether there was a special partnership that we need to have with the State Department because countries around the world that will join coalition's and offer military capability have the same challenges that we do, sometimes offering boots on the ground. And if they do not have access to ports, they do not buy Navy's. But one thing most countries have is an air component to protect their sovereign borders, so therefore coalitions very often come together first in the air and then stay longest in the air.

And so, when we look at the strategy of driving violence down across the globe to the point where it can be maintained within its borders, you could see why our strategy with light attack was to build an interoperable network in a number of—in a variety of capabilities that allowed them to join us. And in some ways for me it is the air equation of the math on the ground in North Africa, 1,000 Americans plus 4,000 French enables 35,000 fighters to be able to counter violence in North Africa. This is the air component contribution to that.

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

Senator SHELBY. Thank you. Senator Baldwin.

AIR FORCE MISSION CAPABILITY

Senator BALDWIN. Thank you, Mr. Chairman. In October, Secretary of Defense, former Secretary of Defense Mattis ordered that the Air Force get to 80 percent mission-capable rates for its fighters. I would like to hear from you where the Air Force is at this point in meeting that goal, and since the directive came after you had received your 2019 budget, how much money will it cost this year to meet that goal?

Secretary WILSON. Senator, we have identified reprogramming that has to be done within the Air Force budget, particularly for the F-22s and F-16s, and we are focused on the operational squadrons where we measure our mission capability rates most directly. I believe that we are probably going to meet that objective with the F-16s. Given the impact of the hurricane on the F-22s in Tyndall Air Force Base and all of the permanent change-of-station moves associated with moving those F-22s, we may not make it with the F-22s, but we do have to do the reprogramming to get more money into weapon system sustainment for the F-16 and the F-22 within the Air Force budget.

The responsibility for the funding for the sustained the F-35s goes to the Joint Program Office and they manage that. I can give you privately in a secure session the actual numbers of where we are in both mission, capable rates, and also we monitor not just mission capable rates of just about whether the airplanes are ready to fly. An airplane sitting on a hangar that is ready to fly is not necessarily ready to fight, and so for us it is about the readiness of our squadrons to fly and fight that matters.

Senator BALDWIN. Okay. So, meeting this readiness goal along with the modernization that we had a chance to discuss earlier, things like the F-16 radar systems so that they can operate alongside the next generation fighters, is particularly important in a State like Wisconsin that has F-16s at Truax and is a future site for F-35s. But it is also my understanding that the Air Force has had trouble funding some really basic base operations, road maintenance, garbage collection, basic repair and modernization of facilities on installations, and has embarked on, I know this committee has discussed earlier, an ambitious plan to replace its missile defense satellites, which also requires increased funding.

So, I imagine there are more items on the list that I have not even gotten to, but I would ask what are the Air Force's top 2 or 3 readiness gaps that you would like to see addressed?

AIR FORCE READINESS GAPS

General GOLDFEIN. Ma'am, I will just start by telling you that for the Secretary and me, greatness first and foremost is about people. And so that is why you have seen us in a continual growth of manpower, Active Guard, reserve, civilian in strength, so we can rebuild the Force from that—we talked about the 945,000 that we were back in 1991 to defeat a rogue nation into the 685,000 we have. So, we have to fill our squadrons to make sure that they are capable fighting formations. We were very successful this year of closing the gap on maintainers. We were 4,000 maintainers short and we successfully have closed that.

Now our challenge we are working through right now is they are young, and so while we have the numbers we need, now we need to experience them. So, we are looking at how we do that more rapidly. You brought up the roads and grounds and making sure, you know, we are a land-based Force and we fight from our bases. And so therefore we are putting a significant amount of effort into not only how we sustain those bases, but also bases forward that we would roll in on as the hold Force, because if you look at the Combatant Commander plans, they expect the air component to arrive first by virtue of the fact that we can fly there quickly, halting enemy activity before we go forward.

Senator BALDWIN. I agree that these are really important to address. I am aware that the Department of Defense has only authorized to transfer up to \$4 billion dollars annually within its own accounts, and with much of that being planned to be used up by transferring money between accounts to pay for the wall, I am not sure how all of these gaps and more will be addressed. And so, as we are looking to conduct oversight on both readiness funding as well as how the Department of Defense is able to move these funds around, could you tell the committee which readiness gap should be delayed, and which ones are not priorities right now?

Secretary WILSON. Senator, the reprogramming that we need, we can give you chapter and verse on what is required in order to meet the mission-capable rates that we have been guided to work towards, and I think there is one reprogramming request, I believe, that has already come up to the Hill, although it may be just on the verge of coming up here but will be able to explain that in detail.

[The information follows:]

At the time of the hearing, the reprogramming request had not been submitted to the Hill.

Secretary WILSON. But to meet the guidance that says we need to get to 80 percent mission-capable rates, we do have to do reprogramming, because the guidance came down in this fiscal year.

Senator SHELBY. Thank you, Senator. Senator Collins.

Senator COLLINS. Thank you, Mr. Chairman. Secretary Wilson, let me add my voice to those of others who have thanked you for your extraordinary service. As Secretary of the Air Force, you truly have done an amazing job on everything from procurement, to morale, to recruitment, to readiness. I cannot think of anyone better, and I am very sad that you are leaving. You can still tell them no in El Paso. Maybe you cannot, but I just wanted to start off by thanking you and wishing you well.

REFUELING WING IN BANGOR, MAINE

The air refueling wing in Bangor, Maine, which I did not get an opportunity to bring you to visit so I am hoping the General will make up for that, has long been a workhorse unit for the Air Force. It typically supports more than 1,000 transient aircraft annually.

In addition, it continues to deploy personnel at very high rates worldwide. The wing's enormous workload is demonstrated by the fact that it has processes twice as many gallons of fuel as the average Air National Guard refueling wing, and its strategic location

obviously makes it absolutely critical. What are we doing to make sure that a workhorse unit like this refueling wing has the resources it needs at a time when it is filled deploying individuals at a great rate, General?

General GOLDFEIN. Ma'am, I will tell you that having been pulled out of a lot of really bad places by some courageous tanker crews, many of which I am sure are at Bangor, I would not be sitting here had it not been for the courage of those crews. So, as we recapitalize the tanker force, I go back to, you know, it has being in a world of pure competition. Those three phone calls that I will get as Chief, the Secretary will get, that says the Combatant Commander, let's say in EUCOM needs tankers. The Stratcom Commander to be able to support the nuclear mission needs tankers. The Northcom Commander to be able to defend the homeland, needs tankers. These are simultaneous, no fail missions. Therein lies why we do see the investment in the KC-46 and sustainment of the tankers that we have so we can get to the 479 required that we will do in 2019, to ensure that we have the tanker force required to do the Nation's business. And I would just say, I believe that we are a global force, a global power, because of global reach and it is our tankers that give us that.

Senator COLLINS. Thank you.

Secretary WILSON. Senator, if I could just add one brief thing. The study that we did that was directed by the Congress, that came really from the hearings last year when you all asked us, you know, you always come up, we always come up and present the Air Force we can afford given the budget that we have, and you asked us, well what is the Air Force we need to execute the National Defense Strategy. And that led to a piece of work that you all directed that is ready to come up in classified form, but we released and unclassified summary and it is no big surprise to anyone that the Air Force we need is larger than the Air Force we have. One of the biggest areas of unmet need, particularly by the time we get to the 2025, 2030 timeframe, is in tankers.

F-15 V. F-35

Senator COLLINS. Thank you. Secretary Wilson, in what seems like a major change of direction, the budget request new F-15 fighter jets which have not been purchased by the Department of Defense since 2001. If you were not constrained by an inadequate budget, would your preference be for more F-35s?

Secretary WILSON. If the budget is unconstrained, there are a lot of things I can think of—

[Laughter.]

Secretary Wilson [continuing]: That would be—

Senator COLLINS. But in terms of capability that the F-35 gives you?

Secretary WILSON. Let me talk a little bit about this or Chief do you want to lead, or do you want—

General GOLDFEIN. I will just say, ma'am, that very often we throw the terms 4th generation and 5th generation around and if I could just take a couple of minutes and explain the importance of what 5th generation means and the F-35's role in that. Because, you know, we will sometimes present charts that show, you know,

this red dome over countries so they can put a block of wood over themselves to protect themselves that is actually not accurate.

The best a country can do today is a block of swiss cheese. There are holes there and it is our job in the Air Force to know where they are, exploit them, and get in. And when we get in, it is with a penetrating joint team. We are there in space. We are there with High-Altitude ISR. We are there with B-21. We are there with F-22. We are there with F-35. We are there with our joint teammates, with submarines. We are there with special operations. If I can, you know, send a message to any of our adversaries, whoever sees an F-35, it would be we are here. Not I am here, we are here, because the F-35 will never be alone. But what the F-35 brings is not the traditional fighter characteristics that we always think about. It is the information fusion from multiple sources that comes together in the cockpit and allows that F-35 to be the quarterback of the penetrating team.

And there is no other weapon system that we design that can do that role, and in that role, it is performing spectacularly. Our challenge was that when you look at the force structure there are four 4th-gen airplanes, F-16, F-15E, A-10, and F-15C, that we need to fly into 2030s. The F-15C is not going to make it. It is old and it is not going to fly past the mid-20s, and we need that capacity to do all the missions I laid out for you in my opening statement.

And so, where we find ourselves is in a position where we have got to buy 72 aircraft a year to be able to reverse the historical trends, and the F-15C is going to retire. We use the best cost estimate that we had at the time and looked at the various options and the most affordable option, as long as we keep the F-35 absolutely on track with our program of record, was to look at an F-15 variant to replace the F-15C. And so that is why we are looking at that. It is one line of 4th-gen to keep that mix right. But an F-15 will never be an F-35.

Senator COLLINS. Thank you, Mr. Chairman. I have some more questions that I would like to submit for the record if I may.

Senator SHELBY. Thank you, Senator Collins. You can do that. Senator Udall.

Senator UDALL. Thank you very much, Chairman Shelby. Secretary Wilson, I would also like to echo what others have said here and thank you for your service to the Nation and to the United States Air Force during your distinguished career. And I would like to congratulate you on your upcoming career opportunity at UTEP. That is still staying close to New Mexico, so I am sure you will enjoy that. And we are going to miss your leadership at the Pentagon.

PFAS CONTAMINATION

Madam Secretary, as you are aware, an epidemic of PFAS (polyfluoroalkyl substances) contamination is infecting communities adjacent to Air Force bases all over the country and I know the General is familiar with this too. Families, business owners, farmers, and service members who have suffered from exposure to these toxic chemicals in New Mexico deserve immediate relief, and the Air Force must take precautionary steps to prevent further dangerous to public health. In response, myself, Senator Heinrich, and

Representative Luján are pressing the Environmental Protection Agency and the Department of Defense through the newly introduced legislation to coordinate closely with the State of New Mexico to move forward with remediation plans to clean up contaminated sites and take all necessary steps to prevent further risk to public health.

We have made sure to keep the Air Force informed as we have worked on this issue. The Air Force has asserted that it does not have legal authority under the law to provide clean water or filtration for agriculture. Is that your understanding of current authority?

Secretary WILSON. Yes, Senator Udall. That is correct. We have authority to provide clean water to people, but not for agricultural use under the current law.

Senator UDALL. And our bill provides that authority. It moves further than you believe you have authority for. Is the Air Force prepared to work with us to find a way to ensure that they have the authority?

Secretary WILSON. Senator, we will work with you on that legislation and also there is a very broad coalition of people concerned with this issue and if I could—because it affects them. What we are talking about here is a chemical that was safe for its intended use at the time it was used. It is called PFAS and PFOS. It was used in firefighting foam by the Air Force, but less than 3 percent of this chemical was sold to firefighting foam companies. It is used in wrappers on fast food. It is used for waterproofing on shoes. It is used in Teflon coating on pans. So, it is used in a lot of different things and it is now an emerging potential pollutant.

And the Air Force leaned forward and identified, looked at all of our sites as to where it might be and began the process of assessing whether there was any impact to the water and taking mitigating actions. So, I think those are all the services to really lean forward and do that, I think it was the responsible thing to do. But we also need to recognize this as a national issue and a problem, and probably is going to involve not just the EPA and the Department of Defense, but Agriculture, Health and Human Services. This is a—this is a major issue for the country of which the Air Force is just one small piece.

Senator UDALL. You know, and just to elaborate on that, I mean this is a toxic chemical, and what has happened in New Mexico near Cannon is with the firefighting activities, the PFAS chemical with large quantities of this has polluted the aquifer, it has poisoned people. I have a farmer that is gone and taken specifically from his blood and from the blood of his wife to see. They have a very high levels of PFAS in their blood. He is about ready to kill 4,000 cows because he has no way through filtration, which I asked you about. The cows, he cannot sell them. It could impact an even larger area, which is all dairy farmers.

So, we are at the point of the spear on this. I mean New Mexico and this base. You have poisoned people, you poisoned agriculture, you poisoned the aquifer, and you poisoned the feed that is raised for the farmers also has PFAS. So, we would hope that you would be very, very aggressive about dealing with this issue. We have been very frustrated with dealing with the Air Force on this be-

cause you say you have the—wanted to have the authority. We gave you legislation in November 27th. Your response, which I would ask that response be put in the Record. Consent to do that, Mr. Chairman. The response be put in the Record.

Senator SHELBY. Without objection.

Senator UDALL. You have basically responded with something that was not very helpful and basically says we do not want to have the authority to do that. We sent revisions back to you on February 14th and so March the 6th we introduced our bill. So, our sense is the Air Force is not moving aggressively like it should be moving, and I would like to know whether you believe that you are going to take the authority and get the bull by the horns. And, you know, you say here you want to have authority. Well, support the bill. Will you support our bill? Tell me today, will you support our bill so that we can move forward and correct these things? General why don't you start.

Secretary WILSON. Senator, we have dozens of sites around the country where this is an issue. It is a particular issue with Cannon where we not only—when we have the authority to provide clean water immediately and also prevent any additional damage to the aquifer when it has to do with people. We do not have the authority to deal with agriculture. To his credit, our Assistant Secretary for Insulations and Environment has led the effort in the Executive Branch to engage the Secretary of Agriculture, the EPA, and Health and Human Services to see whether they have authorities to be able to deal with the agriculture issues. And as you know and we have been, all of us have been concerned and frustrated by this, that there is no standard for agriculture as well. So, it is an extremely difficult situation. We are doing the best we can with the authorities that we have, but it is a national problem, and there is a coalition of members, some of whom are on this committee as well, who are facing this issue.

Senator UDALL. Well, have you all reviewed our legislation, and will you support it?

Secretary WILSON. Senator, I have not seen your draft legislation.

Senator UDALL. Okay, well we have been sharing it with you over the course of 3 months. And I think you knew this was what I was going to ask about, so I am very disappointed as to where we are today. And we can put it in all sorts of fancy words, but the reality is of this one farmer and many farmers that are in the region is the Air Force has poisoned his family, they poisoned his livestock, they poisoned his water, and they poisoned his crops. And we would expect under those circumstances that the Air Force be very aggressive about supporting legislation and doing all you can to make sure this contamination does not spread further, and to take care and make the people whole that have been hurt already. Thank you very much, Mr. Chairman.

Senator SHELBY. Thank you, Senator. Senator Blunt.

Senator BLUNT. Thank you, Chairman and Secretary let me join everybody else in telling you how much we appreciate the leadership you have shown, the work you have done, and our long friendship, over 20 years now, has really always been important to me. I have always had great confidence in the decisions you would

make in any job and particularly in this job. I am going to come back to you in a minute and ask a little bit about military families, things like the Military Family Flexibility Act, the importance of military families as it relates to that highly skilled technical workforce that you have in the Air Force today. Let me ask a couple of follow-up equipment questions to General Goldfein.

F-15 ISSUES

On the F-15 issue really two questions. One is, the F-15 is a compliment to the F-35 is the future and the current and even foreseeable future flying package, and then the other one you mentioned a variation of the F-15, was that the F-15 PX or—so do you want to talk about that just a little bit more?

General GOLDFEIN. Yes, sir. I would say that the F-15 like all the 4th generation standoff bomber, any standoff capability is complementary to that which is capable of penetrating. And so, we look at it from a network team approach in the future of warfare and I cannot overemphasize the importance of this. This is why we took on the joint stars to advance battle management system debate last year and why this is so important because this is about the future of war fighting and how we move into a network centric approach as opposed to a platform centric approach. So, it is again why the F-35 does not fly alone, the F-15 does not fly alone, they always fly as part of a joint family and with allies and partners. So complimentary, yes, but it is more than just the F-15 and the F-35.

Senator BLUNT. And what is the F-15 PX add to the F-15?

General GOLDFEIN. What it does in terms of cost, is when we looked at, again the cost estimates that came from OSD/CAPE. When we were looking at the requirement for us to buy capacity to do all the missions that we were required to do, and they looked at the overall cost—you get a look at the cost, not with the procurement but the cost of operating over time. And we looked at the overall operating cost, the F-15. You have also got to look at the conversion cost, if you go from F-15C to a different kind of airplane versus an F-15C to a like model airplane where 90 percent of the parts are common, where you can do local training for the operators and maintenance, and it is about a \$10 million conversion costs for aircraft that we cannot fly any longer.

So that is part of the cost that was put into the equation. The previous question was about combat capability, and that is why I wanted to stress that. When it comes to combat capability of the F-35 and the F-15, the F-15 will never be the F-35. It was not designed to be.

Senator BLUNT. And it does not cost nearly as much?

General GOLDFEIN. Based on the best cost estimates that we had at the time, it does not cost as much over the lifetime of the weapon system. We have been very clear with both the Joint Program Office and the company that we have got to drive the operating cost of the F-35 down. And so were those numbers to change, then we would have to relook at it.

C-130S AT ROSECRANS

Senator BLUNT. Thank you, General. I might have a couple of questions for the record on equipment, particularly of C-130s at

Rosecrans, but let us suppose talk a little about military families and what we can do and are doing to make them more appreciated in the package that the military serving person puts together.

Secretary WILSON. Senator, there is a couple things that—all three Service Secretaries sent a letter to their Governors talking about the things that matter to our families. And if you ask an Airman what really matters to you most, they will go anywhere or do anything as long as their families are taken care of. And one of those things where we need help from local communities and from States, is the quality of the public schools near the bases where we are stationed.

And a second is reciprocity of licensure for family members who are assigned in your State. So, and that is a tough one because, you know, there is all kinds of boards and commissions over the realtors and the bankers and the lawyers and the cosmetologists, and we understand that, but if you move from Massachusetts to Missouri and you are a family therapist and you have to wait 18 months to get certified in Missouri, then it is a real problem.

So those two things can really make your State a State of preference, if we can have great public schools and reciprocity of licensure for family members.

Senator BLUNT. Great, thank you.

Senator SHELBY. Senator Leahy.

Senator LEAHY. Thank you very much, Mr. Chairman. Secretary, I want to add my congratulations or condolences in your new job. No, congratulations but we are going to miss you. And I think they are very fortunate to have you down there. And you and General Goldfein, I really appreciate the time you spent with me at the Capitol the other day. Mr. Chairman, you know that modest office I have there in the Capitol, we spent some time going over the problems of the world.

Senator SHELBY. It was something too.

Senator LEAHY. We have, and in fact, I bragged about your work when they were there.

CYBERSECURITY

You know, Madam Secretary, we talked before about cybersecurity. I am more concerned about something—all our grids closed down, we do not know who did—than I am more about a missile fired, because a missile comes with a return address. And I think anybody firing a missile knows that whoever comes for us is going to be obliterated in a matter of minutes. But cybersecurity in the commercial side, the defense side, closed down our power grid in the middle of January in the Northeast, things like that, and we do not know where it came from. And I know you have worked hard to get cyber specialists. But then, you have to work hard to retain them.

And this may sound parochial and it is, but Norwich University in Vermont, in the senior military colleges—this is the oldest private military college. They have an extensive cyber program. One of the most popular is the Air Force specialty codes and that is someone going into the Air Force, and that is second only to flying. So, do you agree that whether in Vermont or anywhere else, col-

leges and universities like Norwich should give the Air Force ability to recruit based on what they have done?

Secretary WILSON. Senator, Norwich is a good example of that where we are trying to partner with universities and communities to develop cyber talent through our universities, and then benefit from it. One of the other things and I think of your folks in Norwich will probably talk to you a little about it, we are actually expanding our Language Enabled Airman's Program to include not just the ability to speak Spanish or Tagalog or something, but also to include computer languages and recognizing that as a special skill that we can compensate our Airmen for just like we compensated for a second foreign language, if you will.

F-35 IN BURLINGTON

Senator LEAHY. Thank you, Madam Secretary. That is helpful whatever it is. These young people want to get the skill, but secondly, they learn that being in the military can be something worthwhile. And General Goldfein, we talked about the Vermont National Guard, the Air Guard, F-35 is arriving in Burlington this fall. A lot different than any aircraft that has been flown up there, or anywhere else. Its connectivity, its use of data. They are going to need considerable training. How do you determine what kind of funding goes to that kind of unit with a new aircraft like that because of the training, because of all the cyber background?

General GOLDFEIN. Sir, there is a process we go through that's a formal basing process that looks at and actually score against the cost associated with bedding down new weapons system, and so that was done. And obviously Burlington scored very well. That is why we are bringing the F-35 there. So, those costs are factored into the bed down, and then we roll them into our normal training pipeline to ensure that we are bringing that capability to bear. And, you and I discussed that the unit we are talking about, 24 hours after they deployed to Iraq were dropping bombs on the enemy, and had one of our top records for the munitions expended during their timeframe. That's a hell of a unit. I'm looking forward to seeing them get the F-35.

Senator LEAHY. Thank you. They believe when we say service, it means service. And, last, I would look carefully at \$42 billion your budget is designated OCO (Overseas Contingency Operation), triple last year's level. We can talk about this more, but try to ween off OCO. It is a gimmick and it makes it difficult for those of us who is really trying to get us all a budget. Thank you for what you said.

General GOLDFEIN. Sir, if I could perhaps just use a moment to speak to our Guard Reserve Cyber Airman because you brought a great point in terms of how we retain talent. There is a great story that General John Hyten tells. He pulled into a parking spot in Joint Base Lewis-McChord and a young Airman, senior Airman in a Tesla pulled up next to him. And he called him out, he says, hey Airman come over here. He says, so you have your parents' car or what have you got here. No sir, he says, this is my car. He says, well how does an Airman afford a Tesla. He said well I am doing my weekend drill duty but when I do not do this, I am one of the directors of security at Google. And so, one might ask the question, why would someone who has that kind of income put on a uniform

of the United States Air Force and come to work on a weekend. And his answer is because he wants to make a difference and that is what we offer. And so, to all those out there who are in the cyber business, we have a place for you.

Senator LEAHY. Thank you, General. Makes me proud. I know it must make you proud. Thank you, Mr. Chairman.

Senator SHELBY. Thank you, Senator. Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman, and General thank you for your service, your leadership. You are clearly making a difference. And to you Secretary Wilson, just my deep and genuine thanks for your leadership, for your voice of reason, and calmness, and just, professionalism throughout. What you have added to this Administration is greatly appreciated and will be deeply missed. I think it is great to have all of us saying this, I do wish that we could influence the decision but respect that decision that you have made but your contribution is just greatly and deeply appreciated. Thank you so very much, and I thank you for the conversation that we had last week. My opportunity to share some of the issues and concerns that I had. You heard me out on my concerns with the Space Force and we had some discussion about the F-35s. I appreciate General Goldfein, your explanation here as to how the F-15 4th generation, F-35, your swiss cheese analogy, that kind of helps somebody appreciate where this might fit in because I have been concerned that this might be a dilution of the support towards this 5th generation fleet with our F-35s.

So, I appreciate that, and I also thank you Secretary so much for your continued reminder that we can do so much more from the State's perspective to assist our Airmen and their families, with a focus on schools and what we do with the licensure. We are making a little bit of headway on the licensure side of that in my State, but it is a great reminder for all of us because it is these differences that do keep our families in the Air Force, in our services and there. And so, it is appreciated. I wanted to speak to JPARC (Joint Pacific Alaska Range Complex) as well as the efforts that we have with training, and I note with some appreciation that the posture statement that you presented this morning identifies JPARC as one of the regions that is going to receive the targeted funding. I think we recognize the extraordinary asset that we have with that training range up North. The posture statement also speaks to the need to build additional capacity with adversary air with the aggressor.

I understand the current Fleet of 18 primary assigned F-16 aggressor aircraft at Eielson is insufficient. We have had a chance to talk a little bit about this, Madam Secretary. So, I am told that an additional 6 F-16s are immediately needed to support the Aggressor Mission and that more can be useful or needed.

AIR FORCE POSTURE

So, the question to both of you this morning is with regards to the need for additional support on the Aggressor squadron, can the Air Force fulfill this requirement? I think we recognize that when we have this extraordinary training capacity up there, that the ultimate training is when you can get that that hands-on, in the air

with the actual aggressor. So broadly to the issue of JPARC but more specific to the adequacy of the aggressors?

General GOLDFEIN. Yes, ma'am. You know it is something we do not talk about a lot in terms of JPARC, but you know, this is very often we have international partners who either cannot get into Nellis for our red flag or prefer to do something of lower visibility. And so, they can go in and they can plan this incredible range, one of the largest range we have at JPARC. So, we do have money in the budget, \$8 million to upgrade the threats simulators as we go forward. And it is our premier range for doing that. When it comes to aggressors, we are actually short on aggressors both at local training, home station, and in our two large ranges, both Nellis Air Force Base, and JPARC in Alaska.

The way we are getting after it is a combination of what we call organic, F-16s that we own and a contract adversary—and there are more and more companies that are getting in the business of providing contract. We are also working with the Navy who uses that as well, so I think what you are going to see is us continuing to push for this right combination, the sweet spot, between contract and organic to get at the adversary issue.

Secretary WILSON. If I could just add, one of the things I was out in Utah at Hill Air Force Base, of course I flew with the aggressors to see JPARC when I was up in Alaska but one of the things that the F-35 pilot mentioned to me was, it would really help their training and readiness to reduce the requirement to fly adversary air. So, we are using U.S. pilots to study adversary tactics and pretend to be the bad guys when maybe we can do that with contractors so that our pilots, who really would go in to fight for the United States, can focus on practicing their skills rather than just imitating. And I thought that was a good point and it is the reason why we are shifting to see whether we can do more contracted adversary air.

ARCTIC CHALLENGE EXERCISE

Senator MURKOWSKI. Great. I appreciate that. I know Senator Baldwin wanted to ask one more question. Let me just very quickly ask and you responded to Senator Hoeven's question about the Arctic and you mentioned the Arctic challenge exercise that will involve Alaska, Canada, and Sweden. Obviously these exercises are critically important. I always ask the question at any of these Appropriations hearings to just ensure that we are keeping our eyes on the Arctic, and sometimes it seems that the Air Force in Alaska is more Pacific facing than Arctic facing.

And so, when you say what you have shared today, that is comforting, it is good, it is necessary, but it is one thing to do the training exercises and another thing to make sure that we are making the kinds of investments that we need to address emerging defense challenges in the Arctic, recognizing that it is just a different environment up there. Are you satisfied with where we are?

General GOLDFEIN. Ma'am, I am satisfied, but I will tell you that this is an opportunity to highlight the important partnership we have with Canada in NORAD and we can defend our homeland together just as we have for, you know, six decades. And so, as Canada modernizes and we modernize, we being able to be interoper-

able in both 5th generation and 4th generation is absolutely essential as we go forward.

Senator MURKOWSKI. Madam Secretary.

Secretary WILSON. I would just say, one of the things that, you know, people think about the Arctic strategy from a naval point of view, and of course the Navy is ship-based, but the majority of Defense Department infrastructure in the Arctic is United States Air Force. And then we have to know the domain, so that is about the kind of intelligence surveillance and reconnaissance missions there, the missile warning missions, which are really focused about the threat that could—and historically that is where we put the ballistic missile early-warning radars because of the threat coming potentially from that direction.

So there have been a number of upgrades that we have done there, both at Clear, Alaska and also at Thule, and the deepening partnership with our allies who are Arctic allies, Danes, the Swedes, the Norwegians, Finland and of course Canada, are going to be invaluable going forward.

Senator MURKOWSKI [presiding]. We appreciate the eye on the Arctic because we know it is being viewed by others perhaps in different lands, and we need to be ever aware. So again, thank you both. I will turn to Senator Baldwin for an additional question.

Senator BALDWIN. Thank you. Secretary Wilson, I too want to add my words of thanks for your service and that we will miss you and I have enjoyed our work together since our days on the Energy and Commerce committee back in the House of Representatives, through to your service as Secretary of the Air Force. I do not know if anyone else on the committee has covered Space Force yet, but I did want to ask a couple of questions.

SPACE FORCE

I know that the Department of Defense and the Air Force have spent a great deal of energy responding to the President's directions for the creation of a Space Force, and I am going to withhold judgment until I see the proposal sent over by the Department of Defense. But one thing I do not have to withhold judgment on is one thing that I hope we all agree on that the Air Force ought to be working on lowering the cost of access to space and space launch. So, I have a couple of questions along those lines. The Air Force buys launch as a service, am I correct?

Secretary WILSON. That is correct.

Senator BALDWIN. And even though launch is bought as a service, the Air Force still invests in advancing the state of, art of rocket propulsion technology, is that correct?

Secretary WILSON. Yes.

Senator BALDWIN. Okay and to break the habit of using Russian engines, the Air Force has invested considerably over the last decade to mature and advance American made Stage 1 engine technology?

Secretary WILSON. Correct.

Senator BALDWIN. Okay. What has the Air Force done to advance Stage 2, also called Upper Stage Engine Technology?

Secretary WILSON. I will probably have to get back to you on specifics on Upper Stage.

Senator BALDWIN. Okay. And as you get back to me on that, I am wanting to be made more aware of the progress being made by the Air Force Research Laboratory's rocket propulsion directorate, and I would appreciate learning what is happening there because this committee has appropriated additional funding in recent years to support the AFRL's efforts, and we certainly want to be looking at the results of those efforts as we appropriate for fiscal year 2020.

Secretary WILSON. Very happy to, and one of the things we are doing in space is and I think we benefited more in space than in any other element of our mission in trying to drive acquisition faster and smarter. And we have a Space Enterprise Consortium out of Space and Missile Systems Center in California that has now, I think, 274 companies in it. About three-quarters of them are highly innovative companies that have not done business traditionally with the Defense Department. And our average time to get a contract from request for proposal to contract award is 90 days in the Consortium.

So, we are driving forward very aggressively to buy things faster and smarter and leverage commercial space. Chief, did you want to—

General GOLDFEIN. Yes, ma'am. I want to just give, perhaps a minute, on a warfighter's perspective on space and where we are headed. So, from 2011 through 2013, I was deployed forward as the Air Component Commander in Central Command, and one of my responsibilities was to be the space coordinating authority.

And so, my job was to ensure that I understood all the space capabilities that were available to be applied against an active campaign in Central Command. And I want to give the Administration credit because during that timeframe, I could not say the word space and war-fighting in the same sentence. Today, based on the President's declaration that space is a war-fighting domain and it is not good enough for us just to be there, we have to dominate. We are having an active dialogue, a very healthy discussion about space as a war-fighting domain. And the Secretary laid out the problem statement. I would offer going forward that there are three lines of effort that we are working on.

Number one, we have to defend what we have in space because it is going to be there for a while, and we all depend on it. But number two, it is not good enough to just step into the ring and take hits. At some point you got to be able to punch back and so we have got to be able to develop that capability and fill it quickly so we stay ahead of the adversary. And the third piece that we want to make sure we stay focused on us building a Force that can fight and win, because space has been a benign domain and so as we have a lot of efforts going forward in the Air Force to ensure that we are developing the cadre of space warriors to be able to do what the Nation requires us to do.

So, from a warfighter's perspective, the most important action going forward that I hope we can do this year is to stand-up a Combatant Commander for space, because it normalizes space war-fighting for us and us as a Department then know how to act.

ADDITIONAL COMMITTEE QUESTIONS

Senator MURKOWSKI. Thank you, Senator. So, there are no more questions for the witnesses. We thank you both. We appreciate your appearance before the committee. Senators will have an additional—well it does not say how long they can submit additional written questions. But when those are submitted, we would ask that you respond to them within 30 days.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO DR. HEATHER WILSON

QUESTIONS SUBMITTED BY SENATOR SUSAN M. COLLINS

Question. What is your best estimate of the cost of a new F-15 combat equipped aircraft? (OPR: SAF/AQ)

Answer. The F-15EX estimated fly-away cost is approximately \$80.3 million.

Question. My understanding is that Luke and Hill Air Force bases are doing some innovative things to reduce maintenance and operating costs of the F-35, and industry has a goal for the F-35 to be \$25,000 cost per flying hour by 2025—is that on par or less than some F-15s flying today? (OPR: SAF/FMBP)

Answer. While the industry has a goal for the F-35's Cost Per Flying Hour (CPFH) to be \$25,000 by 2025, according to the latest cost estimates by OSD CAPE, the estimated CPFH for Then Year 2020 (TY20) are as follows:

- F-35: \$39,000
- F-15EX: \$29,000
- F-15C: \$34,000

Question. What analysis or competition was performed that called for the purchase of new fourth-generation F-15's in the budget? (OPR: AF/A8)

Answer. Analysis shows that we must procure 72 fighter aircraft a year to account for aging aircraft retirements and to meet National Defense Strategy and Operations Plans assigned missions. Air Force analysis and fiscal reality combined with the global missions of the Air Force demand a mix of 4th and 5th generation force structure to balance near and mid-term readiness with future needs. Procuring F-15EX aircraft leverages partner investments in 4th generation modernization, an existing production line, uses existing infrastructure, and minimizes conversion downtime for F-15 operators and maintainers. The F-15EX will help us improve fighter aircraft capacity at a cost we estimate to be 10 percent cheaper than the F-35A to procure and 35–40 percent cheaper to operate.

Question. Are you concerned that allocating funds to fourth generation fighters will prevent the Air Force from buying the number of F-35As needed to get a 50-percent fifth generation fleet in time to meet the threats from Russia and China? (OPR: AF/A8)

Answer. We are committed to buying the F-35 in sufficient numbers to meet the fighter force mix we need for the missions we've been given in the National Defense Strategy. Funding for the F-15EX did not come from the F-35 portfolio, nor will it in the future, as these two aircraft are seen as complimentary, not competitive, in what they bring to the fight.

Question. I commend the Air Force for making progress on reducing the overall pilot and maintainer staffing gaps, but there is still some work to be done. Last month GAO noted increasing loss rates of experienced maintainers, and recommended that the Air Force develop annual retention goals and a retention strategy for aircraft maintainers. Have you taken corrective action and implemented such a plan? (OPR: AF/A4)

Answer. Our Aircraft Maintenance Career Field Managers continue to refine the Air Force Maintenance Retention strategy. Our goal is to have our strategy framework completed by August 30, 2019. Career Field Managers are gathering current and historical retention data to conduct analysis, are partnering with experts within the Deputy Chief of Staff for Manpower, Personnel and Services, and have laid out goals and objectives to meet the August 30, 2019 delivery date.

Question. How can Congress assist the Air Force in addressing this problem, particularly with respect to the Air National Guard? (OPR: NGB)

Answer. As referenced in Government Accountability Office's report, the Air National Guard (ANG) is experiencing a shortfall of assigned maintainers and defi-

ciencies in required skill levels for those maintainers. The ANG requires increased military personnel funding to incentivize recruiting and retention of critical maintenance career fields and to provide adequate training days in order to expedite skill level qualifications for deploying maintainers.

QUESTIONS SUBMITTED BY SENATOR ROY BLUNT

WHITEMAN AIR FORCE BASE VEHICLE MAINTENANCE FACILITY (OPR: SAF/A4C)

Question. Secretary Wilson, I know you visited Whiteman very early on in your tenure.

While there, you saw firsthand the problematic situation involving Whiteman's vehicle maintenance facility.

The current aging 1950s era facility was originally designed for a fleet of 300 vehicles. The current fleet is over 650 vehicles. The facility needs a \$24 million military construction project to meet safety standards and prevent workarounds in support of Whiteman's strategic mission.

This is Whiteman's top military construction project request and is at the top of Air Force Global Strike Command's list as well.

In response to a letter I sent you on the project, you commented that the Air Force had nearly 500 projects submitted by Air Force major commands. Yet, the Air Force was only able to fund a small number given difficult funding choices.

Can you please discuss the demands, and balance necessary, to fund military construction projects to address the backlog of necessary investments in critical infrastructure in the Air Force?

Answer. Most years, 75–80 percent of military construction resources support combatant commander requirements and new mission beddowns, leaving 20–25 percent for recapitalization of existing missions and facilities Air Force-wide. Informed by major command priorities, the Air Force prioritizes all enterprise-wide existing mission requirements for these scarce recapitalization military construction resources. In the last two decades, some budgets did not provide enough military construction funds for all major commands to fund even their top recapitalization priority. The Air Force maintains an unfunded priority list, which includes unfunded recapitalization requirements, so that we are postured to execute any additional appropriations if they become available. Our fiscal year 2020 military construction unfunded priority list includes the Consolidated Vehicle Operations and Maintenance Facility project at Whiteman Air Force Base.

Given the limited percentage of military construction funds available annually for recapitalization, we intend to leverage Facility Sustainment, Restoration, and Modernization (FSRM) funds, along with recapitalization military construction, to address our backlog of deferred infrastructure maintenance. Going forward, robust FSRM budgets, coupled with new authorities to use FSRM instead of military construction for facility conversion, will allow major commands much needed flexibility to address their top priorities and will enable the Air Force to begin reducing our backlog of deferred maintenance.

AIR FORCE WE NEED (OPR: AF/A5)

Question. Secretary Wilson, last year you announced an effort to get the Air Force to 386 squadrons in order to meet the intent of the National Defense Strategy.

Can you provide us with an update on how the Air Force intends carry out that plan to increase capability, capacity, and readiness?

Answer. The Air Force We Need growth from 312 to 386 operational squadrons is a strategy-driven, rather than budget constrained, analysis of what the Air Force requires to implement the National Defense Strategy. Our budget this year was driven by the National Defense Strategy and the prioritized missions set out in that strategy. In terms of readiness, we focused on building a more lethal and ready force—the Air Force is more ready for combat operations today than it was 2 years ago. We closed the gap on our maintainer shortage to address readiness shortfalls. In terms of capability and capacity, we are modernizing across the board with the F-35, the KC-46, the B-21 bomber, the nuclear deterrent, the T-X trainer, and our helicopters. We have aligned our budget priorities to the priorities of the National Defense Strategy—and identified the need to grow to meet all of the mission sets with our Air Force We Need analysis.

QUESTIONS SUBMITTED BY SENATOR JERRY MORAN

Question. I would like to know how your fiscal year 2020 request invests in sustainment research. Specifically, what level of funding is dedicated to sustainment research efforts and what programs or partnerships does the Air Force intend to pursue to modernize sustainment of your aircraft? (OPR: SAF/AQ)

Answer. The fiscal year 2020 President's Budget Request includes \$659 million (Fiscal Years 2020–2024) for the Air Force Research Laboratory (AFRL) science and technology research in sustainment technologies for aircraft and intercontinental ballistic missile systems. This involves approximately a dozen AFRL core technical areas and over 50 projects in partnership with various system program office, depot operations, and repair sites at Air Force bases. Key examples are Low Observability improvements for F-35, F-22, and B-2, new non-destructive evaluation (NDE) for fighters and transport aircraft, advanced inspection processes and equipment for life extension, reduced costs of various turbine engines, and digital engineering and machine learning processes and tools for advanced Intercontinental Ballistic Missile health prognostics. The newly formed Rapid Sustainment Office leverages AFRL initiatives and transitions the new technologies into active sustainment activities to reduce sustainment cost and improve readiness.

Question. I would like your perspective on two proposals stemming from OT&E's report to increase Cyber Red Teams capacity. The first proposal is to resource partnerships with academia to create a pipeline of cyber talent for Red Teams. The second proposal is to resource a Joint Cyber Red Team construct, for example, the 177th Information Warfare Aggressor Squadron at McConnell Air Force Base is an Air National Guard, NSA and USCYBERCOM-certified red team that already works hand-in-hand with the Army team based in Huntsville, and they should be resourced to collaborate on testing to meet demand. (OPR: AF/A2/6)

Answer. The Air Force is currently leveraging efforts like "Hack the Air Force" where the Air Force has partnered with HackerOne to not only uncover vulnerabilities in public facing websites, strengthening the service's cyber posture, but also potentially identifying, recruiting, or retaining cyber talent. Due to required elevated clearance levels to access DoD network systems, elevated tools and methods, the DoD is unable to fully partner with non-Federal agencies for pipelines to increase Cyber Red Team capacity. Often, the limitation on Cyber Red Team Capacity is the backlog of personnel awaiting completion of clearance investigations. Partnerships with Total Force aggressors would provide valuable additional capacity, and we would welcome their assistance, provided they were resourced and supported appropriately.

QUESTIONS SUBMITTED BY SENATOR JOHN HOEVEN

Question. Is the Air Force considering using RPAs for missile defense and wide area surveillance as part of efforts to combat future high-end adversaries? (OPR: AF/A2/6)

Answer. The Air Force is not currently planning or programming to use RPAs for missile defense. The Missile Defense Agency has contracted MQ-9 and MQ-9B aircraft, which have been structurally modified with electro-optical/infra-red sensors in a nose turret, to assess the feasibility and utility of this capability. The Air Force is working with the Missile Defense Agency on potential warfighter concepts of operations if a decision was made to field this capability. If fielded, the Air Force favors use of a modular pod-based approach to minimize the impact to existing RPA aircraft, missions, and force structure.

The Air Force's current RPA wide area surveillance capability is Gorgon Stare 2, which flies on a limited number of MQ-9 aircraft providing Wide Area Motion Imagery (WAMI) in permissive environments. Carrying a Gorgon Stare precludes carrying weapons. The Air Force studied Next Generation Sensors needed to combat future high-end adversaries and considered wide area surveillance concepts, but they were not prioritized for further development.

Question. Is the Air Force considering increasing the total number of RPA combat lines in order to meet demands in the PACOM and EUCOM AOR? (OPR: AF/A2/6)

Answer. The Air Force is programmed to support 60 MQ-9 combat lines (CLs) plus 10 Government Owned, Contractor Operated (GOCO) CLs. The Air Force is currently not considering increasing the total number of MQ-9 CLs.

Question. If a lack in personnel is the Department's biggest challenge in increasing RPA combat lines, what kind of advancements could be leveraged to address that challenge?

Answer. The Air Force does not currently intend to increase the number of MQ-9 CLs. In addition to increasing personnel the Air Force would have to address current limitations on equipment, specifically Ground Control Stations (GCS), aircraft, and ground support equipment for Launch and Recovery locations.

QUESTIONS SUBMITTED BY SENATOR PATRICK J. LEAHY

Question. You testified that there was nothing in the Air Force's budget request for Military Construction that is not necessary for readiness. (OPR: AF/A4C)

What is the specific impact on Air Force readiness if funding for Military Construction projects is reprogrammed away from the Air Force?

Answer. The Acting Secretary of Defense is considering the option of utilizing 10 USC 2808 authority to construct a barrier in support of the use of the armed forces in addressing the national emergency for which the armed forces are required. In the event Acting Secretary Shanahan utilizes this authority, the Air Force will work with the Office of the Secretary of Defense to ensure they are informed of the potential military readiness impacts regarding any Air Force projects that might be deferred.

Question. What projects not included in the fiscal year 2020 budget submission would you accelerate or add if funding was available?

Answer. If additional funding were to become available, we would seek military construction-related requirements, consistent with our fiscal year 2020 military construction unfunded priority list. Our first unfunded priority is \$190 million to complete prior-year projects with known cost increases over their programmed amounts. Without additional funding, these projects will be delayed indefinitely, or other authorized and appropriated projects would need to be deferred to enable reprogramming.

Our second unfunded priority is \$63 million for additional Military Construction planning and design funds. Early design is one of the most important aspects of a healthy military construction program; cost estimating and budgeting will both improve if we have the resources to begin design as early as possible, with ready-to-execute designs on the shelf for future execution years.

Our unfunded priority list also includes our next 10 highest priority projects that are ready to execute, but did not make it into the fiscal year 2020 President's Budget. These critical projects support Total Force requirements at bases across the United States:

- Mechanized Material Handling System Allied Support—Travis AFB, California
- NC3 Support War Reserve Materiel Storage/Shipping Facility—Holloman AFB, New Mexico
- SOCNORTH Theater Operational Support Facility—Peterson AFB, Colorado
- Consolidated Vehicle Operations and Maintenance Facility—Whiteman AFB, Missouri
- Air Force Personnel Center B-Wing—Joint Base San Antonio-Randolph
- 41st Rescue Squadron HH-60W Apron—Moody AFB, GA
- Consolidate Prep School Dormitory—U.S. Air Force Academy, Colorado
- Aerial Port Facility—Minneapolis-St. Paul International Airport, Minnesota (Air Force Reserve)
- Aeromedical Evacuation Squadron Training Administration Facility—Joint Base Andrews, Maryland (Air Force Reserve)
- Fuels/Corrosion Control Hangar and Shops—Moffett Air National Guard Base, California (Air National Guard)

Question. What are the early estimates of the cost of damage to Offutt Air Force Base and other costs related to flooding?

Answer. The early flood damage estimate for Offutt Air Force Base is \$350 million in Operations and Maintenance costs. Cost estimates for construction and equipment are still in development.

Question. You testified that the Air Force is partnering with universities like Norwich University in Northfield, Vermont, to grow cyber talent and recruit young people with proficiencies in computer languages. (OPR: SAF/CN)

Will you provide more information about these partnership programs?

Answer. The AF primarily partners with universities through Reserve Officer Training Corps (ROTC) programs. ROTC programs provide the AF an avenue to directly access officers with cyber talent. Often, ROTC programs will partner with Active, Guard, and Reserve units to connect cadets to operational Air Force missions. This is the case at Norwich University where the 229th Cyber Operations Squadron has established a relationship with the ROTC program, and other Norwich University programs, with an emphasis on cyber operations. The AF will access many offi-

cers directly into the 17D career field, cyberspace operations. To complement direct accessions into cyberspace operations, the AF is piloting a training program similar to the Language Enabled Airmen Program (LEAP) which provides Airmen, from all ranks and specialties, training opportunities to sustain and enhance their foreign language skills over the course of their service. Similarly, the AF is looking at providing sustainment and enhancement training opportunities to Airmen with computer language skills.

Question. How will you coordinate those programs with existing cyber training and education programs?

Answer. ROTC remains our primary partnership vehicle with universities to recruit cyber talent and young people with proficiencies in computer languages. In addition, the AF Computer Language Initiative (CLI) is aimed at uniting enterprise efforts to ensure that the AF has Airmen with the digital talent to face current and emerging challenges. The CLI brings together stakeholder representatives from across the AF to ensure that policy, training, tracking, and utilization efforts are synchronized. Finally, our success with software factories, in particular Kessel Run, provides a proven model for the AF to begin to normalize the process of identifying our Airmen with proficiencies in computer languages, providing additional training, then transitioning to an operational software development capability.

Question. In the fiscal year 2020 President's Budget Request, the account for Overseas Contingency Operations is tripled to include funding over the budget cap. However, even when the so-called "base-to-OCO" funding is removed, OCO remains close to level. (OPR: SAF/FMBP)

What plans exist for the Air Force to transfer enduring OCO costs to the base budget?

Answer. The Air Force plans to move enduring Overseas Contingency Operations costs to the base budget, if directed or given guidance by the Office of Secretary Defense (OSD). Any movement of requirements from OCO to Base would need to include the funding being transferred as well. Without funds across the FYDP, The Air Force would have to divert funding from other efforts, such as readiness, to maintain the current level of operational support in the deployed AOR.

Question. Are there cost savings to including enduring OCO costs in the base budget?

Answer. There are potential cost savings; however, the real benefit is that it sends the right message to the industry. Our budgeting "strategy" (base vs OCO) drives industry behavior for long term planning and internal investment strategies. Without funds in the FYDP, industry's appetite for making internal investments is reduced, which can later drive the AF to incur costs for production line capacity increases.

QUESTIONS SUBMITTED BY SENATOR DIANNE FEINSTEIN

C-130 WILDFIRE AIRCRAFT (OPR: SAF/AQ)

Question. In the 2019 National Defense Authorization Act, Congress directed the Air Force to modify and transfer seven C-130 aircraft currently operated by the Forest Service to California (Cal Fire) for use in wildfire suppression. Please provide the overall budget estimate and the current schedule for contract award, critical design review, delivery of the first aircraft, and final delivery of the seventh aircraft.

Answer. The Air Force is committed to delivering seven C-130H aircraft to Cal Fire for wildfire suppression as directed by the fiscal year 2019 National Defense Authorization Act. Per the fiscal year 2019 NDAA, the total program is capped at \$150 million. Contract award, critical design review, delivery of the first aircraft, and final delivery of the seventh aircraft are projected for fourth quarter fiscal year 2019, third quarter fiscal year 2020, second quarter fiscal year 2021, and first quarter fiscal year 2022 respectively.

LAUNCH SERVICES AGREEMENT (SAF/AQ)

Question. The Air Force announced Launch Services Agreement (LSA) awards to three companies in October 2018. The purpose of these awards was to "to quickly transition from the use of non-allied space launch engines, implement sustainable competition for National Security Space (NSS) launch services, and maintain assured access to space."

A key program objective was to have certified launch vehicles ready to send critical national security satellites to space by April 2022. What is the current schedule toward certification for each of the three LSA award winners, and is the Air Force aware of further delays to the schedule announced in October 2018?

Answer. The Launch Services Agreement (LSA) requires any LSA provider selected for a Phase 2 award to develop certified launch systems by the first National Security Space mission procured under Phase 2. The first Phase 2 launch is projected for 3rd Quarter fiscal year 2022. The launch providers are continuing to make sufficient progress towards this Initial Launch Capability. The specific schedules and milestones for each of the LSA providers is held as proprietary information.

Question. The Air Force has stated that Phase 2 missions would be open to all bidders, including those not awarded under the LSA. What is the Air Force's plan to ensure fair and equitable competition among bids, given that some providers will be receiving hundreds of millions of dollars in government funds while others will not. Will the Air Force account for these government investments when evaluating the total costs to the government in Phase 2? If not, why not?

Answer. The Air Force conducted a full and open competition for LSA awards and all bidders had an opportunity to be awarded. The Air Force has historically delineated separately awarded research and development funds from a procurement decision for concurrent development efforts, therefore, LSAs are considered to be an earned competitive advantage and these investments will not be included in the evaluation of the Phase 2 competition.

Question. The Air Force's current Phase 2 strategy precludes any competition following the initial award in 2020 until at least 2027. How does this limitation to competition meet the Air Force's objective to establish "sustainable competition for National Security Space launch services?"

Answer. The Air Force assesses that the expected market in the 2022–2026 time-frame will conservatively support only two providers. Working with two providers balances competition with National policy, which requires the DoD to maintain at least two paths to space for NSS satellites. In addition, awarding missions as a 5-year "block buy" provides the Air Force the ability to meet NSS requirements while ensuring market stability, lowering prices, and reinforcing commitment to industry. Following Phase 2, the Air Force plans to again compete and award NSS missions for launches starting in fiscal year 2025.

Question. The Evolved Expendable Launch Vehicle (EELV) Program has struggled for years with extremely high, unsustainable launch costs, and a purpose of the LSA effort is to reduce the cost of launching National Security Space payloads. Given that, why does the current Phase 2 RFP rank price as functionally irrelevant?

Answer. The Air Force has consistently worked to meet the more stressing National Security Space launch needs at lower cost. Launch service cost is important, but mission success and readiness will continue to be our most important factors of any source selection. By implementing this balance, the Air Force is expecting a successful Phase 2 competition where two commercial providers are selected that can affordably meet all NSS requirements.

QUESTIONS SUBMITTED BY SENATOR TOM UDALL

Question. There have been reports about the Pentagon working with NASA to have the national standard for PFOS/PFOA levels be raised from 70 ppt to 400 ppt for clean-up efforts and 1200 ppt for the emergency level.¹ This effort is would free the Air Force from a responsibility to clean-up and assist contaminated people and lands in a great deal of areas. (OPR: SAF/IE)

What efforts have been done to push for this raised standard and what are future plans that are in place to continue this effort?

Answer. The Air Force recognizes PFOS/PFOA contamination is a national issue that needs a national regulatory solution. We support the Environmental Protection Agency establishing regulatory standards and a consistent cleanup approach for PFOS/PFOA based on the well-established Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. We take our cleanup responsibilities seriously, and conduct our cleanups in an open and transparent manner following CERCLA. The Air Force and DoD are not seeking a different or weaker cleanup standard, but want the standard risk-based cleanup approach that is based on science and applies to everyone.

Question. As Russia and China aggressively pursue hypersonic weapons capabilities, it is important that we ensure advancement of our own hypersonic technology. Last year General John Hyten, Commander of U.S. Strategic Command, told the

¹ https://www.militarytimes.com/news/your-military/2019/03/15/with-lawsuits-on-the-horizon-dod-looks-for-ways-to-cut-contaminated-water-cleanup-costs/?utm_source=Sailthru&utm_medium=email&utm_campaign=ebb%2018.03.19&utm_term=Editorial%20-%20Early%20Bird%20Brief.

Senate Armed Services Committee that, “We don’t have any defense that could deny the employment of such a weapon against us.”² (OPR: SAF/AQ)

To develop hypersonic technology and possible counters, inland tests will need to be conducted. Is the Air Force coordinating with White Sands Missile Range to conduct the needed testing?

Answer. The Air Force reaches out to the various test ranges, including White Sands Missile Range, for its hypersonics-related science and technology and prototyping efforts. Each range has different attributes: over land, over water, data rates, risks, distances over which the testing can be conducted, etc. Test range selection is based on test requirements and range availability. The Air Force coordinates with White Sands Missile Range during the requirements process for supporting hypersonic testing. The Program Office for the Air Force’s Air-launch Rapid Response Weapon (ARRW) prototyping effort plans to run some ground global positioning system (GPS) performance testing at White Sands Missile Range. The ARRW Program Office is also planning to perform sled testing at the Holloman Air Force Base High Speed Test Track. The Air Force did participate in initial discussions about overland hypersonic testing. However, it was determined that White Sands Missile Range is too small for overland hypersonic weapon testing. As such, the Air Force has no current plans to accomplish hypersonic over land testing at White Sands.

Question. Can you update my office on Air Mobility Command’s efforts to utilize hypersonic point to point travel? What are the plans to make this a reality and has the Air Force begun the interagency efforts to conduct overland hypersonic tests?

Answer. The Air Force Research Laboratory, along with the major commands and the Air Force Warfighting Integration Capability, explore various concepts in simulations about wargames to assess if and how well they meet mission requirements or otherwise positively impact the future of warfighting. Currently, Air Mobility Command has no plans to invest in hypersonic point-to-point delivery.

Question. Secretary Wilson, in 2017, you submitted a detailed plan how the military’s space force would transition to a new branch. In this report, you suggest the Space Development Agency be assigned to the Air Force Space Rapid Capabilities Office. The Space Development Agency would evolve to a “hybrid” organization with elements of the RCO and National Reconnaissance Office. The RCO, you noted, “exists now and has the personnel and expertise to meet the needs of U.S. Space Command.” (OPR: SAF/SP)

I agree with your statement, and would like to know what role the Air Force Space Rapid Capabilities Office would play in the administration’s most recent legislative proposal to establish the Space Force?

Answer. The Air Force Space Rapid Capabilities Office is not addressed in the administration’s legislative proposal to establish the Space Force. However, if a Space Force is approved by congress, the Department of Defense intends to transfer all space acquisition organizations to the Space Force.

Question. Please update me on the Space Development Agency (SDA) and the metrics the Air Force is considering for locating this important office. Do you agree that the SDA would benefit from being co-located with the Space RCO? Please provide any reasons why or why not?

Answer. The Air Force is not involved in the process to determine the location of the Space Development Agency. On March 12th the Acting Secretary of Defense established the agency under the authority, direction, and control of the Under Secretary of Defense for Research and Engineering. The agency is currently located in the Washington, D.C. area. In a 14 September memo, the Air Force proposed “assigning the function” of the Space Development Agency to the Space Rapid Capabilities Office. The Air Force recommended this action because the Space Rapid Capabilities Office exists now, has special authorities granted by Congress, and has the personnel and expertise to develop the capabilities needed by U.S. Space Command.

Question. You reportedly wrote a memo to Defense Secretary Shanahan recommending that the SDA be co-located with the Space RCO. Can you please provide a copy of the memo to the committee for review?

Answer. Yes. Please find the memo, the Air Force concept for the Space Development Agency, and other relevant correspondence enclosed.

Question. I wanted to quickly address Holloman’s important role addressing the pilot shortage to help the Air Force meet its F-16 mission. The New Mexico delegation has inquired with you and your office several times, but I want to reiterate our position that the Air force should move quickly to make the F-16 basing permanent at Holloman. Do you have any updates on this decision? (OPR: SAF/IE)

² <https://www.cnn.com/2018/03/21/hypersonic-weapons-what-they-are-and-why-us-cant-defend-against-them.html>.

Answer. The basing process for the F-16 permanent Formal Training Unit continues. We anticipate the Secretary of the Air Force to select candidate bases this summer. Following the site surveys, the Secretary of the Air Force will make the preferred and reasonable alternatives decision in the winter of 2019/2020. After the required environmental analysis is complete, the Secretary of the Air Force will render the final decision, anticipated in the winter of 2021/2022.

Question. Do you still agree that permanent basing will help the Air Force manage its historical training requirements for pilots? (OPR: AF/A3)

Answer. ACTF—Pilot production, to include seasoning, depends on the proper distribution of aircraft and Instructor Pilots between the Formal Training Unit (FTU) and line squadrons. As we work to set targets to meet operational requirements, we need to ensure we have the right balance of aircraft and Instructor Pilots in the operational units to receive and season the FTU graduates. This work is on-going.

Question. The New Mexico Air National Guard performs important work, including providing critical training to Special Operations aircrews and supporting missions throughout the world. However, the TACOS do not have a flying mission. (OPR: NGB)

Has the Air Force made any decision to assign a flying mission to the New Mexico Air National Guard?

Answer. No decision has been made concerning a unit-equipped flying mission for the New Mexico Air National Guard (NM ANG). Current NM ANG contributions to Air Force Special Operations Command (AFSOC), Air Combat Command (ACC) and Air Education and Training Command (AETC) fill vital Service requirements. We acknowledge New Mexico's strong desire for an operational flying mission with unit-equipped aircraft and the Air Force will continue to evaluate future opportunities for the state.

Question. Multiple platforms have been considered for the flying mission at the ANG. Among these are HH 60's, the light attack aircraft, and CV-22's. Will the Air Force commit to assigning one of these proposed aircraft or another to New Mexico's ANG?

Answer. The HH-60, light attack aircraft (LAA) and CV-22 are all potential candidates for assignment to the NM ANG, but there is no existing or planned additional force structure available to support a commitment on assigning a flying mission to the New Mexico ANG at this time. An opportunity may arise in the future as we build towards the Air Force We Need and grow our total number squadrons. If we do grow, we will utilize our Strategic Basing Process to evaluate candidate locations and arrive at a decision on where that will occur.

Question. Following the Air Force LSA announcement, each of the three selected providers announced a 1 year schedule delay. Was the Air Force aware of this schedule delay when it made its award decision, and if so how did this impact the Air Force's decision? (OPR: SAF/AQ)

Answer. The Air Force comprehensively reviewed the launch service providers' schedules proposed under the Launch Services Agreement (LSA) solicitation. The launch providers have not adjusted their LSA completion schedules as proposed and awarded. All LSA providers are expected to be able to support the Phase 2 launch dates.

Question. Please describe how the Air Force plans to pursue its Phase 2 procurement for the LSA and whether total costs to the government will be considered for the award? (OPR: SAF/AQ)

Answer. The Phase 2 procurement will be a full and open competition separate from the LSA development efforts. Several draft solicitations have been released for industry comment and the final Request for Proposal is forthcoming. Additionally, the Air Force conducted a full and open competition for LSA awards and all bidders had an opportunity to be awarded the contract. The Air Force has historically delineated separately-awarded research and development funds from a procurement decision for concurrent development efforts, therefore, LSAs are considered to be an earned competitive advantage and these investments will not be included in the evaluation of the Phase 2 competition.

Question. Have you, anyone on your staff, or anyone within the Air Force participated in war planning for a potential war and/or attack in Iran or its military? (OPR: AF/A5)

Answer. The Air Force by statute is responsible for fulfilling the future operational requirements of the unified and specified combatant commands as well as for preparation of the air forces necessary for the effective prosecution of war. To meet these responsibilities as a Service, the Air Force organizes, trains, and equips its forces to conduct prompt and sustained offensive and defensive air operations across a range of contingencies. Specific war planning for any particular region is the responsibility of combatant commands. This question is best answered in a dif-

ferent setting, and as a Service we would only be able to talk about theoretical planning scenarios not actual war plans.

Question. Have you, anyone on your staff, or anyone within the Air Force participated in war planning for a potential war and/or attack in Venezuela or against the Maduro regime? (OPR: AF/A5)

Answer. The Air Force by statute is responsible for fulfilling the future operational requirements of the unified and specified combatant commands as well as for preparation of the air forces necessary for the effective prosecution of war. To meet these responsibilities as a Service, the Air Force organizes, trains, and equips its forces to conduct prompt and sustained offensive and defensive air operations across a range of contingencies. Specific war planning for any particular region is the responsibility of combatant commands. This question is best answered in a different setting, and as a Service we would only be able to talk about theoretical planning scenarios not actual war plans.

Question. Would a war with Iran hinder the Air Force's ability to prepare for near peer competition with China and Russia as outlined by numerous defense policy documents? Has the Air Force completed any estimates regarding what a war with Iran would cost in terms of dollars, equipment, and lives? If so, please provide that analysis. (OPR: AF/A5)

Answer. Logically, any military action against one nation has an impact on capacity to prepare or engage in competition with another nation. We have seen this over the past two decades, with our continual engagement in the Middle East, and its impact on our full-spectrum readiness. Any estimated regarding detailed consequences we have discovered in scenario planning would need to be provided in a classified setting.

QUESTIONS SUBMITTED BY SENATOR BRIAN SCHATZ

Question. After Hurricane Michael, the Air Force moved F-22s from Tyndall Air Force Base to other squadrons across the country, including the 199th Fighter Squadron at Joint Base Pearl Harbor-Hickam. (OPR: SAF/IE)

Has the Air Force made a decision about basing F-22s back at Tyndall?

Answer. Yes, the Air Force is using its strategic basing process to determine the locations to meet the recommendations of the Government Accountability Office report on F-22 organization and utilization changes that could improve aircraft availability and pilot training. The Secretary of the Air Force directed a study to assess the feasibility of basing up to three F-35A squadrons at Tyndall. We anticipate a Secretary of the Air Force preferred alternative decision for the F-35 and F-22 this summer.

Question. Have you made recommendations about making any of the temporary F-22 moves permanent?

Answer. Yes, the Air Force is using its strategic basing process to determine the locations to meet the recommendations of the Government Accountability Office report on F-22 organization and utilization changes that could improve aircraft availability and pilot training. We anticipate a Secretary of the Air Force preferred alternative decision this summer.

Question. Last summer, GAO issued a report that said increasing the number of aircraft with the 199th Fighter Squadron would generate more sorties and improve maintenance performance. (OPR: AF/A8)

Regardless of the basing decision for Tyndall, will you commit to keeping the 199th Fighter Squadron its current size of 24 primary aircraft?

Answer. As the basing decision is being finalized, many factors across fighter platforms are still being considered that do not allow the USAF to fully commit to keeping the 199th Fighter Squadron at its current size into the future. The end goal is to position aircraft appropriately to meet the needs of the joint force and capitalize on efficiencies where able.

Question. Will you work with me to get training aircraft to Hawaii to provide an adversary air capability so we can free up F-22s that are currently playing that role?

Answer. We look forward to working with you and your staff to discuss the adversary air enterprise.

QUESTIONS SUBMITTED BY SENATOR TAMMY BALDWIN

F-35 OPS 5 & 6 DRAFT ENVIRONMENTAL IMPACT STATEMENT (OPR: SAF/IE)

Question. As you know, the 115th Fighter Wing at Truax Air National Guard Base was selected in 2017 through the Ops 5 basing process to be the next ANG unit to perform the F-35A Joint Strike Fighter mission. Can you please provide me with a detailed outline as to where the process currently stands and when you expect the release of a Draft Environmental Impact Statement (EIS) and public comment hearing as well as the impact of this timing on the planned bed-down schedule for Ops 5 & 6?

Answer. The Air Force is accomplishing the environmental analysis. The Secretary of the Air Force will render a final decision once informed of the potential environmental impacts of the proposed action. We anticipate release of the draft Environmental Impact Statement late this summer, with public hearings scheduled within 30 days of the release of the document. This timeline does not affect the planned bed down schedule, nor first aircraft arriving at Ops 5 in April 2023 and in December 2023 at Ops 6.

PFOS/PFOA (OPR: SAF/GC)

Question. (a) In the Department's view, which entity has the legal responsibility for environmental and human health impacts, and related cleanup and mitigation costs, related to the use of PFOS/PFOA for crash, fire & rescue training and services at any non-USG, fee-owned installations?

(b) A site which: is a NG site for which the DoD has some contractual relationship with an Airport authority as a tenant, and that agreement includes specifies requirements for training and operations (such as Crash, Fire & Rescue), which is later to be found to have contamination resulting from those requirements:

—What is DoD's role when the contamination is classified as requiring cleanup under Federal superfund laws?

—What is DoD's role when the contamination is classified at the Federal level as caused by emerging contaminants of concern, and which does not have a Federal regulatory standard, but which is subject to a regulatory cleanup standard at the State level?

Answer. Generally. In general, the Air National Guard would implement any necessary environmental response actions to address contamination attributable to the Air National Guard, utilizing authorities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

In the case of environmental releases of PFOS/PFOA attributable to the Air National Guard, the Air Force by policy acts to meet the US Environmental Protection Agency's Lifetime Health Advisory of 70 ppt for PFOS/PFOA concentrations in drinking water. Where PFOS/PFOA drinking water concentrations exceed 70 ppt, we immediately provide alternate drinking water and implement long-term measures to ensure safe drinking water.

The Air Force also investigates the source of PFOS/PFOA releases and the extent of contamination. Following the risk-based CERCLA process, Air Force would then conduct any response action that is necessary to protect human health and the environment.

In the case of environmental releases of contaminants for which there is a Federal standard, the Air Force would comply with that standard. Where a State has properly promulgated and implemented a standard that is more stringent than the Federal standard and such standard either directly applies to the United States Government or would constitute an Applicable or Relevant and Appropriate Requirement under CERCLA, Air Force would comply with the State standard.

Extinguishing Fires on Aircraft Located on Civilian Airports. Where there is an environmental need to respond to PFOS/PFOA releases that are caused by Air National Guard use of fire-fighting foam to address fires located at civilian airports that result from non-Air National Guard operations, the responsibility for implementing or paying for the environmental response may depend either on agreement language or on the particular facts of the situation. For example, where an agreement between the Air National Guard and the civilian airport, e.g., a "Joint Use Agreement," identifies which party is responsible for funding environmental response actions, the agreement would control. In the absence of such an agreement allocating this responsibility, responsibility for funding such response action may depend on the entity whose fire caused the need for extinguishing action that released PFOS/PFOA.

Question. Please provide a summary of USAF RDTE investments designed to reduce the cost space access and space launch.

Answer. The Air Force is executing a strategy through the National Security Space Launch program to ensure affordable access to space by investing in next generation rocket propulsion and launch systems. Successful development under the rocket propulsion partnerships led to the next generation of rocket engine prototypes. These engine prototypes are being leveraged to support the development of new domestically-produced launch systems to meet all National Security Space requirements while ending reliance on foreign rocket engines. Through these partnerships, the Air Force has invested over \$2 billion to ensure there are viable and affordable domestic launch capabilities. For the first time in 20 years, the Air Force will be able to meet all national security launch needs through competition among multiple launch providers, assuring continued access to space.

Question. What investments is the Air Force making to advance Stage 2 engine technology?

Answer. The Air Force is investing in the modernization of the RL10 Liquid Oxygen-Hydrogen upper stage engine built by Aerojet Rocketdyne and used since the 1960s. Current variations are used on the United Launch Alliance Centaur second stage, flown on Atlas V and Delta IV rockets. The Air Force and Aerojet Rocketdyne are co-investing in developing the next-generation RL10CX engine. The RL10CX replaces many heritage parts and processes dating to the Apollo era, with additive manufacturing, which reduces fabrication time and costs 30–50 percent less. RL10CX is compatible with launch vehicles using RL10C engines, including Northrop Grumman's Omega and United Launch Alliance's Vulcan.

Question. What is the budget in the POM and over the FYDP for Air Force Research Laboratory (AFRL) sponsored work on rocket propulsion, specifically upper stage engine maturation?

Answer. The Air Force fiscal year 2020 President's Budget for an upper stage engine rocket motor concept is \$17.4 million. The Future Years Defense Program funding across fiscal years 2020 to 2024 totals \$105.1 million for these efforts.

QUESTIONS SUBMITTED TO GENERAL DAVID L. GOLDFEIN

QUESTIONS SUBMITTED BY SENATOR ROY BLUNT

ROSECRANS C-130 ISSUES (OPR: AF/A8)

Question. The 139th Airlift Wing at Rosecrans Air National Guard Base provides critical C-130 training through its Advanced Airlift Tactics Training Center (AATTC) and Weapon Instructor Course (WIC).

The AATTC provides academic and combat flying training tactics to the active duty Air Force, National Guard, Air Force Reserve, and nearly 20 allied nations.

The WIC increases pilot's combat capabilities and ensures they stay current in their training in order to effectively engage in a joint environment.

In the past, funding has not been explicitly programmed in the budget. Instead, it was done on an ad hoc, yearly basis that caused stress for the 139th. However, thanks to this committee working with the Air Force and National Guard over the last several years, this issue appears to be resolved. So thank you for your efforts in that area.

General Goldfein, related to Rosecrans and C-130 issues, in September 2018, I sent a letter to the Chief of the National Guard Bureau, General Joseph Lengyel. I copied you on that letter.

The letter raised concerns over the decision to temporarily reduce the Primary Aircraft Assigned (PAA) for Air National Guard C-130 units from eight to seven.

I understand the temporary reduction is meant to help the Air National Guard address readiness maintenance issues.

While I am supportive of the effort to address readiness issues, I want to ensure that seven PAA does not become permanent.

Can you please discuss how you plan to work with the National Guard on a plan to return to eight PAA as quickly as possible?

Answer. Based on fiscal year 2020 President's Budget (PB) submissions, the 139 AW's current fleet of 7x Primary Mission Assigned Inventory (PMAI) C-130Hs will not increase to 8. The fiscal year 2019 PB adjusted the unit's PMAI from 8 to 7 in an effort to reach the Air Force directed goal of 10 percent fleet-wide Backup Aircraft Inventory (BAI). Currently, the 139 AW has a total of 7 PMAI and 2 BAI. This BAI increase improved AF readiness by allowing for increased maintainer-to-aircraft ratio and facilitating modernization efforts while improving C-130H mission capable rates. For the Air National Guard in particular, the decrease from 8x PAI to 7x PAI did not drive a decrease in manpower.

QUESTIONS SUBMITTED BY SENATOR JOHN HOEVEN

Question. I think we can both agree that the Airmen and women who serve in our Air Force are the Department's most important asset. When our servicemembers and their families face adversity and do not seek help, the readiness and lethality of our Air Force is degraded. Task Force True North (TFTN) is a pilot program currently taking place at four bases around the country—including Minot Air Force Base in North Dakota—that focuses on enhancing well-being, increasing resilience, preventing detrimental outcomes such as suicide, sexual assault, domestic violence and substance abuse, and optimizing human performance. One unique initiative within the TFTN pilot program involves embedding four licensed clinical social workers and one mental health technician at the unit or squadron level. (OPR: AF/A1)

What do you see as the greatest challenge to expanding this type of pilot program Department-wide?

Answer. We see the greatest challenge to be the availability and recruitment of enough professionals to meet the program demand for embedded providers.

Question. Are there specific areas where additional funding is needed to ensure our Airmen and women have these types of programs in place?

Answer. Yes. We have identified three areas where additional funding is essential to success: manpower dollars, contractor dollars and sustainment/operating dollars. We are in the process of defining the required amounts through the AF's budget process.

QUESTIONS SUBMITTED BY SENATOR PATRICK J. LEAHY

Question. The Vermont Air National Guard is due to receive the first of its F-35A Lightning II aircraft this fall. This aircraft is being fielded concurrently in the Air National Guard and the active duty Air Force, unlike previous fighter aircraft. This means there are few experienced active duty pilots, maintainers, and other personnel to join the 158th Fighter Wing than under existing Air Force Air National Guard unit transition models. (OPR: NGB)

How have you developed budgeting models for Military Personnel and Operations and Maintenance costs for fiscal year 2019 and beyond for the transition?

Answer. A funding baseline for Military Personnel and Operations and Maintenance costs for the F-35 was established using funding from the existing F-16 mission. The ANG has further refined the resourcing requirements through a series Site Activation Task Force (SATAF) on-site visits and monthly conversion reports from the unit. One variance we've already discovered in this initial conversion is the concurrent seasoning of ANG maintenance personnel, which required an additional \$3.3M this year. We expect to continually refine the budget throughout the unit's 3-year conversion period and a manpower study will also be conducted within 2 years of the unit achieving full operational capability so that we can validate the assumptions and adjustments we've made up until that point.

Question. Will you share a detailed table outlining those estimates over the next five fiscal years?

Answer. The initial F-35 Operations and Maintenance (O&M) and Military Personnel (MILPERS) requirements for the 158 FW are satisfied in the fiscal year 2020 budget; the breakout is shown in the table below. Data for fiscal year 2021 and beyond is pre-decisional and will be made available once the Service's budget is finalized each year.

Fiscal Year 2020

[\$ in millions]

	Requirement	Programmed
Operations and Maintenance (O&M)		
Flying Hours	3260	3260
Weapons System Sustainment	\$105.3	\$105.3
Manpower	Mil/FT	Mil/FT
	595/189	619/188

Question. Will you report to the Committee over the course of the transition with updated cost estimates in order to ensure the success of and successful budgeting for the F-35A transitions and future concurrent fielding?

Answer. The Air Force is actively documenting the experiences and lessons learned during this early stage of F-35 fielding into the Total Force and we look forward to providing the Committee with updates as we move forward.

SUBCOMMITTEE RECESS

Senator MURKOWSKI. The Defense committee will reconvene on Wednesday, March 27th at 10:00 a.m. to receive testimony from the Army. And until then, the subcommittee will stand in recess. Thank you both very, very much.

[Whereupon, at 11:52 a.m., Wednesday, March 13, the subcommittee was recessed, to reconvene subject to the call of the Chair.]