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HEARING

ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2019

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES HEARING

ON

FISCAL YEAR 2019 BUDGET REQUEST ON AIR FORCE AIRBORNE INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE PROGRAMS

HEARING HELD
MARCH 15, 2018



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FISCAL YEAR 2019 BUDGET REQUEST ON AIR FORCE AIRBORNE INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE PROGRAMS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES,
Washington, DC, Thursday, March 15, 2018.

The subcommittee met, pursuant to call, at 2:00 p.m., in room 2212, Rayburn House Office Building, Hon. Michael R. Turner (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. MICHAEL R. TURNER, A REPRESENTATIVE FROM OHIO, CHAIRMAN, SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Mr. TURNER. The hearing will come to order.

The subcommittee meets today to receive testimony on airborne intelligence, surveillance, and reconnaissance [ISR] programs contained in the Air Force's fiscal year [FY] 2019 budget request.

I want to welcome our witnesses today for today's panel: Lieutenant General Jerry Harris, Air Force Deputy Chief of Staff for Strategic Plans and Requirements; Ms. Susan Thornton, a member of the Air Force's Senior Executive Service and Director of Air Force Information Dominance Acquisition programs; Lieutenant General Anthony Ierardi, a Director of Force Structure, Resources, and Assessment for the Chairman of the Joint Chiefs of Staff; and Lieutenant General John Dolan, Director of Operations for the Chairman of the Joint Chiefs of Staff. You all have really long titles.

We thank all of you for your service and for being with us today. And after reviewing the Air Force's fiscal year 2019 budget request, the subcommittee is somewhat satisfied with its content and funding levels provided for the airborne ISR enterprise. The budget request appears to support what is needed to sustain the legacy fleet of ISR programs, but the subcommittee is disappointed that there is no significant capacity growth in the Air Force's ISR portfolio to meet more airborne ISR requirements.

ISR is the pacesetter for operations. In short, ISR is a combat multiplier that not only informs our commanders where they need to engage, but also where not to engage and what areas to avoid. With the exception of full motion video [FMV] capability provided for counterterrorism support, there appears to be stagnation in the remainder of the ISR portfolio for other critical intelligence needs. This situation—stagnation maintains the ISR capacity shortfall and should be reversed to fill more combatant commanders' intelligence requirements.

We understand that we cannot afford to satisfy all combatant commander ISR requirements, but consistently we see, year after year, ISR fulfillment rates for critical intelligence areas in single-digit percentages and with higher risk than there should be. It seems that if there is not more effort within all of the services to achieve more ISR capacity for our combatant commanders, that we will have a continued shortfall.

I am pleased, however, to see that the Air Force has finally removed the uncertainty regarding the high-altitude ISR capability that the U–2 and RQ–4 Global Hawk provide, and that both platforms will be sustained and modernized well into the future.

There is one major point of contention in the budget request that we will need to work through, but I am confident that we will reach a satisfactory compromise: the Joint Surveillance and Target Attack Radar System Recapitalization program, also known as JSTARS Recap, and the Air Force's decision to terminate this program on essentially the eve of the source selection decision; the Air Force's request to forego JSTARS Recap program in favor of fielding a concept called Advanced Battle Management System, or ABMS.

At the moment, there appears to be multiple disconnects with this concept, and I want to highlight a few that stand out. First and foremost, the new concept appears to contradict the years of extensive analysis and testimony to Congress that underpin the current validated requirements. From as early as December 2011, when the Air Force completed its analysis of alternatives [AOA], to as late as August 2016, when the Joint Requirements Oversight Council [JROC] validated the JSTARS Recap capability development document, which is the document that justifies how and why a platform is being designed against a validated requirement, all conclusions pointed to a capability consisting of a business jet-sized aircraft with a reduced crew that would provide, at the tactical edge of the contested battlefield, onboard, real-time battle management command and control [BMC2] and moving target indicator intelligence to the warfighter maneuvering on the ground.

These years of analysis were molded against anti-access/area denial threats per the previous administration's defense strategy of 2012, which identified that states such as China and Iran will continue to pursue asymmetrical means to counter our power projection capabilities, while the proliferation of sophisticated weapons and technology will extend to non-state actors as well. Accordingly, the U.S. military will invest, as required, to ensure its ability to operate effectively in anti-access/area denial environments.

There is not enough time to go through all the analysis completed by many entities within the Department [of Defense], but the committee staff provided a comprehensive summary to each member's office outlining specific details.

Second, the Air Force plans to rely upon unmanned aircraft capabilities and sensors in increment [INC] 1 of ABMS that the analysis of alternatives has already determined would not meet full-spectrum requirements, for the Air Force now wants to rely upon the airborne warnings and control systems, or AWACS [Airborne Warning and Control System], aircraft to do battle management command and control for ground forces in addition to its primary

mission of providing battle management command and control for airborne forces, all without increasing the crew size or adding additional mission spaces onboard the aircraft to effectively perform this mission because the aircraft has no physical growth capacity.

Third, ABMS is not forecasted to reach initial operational capability until 2035, which is 11 years after JSTARS Recap would begin fielding. ABMS is not forecasted to reach full operational capacity until 2042, which, theoretically, is 6 years prior to when JSTARS Recap is scheduled to begin retirement. This schedule, of course, assumes that everything goes as planned and that all technologies and capabilities with the ABMS, many of which are still yet to be developed, are fielded without any issues.

Finally, JSTARS Recap aircraft is being designed as a true open architecture, open mission systems capability with a highly advanced fifth-generation radar and robust communication and battle management command and control suite of capabilities. This is a hallmark example of acquisition reform that this committee's been pushing, and it does not make sense why this capability is not being used as the foundation for the ABMS concept.

As we move forward in understanding the ABMS concept, we also need to understand where the risks to the warfighter lie and what risk mitigation paths we can take in the near and mid term to ensure that the validated requirements of the ground warfighter are met without question.

To put this all in perspective, we understand the projected threats to our forces are real and that the Air Force has submitted a budget that does not include JSTARS Recap. However, completely walking away from this program may prove to be an unacceptable level of risk to our warfighters for this committee. As we continue to build the FY 2019 NDAA [National Defense Authorization Act], we hope to learn more, and look forward to working with the Air Force on a path forward that will both mitigate risks to the warfighter and invest in the new Air Force programs that the Air Force is proposing.

I will now turn to my good friend from Massachusetts, Ms. Niki Tsongas, for her comments that she might want to make.

[The prepared statement of Mr. Turner can be found in the Appendix on page 27.]

STATEMENT OF HON. NIKI TSONGAS, A REPRESENTATIVE FROM MASSACHUSETTS, RANKING MEMBER, SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Ms. TSONGAS. Thank you, Mr. Chairman. And good afternoon to our witnesses. It is good to have you here. I would like to thank you for being here today to talk about the several Air Force intelligence, surveillance, and reconnaissance programs.

As the chairman has pointed out, ensuring that the Air Force preserves and expands the support it provides to the joint force in this mission area has been an ongoing concern for the subcommittee for many years. The United States has the world's largest and most advanced airborne reconnaissance fleet. The question for Congress is, in my view, how do we keep it that way and make it even better?

This capability does not, of course, come cheap. Continued investment in the platforms, sensors, data networks and, importantly, the people across the ISR community is required. It is not surprising, then, that the cost of this enterprise creates tension inside the Air Force's budget. And while some tradeoffs with other important Air Force missions are appropriate, all too often, this mission area appears to be viewed as a bill payer for other Air Force needs.

In addition, there is some important recent history with the Congress in this area. Since I joined this committee, the Air Force has proposed retiring the U–2 and Global Hawk fleets. In both cases, Congress blocked these plans based primarily on concerns about overall ISR capacity and constant shortfalls in this mission area.

In the end, in both cases, Congress concluded that the Air Force's request to retire these platforms was the result of a narrow, short-term, purely funding-driven view that failed to account for an ever-growing demand for ISR on behalf of our combatant commanders around the world. That is important context for today's hearing.

The fiscal year 2019 request for Air Force programs in this area is, overall, quite well funded. Continued investments in the U–2, RQ–4 Global Hawk, RQ–9 Reaper, RC–135 reconnaissance aircraft, and E–3 Sentry fleets look healthy compared to recent requests. There is also funding for the ground-based side of the ISR enterprise. There is, however, one important exception to this overall positive trend: the proposed termination of the JSTARS replacement program.

As we will hear more about today, the Air Force plans to cancel the JSTARS replacement program in order to develop a decentralized network capability to integrate sensors across many platforms. This decision deserves close consideration for several reasons.

First, while the Air Force knows its decision is based on new threats, those very same threats were considered in 2011 when the DOD [Department of Defense] conducted an analysis of alternatives that led to the JSTARS replacement program.

Second, those same threats cited by the Air Force are a danger to any non-stealth aircraft in the early stages of a conflict, yet the Air Force is not proposing mass retirements of fourth-generation fighters or even other reconnaissance aircraft based on commercial aircraft, such as the E–3 AWACS, KC–46 tanker, RC–135 Rivet Joint, or Compass Call.

Third, the Air Force appears to be walking away from the joint in joint—in JSTARS. The origin of the original E–8 JSTARS fleet was a desire to integrate with U.S. Army sensors and weapons to attack targets behind enemy lines. The Air Force's proposal to terminate this program sends a message to the U.S. Army that the Air Force is no longer prioritizing this mission.

Fourth, the Air Force appears to have discounted the risks involved with their alternative network-based plan. Specifically, the time risk, the cost risk, and potential vulnerability of such a network to jamming or cyberattack.

Finally, the Air Force is once again proposing to shrink the size of the airborne ISR fleet at the same time that demands continue to rise. This committee has rejected the Air Force's last two proposals to do the very same thing.

I look forward to today's hearing and yield back.

Mr. TURNER. Thank you.

I ask unanimous consent that non-subcommittee members be allowed to participate at today's hearing, after all subcommittee members have had an opportunity to ask questions. Without objection, so ordered.

I also want to remind members that immediately following adjournment of this hearing, we will reconvene in Rayburn 2337 for a classified presentation by our witnesses.

Without objection, each of the witnesses' prepared statements will be included in the hearing record. We will begin with General Harris.

General.

STATEMENT OF LT GEN JERRY D. HARRIS, JR., USAF, DEPUTY CHIEF OF STAFF FOR STRATEGIC PLANS AND REQUIREMENTS (A8), HEADQUARTERS, U.S. AIR FORCE

General HARRIS. Thank you, Chairman Turner, Ranking Member Tsongas, and distinguished members of the subcommittee. Thank you for the opportunity to testify again. And I am glad our engagements continue in both frequency and qualitative content as they are very beneficial to the Department of the Air Force.

Today, there may be questions that lead to classified answers, to which we will be happy to continue on our scheduled closed session rather than talk around a correct answer in this open session.

The United States Air Force now operates several intelligence, surveillance, and reconnaissance, or ISR, capabilities across many domains. This hearing is focused on the air domain, and the witnesses you have invited appearing here are, clearly, experts that can speak to our joint requirements and operations, as well as our Air Force modernization plans.

The National Defense Strategy published in January of this year highlights the importance of competing and winning at all levels of engagement, above and below the level of armed conflict. The same strategy also tells us to focus on the high-end side of the combat spectrum and gives us some areas to take risk. Most of these risk discussions will need to take place in our already scheduled closed session.

To understand the situation and make decisions to keep the United States and our joint forces ahead of our adversaries, we must maintain a robust and survivable network of ISR systems that will ensure our competitive advantage. This means we must not only collect the information, but we must also process, exploit, and disseminate it.

Additionally, we must protect the information and ensure that it is accurate, reliable, and of decision quality. This soup-to-nuts effort was the focus for the ISR portion of our FY 2019 budget.

We appreciate the continued support of the Tactical Air and Land Forces Subcommittee, and we look forward to your questions.

Mr. TURNER. Ms. Thornton.

[The joint prepared statement of General Harris and Ms. Thornton can be found in the Appendix on page 30.]

STATEMENT OF SUSAN J. THORNTON, DIRECTOR FOR INFORMATION DOMINANCE PROGRAMS (SAF/AQI), OFFICE OF THE ASSISTANT SECRETARY OF THE AIR FORCE FOR ACQUISITION

Ms. THORNTON. Chairman Turner, Ranking Member Tsongas, and distinguished members of the Tactical Air and Land Forces Subcommittee, it is an honor to appear before you today to discuss the Air Force's fiscal year 2019 budget request for airborne intelligence, surveillance, and reconnaissance programs.

In my capacity as the Director of Information Dominance Programs, I have the distinct pleasure of supporting the modernization activities the Air Force is accomplishing to put cutting-edge ISR capabilities in the hands of our warfighters. From the applications used for planning airborne campaigns resident within our air operation centers, to the intelligence-gathering and strike capabilities on the MQ–9 remotely piloted aircraft, the Air Force's ISR programs are critical to providing the combatant commanders with the capability needed to support and engage in combat, drug interdiction, and humanitarian operations across the globe.

I hope our discussions today will provide the committee with a greater understanding of the direction the Air Force is taking to modernize our ISR assets. Your support is paramount to ensuring the Air Force has the funding needed to keep our ISR portfolio viable and ahead of adversarial threats and enhancements.

I thank you for taking the time to have these discussions and for your continued support of these critical capabilities.

STATEMENT OF LTG ANTHONY R. IERARDI, USA, DIRECTOR, FORCE STRUCTURE, RESOURCES, AND ASSESSMENT (J8), HEADQUARTERS, CHAIRMAN OF THE JOINT CHIEFS OF STAFF

General IERARDI. Chairman Turner, Ranking Member Tsongas, and distinguished members of the subcommittee, I am grateful to have the opportunity to appear before you today to discuss the critical importance of airborne intelligence, surveillance, reconnaissance as we face the reemergence of long-term strategic competition.

One of the key capabilities that has supported U.S. military dominance for many years is the Joint Surveillance Target Attack Radar System, also known as JSTARS. For the last several years, the Air Force has been working on an effort to recapitalize this platform. While the ability to collect ground moving target indicator [GMTI] data and to conduct battle management command and control remain key joint force requirements, changes in the threat mean JSTARS Recap will be challenged to satisfy these requirements in a highly contested wartime environment.

In December of last year, the Joint Requirements Oversight Council acknowledged the validity of the existing JSTARS Recap requirements, but also recognized the evolving threats and contested environments as an imperative for change, requesting the Air Force return to the JROC by April, next month, of 2018, with options for providing these capabilities in both permissive and nonpermissive environments.

Turning to the broader ISR enterprise, we note that ISR demand continues to outstrip supply, but continued investment and additional capacity alone will not reverse this trend. Adaptation and innovation in the development and employment of ISR capabilities will be key to ensure we have the ability to collect the right information, connect the right dots, and to get the critical information to the right people in a timely fashion.

Thank you for the opportunity to be here today and, more importantly, for your continued support for these vital programs which support the Department's enduring mission to provide combat-credible military forces needed to deter war and protect the security of our Nation. Thank you.

[The joint prepared statement of General Ierardi and General Dolan can be found in the Appendix on page 44.]

STATEMENT OF LT GEN JOHN L. DOLAN, USAF, DIRECTOR OF OPERATIONS (J3), HEADQUARTERS, CHAIRMAN OF THE JOINT CHIEFS OF STAFF

General DOLAN. Chairman Turner, Ranking Member Tsongas, and distinguished members, I want to thank you for the opportunity to be here to discuss the Chairman's Joint Chief of Staff's global integration efforts as we look to meet the increasing requirements against the Nation's strategic competitors and violent extremist organizations. I look forward to the follow-on discussion and any other questions you may have. Thank you very much.

Mr. TURNER. Thank you for your testimony.

You know, obviously, you heard from both of our opening statements that there are significant issues and concerns by the committee. The subcommittee has heard dueling testimony on a number of systems, and this seems to be like one of them, where we are told we absolutely have to have the capability and then we don't need to have the capability anymore, we need to switch to a different capability, which is not yet completed or defined. That leaves us with not a whole lot of confidence in transitioning to the next stage.

The Secretary of the Air Force is very eloquent when she talks of, you know, her initial time here in Washington where she was at the National Security Council, and she would grab a taxi to go around town. And now, she has an iPhone, and as Secretary of the Air Force has the technology of Uber, and she wants to make certain that the Air Force has the ability to lean in for that technology.

But as she and I have discussed, taxis are still on the road. So it is reaching that new technology without abandoning technology. If we all got rid of all taxis and just went to Uber, we wouldn't have the efficient transportation system we have in our urban areas. And certainly, when you look at the arguments to abandon JSTARS, you are left with that sense that perhaps the stretch for a new technology isn't being correctly evaluated in the terms of what our true needs remain.

Now, one concern that we stated in our opening was the Air Force's ABMS concept is not scheduled to achieve initial operational capability until 2035. Let's just pause for a moment on that number: 2035, initial operational capability. And full operational

capability until 2042. How do you plan to mitigate BMC2 risk for the joint warfighter on the ground if JSTARS Recap is not fielded and ABMS does not reach full operational capacity until 24 years from now?

You know, when we all think of—back to the Secretary's analysis of technology and the analogy to the iPhone, the iPhone has only been with us for 11 years. And this isn't going to reach full operational capacity until 24 years from now, but yet we are going to lose a capability if we don't pursue modernization recapitalization of JSTARS at the same time that we reach for new technology.

So, General Dolan, explain that gap. Explain how we are going to be able to evaluate what this effect is going to be on the battlefield and what we need to do in the upcoming NDAA.

General DOLAN. Well, Chairman, I can tell you, from the perspective of a requirement, we will always have a requirement to have multitargeting indicator. There is going to be a requirement to be able to fuse information in order to have the capabilities that the JSTARS currently has, that I don't see a—any future or time commitment that that would change that in the upcoming years.

Mr. TURNER. Okay. Well, that was certainly validation of the concern. I don't know how the plan that we are being presented might be able to address that.

Anyone else want to comment?

General.

General IERARDI. Mr. Chairman, from the perspective of the Joint Requirements Oversight Council and the Joint Staff, providing support to the warfighter is paramount in terms of marshalling the capabilities to support our missions around the world.

There is a period where we look at this evolving threat that caused the JROC to ask the Air Force to review the options available to perform the ground moving target indicator and battle management command functions that JSTARS performs, and that work is forthcoming, some of which you will hear about today.

I think there is a period here at least acknowledge your concern with the timeline into the future for the delivery of the full systems. There is—that I know, the Air Force can describe in greater detail—an incremental approach that does allow for a degradation, a graceful degradation, if you will, in the numbers of JSTARS platforms available to our warfighters in the near years while ABMS is being developed. And there is work to be done for sure in developing ABMS, but there is a plan to mitigate that risk as ABMS is developed with both existing platforms as well as new capabilities that can be brought to bear.

Mr. TURNER. General Harris and Ms. Thornton, the JSTARS Recap platform is being developed as a true open architecture, open mission systems platform, the same as what the Air Force is stating it's trying to achieve for ABMS concepts. If Congress were to provide sufficient funding to continue the JSTARS Recap program, could you integrate this system as the foundation for Increment 1 of the ABMS concept? General.

General HARRIS. Chairman, yes. Simple answer to that is we would be able to increment and bring it into Increment 1 or 2. Two is basically the timeframe you are looking at by the time we would have this developed.

Mr. TURNER. Ms. Thornton, do you want to comment?

Ms. THORNTON. Yes. I will just add to that, we are able to do that from a technology standpoint. Certainly, again, it is available in the Increment 2 timeframe, not the Increment 1 timeframe.

Mr. TURNER. Ms. Tsongas.

Ms. TSONGAS. Thank you.

I would like to just visit the process that brought us to this place with this sort of abrupt change of direction. So as we know, 7 years ago, the Air Force conducted the analysis of alternatives to determine what capabilities a JSTARS replacement would need and what kinds of threats the aircraft would likely encounter. And since that time, the Air Force has invested hundreds of millions of taxpayer dollars and countless staff hours from some of our brightest minds to build a next-generation JSTARS capability, an effort built around conclusions that were drawn in 2011. Now those conclusions have been reexamined, and Congress is being asked to cut our losses and pursue a different and technologically challenged alternative, with time risks, cost risks, and unknown cyber vulnerabilities.

So my point is this: There has to be a process in place to make sure that taxpayer dollars are being spent as wisely and efficiently as possible and that we in Congress can trust that process. So, General Harris, my question is twofold: Did the Air Force simply get the 2011 AOA wrong? And if so, how can we go about correcting the AOA process in the future to make sure we are spending taxpayer dollars on the capabilities we need and that it is a process that brings—when it brings forth its decisions we in Congress can trust what was done in a forward-looking way?

General HARRIS. Yes, ma'am, that is a great question. I wouldn't say in 2011 we got the analysis of alternative studies wrong; we just looked at and underestimate the pace of change and the threats that come up. We talked through that AOA multiple threats that exist today that were forecast to be here in 2024 and 2028. So that threat has accelerated quickly. And I think the committee here will recognize why that has happened based on some of the pictures we have shown in our past engagements from that.

When it comes to us in the process, we do intend to move our acquisition process and our requirements process faster than what we have been doing, which will allow us to be able to get ahead of the technology piece. So the money that we invested in the JSTARS Recap effort, those radars, the technologies we are pulling out of that, we think will still benefit us in Increment 2 and Increment 3 as we move forward. So it was not money wasted.

Ms. TSONGAS. So what you are suggesting is that you didn't anticipate the pace of change—or the pace of evolution among our near peers. And my question would be there have to be people out there who could have been brought into this process, who could have better assisted the Air Force in thinking further out, or a better understanding that who are in a world in which change comes much more quickly who knew this had the potential to move rather quickly, more quickly than you were thinking about.

And so how in the future do you be sure you are casting a wide net to get that kind of thinking at the table?

General HARRIS. Okay. So we do have a new senior acquisition leader in our department who leans forward in that direction. And as we heard testimony from him yesterday in a different committee, he is committed to that process. So I think you will see those changes coming up, and it is a change in the way we have done business in the past.

We certainly don't intend to start down one direction and have abrupt changes, but we have a National Defense Strategy that has changed. In 2011, we weren't talking about peer threats. We didn't have a strategy that said you need to focus on the high end of the combat. We were focused on winning today's fight in a COIN [counterinsurgency] type of an environment where this airplane was well developed and deserved.

So I would say that while we may not be keeping with the pace of change, we are trying to change that, rather than continue to invest money in the old way of doing things; that 15 years from now, we will have the same capability and a JSTARS Recap aircraft that we have today, but it will only work in a small portion of the globe, rather than our Increment 3 that we are trying to get at to span the globe.

Ms. TSONGAS. Question for you, General Ierardi. The original reason for the JSTARS aircraft was to enable Air Force and Army coordination for attacking targets deep behind enemy lines. That mission still seems very relevant in the context of possible conflicts with North Korea and Russia where the U.S. Army and our allies will likely face large enemy ground forces.

The Air Force's original AOA certified by the Joint Staff determined that joint battle command with the U.S. Army onboard the aircraft itself was still an important requirement. Is that no longer the case? And how will the Air Force integrate the ability to attack well behind enemy lines with the Army under the proposed JSTARS alternative?

General IERARDI. Thank you, ma'am. The Army certainly should expect the delivery of the capabilities required for it to operate in a wartime environment against a near-peer or a peer competitor in a high-intensity action. That, we expect will be delivered by the Air Force, by the joint force, the collection of assets that are available to provide commanders what they require.

So the JSTARS as it was envisioned to provide those capabilities in a contested environment as we have described, that has changed. Indeed, we can say—the intent would be to be able to deliver under ABMS an even greater level of support to warfighting commanders in contested environments than they might otherwise receive as we watch the threat evolve in places like—as you have described.

Ms. TSONGAS. Thank you. I yield back.

Mr. TURNER. Mr. Kelly.

Mr. KELLY. Thank you, Mr. Chairman.

This is, I guess, General Harris and General Dolan—you know, our thirst for intel can never be quenched. And we currently cannot meet all the ISR requirements for all of our combatant commands, yet we are talking about lessening that capability. That just absolutely makes no sense to a dumb grunt.

We certainly need to shift our reliance on relatively indefensible surveillance systems, as state competitors or peers like Russia and China, you know, challenge that. But we also, our bombers in World War II didn't have the capability of defending themselves on deep bombing missions, but we didn't discontinue bombers because they weren't survivable; we put fighters with them to make them more survivable. We have lots of things in the Army that are not survivable by themselves, but we place protection around them based on the criticality of that asset.

So I am very disappointed that we would even think about reducing our ISR capabilities without first fully replacing that when we already have a shortfall that is critical in all areas of the globe. And so, you know, we have gone through this with the U–2. We have gone through it with the A–10s for us ground guys with the Air Force where they didn't want to use A–10s because they are not survivable in air-to-air, and they are not. But at the end of the day, nothing is better for that grunt on the ground than an A–10 killing those tanks. Because an F–16 doesn't do that and an F–35 doesn't do that, they have different missions, but an A–10 is still critical to killing those tanks on the ground, which is what us Army guys care about.

And so how is the planned cancellation of JSTARS Recap going to affect the ISR requirements of warfighters on the ground? And has the Air Force discussed this decision with the Army and Marine Corps? And if so, what do the Army and Marine Corps think about this?

Now, either General Harris or General Dolan, either one.

General HARRIS. Sir, I would be happy to start that, and if General Dolan has something to add, he is more than welcome to participate.

So, sir, we have spoken with the Army and the Marine Corps, and we are also speaking with each one of the combatant commanders to make sure. And to this point, they have all agreed with our way ahead. Mostly because the fights we are most concerned about for our soldiers and our Marines that are on the ground are these highly contested fights in these areas where we may not have air superiority over the top of them on day one. The JSTARS Recap does not do that for us. It would be pushed out of that same fight.

You talk about adding fighters to our bombers in World War I and II to make them survivable. Completely agree. But a fighter with the JSTARS doesn't help when it is multiple SAMs [surface-to-air missiles] coming out and there is nothing the fighter can do about it from that perspective, even if it is a fifth-gen [generation] fighter attacking other missiles that are long range and exceed the radar capabilities of the JSTARS Recap. It still doesn't change that situation.

If there is a reduction—and right now, we are under-promising and intend to over-deliver—I don't think it will be long in our ISR capability. And when we do complete INC 3 hopefully well before the time that is laid out in the plan now, and I think we will see more of that in our closed session, you will see much more capacity to get after ISR across the globe in this GMTI type of role, rather than in two or three narrow orbits in CAPs [combat air patrols].

Mr. KELLY. So we are not going to have a gap, because I point this out: If they are targeting at JSTARS as opposed to some other asset, that shows the value of that JSTARS to our guys on the ground that they would target—because we only go after high-value targets. So the fact that they would take a JSTARS out of the sky as opposed to something else shows the value it has to the guys on the ground.

And so I just want to make sure and I want you guys, regardless—I don't care which system we got to. Here is what I do care, is that we never have a gap where we don't have the ability to get that ISR to the combatant commanders. And can you all tell me that is what we are going to do if we do this, we are never going to lose capability that we currently have, whether contested or not contested?

General HARRIS. No, sir. We are not making that promise. Even with today's fleet, there will be a gap. There is nothing we can do about it because of the way the threat has accelerated.

If it requires us to have soldiers on the ground that are in this battle space, we will put airmen up there. Our approach to this is to put fewer airmen at risk so that we can get this mission done. We have multiple other sensors—some manned, some unmanned—that get after this. So we are intending to minimize the gap and make sure that when we are done, we actually provide a better capability in both contested and uncontested than where we are heading with the recap.

Mr. KELLY. I understand. But when those airmen and airwomen are not at risk, those guys on the ground, those soldiers and Marines are at risk to prevent that risk to Air Force people, and we just can't accept the lack of ISR. And I hope you guys will really rethink this, because we really cannot accept a gap in our capabilities to conduct ISR until we have a replacement. We shouldn't chase shiny objects until we have one that works. And I just say, we cannot afford at this critical stage—we still have COIN fight going on, and we can't afford to just fight the peer fight; we have to fight them both.

And, Mr. Chairman, my time is out, but I yield back.

Mr. TURNER. Thank you. Ms. Rosen.

Ms. ROSEN. Thank you, Mr. Chairman, Ranking Member, and our guests for being here today.

I would like to switch the conversation a little bit to the MQ–9. I represent southern Nevada and, of course, we are proud to have Creech Air Force Base that conducts those airborne ISR operations, well, actually, Nellis and Creech in Nevada fighting the global war on terrorism. So I know that the MQ–9 have been operating at surge capacity levels for over 15 years; obviously, not an end in sight, as we need intelligence more and better each and every day.

Our current fleet is about, is 268. I know you are asking for 29 more, putting us up to 297 MQ–9s. So what I would like to know is what is the current status of the MQ–9 enterprise? What are your plans to normalize those operations in order to reduce us from surge operations to our steady-state sustainable operation going forward?

General HARRIS. Ma'am, I would be happy to start with that. Thank you to the outstanding airmen that are supporting this mis-

sion. And while they may not be present over the battlefield, they are doing everything they can to have the effect they are looking for in our COIN environment.

Our effort, as you know, this past week, we have flown our last MQ–1 in combat from a sortie perspective. We are now to a fully 100 percent MQ–9 fleet, and that brings a better capability and capacity, rather than being stuck with that MQ–1 and not ever transitioning to something that is new. So much like what we are trying in the GMTI environment, there is a better way to do this. To help the airmen that have been at this surge capacity for 15 years and not getting the credit because they weren't seen as being present on the battlefield, we have—I am sorry, started our CPIP [Culture and Process Improvement Program] effort to take care of those airmen that are deployed at home, that are working 6½, 7 days a week in this combat environment and still have all the home things that are associated with that with none of the benefits of returning to a country that is grateful for the work that they are doing.

We are thankful to say that we have opened up and said we are going to have more locations, so some of them like to have an option other than just being in the desert there in Nevada. Very much happy to be there myself, but we have opened up Shaw as the next location for them to give them opportunities to move about and continue a normal Air Force career while they do this fantastic mission.

We have also fully manned the MQ–9 RTU [Reinforcement Training Unit] so that we are able to get more aircrew out, and we are increasing the crew ratio so that these flying airmen get some time off. It is work hard for 2 months on this, then be able to take a month to train, and we haven't been able to do that in the past and we are starting to make progress in that. So it is moving well for the MQ–9 fleet.

Ms. ROSEN. I really thank you for that, because as we go out there and talk to the airmen and women who are working there, it is stressful in its own way, even though they are not actually there. And I appreciate that.

I have one more question. Actually, I would like to talk a little bit about the termination of the software development modernization contract that we had for Air Force operation centers, known as AOC [Air Operations Center] 10.2.

So what do you feel, Ms. Thornton, were the root causes of the failure of the program? And how can we develop software that we can utilize, be more agile and nimble, dynamic, the next environment?

Ms. THORNTON. Thank you, ma'am, for that question. The AOC 10.2 program, as you know, was canceled. There were schedule issues. There were challenges in trying to deliver a lot of capability all at once, rather than looking at it more incrementally and how we could make improvements rapidly to support our users in need. So we are now embarking on AOC Pathfinder, which started in August of 2017. And with that Pathfinder we are using modern software and hardware, using cloud capability, as well as taking advantage of the way the commercial world develops software. You know, the Facebooks, the Googles, the Amazons, they know how to

do it well, and so we are taking advantage of what they have learned to be able to deliver quality software, very user friendly, very quickly, and securely. So that program is going very well, the Pathfinder.

By this time, we were expected to have delivered one capability, which was the critical capability for dynamic targeting and, in fact, we have delivered four capabilities to Al Udeid [Air Base]. So that has been a great benefit to those users out there. They have sat side by side with the developers and given feedback. So as we continue this effort, we expect to expand it out, and it will allow us to actually sunset our current 10.1 Air Operation Center sooner than we would have under the old program.

So we are seeing a lot of successes. We are taking lessons learned in a way that we can apply to other programs successfully.

Thank you.

Ms. ROSEN. Fantastic. Thank you. I yield back.

Mr. TURNER. Mr. Bacon.

Mr. BACON. Thank you, Mr. Chairman. And I want to thank you all for being here today. As a retired ISR guy and an electronic warfare person, these are exciting conversations.

So I know you have got a challenge. We—each COCOM [combatant command] is asking for more assets than we have in the Total Force, essentially. It is like coming to deliver 10 gallons of water when you have got 1 gallon of water with you. So I know it is a very big challenge.

So I want to first start off by recognizing General Dolan and thanking the OSD [Office of the Secretary of Defense] and the Joint Staff team for the new organizational structure that we have put in for ISR. I understand the charter that General Mattis put out is very detailed, and we appreciate it. We think it is, you know, a great work.

In the last NDAA, we put in multiple reports that we were requesting from the Joint Staff or OSD. And there are four of them that were due on 1 March that we are still waiting on. I just want to point them out so you can push them along, if you would.

We did ask for a joint force sufficiency assessment for ISR. How much ISR do we really need? We would like to get a better handle for what you think that is. Also for the Joint Staff, an implementation, a strategy plan to establish common standards and management procedures for MTI [moving target indicator] exploitation so that we can take MTI and standardize all those platforms and the data that comes off.

And when I was working, when I was in the Air Staff, it was the fifth-generation sensor. So how do we get that data off the F–35 and other fifth generation? And how do we exploit it quickly back at the Air Operations Center so we can get it back to the warfighters?

And the fourth one is getting the steady-state requirements for the RPA [remotely piloted aircraft] line, for beyond-line-of-site, wide-area motion imagery. And, General Dolan, I will just give you a chance, you may not know where those four are at, but——

General DOLAN. Well, Congressman Bacon, first off, I want to thank you for your continued service here. Your background, obvi-

ously, with the committee is very helpful. It is helpful for the enterprise, it is helpful for the Department.

Mr. BACON. I like being an advocate.

General DOLAN. And so I want to thank you for that.

With regard to the reports, we would definitely get back——

Mr. BACON. Okay. Thank you.

General DOLAN [continuing]. In a timely manner to get back here with you on that.

You touched on a lot of the innovation that the Department is trying to take on. And as you know, when you take a look at the joint solution, we have to look beyond just platform. We have to look at a whole-of-system solution. And I think you understand that as we put thought, energy, and resources to that, that is going to make us better down the road, because we will never meet 100 percent of the combatant commanders' requirement.

Mr. BACON. All right.

General DOLAN. So we have to be——

Mr. BACON. It is hard to meet one of them.

General DOLAN. We have to put effort towards that. You know, I think that with very pointed and educated look at and questions for us that challenge the Department is good, and it is going to help us stay focused.

Mr. BACON. Okay. Thank you, General Dolan.

Question for you, General Harris. I think the vision for MTI is laudable; you are aiming high, thinking big. It seems to me there's two key points that we have to give confidence to people on. Will the current Joint STARS be able to bridge that gap? I mean, is it—it is struggling right now maintenance-wise. Can it cover that gap that you are looking for to go to this new, you know, concept? And second part is, I think we just want confidence that you will get approval from the Joint Staff or JROC for the plan before you move beyond the Recap or the new Joint STARS. Thank you.

General HARRIS. Congressman, great questions. If you don't mind, I will also come back to talk about that fifth to fourth project that you worked on because you had some successes to report.

Yes, sir, we are confident that current JSTARS fleet, the E–8 fleet will have the ability to cover this gap. We have got the decision point in FY 2023 that allows us to use that fleet longer if we find that INC 2 or INC 3 are late in delivering, and that could extend that fleet by a few years to cover those gaps. So we are comfortable that we will be there and confident that we will be able to work this process, to include where we think we are headed with the JROC and their approach to it. Because what we have brought forward recently, we are seeing positive responses in both CAPE [Cost Assessment and Program Evaluation] and AT&L [Acquisition, Technology, and Logistics], now that it has broken up, the [R&E, Research and and Engineering] and A&S [Acquisition and Sustainment] organizations. And we think it won't be an issue getting this through the JROC process.

So your fifth to fourth and that communication piece, that is part of the solution that we are looking at of making sure that we have both the sensors available and the communication to port that back. And we just recently demoed in an exercise in Alaska and 2 months ago in Japan with real-world aircraft as was in the exercise

that out in the combat operational scenario with F–35s to F–15Cs, and it is working now. So we are happy with that.

Mr. BACON. Good, because that is a great sensor capability that we can get back, hopefully, to the AOC to watch the next wave of aircraft before those F–35s ever come back.

One last question. I understand that we have a really good system for real-time MTI tracking, but then we have to go back and do forensics, quality-of-life studies, that there is a lot more challenges. Do we have a plan for that?

General HARRIS. We do, sir. That is part of the process exploitation and dissemination that we are working through. Too much of what we collect right now in any ISR platform ends up on the floor and is never looked at again, other than just the initial take, and we have to fix that. Part of that is our AI/ML, so it is artificial intelligence/machine learning, getting that to do things that they are much faster at computer-to-computer than we are with the human in the loop. And as we continue to grow and evolve and invest in that, we expect that that is the technology that is not widely available now. It will be in the 2023 to 2025 timeframe well before it becomes a necessary part of this.

Mr. BACON. Thank you, panel.

I yield back, Mr. Chairman.

Mr. TURNER. Mr. Carbajal.

Mr. CARBAJAL. Thank you, Mr. Chair. Thank you all for being here today.

The MQ–9s are essential to the State of California's National Guard as it utilizes aircraft during natural disasters, such as fires, floods, and search and rescue, as was the case recently in my district. Most recently, the MQ–9 was used to assist in the suppression of the Thomas fire, which devastated my district. MQ–9 is a vital ISR capability that provides around-the-clock situational awareness for our combatant commanders, but they are also essential to our Guards as it is a lifesaving capability for our emergency responders and citizens.

However, MQ–9s are not meant to fly as a fast—as fast as larger aircraft. In order to more rapidly deploy the MQ–9s, a deployable kit capability has been identified which would allow the kit to be packed in a larger aircraft. Has the Air Force or the Army looked at the feasibility of incorporating and funding a deployable MQ–9 launch and recover element kit?

General HARRIS. Yes, sir. We are looking at that and that is part of the study. The LRE [launch and recovery elements] that you speak about, it is a significant move when we go out and do that. I am not sure if the Army is looking at it from that perspective, because it is your Air Force that's flying the MQ–9s, but in similar platforms for them with their Gray Eagle.

We are looking at it from that perspective, but right now, sir, our MQ–9s, minus a few that are available for elements in title 32 status, and our guardsmen are awesome at bringing that to the table to help when we can here stateside. We just don't have the capacity right now in our ability to fly additional lines. So the LREs are in place. We are looking at different plans to move those LREs, but from a deployable kit; we will continue to study that, but it has not

risen yet to the priority that it is something we must fund at this time.

Mr. CARBAJAL. Thank you.

Lieutenant General, any——

General IERARDI. On behalf of the Joint Staff, nothing else to add to General Harris' response, sir.

Mr. CARBAJAL. Great. Thank you very much. Mr. Chair, I yield back.

Mr. TURNER. Mr. Scott.

Mr. SCOTT. Thank you, Mr. Chairman.

And first, I would like to associate my comments with you, Chairman Turner, and also with Ranking Member Tsongas, with the concerns about the proposal. And as I have listened to the comments from the panel, we have an operational capability of the new ABMS system of 2042, if things go as planned. Is that correct? That is when—all right, 2042. And you plan to stand down all of the JSTARS by the end of 2025. That is a 17-year gap between the standing down of 100 percent of the fleet and the operational capabilities of the new system.

I don't—I guess my question—General Ierardi, what are you going to do during that 17-year gap?

General IERARDI. Sir, the notion of the Advanced Battle Management System is the integration of sensors and capabilities——

Mr. SCOTT. Yes, sir.

General IERARDI. [continuing]. To be able to deliver information to warfighters faster.

Mr. SCOTT. Yes, sir.

General IERARDI. So that is the intent of the ABMS, and at the appropriate time, in the near future——

Mr. SCOTT. Sir, if I may?

General IERARDI. Yes, sir.

Mr. SCOTT. We intend to be there operational capabilities 2042. Is that correct?

General IERARDI. For the final operating capability, yes, sir.

Mr. SCOTT. 2035 for first operational capability.

General IERARDI. Yes, sir.

Mr. SCOTT. And 2042 for good capacity, if you will. But 2035 is the initial operation. If everything goes as planned, 2035, but the JSTARS are going to stand down—the intent is to stand them all down by 2025, you have got a 10-year gap where you have nothing.

General IERARDI. Sir, I believe that the incremental approach that the Air Force is taking will yield capabilities along the way; that is the plan. The JROC will have an opportunity to review that plan in the near future.

Mr. SCOTT. What platform do they intend to use to deliver that?

General IERARDI. A number of platforms would be netted together to produce the outcome, sir.

General DOLAN. So, Congressman, if I will, I will say from a—you talk about the gap, you talk about where we are at now and how we are going to cover down, if you will, between now and 2035, JSTARS is, with respect to the moving target indicator, we have got five—from a joint force, we have five platforms that crosses multi-services that will come across from there.

Mr. SCOTT. If you did not need the new JSTARS, then why did you request $417 million for the JSTARS less than 12 months ago?

General DOLAN. I will yield to the Air Force on that question.

General HARRIS. Sir, because we are still in the study and we didn't have a National Defense Strategy at the time, it was directing us to focus elsewhere and put your highest priorities in that conventional plate.

And, sir, to your question, the JSTARS stand-down that we are talking about in that timeframe is only 10 percent to 15 percent of our GMTI capability. We will still continue to provide that, as was mentioned, with the other platforms, to include the Global Hawk Block 40 and the MQ–9 with its GMTI capability, in addition to the assets that are in the other services. So it is——

Mr. SCOTT. And you will be pulling those. Are those assets currently being used?

General HARRIS. Yes, sir, they are.

Mr. SCOTT. So which fights do you intend to stop using them in?

General HARRIS. We will use them less in our low-intensity counterinsurgency fights. And the intent now as we bring these forward into a higher combat level from the perspective of using them in contested environments, if we must be there to support our teammates on the ground. It also brings the sensors that allow us to not only see the target and to pass that information and share it, but to take action on it from a combat perspective.

Mr. SCOTT. If you assume that you are going to have to maintain the JSTARS to fill the capacity until the operational capacity is there for the new Advanced Battle Management System—and I am not opposed to development of the new Advanced Battle Management System; I want you to understand that—what is the difference in the cost of recapitalization—of the recapitalization versus the maintenance of the current JSTARS fleet?

General HARRIS. Sir, the recapitalization bill is about $6.5 billion for the new system to bring in the JSTARS Recap program. And are you asking them to keep the cost difference for the current fleet of E–8s?

Mr. SCOTT. My point is that the cost of the recapitalization versus the cost of maintaining the existing JSTARS fleet, there is not that much difference in the two. But the capabilities are very different. I would just—I don't know, I don't understand the logic that the Air Force has used with regard to this decision. I think that y'all have made a decision and you are trying to back into it. I again want to associate myself with the comments of both Mr. Turner and Ms. Tsongas. It is—I do not understand how the Air Force could have requested almost half a billion dollars about 12 months ago for the JSTARS Recapitalization program and then turned around and said we don't need it. So we just wasted that half billion dollars.

With that said, I will yield the remainder of my time.

Mr. TURNER. Mr. Gallego.

Mr. GALLEGO. Thank you, Mr. Chair.

Let's switch topics. Some of the materials that were handed to us right before this in regards to the U–2—and surprisingly, but good to hear that the U–2, with proper updates, can last 50 more

years and be effective, and maybe even longer. So can we—as part of our fleet.

Can we just have a little more details on what kind of investments are needed to ensure the health of the U–2 program? And we will start left to right, if that works.

Lieutenant General.

Ms. Thornton, would you like to take this?

Ms. THORNTON. Yes, I will take it.

Mr. GALLEGO. Thank you.

Ms. THORNTON. So we are investing in working through diminishing manufacturing sources. Many of the sensors are—there are diminishing resources for that. We are looking at our ejection seats and how we want to make—modernize them and make them safer, so we continue to do that. We are also—as you know, the U–2s are pretty much rebuilt every 7 years, so right now, they have a life out to 2055, but we are also investing in a structural study to look at taking that out to the full 75,000-hour life, which would take them out to 2100. So pretty far out there.

So again, we, as a part of the next-generation ISR dominance flight plan, there will be a high-altitude annex that we will describe in a little more detail, we expect to deliver that this spring, all of the different capabilities that will be looking out for U–2 and the whole high-altitude fleet in incorporating those capabilities. But we are continuing to modernize the U–2 and expect that to continue to be a valuable asset to the Air Force for some time to come.

Mr. GALLEGO. Yes.

General HARRIS. Yes, sir. The NDAA that we have from FY 2017 tells us that we can't do anything to retire the U–2 until we have shown the Global Hawk Block 40 reach parity with it. So we are also making similar investments in the Global Hawk Block 40, I'm sorry Block 30 to get after this effort. So we are continuing to move and provide additional capability and capacity from what the original plans were to retire the U–2, but that is our expectation at this time.

From an air perspective, nothing provides the altitude associated with the U–2 operations. The Global Hawk can see targets for a longer period of time. So each one of these platforms brings their different strengths, and we will continue to fund both while we can.

General IERARDI. The only thing I would add is that the U–2 is a part of an important set of capabilities that we will employ. And I don't have anything else to add to their responses. Thank you, sir.

Mr. GALLEGO. Thank you.

General DOLAN. Congressman, I will tell you, you know, from someone who has to fill requirements, it is the capability of what the platform brings, in this case with the U–2, with the capability it brings right now until there is another capability that is brought up that the Air Force identified. We are going to actively employ the U–2 to its fullest right now in all theaters. And you can see now that it is across the world we are going to continue to employ it.

Mr. GALLEGO. From some of the briefings I have had, it is a great platform that really has served this country well. Thank you, and I yield back.

Mr. TURNER. Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman. I want to thank our witnesses for your testimony here today and for your service to the Nation. Thank you.

I know that we touched on this processing question. Mr. Bacon raised this, but I am going to dive into it a little deeper. Although we know we don't have enough ISR platforms to meet combatant commander requirements, we still do collect enormous amounts of data, all of which take time to analyze. So processing, exploitation, and dissemination capacity is the primary limiting factor, as I see it, that we face in terms of making this massive amount of data actually useful.

So how do we more fully use artificial intelligence and machine learning to more quickly sift through the data? And how will that allow you to more strategically allocate the limited analyst manpower that you have? And what types of gains do you see possible with increased use of machine learning? And then finally, do you think that we will eventually see a reduced need for ISR, given that machine learning will better focus our collection efforts?

General HARRIS. Thank you, sir. Great questions. And that is one of the areas where we see some of our most promising efforts getting after artificial intelligence to help reduce the manpower burden associated right now with the process, exploitation, dissemination of our intel.

As we said, it is less than 20 percent of what we collect actually gets significant analyst time to help us come back with that. So we are working with several groups within our DCGS enterprise, our distributed common ground system enterprise, to make sure that they are tagging the data that they see, that we can then turn back and run through algorithms within the machines to help them learn so they can come back later and tell us, that is a vehicle with wheels, that is a vehicle with a track, to help us with those important parts.

What we really think is that as we move forward, we can have the machines coming back telling us, look here for an analyst, look here for an analyst, rather than trying to scan the entire time of FMV. And we think we will see significant improvements in that. And, again, these are fantastic airmen that are working.

So I don't think we will do away with ISR; it is how we get that ISR. In the fifties, we collected the same amount of ISR that is exquisite that we do today, but it was probably half of what was available at the time. Now, in today's information age, collecting about that same amount of exquisite ISR, it is only a percent of what is actually available across the spectrum.

So we are actually trying to open up and use publicly available information to help us gather the information that we need as a Nation to keep the lead in the technology advances that we have.

General DOLAN. Congressman, I will just add that it is just not a service-centric project that General Harris is talking about. It is actually a Department-wide initiative to look at it, because we have to use automation and intelligence—artificial intelligence in order to go through big data.

The Department has actually formulated a plan to go forward with that. And not only does it come back on the PED [processing,

exploitation, and dissemination] that you described, but it is also going to come back in the manpower and the crews that you need to do that. So there is a huge manpower piece, not only from an hour, man-hours perspective, but trained specialists and linguists that you can save also in doing that. And so it is a very important initiative across the Department.

Mr. LANGEVIN. Thank you.

Ms. THORNTON. Sir, may I add to that, too? In the DCGS program, we have been, similar to our Air Operations Center, we have been moving to an open architecture. We have done three pilots to date. And in our FY 2019 request, you will see about 289 additional funds requested to implement that architecture across all 27 of our DCGS sites.

And what that does for us is then allow some of these applications and capabilities that General Harris and General Dolan talked about, because we have got the right commercial hardware-software baseline to work from to allow for that machine learning and artificial intelligence to be developed in that PED enterprise.

Mr. LANGEVIN. Okay. Thank you all for that.

So most of the ISR that we are flying right now are in areas where we maintain air dominance. Would our current mix of ISR meet the capability requirements if we needed to fight in contested environments? And how are we hardening our systems to make sure that they are protected against cyber or electronic warfare attacks by sophisticated threats?

General DOLAN. Congressman, I will start off. From a requirements standpoint, the answer is no. And that is a priority that the Department is looking at. And I will yield to my colleagues to give more detail.

General IERARDI. I would only briefly add, sir, that that is one of the main reasons why, in fact, with JSTARS we feel like we have got to review the recap program to ensure that we are able to operate in those high-intensity environments that you described.

General HARRIS. Thank you, sir. And we are working through both the cyber protection, but also the physical defenses that are coming up, which is why we think we need to expand beyond the air domain for our ISR and increase our capability and capacity in all domains.

Mr. LANGEVIN. Thank you. I know my time has expired. I have additional questions that I will submit for the record, but thank you for the answers and thank you again for your service to the country.

I yield back.

Mr. TURNER. Thank you all for your testimony.

This subcommittee will now reconvene in Rayburn 2337 for a classified presentation by our witnesses.

Also, we have votes that are to occur at like 3:25. To the extent that people might be able to rapidly move to 2337, I would appreciate it.

[Whereupon, at 3:06 p.m., the subcommittee proceeded in closed session.]

A P P E N D I X

MARCH 15, 2018

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MARCH 15, 2018

Statement of the Honorable Michael Turner
Hearing on Air Force Airborne ISR Program in the Fiscal Year 2019 Budget Request

March 15, 2018

The hearing will come to order.

The subcommittee meets today to receive testimony on airborne intelligence, surveillance, and reconnaissance programs contained in the Air Force's fiscal year 2019 budget request.

I want to welcome our witnesses for today's panel:

- Lieutenant General Jerry Harris, Air Force Deputy Chief of Staff for Strategic Plans and Requirements;
- Ms. Susan Thornton, a member of the Air Force's Senior Executive Service and Director of Air Force Information Dominance Acquisition Programs;
- Lieutenant General Anthony Ierardi, Director of Force Structure, Resources, and Assessment for the Chairman of the Joint Chiefs of Staff; and,
- Lieutenant General John Dolan, Director of Operations for the Chairman of the Joint Chiefs of Staff.

We thank all of you for your service and being with us here today, and look forward to your testimony.

After reviewing the Air Force's fiscal year 2019 budget request, the subcommittee is somewhat satisfied with its content and funding levels provided for the airborne ISR enterprise.

The budget request appears to support what is needed to sustain the legacy fleet of ISR platforms, but the subcommittee is disappointed that there is no significant capacity growth in the Air Force's airborne ISR portfolio to meet more airborne ISR requirements.

ISR is the pacesetter for operations. In short, ISR is a combat multiplier that not only informs our commanders where they need to engage---but also where NOT to engage and what areas to avoid.

With the exception of full-motion video capability provided for counter-terrorism support, there appears to be stagnation in the remainder of the ISR portfolio for other critical intelligence needs.

This stagnation maintains the ISR capacity short fall and should be reversed to fill more combatant commander's intelligence requirements.

We understand that we cannot afford to satisfy all combatant commander ISR requirements, but consistently we see year-after-year ISR fulfillment rates for critical intelligence areas in single digit percentages and with higher risk than there

should be. It concerns me that there is not more effort within all the services to achieve more ISR capacity for our combatant commanders.

I am pleased, however, to see that the Air Force has finally removed the uncertainty regarding the high-altitude ISR capability that the U-2 and RQ-4 Global Hawk provide, and that both platforms will be sustained and modernized well into the future.

There is one major point of contention in the budget request that we'll need to work through, but I am confident that we can reach a satisfactory compromise. The Joint Surveillance and Target Attack Radar System Recapitalization program, also known as just "J-STARS Recap," and the Air Force's decision to terminate this program on essentially the eve of the source-selection decision.

The Air Force is requesting to forego the J-STARS Recap program in favor of fielding a concept called Advanced Battle Management System, or "ABMS". At the moment, there appear to be multiple disconnects with this concept, and I want to highlight a few that stand-out.

First and foremost, this new concept appears to contradict the years of extensive analyses and testimony to Congress that underpin the current validated requirements. From as early as December 2011, when the Air Force completed its Analysis of Alternatives, to as late as August 2016, when the Joint Requirements Oversight Council validated the J-STARS Recap Capability Development Document … which is the document that justifies how and why a platform is being designed against the validated requirements…all conclusions pointed to a capability consisting of a business-jet sized aircraft with a reduced crew, that would provide at the tactical edge of the contested battlefield, on-board, real-time Battle Management Command and Control, and Moving Target Indicator intelligence to the warfighter maneuvering on the ground.

These years of analysis were modeled against anti-access, area-denial threats per the previous Administration's defense strategy of 2012 which identified that "states such as China and Iran will continue to pursue asymmetric means to counter our power projection capabilities, while the proliferation of sophisticated weapons and technology will extend to non-state actors as well. Accordingly, the U.S. military will invest as required to ensure its ability to operate effectively in anti-access, area-denial environments."

There is not enough time to go through all the analyses completed by many entities within the Department, but the committee staff provided a comprehensive summary to each Member office outlining specific details.

Second, the Air Force plans to rely upon unmanned aircraft capabilities and sensors in Increment one of ABMS that the Analysis of Alternatives has already determined would not meet full-spectrum requirements.

Further, the Air Force now wants to rely upon the Airborne Warning and Control System, or "AWACS" aircraft to do Battle Management, Command and Control for ground forces, in addition to its primary mission of providing Battle Management, Command and Control for airborne forces – all without increasing the crew size or adding additional mission spaces on-board the aircraft to

effectively perform this mission because the aircraft has no physical growth capacity.

Third, ABMS is not forecasted to reach Initial Operational Capability until 2035, which is 11 years after J-STARS Recap would begin fielding. ABMS is not forecasted to reach Full Operational Capability until 2042, which theoretically is 6 years prior to when J-STARS Recap is scheduled to begin retirement. This schedule of course assumes that everything goes as planned and that all technologies and capabilities within the ABMS, many of which are still yet to be developed, are fielded without issue.

Finally, the J-STARS Recap aircraft is being designed as a true open-architecture, open-mission systems capability with a highly advanced 5th generation radar and robust communication and Battle Management, Command and Control suite of capabilities. This is a hallmark example of acquisition reform this committee has been pushing, and it does not make since why this capability is not being used as the foundation for the ABMS concept.

As we move forward in understanding the ABMS concept, we also need to understand where the risks to the warfighter lie, and what risk mitigation paths we can take in the near and mid-term to ensure that the validated requirements of the ground warfighter are met without question.

To put it all into perspective, we understand that the projected threats to our forces are real, and that the Air Force has submitted a budget that does not include J-STARS Recap. However, completely walking away from this program may prove to be an unacceptable level of risk to our warfighters for this committee.

As we continue to build the FY19 NDAA, we hope to learn more and look forward to working with the Air Force on a path forward that will both mitigate risk to the warfighter and invest in the new Air Force programs that the Air Force is proposing.

I ask unanimous consent that non-subcommittee Members be allowed to participate in today's hearing after all subcommittee Members have had an opportunity to ask questions. Without objection? So ordered.

I also want to remind Members that immediately following adjournment of this hearing, we'll reconvene in Rayburn 2337 for a classified presentation by our witnesses.

Without objection, each of the witnesses prepared statements will be included in the hearing record.

Lieutenant General Harris, please begin with your brief opening remarks, and you'll be followed by Ms. Thornton, Lieutenant General Ierardi, and then Lieutenant General Dolan.

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HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON TACTICAL AND LAND FORCES
U.S. HOUSE OF REPRESENTATIVES

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE HOUSE
ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES
U.S. HOUSE OF REPRESENTATIVES

SUBJECT: Fiscal Year 2019 Budget Request on Air Force Airborne Intelligence, Surveillance and Reconnaissance (ISR) Programs

STATEMENT OF: Lieutenant General Jerry Harris, Jr.
Air Force Deputy Chief of Staff for Strategic Plans and Requirements

And

Ms. Susan Thornton (SES)
Director of Information Dominance Programs
Office of the Assistant Secretary of the Air Force for Acquisition

March 15, 2018

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HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON TACTICAL AND LAND FORCES
U.S. HOUSE OF REPRESENTATIVES

Lt Gen Harris and Ms. Thornton

Fiscal Year 2019 Budget Request for

Airborne ISR Programs

House Armed Services Committee March 15,

2018

Chairman Turner, Ranking Member Tsongas, and distinguished members of the Tactical Air Land Forces Subcommittee, it is an honor to appear before you today to discuss the Air Force's Fiscal Year (FY) 2019 Budget Request for Airborne Intelligence, Surveillance and Reconnaissance (ISR) Programs. The programs you are inquiring about are of vital importance to supporting Combatant Commanders and warfighters across the globe, so we thank you for taking the time to discuss the Air Force's intent for these critical assets.

In the invitation to testify, the Tactical Air and Land Forces Subcommittee identified specific topics for discussion during the hearing, and it is the Air Force's hope our dialogue today will impart a greater understanding to all present as to the utility of the Airborne ISR portfolio and the rationale for the planned modernizations and updates the Service is seeking to conduct.

Way Ahead on Joint Surveillance Targeting and Attack Radar System (JSTARS) Recapitalization and the Advanced Battle Management System

As we prepare to deter or defeat potential adversaries as outlined in the National Defense Strategy, failure to prioritize investment in future technologies that allow us to operate in highly-contested environments is not an option. These highly contested scenarios present the lowest margin for error and the greatest risk to our national security. The recapitalization of the current JSTARS platform is not viable in future contested environments, putting the Battle Management Command and

Control and Ground Moving Target Indicator missions at risk in a peer engagement. In light of this the Air Force owes it to the joint force an alternative approach to fulfill the Combat Commander requirements for Ground Moving Target Indication and Battle Management Command and Control. To achieve this evolutionary shift, the Air Force is transitioning from a primarily aircraft centric to a net-centric approach using sensors across the battlespace linked by agile, resilient communications to provide the warfighter persistent capabilities across the full range of military options, uncontested and highly-contested, to meet the Nation's future needs. The key for future success is to establish a family of systems capable of integrating and fusing sensor information from all domains and bridging resilient communications across multiple pathways at all security levels.

The Air Force is pursuing a three-phased "incremental approach" to regain a strategic advantage and strengthen long-term lethality for the joint force. Increment 1 continues to employ the current E-8C JSTARS fleet in the manner in which it operates today, and begins the investments in agile communications and advanced sensors. This approach builds up resilience by incorporating technologies assessed at low technical risk. Increment 2 builds upon capability improvements by integrating advanced sensors and Open Mission System software into ground and air-based Battle Management Command and Control platforms. This increment also fully incorporates joint and coalition sensors, as well as fifth generation aircraft sensors, which provide the ability to sense targets in highly contested environments. Increment 3 realizes the full potential of the proposed incremental approach with full operational capability of the Advanced Battle Management System. This system leverages both Increment 1 and 2 enhancements as well as emerging technologies.

The Air Force envisions the Advanced Battle Management System as an open architecture system, capable of ingesting new sensors and leveraging communications capabilities as the science and technology communities deliver them. Ultimately, the Air Force anticipates a more robust, resilient, reliable, and survivable architecture than currently exists. This open architecture will provide the means to

integrate new technologies and create a more lethal force capable of operating in all environments. If we continue down last year's path, we will spend billions of dollars and end up with today's capability and capacity that will only be effective on small portions of the world.

Overview of High-Interest ISR Systems

Airborne Operations Center (AOC) 10.1

The AOC 10.1 program is a sustainment effort fielding hardware and software to replace end-of-life or end of support components. These upgrades are required to keep the AOCs interoperable, supportable, and cyber security compliant while the Air Force modernizes the AOC enterprise.

AOC 10.2 and AOC Pathfinder

In response to Combatant Commanders' needs for rapid development of new capabilities in the current fight and to outpace our near-peer competitors, the Air Force initiated the AOC Pathfinder effort in August 2017, and subsequently terminated the AOC 10.2 program in January 2018. AOC Pathfinder seeks to rapidly deliver a subset of the AOC 10.2 requirements using industry software development best practices. These best practices include using cloud-native computing technologies, lean agile software development methodologies, and an entrepreneurial management structure. If the AOC Pathfinder proves successful, which it is showing great progress to date, its development approach will become the model for continued AOC modernization. The legacy AOC 10.1 infrastructure would then sunset by the end of Fiscal Year 2020, three years earlier than originally planned under the AOC 10.2 acquisition program.

Air Force Distributed Common Ground System (DCGS)

Air Force DCGS is currently transitioning away from a proprietary, stove-piped, original equipment manufacturer controlled system to an open architecture framework. Using the open architecture DCGS agile framework, Air Force DCGS has ceased all original equipment manufacturer block releases with the goal of shifting the average time to field for new capability from seven years to

six months. The Air Force completed three open architecture pilots (Full Motion Video, High-Altitude Geospatial Intelligence, and Multi-Intelligence Correlation and Fusion) in 2017. After the associated Operational Utility Evaluations in the Spring and Summer of 2018, we will begin deploying capabilities to all twenty-seven worldwide, regionally aligned DCGS sites. Active duty, Air National Guard, and Reserve analysts will realize the operational benefits of improved workflows, best-of-breed tools, higher quality data, and faster turn-around time of requested system updates and modifications.

Open Skies Treaty Observation Aircraft

In the FY 2019 President's Budget, the Air Force is requesting $222M for the Open Skies program. This funding will allow the Air Force move forward to finalize the requirements for the recapitalization the fleet of two OC-135B aircraft and to address capability performance gaps limiting the ability of the legacy jets to complete their primary mission. This will enable full territorial access to the Russian Federation, while also generating improved mission success rates due to higher aircraft availability.

Modernizations and Upgrades for Fielded Airborne ISR Assets

Airborne Warning and Control System (AWACS)

In order to add capability to the AWACS Fleet, eight modification programs are targeted to provide capability improvements across all AWACS missions. These improvements will be implemented as aircraft cycle through Programmed Depot Maintenance and field modifications, completing in FY 2029. Cockpit improvements and the Block 40/45 program are on-going to ensure global access by revitalizing the mission systems necessary to improve the integration, quality, and timeliness of sensor data to support the warfighter. Additional capability improvements center around communications upgrades required to provide war-winning Battle Management Command and

Control. Upgrades include Link 16, Mobile User Objective System (MUOS), Second Generation Anti-jam Tactical UHF Radio for NATO (SATURN), and a fifth to fourth generation aircraft communication capability. These modifications will allow AWACS to remain a key contributor to the warfighter through its projected service life date of 2035.

E-8 JSTARS

The E-8C JSTARS fleet is in sustainment, but the Air Force is accomplishing a limited number of modernizations to ensure viability of the fleet. The current modernization efforts include Primary Mission Equipment Diminishing Manufacturing Sources, Combined Enterprise Regional Information Exchange System, Emergency Locator Transmitter and Common Data Link. The Air Force intends to fly a leaner E-8C JSTARS Legacy fleet over the next decade and has a divestiture/retirement schedule which will gradually reduce the JSTARS fleet size. The current plan is to divest three aircraft in FY 2019 and one aircraft in FY 2021. The remaining 12 aircraft are projected to fly until the mid-2020s. This gradual reduction of the JSTARS Legacy fleet will cause no reduction in current Battle Management Command and Control and Ground Moving Target Indicator capabilities.

MQ-9

The MQ-9 fleet continues to meet the demands of the combatant commanders with over 1.6 million flying hours accumulated and supporting 60 steady-state combat lines and nine Government owned contractor operated combat lines. The Capability Development Document for MQ-9 was approved by the Joint Requirement Oversight Council in January 2006 and since that time, significant enhancements have been made to the MQ-9 fleet. Upgrades include the Lynx Synthetic Aperture Radar, extended range, the multi-spectral sensor ball, and various reliability and maintenance improvements. The MQ-9 program continues to field advanced capabilities to the warfighter. The FY 2019 President's Budget requests funding to increase beyond line of sight capabilities, sensor multiplexing to enable simultaneous sensor missions, automatic take-off and landing capabilities,

increased test infrastructure and ground control station capability upgrades via the Block 15 to Block 30 conversions.

The ground control system upgrades allow for operation of the newest MQ-9 Block 5 aircraft in addition to increased radio capabilities and mitigation for diminishing manufacturing sources and material shortages. In FY 2018, the MQ-9 program initiated a new start effort to standardize the Squadron Operation Centers across the enterprise. The Squadron Operation Centers merge multiple ground control stations into a common operation picture allowing for greater command and control within the operational squadrons. These efforts will continue with the funding requested in FY 2019.

RC-135

The RC-135 is a fleet of heavily modified C-135 aircraft that provide intelligence and reconnaissance support, which enables decision advantages to national, joint and coalition leaders across the range of military operations. Seventeen RC-135V/W RIVET JOINT aircraft provide near real time on-scene signals intelligence collection, analysis and dissemination. Two RC-135U COMBAT SENT aircraft collect technical electronic reconnaissance data used by the intelligence and joint warfighting community to characterize next generation threats. Three RC-135S COBRA BALL aircraft collect optical and electronic data on ballistic targets, as directed by the Intelligence Community and the Chairman of the Joint Chiefs of Staff. The WC-135 CONSTANT PHOENIX is a fleet of two modified C-135 aircraft that provide atmospheric collection of particulate and gaseous effluents and debris supporting the Limited Nuclear Test Ban Treaty of 1963. All three variants of the RC-135 are currently deployed in support of the Combatant Commands in accordance with the Global Force Management Allocation Plan. Within 72 hours of being tasked, the WC-135 deploys to meet national collection requirements. All three variants of the RC-135 undergo extensive programmed depot maintenance that will enable these 50+ year airframes to continue operating through 2050. The fleet utilizes a spiral baseline upgrade process that allow the platforms to keep pace with adversary

threats and technological advancements. The FY19 President's Budget includes funding to convert 3 KC-135Rs to WC-135Rs to improve mission effectiveness and aircraft availability. These three aircraft will allow the retirement of the existing two WC-135s. Additionally, the cooperative RC-135 program with the Royal Air Force provided three aircraft under Foreign Military Sales (final aircraft delivered in 2017) expanding partner capacity and capability with our most valued international mission partner.

RQ-4

The Air Force is modernizing the RQ-4 Global Hawk to increase mission effectiveness and replace aging ground components. The Office of the Secretary of Defense approved the RQ-4 modernization approach in November 2015. Since then, the Air Force has initiated two modernization activities. The MS-177 sensor development and integration contract was awarded in November 2015 with an Initial Operational Capability scheduled for third quarter FY 2018 and Full Operational Capability scheduled for third quarter FY 2020. The MS-177 sensor will provide multi-spectral, long-range imaging capabilities on the RQ-4. The second modernization effort, the Ground Segment Modernization Program, award was initiated in July 2016. Ground Segment Modernization Program will replace outdated trailer-based Launch and Recovery Elements and Mission Control Elements with a modern building-based ground segment solution capable of supporting the RQ-4 mission and aircraft command and control requirements. Development and operational testing for this effort will be conducted in FY 2019 through FY 2020, with fielding beginning in FY 2021.

U-2

The U-2 is a high altitude, all-weather, day/night, self-defended, simultaneous multi-intelligence platform that provides near-real-time intelligence collection in contested and permissive environments. Programmed depot maintenance ensures every aircraft is rebuilt every seven years providing an average lifespan beyond 2055. The U-2 is continuously deployed in support of the

Combatant Commanders in accordance with the Global Force Management Allocation Plan providing intelligence to meet collection needs at strategic, operational, and tactical levels of conflict. Modernization and upgrade plan were provided in accordance with the Congressional reporting requirement stipulated in the FY 2018 National Defense Authorization Act. The "U-2 and RQ-4 Aircraft and Sensor Modernization and Sustainment Plan" submitted to the Congressional Defense Committees in February 2018. The report highlights modifications to include updating the navigation and avionics systems to achieve Open Mission Systems compliance; modernization of the advanced electronic warfare system to increase capability in the highly contested environment; upgraded deep-look synthetic aperture radar with multi-mission collection capabilities; on-board automatic target recognition and artificial intelligence to enable processing, exploitation, and dissemination without reach back communication; and the usage of emerging quick reaction capabilities. These modernization efforts will make use of the investment of other programs of record, promote sensor interoperability, ensure modularity with other platforms where applicable, and capitalize on the unique strengths of the platform. The U-2 is funded using a combination of base and overseas contingency funding with weapon system sustainment funded in accordance with the FY 2019 requirement.

Assessment of Airborne ISR Readiness

The Air Force understands the concerns the Committee has on the assessment of Airborne ISR Readiness. As a Service, we also place great importance on the readiness of our ISR Airborne platforms as we move forward to align with the National Defense Strategy. Per the request of the Committee, an assessment being conducted on the assessment of the weapon system sustainment and readiness. As soon as the assessment is completed, we will provide it to the Congressional Defense Committees.

Status of the Air Force's Remotely Piloted Aircraft "Get-Well" Plan

The "Get-Well" Plan goals of increasing MQ-9 formal training unit manning to 100% and increasing overall manning to a 10:1 crew-to-Combat Line ratio were achieved by the first quarter of 2017. Culture and Process Improvement Program goals of generate in-garrison combat-to-dwell, establish new MQ-9 Wing, expand MQ-9 leadership opportunities and expand assignment options remain ongoing. To achieve Culture and Process Improvement Program goals, MQ-9 formal training unit production will be expanding in FY 2020 via the creation of two new active duty formal training unit squadrons at Air National Guard bases. In addition, the first of two new bases housing a new MQ-9 Wing will stand up this year. The new Wing and active/associate squadrons will achieve increasing leadership opportunities at the squadron, group and wing levels as well as expand assignment options for remotely piloted aircraft airman. The Air Force is progressing towards its goal of achieving a 2:1 combat-to-dwell ratio by FY 2024. Air Combat Command, as the lead Command, ensures MQ-9 training resources are proportionally fielded across Active Duty, Air National Guard, and Air Force Reserve components.

Conclusion

The Air Force's Airborne ISR portfolio is of paramount importance for the execution of operations around the world, and the funding the Service requested in the FY 2019 President's Budget ensures our ISR capabilities are viable and ahead of adversarial threats and enhancements. The Air Force thanks the Committee for the continued advocacy of these vital capabilities and requests you support our FY 2019 funding request so we can continue to put cutting edge capability in the hands of our warfighters.

Lieutenant General Jerry D. Harris Jr.

Lt. Gen. Jerry Harris is Deputy Chief of Staff for Strategic Plans and Requirements, Headquarters U.S. Air Force, Washington, D.C. In support of the Chief of Staff and Secretary of the Air Force, General Harris leads the development and integration of the Air Force strategy, long-range plans and operational capabilities-based requirements. He directs and coordinates activities ensuring the Air Force builds and employs effective air, space and cyber forces to achieve national defense objectives.

General Harris entered the Air Force in 1985 as a graduate of the ROTC program at Washington State University. He has served as a flight commander, operations officer, weapons officer and inspector general. The general served on the staffs of two numbered Air Forces and one major command, all in operations. He has also served as the Combined Air and Space Operations Center Battle Director for operations Iraqi Freedom and Enduring Freedom. General Harris has commanded at squadron, group and wing levels. Prior to his current assignment, General Harris was the Vice Commander, Air Combat Command, Langley Air Force Base, Virginia, responsible for organizing, training, equipping and maintaining combat-ready forces for rapid deployment and employment while ensuring strategic air defense forces are ready to meet the challenges of peace time air sovereignty and wartime defense. General Harris is a command pilot with more than 3,100 flying hours in the F-16.

EDUCATION

1985 Bachelor of Science in Mechanical Engineering, Washington State University
1992 Squadron Officer School, Maxwell AFB, Ala
1997 Air Command and Staff College, Maxwell AFB, Ala.
1997 Master of Science in Aeronautical Science Technology, Embry-Riddle Aeronautical University, Daytona Beach, Fla.
1998 School of Advanced Airpower Studies, Maxwell AFB, Ala.
1998 Master of Science in Airpower Art and Science, School of Advanced Airpower Studies, Maxwell AFB, Ala.
1998 Armed Forces Staff College, Norfolk, Va.
2001 Air War College, by correspondence
2006 National Defense College, New Delhi, India
2011 Capstone General and Flag Officer Course, National Defense University, Washington, D.C.

ASSIGNMENTS

1. February 1986 - January 1987, Student, undergraduate pilot training, Williams AFB, Ariz.
2. January 1987 - April 1987, Student, AT-38B lead-in fighter training, Holloman AFB, N.M.
3. April 1987 - December 1987, Student, F-16 B-Course, MacDill AFB, Fla.
4. December 1987 - July 1989, Chief, Current Operations Division; Squadron Assistant Programmer; Training Officer; and Mobility Officer, Nellis AFB, Nev.
5. August 1989 - January 1992, Chief of Weapons and Tactics and Air-To-Surface Weapons Officer, Moody AFB, Ga.
6. January 1992 - February 1992, Student, Squadron Officer School, Maxwell AFB, Ala.
7. February 1992 - March 1994, Chief of Mid-range Programming and Student, Fighter Weapons School, Luke AFB, Ariz.
8. March 1994 - June 1996, Weapons and Tactics Flight Commander; Chief of Wing Weapons; and Chief of Squadron Weapons, Eielson AFB, Alaska
9. July 1996 - July 1998, Student, School of Advanced Airpower Studies and Air Command and Staff College, Maxwell AFB, Ala.
10. July 1998 - September 1998, Student, Armed Forces Staff College, Norfolk, Va.
11. September 1998 - March 1999, NATO Joint Staff Officer, Long-range Plans, Plans and Policy, Headquarters, Southern Region Air Command, Naples, Italy
12. March 1999 - August 2000, Chief of Strategy, Crisis Action Group, Headquarters Southern Region

Air Command, Naples, Italy
13. September 2000 - January 2001, Student, F-16 requalification, Luke AFB, Ariz.
14. January 2001 - February 2003, Operations Officer and Chief of Standardization and Evaluation, 20th Operations Group; and assistant Director of Operations, 79th Fighter Squadron, Shaw AFB, S.C.
15. March 2003 - February 2005, Commander, 79th Fighter Squadron, Shaw AFB S.C.
16. March 2005 - July 2005, Staff Director and Inspector General, 20th Fighter Wing, Shaw AFB S.C.
17. July 2005 - December 2005, Deputy Commander, 20th Operations Group, Shaw AFB S.C.
18. January 2006 - January 2007, Student, National Defense College, New Delhi, India
19. January 2007 - July 2008, Commander, 505th Training Group, Hurlburt Field, Fla.
20. July 2008 - November 2008, Director of Air, Space and Information Operations, 13th Air Force, Hickam AFB, Hawaii
21. November 2008 - September 2009, Commander, 8th Fighter Wing, Kunsan Air Base, South Korea
22. September 2009 - September 2010, Assistant Director of Operations, Plans, Requirements and Programs, Headquarters Pacific Air Forces, Hickam AFB, Hawaii
23. September 2010 - September 2012, Commander, 56th Fighter Wing, Luke AFB, Ariz.
24. September 2012 - March 2014, Vice Commander, 5th Air Force, Yokota Air Base, Japan
25. March 2014 - April 2015, Director of Programs, Office of the Deputy Chief of Staff for Strategic Plans and Programs, Headquarters U.S. Air Force, Washington, D.C.
26. April 2015 - February 2017, Vice Commander, Air Combat Command, Joint Base Langley-Eustis, Va.
27. February 2017 - Present, Deputy Chief of Staff for Strategic Plans, Programs, and Requirements, Headquarters U.S. Air Force, Washington, D.C.

SUMMARY OF JOINT ASSIGNMENTS
September 1998 - August 2000, NATO Joint Staff Officer, Long-range Plans, Plans and Policy; and Chief of Strategy, Crisis Action Group, Headquarters Southern Region Air Command, Naples Italy, as a major

FLIGHT INFORMATION
Rating: command pilot
Flight hours: more than 3,300
Aircraft flown: F-16, T-37, T-38, Mig-29 and Mig-21

AWARDS AND DECORATIONS
Distinguished Service Medal
Legion of Merit with two oak leaf clusters
Defense Meritorious Service Medal
Meritorious Service Medal with two oak leaf clusters
Air Medal with three oak leaf clusters
Aerial Achievement Medal
Air Force Commendation Medal with two oak leaf clusters
Joint Service Achievement Medal
National Defense Service Medal with bronze star
Southwest Asia Service Medal with three bronze stars
Kuwait Liberation Medal (Kingdom of Saudi Arabia)
Kuwait Liberation Medal (government of Kuwait)

EFFECTIVE DATES OF PROMOTION
Second Lieutenant May 11, 1985
First Lieutenant Sept. 1, 1987
Captain Sept. 1, 1989
Major Sept. 1, 1995
Lieutenant Colonel April 1, 2000
Colonel Jan. 1, 2006
Brigadier General Nov. 3, 2010
Major General June 27, 2014
Lieutenant General Feb. 22, 2017

(Current as of February 2017)

Susan J. Thornton

Susan J. Thornton, a member of the Senior Executive Service, is the Director for Information Dominance Programs, Office of the Assistant Secretary of the Air Force for Acquisition, Washington, D.C. She is responsible for planning and programming all acquisition and modernization activities for Air Force command, control, communications, computers, intelligence, surveillance and reconnaissance programs. She guides development of program management directives, acquisition strategies, budget submissions, congressional testimony and international acquisition programs. She advocates acquisition program strategies for reconnaissance and surveillance aircraft, unmanned aircraft systems, command and control and combat support systems, evolving C4ISR infrastructure, net-centric operations and information warfare programs. Ms. Thornton also provides the Secretary of the Air Force direction and guidance for combat C4ISR systems and architectures to the Air Staff, the Office of the Secretary of Defense, the Joint Staff and Congress. She directs activities for four C4ISR divisions.

Ms. Thornton began her career at the Aeronautical Systems Center, Wright-Patterson AFB, Ohio, in 1981. She has served in a wide variety of engineering positions for the Aeronautical Systems Center and Missile Defense Agency. Prior to this assignment, Ms. Thornton served as Director of Engineering and Technical Management, Headquarters Air Force Materiel Command, Wright-Patterson Air Force Base, Ohio. Ms. Thornton was appointed to the Senior Executive Service in January 2007.

EDUCATION

1981 Bachelor of Science Degree in Systems Engineering, Wright State University, Dayton, Ohio
1988 Master's Degree in Public Administration, John F. Kennedy School of Government, Harvard University, Cambridge, Mass.
1990 Master of Science Degree in Aerospace Engineering, University of Dayton, Ohio
2000 Advanced Program Managers Course, Defense Systems Management College, Fort Belvoir, Va.

CAREER CHRONOLOGY

1. 1981 – 1984, Project Engineer, Propulsion System Program Office, Wright-Patterson AFB, Ohio
2. 1984 – 1986, Lead Engineer for Engine Monitoring Systems, Propulsion SPO, Wright- Patterson AFB, Ohio.
3. 1986 - 1990, Lead Engineer for the F119 Engine, F-22 SPO, Wright-Patterson AFB, Ohio
4. 1990 – 1993, Lead Propulsion Engineer, Special Operations Forces Program Office and Aircraft System Program Office, Wright-Patterson AFB, Ohio
5. 1993 – 1994, Chief Engineer for CV-22 Osprey, Special Operations Forces Program Office, Wright-Patterson AFB, Ohio
6. 1994-1997, Chief Engineer for MC-130H Combat Talon II, Special Operations Forces Program Office, Wright-Patterson AFB, Ohio
7. 1997 – 1998, Student, John F. Kennedy School of Government, Harvard University, Cambridge, Mass.
8. 1998 – 1999, Chief, Technical and Acquisition Policy, Systems Engineering Division, Engineering Directorate, Aeronautical Systems Center, Wright-Patterson AFB, Ohio
9. 1999 – 2001, Chief, Plans and Program Branch, Systems Engineering Division, Engineering Directorate, ASC, Wright-Patterson AFB, Ohio
10. 2001 – 2007, Director of Engineering, Airborne Laser Program, ASC, Kirtland AFB, N.M.
11. 2007 – 2010, Director, Directed Energy Directorate, Air Force Research Laboratory, Kirtland AFB, N.M.
12. 2010 – 2012, Director of Engineering and Technical Management, Electronic Systems Center, Hanscom AFB, Mass.
13. 2012 – 2016, Director of Engineering and Technical Management, Headquarters Air Force Materiel Command, Wright-Patterson AFB, OH.

14. February 2016 - Present, Director for Information Dominance Programs, Office of the Assistant Secretary of the Air Force for Acquisition, Washington, D.C.

AWARDS AND HONORS
1986 Junior Engineer of the Year, Air Force Association
1998 Lucius N. Littauer Fellow, John F. Kennedy School of Government, Harvard University
2003 Chief Engineer of the Year, Aeronautical Systems Center
2007 Office of the Secretary of Defense Medal for Exceptional Civilian Service
2016 Meritorious Civilian Service Award

PROFESSIONAL MEMBERSHIPS AND ASSOCIATIONS
Armed Forces Communications and Electronics Association

(Current as of February 2016)

STATEMENT OF

LIEUTENANT GENERAL ANTHONY R. IERARDI, U.S. ARMY

DIRECTOR FOR FORCE STRUCTURE, RESOURCES, AND ASSESSMENTS

AND

LIEUTENANT GENERAL JOHN L. DOLAN, U.S. AIR FORCE

DIRECTOR FOR OPERATIONS

THE JOINT STAFF

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

MARCH 15, 2018

Chairman Turner, Ranking Member Tsongas, and distinguished members of the Tactical Air and Land Forces Subcommittee, it is an honor to appear before you today to augment the discussion on the Air Force Fiscal Year (FY) 2019 Budget Request for Airborne Intelligence, Surveillance, and Reconnaissance (ISR) Programs. The programs you are inquiring about are of vital importance to supporting Combatant Commanders and the joint warfighter.

In the invitation to testify, the Tactical Air and Land Forces Subcommittee identified specific topics for discussion during the hearing, and we hope the dialogue today will impart a greater understanding to all present as to the Joint Staff's role in validating requirements and allocating ISR.

A central theme of the 2018 National Defense Strategy (NDS) is the reemergence of long-term strategic competition in a world where our competitive military advantage is eroding. It is against this backdrop that the Department of Defense (DoD) must make difficult choices to ensure we continue to field a lethal, resilient, and adaptable Joint Force that is aligned with the strategic environment and the growing threats within it.

One of the key capabilities that has supported U.S. military dominance for many years is the Joint Surveillance Target Attack Radar System also known as JSTARS. JSTARS has provided Battle Management Command and Control (BMC2), Intelligence Surveillance and Reconnaissance (ISR), and communications capabilities to the Joint Force since it was originally deployed in 1991 as a part of Operation Desert Storm. A key piece of JSTARS-provided ISR data is Ground Moving Target Indicator (GMTI) information that helps us conduct wide-area

surveillance of mobile ground targets. The JSTARS E-8C aircraft is a modified Boeing 707-300 with individual airframes dating back as far as the 1960s. As these aircraft have aged, availability rates have fallen and sustainment costs continue to rise. These trends led the Air Force to initiate a JSTARS Recapitalization (Recap) effort to ensure the Joint Force would have JSTARS-like capabilities well into the future. The Joint Requirements Oversight Council (JROC) validated both an Initial Capabilities Document (ICD) in 2013 and a Capability Development Document (CDD) in 2016 which form the basis of the capability requirements for the JSTARS Recap program. JSTARS Recap requirements are focused on providing a similar capability set to the original JSTARS program on a commercially-derived business jet-class aircraft.

Changes in the threat environment, however, call into question the viability of the JSTARS Recap program. While the ability to collect wide-area GMTI data and conduct BMC2 remain key Joint Force requirements, JSTARS Recap will be unable to satisfy these requirements in a highly contested, wartime environment. As the NDS states, "we cannot expect success fighting tomorrow's conflicts with yesterday's weapons or equipment."

In December of last year, mindful of the evolving threat environment and new strategic direction, the Air Force approached the JROC with its proposal to re-allocate JSTARS Recap funding to help accelerate fielding of the Advanced Battle Management System (ABMS). ABMS is envisioned to provide JSTARS-like capabilities via a net-centric (vice aircraft-centric) approach. The JROC recognized the validity of the existing JSTARS Recap requirements, but also acknowledged the imperative for change driven by the nature of future threats in a contested

environment. It requested the Air Force return to the JROC with options to provide survivable BMC2 and GMTI capabilities in both permissive and non-permissive environments and propose any requirement adjustments that might be needed to support these options. While the Air Force is still developing its response to the JROC request, it has already inserted funding into the FY19 President's Budget that will support efforts to accelerate building a robust, resilient ABMS that can operate across the full range of operating environments and mitigate the interim permissive environment risk that would result from halting the JSTARS Recap effort.

The message from the Secretary of Defense is clear: we must pursue urgent change at significant scale if we are to halt the erosion of our competitive military advantage. Ensuring we can continue to deliver GMTI and BMC2 capabilities with a more resilient approach is an important piece of this effort. The Joint Staff will continue to work with the Air Force and other stakeholders to ensure we exercise good stewardship of the nation's resources to invest in needed capabilities that will support the Joint Force across the full range of potential operating environments.

Turning from questions about BMC2 and GMTI to the broader ISR enterprise we again look to the NDS and its renewed focus on long-term strategic competition which requires that we concentrate on more than just individual platforms, also prioritizing development of resilient, survivable, federated networks and information ecosystems that inform everything from tactical actions to strategic plans.

Demand for ISR continues to outstrip supply, but continued investment in additional capacity alone will not reverse this trend. Adaptation and innovation in the development and employment of ISR capabilities will be key. We must adapt the way we manage the flow of information. In many cases, the information we need exists, but we sometimes lack the ability to "connect the dots" and then get that information to the right decision-makers at the right time. We need innovative means of collecting information that isn't overly focused on the current fight, but also prepares us to win the fights of the future. Efforts to address these shortfalls include not only upgrading the capabilities of our collection platforms but also investing in game-changing technologies like artificial intelligence and machine learning as well as pursuing governance changes designed to improve ISR requirements and capability management.

A key governance change occurred last fall when the Director of the Joint Staff approved the formation of JS J32 and the Secretary of Defense authorized the establishment of the Joint ISR Operations Center (JISROC) Chairman's Controlled Activity (CCA) on 9 November 2017. These organizations enable the Chairman of the Joint Chiefs of Staff to assume leadership for synchronization of Combatant Command and Military Service ISR efforts. Activities under the purview of these organizations include global force management of ISR, joint ISR assessments, joint ISR mission approval and reporting, joint ISR enterprise management, DoD specialized scientific and technical ISR operations, allied and partner ISR integration, joint ISR modeling and simulation, ISR communication relay governance, joint ISR mission support tool management, and joint ISR force development.

Finally, House Report 115-200 tasked the Chairman of the Joint Chiefs of Staff to provide several ISR-related briefings and/or reports. What follows is a summary of the status of these tasks:

1) Submit a report by 2 March 2018 on efforts to develop capabilities to collect ISR on foreign military activities and the ISR prioritization process. The report is currently in final staffing and should be delivered to the HPSCI and HASC shortly.
2) Submit a report by 1 March 2018 which includes a Joint Forces Sufficiency Assessment (JFSA) for ISR, based on a stress test of currently fielded ISR assets and capabilities for all approved level 3/4 OPLANS and CONPLANs. JS J32 has lead and will provide the coordinated response by the new approved suspense date of 28 August 2018.
3) Provide a briefing by 1 March, which describes a strategy and implementation plan to establish common standards and management procedures among DOD stakeholders to ensure joint, integrated, TCPED of MTI information collected from DOD aircraft. Through conference, DoD determined USD(I) should have lead, with Joint Staff support. The briefing is in final staffing and should be delivered to the HPSCI and HASC shortly.

Thank you for the opportunity to be here today and, more importantly, for your continued support for these vital programs which support the Department's enduring mission to provide combat-credible military forces needed to deter war and protect the security of our nation.

Lieutenant General Anthony R. Ierardi
Director for Force Structure, Resources and Assessment (J-8),
The Joint Staff

Lieutenant General Ierardi is the Director, Force Structure, Resources and Assessment (J-8), Joint Staff, the Pentagon, Washington, D.C. He develops capabilities; conducts studies, analysis and assessments; and evaluates plans, programs and strategies for the chairman of the Joint Chiefs of Staff. He serves as the Joint Requirements Oversight Council Secretary and as the Chairman of the Joint Capabilities Board.

Prior to assumption of this position, he served as Deputy Chief of Staff, G-8.

In previous assignments, LTG Ierardi served as the III Corps Deputy Commanding General and Commanding General of the 1st Cavalry Division, "America's First Team;" Director of Force Management, Office of the Deputy Chief of Staff, G-3/5/7; Director, Joint and Futures, Office of the Deputy Chief of Staff, G-8; Executive Officer for the Department of Defense Counter-IED Senior Integration Group; and as Deputy Commander for Programs, Combined Security Transition Command-Afghanistan. He commanded Joint Task Force North at Fort Bliss, Texas and served as Director of Capabilities Development, U.S. Army Capabilities Integration Center, U.S. Army Training and Doctrine Command, at Fort Monroe, Virginia. He also served as the Chief of Staff of the 2d Infantry Division at Camp Red Cloud, Republic of Korea and as Commander of the 2d Infantry Division's First "Iron" Brigade at Camp Casey, Korea. While assigned at Fort Hood, Texas, he served as the Operations Officer (G-3) of the 1st Cavalry Division and Commander of the 1st Squadron, 7th Cavalry Regiment.

Earlier in his career, LTG Ierardi served as a Cavalry Troop Commander in the 2d Squadron, 2d Armored Cavalry Regiment in Bamberg, Germany and participated in Operation Desert Storm while assigned to the 2d Armored Cavalry Regiment.

LTG Ierardi trained and served as a Latin American Foreign Area Officer, first as a student attending the Mexican Army's Command and General Staff College (Escuela Superior de Guerra) in Mexico City, and later as the Aide-de-Camp to the Commander of the U.S. Southern Command.

LTG Ierardi's awards include the Defense Superior Service Medal, the Legion of Merit, the Bronze Star, the Defense Meritorious Service Medal, the Meritorious Service Medal, the Army Commendation Medal, and the Army Achievement Medal. LTG Ierardi holds a degree in Business Administration from Washington and Lee University, a Master of Arts Degree in Latin American Studies from Georgetown University and is also a graduate of both the U.S. Army Command and General Staff College and the U.S. Naval War College.

Lieutenant General Ierardi is married and has two children.

Lieutenant General John L. Dolan
Director for Operations, J-3

Lt Gen John L. Dolan is the Director for Operations (DJ-3), Joint Staff, Washington, D.C. He assists the Chairman of the Joint Chiefs of Staff in fulfilling his responsibilities as the principal military advisor to the President and Secretary of Defense. The general develops and provides strategic guidance to the combatant commands and relays communications between the President and the Secretary of Defense to the combatant commanders regarding current operations and plans.

General Dolan received his commission in 1986 through the University of Northern Colorado's ROTC program. He has held various squadron, wing, and headquarters level positions in multiple overseas and deployed assignments. He instructed and commanded at the U.S. Air Force F-16 Weapons School, deployed as the 332nd Air Expeditionary Wing vice commander, Joint Base Balad, Iraq, commanded the 8th Fighter Wing at Kunsan Air Base, South Korea, and commanded the 451st Air Expeditionary Wing and Kandahar Airfield (NATO), Kandahar, Afghanistan. Additionally, he served on the Joint Staff for warfighter requirements, as the U.S. Air Force's Deputy Director of the Legislative Liaison, and as the Chief of Staff, United States Pacific Command. In his last duty assignment, the general served as the Commander, U.S. Forces Japan, and Commander, 5th Air Force, Pacific Air Forces, Yokota Air Base, Japan and was the senior U.S. military representative in Japan.

General Dolan is a command pilot with more than 4,000 flying hours, including more than 200 combat missions during Operations Iraqi Freedom, Enduring Freedom, and Northern Watch.

EDUCATION
1986 Bachelors of Science Degree in Chemistry, University of Northern Colorado, Colo.
1993 Squadron Officer School, Maxwell AFB, Ala.
1996 Masters of Aeronautical Science and Technology, Embry Riddle University, Fla.
2001 Air Command and Staff College, Maxwell AFB, Ala.
2006 National War College, Fort Lesley J. McNair, Washington, D.C.
2014 Joint Force Air Component Commander Course, Maxwell AFB, Ala.
2016 Leadership at the Peak, Center for Creative Leadership, Colorado Springs, Colo.

ASSIGNMENTS
1. October 1986 - August 1987, Student, Undergraduate Pilot Training, Reese AFB, Texas.
2. September 1987 - January 1988, Student, F-16 Replacement Training Unit, MacDill AFB, Fla.
3. February 1988 - December 1992, F-16 Instructor Pilot, Flight Examiner, Assistant Chief of Standards and Evaluation, Misawa AB, Japan.
4. January 1993 - June 1993, Student, U.S. Air Force Weapons Instructor Course, Nellis AFB, Nev.
5. July 1993 - June 1996, F-16 Weapons Officer and Flight Commander, Spangdahlem AB, Germany.
6. July 1996 - June 1999, F-16 U.S. Air Force Weapons School Instructor, Flight Commander, Chief of Wing Scheduling, Assistant Operations Officer, Nellis AFB, Nev.
7. July 1999 - June 2000, Chief of Safety, Inspector General, 8th Fighter Wing, Kunsan AB, South Korea.
8. July 2000 - June 2001, Student, Air Command and Staff College, Maxwell AFB, Ala.
9. July 2001 - June 2002, Chief, F-22 Avionics and System Effectiveness, Headquarters Air Combat Command, Langley AFB, Va.
10. July 2002 - June 2005, Special Assistant to the Commandant, U.S. Air Force Weapons School, Commander, 16th Weapons Squadron, Nellis AFB, Nev.
11. August 2005 - June 2006, Student, National War College, Fort Lesley J. McNair, Washington, D.C.
12. July 2006 - March 2007, Lead, Fixed Wing Applications, Force Applications, J-8, the Pentagon, Washington, D.C.
13. March 2007 - July 2008, Chief, Force Applications Engagement Division, J-8, the Pentagon, Washington, D.C.

14. July 2008 - July 2009, Vice Commander, 332nd Air Expeditionary Wing, Joint Base Balad, Iraq.
15. July 2009 - May 2010, Chief, Senate Legislative Liaison, Office of the Secretary of the Air Force, the Pentagon, Washington, D.C.
16. May 2010 - May 2011, Commander, 8th Fighter Wing, Kunsan AB, South Korea.
17. May 2011 - October 2012, Deputy Director, Legislative Liaison, Office of the Secretary of the Air Force, the Pentagon, Washington, D.C.
18. November 2012 - November 2013, Commander, 451st Air Expeditionary Wing and Kandahar Airfield (NATO), Kandahar, Afghanistan.
19. January 2013 - May 2014, Assistant Deputy Commander, U.S. Air Forces Central Command and Assistant Vice Commander, 9th Air Expeditionary Task Force, Shaw AFB, S.C.
20. May 2014 - May 2015, Chief of Staff, United States Pacific Command, Camp H.M. Smith, Hawaii.
21. June 2015 - August 2016, Commander, United States Forces Japan and Commander, 5th Air Force, Yokota AB, Japan.
22. August 2016 - present, Director for Operations (J-3), Joint Staff, the Pentagon, Washington, D.C.

SUMMARY OF JOINT ASSIGNMENTS
1. July 2006 - March 2007, Lead, Fixed Wing Applications, Force Applications, J-8, the Pentagon, Washington, D.C.
2. March 2007 - July 2008, Chief, Force Applications Engagement Division, J-8, the Pentagon, Washington, D.C.
3. November 2012 - November 2013, Commander, Kandahar Airfield (NATO), Kandahar, Afghanistan.
4. May 2014 - May 2015, Chief of Staff, United States Pacific Command, Camp H.M. Smith, Hawaii.
5. June 2015 - August 2016, Commander, United States Forces Japan, Yokota AB, Japan.
6. August 2016 - present, Director for Operations (J-3), Joint Staff, the Pentagon, Washington, D.C.

FLIGHT INFORMATION
Rating: command pilot
Flight hours: more than 4000 hours with 200+ combat missions
Aircraft flown: F-16A/B/C/D

MAJOR AWARDS AND DECORATIONS
Defense Distinguished Service Medal
Defense Superior Service Medal with two oak leaf clusters
Legion of Merit with oak leaf cluster
Bronze Star Medal with oak leaf cluster
Meritorious Service Medal with four oak leaf clusters
Air Medal with silver and bronze oak leaf clusters
Afghanistan Campaign Medal with bronze star
Iraq Campaign Medal with two bronze stars
NATO Non-Article Five Medal (ISAF)
Korean Defense Service Medal
General Emblem of Honor (Romania)

EFFECTIVE DATES OF PROMOTION
Second Lieutenant June 14, 1986
First Lieutenant August 9, 1988
Captain August 9, 1990
Major May 1, 1998
Lieutenant Colonel November 1, 2002
Colonel September 1, 2007
Brigadier General May 2, 2012
Major General March 2, 2015
Lieutenant General June 5, 2015

(Current as of January 2017)

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MARCH 15, 2018

QUESTIONS SUBMITTED BY MR. BACON

Mr. BACON. Secretary Mattis' assignment of responsibilities and authorities for the new Joint ISR management organization required in the FY18 NDAA represents an important evolution for the Department of Defense. To assist the subcommittee in ensuring this new structure has the resources necessary to succeed, 1) What is the organizational structure of the J–32 and associated Chairman's Controlled Activity for Joint ISR Management? 2) What is the current authorized manpower for these organizations for officer, enlisted, civilian and associated contractors, broken out by grade and service where appropriate? 3) Does the new organization have a dedicated source of funding? If so, what is it and what is its budget for FY18? 4) What is the current status of development and fielding of automated tools to enable management of our large and increasingly complex joint ISR enterprise? Specific areas of interest include tools that support joint collection management, ISR operations management, mission reporting and effectiveness analysis, and modeling and simulation.

General DOLAN. *1) What is the organizational structure of the J–32 and associated Chairman's Controlled Activity for Joint ISR Management?*

See attachment A "J32_Organization_Manpower.pdf"

[The attachment referred to was not available at the time of printing.]

2) What is the current authorized manpower for these organizations for officer, enlisted, civilian and associated contractors, broken out by grade and service where appropriate?

See attachment A "J32_Organization_Manpower.pdf"

3) Does the new organization have a dedicated source of funding? If so, what is it and what is its budget for FY18?

Upon completion of the transition from USSTRATCOM to Joint Staff on 1 October 2018, J32-/JISROC CCA has two dedicated sources of funding starting in FY19: PE 32222F Civ Pay US Air Force is the Executive Agent PE 92222F O&M US Air Force is the Executive Agent In FY18, J32/JFCC ISR's budget was approximately $5.7M.

4) What is the current status of development and fielding of automated tools to enable management of our large and increasingly complex joint ISR enterprise?

Specific areas of interest include tools that support joint collection management, ISR operations management, mission reporting and effectiveness analysis, and modeling and simulation. The Combatant Command Intelligence Information Technology (CCIIT) Enterprise initiative, led by USD(I), is addressing chronic materiel and non-materiel gaps and improving enterprise management to align and modernize Combatant Command intelligence capabilities. The first materiel solution, based on validated CCIIT enterprise requirements and resourced beginning in Fiscal Year (FY) 2019, will address shortfalls in "Integrated Mission Management"—the integration of currently siloed capabilities supporting requests for Information (RFI), Collection Management (CM), and Intelligence, Surveillance & Reconnaissance (ISR) Mission Management (MM). DIA will deliver the integrated mission management (IMM) capability using agile development methodology, incorporating input and guidance from the functional managers for CM and MM, the Joint Staff J26 and J32, respectively. IMM will deliver a unified workspace to manage intelligence requirements and products, integrating data sources via a workflow tracking and monitoring dashboard. The current state is siloed systems which provide functions aligned to their own data, requiring users to access multiple tools to accomplish the mission. The future state is a presentation layer which provides a single point of entry, while an application layer aggregates data to the dashboard, providing access to IMM functionality of individual systems. Over time, rationalization will remove duplicative functionality and non-authoritative data.

Capability Drops (CD).

- CD–1 is projected in the first quarter of FY2019 and will provide an agile sprint plan and proof of concept.
- CD–2 is projected in the first quarter of FY2020, focused on the design and development of IMM Workflow Data Services for tracking and monitoring, and will implement information discovery across multiple intelligence disciplines.

- CD–3 is projected in the fourth quarter of FY2021 and deliver access to data from additional data sources, design and develop end-to-end collection and Processing, Exploitation & Dissemination (PED) service by integrating with existing systems and new systems, obtain IMM Final Operating Capability (FOC), and capture FOC lessons learned.
- CD–4 is projected in the fourth quarter of FY2021 and will develop Modeling and Simulation Capabilities, integrate tipping and cueing, and implement cross-domain information sharing capabilities.

Mr. BACON. Please provide details on the USAF's current capability and capacity to provide for the processing, exploitation and dissemination (PED) and forensic analysis of Moving Target Indicator intelligence. In your response please provide specifics on: 1) The current number of USAF personnel trained to conduct the analysis and exploitation of MTI intelligence; 2) How the AF trains and certifies it's personnel to perform PED and forensic analysis of MTI intelligence; 3) The current suit of tools used to assist USAF personnel in the performance of PED and forensic analysis of MTI intelligence; 4) Details on the portions of the USAF FY19 budget request that address resource requirements for the performance of PED and forensic analysis of MTI intelligence to include personnel, RDT&E, procurement, and operations and maintenance accounts and programs; and 5) The USAF strategy to increase its capability and capacity to perform PED and forensic analysis of MTI intelligence associated with the growth and diversification of MTI sensors as part of its ABMS proposal.

General HARRIS. [The information was not available at the time of printing.]

Mr. BACON. The F–35's onboard sensors provide an asymmetric advantage to other F–35s in flight, but I am concerned about the ability of the F–35A to share the information it is capable of collecting with other users. Questions: 1) What capability/capacity does the F–35A Block 3F have to store and record information from each of the F–35A's active and passive sensors? 2) Does the F–35A Block 3F have a post-mission data recovery architecture to allow sensor and mission data to be sanitized and passed on to other joint users, U.S. national intelligence agencies and international partners? 3) What are the USAF's current Block 4/C2D2 requirements to record and share F–35A sensor data, both inflight and post-mission, and when does the USAF anticipate fielding this capability? 4) When will the F–35A have to ability to pass targeting information to support the following joint force missions: Inflight target cueing for Army long-range fires? Inflight target cuing for Navy TLAM strikes? Inflight imagery transfers to deployed joint special operations forces? Inflight and post mission electronic order of battle (EOB) updates to the appropriate national intelligence agencies and integrated broadcast services?

General HARRIS. [The information was not available at the time of printing.]

Mr. BACON. As the USAF program of record for multi-intelligence processing, exploitation and dissemination (PED), 1) How does the Distributed Common Ground System (DCGS) support the planning, collection, processing, analysis, and dissemination of intelligence collected by the RC–135 fleet? 2) Does AF DCGS provide tools and enterprise capabilities required to support management of information collected by RC–135 baseline sensors and quick reaction capabilities like it does for other ISR platforms like U–2, RQ–4 and MQ–9? If not, why not and does the AF have a plan to integrate PED mission requirements for all AF ISR platforms? 3) Does AF DCGS provide PED crews the ability to monitor secure radio channels and provide secure communications with distributed crews who operate remotely operated systems like the RQ–4, and MQ–9, similar to what exists for the U–2? Is there a modernization plan to provide secure crew communications to link all USAF distributed ISR operations crews?

General HARRIS. [The information was not available at the time of printing.]

Mr. BACON. Please provide details on the USAF's current capability and capacity to provide for the processing, exploitation and dissemination (PED) and forensic analysis of Moving Target Indicator intelligence. In your response please provide specifics on: 1) The current number of USAF personnel trained to conduct the analysis and exploitation of MTI intelligence; 2) How the AF trains and certifies it's personnel to perform PED and forensic analysis of MTI intelligence; 3) The current suit of tools used to assist USAF personnel in the performance of PED and forensic analysis of MTI intelligence; 4) Details on the portions of the USAF FY19 budget request that address resource requirements for the performance of PED and forensic analysis of MTI intelligence to include personnel, RDT&E, procurement, and operations and maintenance accounts and programs; 5) The USAF strategy to increase its capability and capacity to perform PED and forensic analysis of MTI intelligence associated with the growth and diversification of MTI sensors as part of its ABMS proposal.

Ms. THORNTON. [The information was not available at the time of printing.]

Mr. BACON. The F–35's onboard sensors provide an asymmetric advantage to other F–35s in flight, but I am concerned about the ability of the F–35A to share the information it is capable of collecting with other users. Questions: 1) What capability/capacity does the F–35A Block 3F have to store and record information from each of the F–35A's active and passive sensors? 2) Does the F–35A Block 3F have a post-mission data recovery architecture to allow sensor and mission data to be sanitized and passed on to other joint users, U.S. national intelligence agencies and international partners? 3) What are the USAF's current Block 4/C2D2 requirements to record and share F–35A sensor data, both inflight and post-mission, and when does the USAF anticipate fielding this capability? 4) When will the F–35A have to ability to pass targeting information to support the following joint force missions: Inflight target cueing for Army long-range fires? Inflight target cuing for Navy TLAM strikes? Inflight imagery transfers to deployed joint special operations forces? Inflight and post mission electronic order of battle (EOB) updates to the appropriate national intelligence agencies and integrated broadcast services?

Ms. THORNTON. [The information was not available at the time of printing.]

Mr. BACON. As the USAF program of record for multi-intelligence processing, exploitation and dissemination (PED), 1) How does the Distributed Common Ground System (DCGS) support the planning, collection, processing, analysis, and dissemination of intelligence collected by the RC–135 fleet? 2) Does AF DCGS provide tools and enterprise capabilities required to support management of information collected by RC–135 baseline sensors and quick reaction capabilities like it does for other ISR platforms like U–2, RQ–4 and MQ–9? If not, why not and does the AF have a plan to integrate PED mission requirements for all AF ISR platforms? 3) Does AF DCGS provide PED crews the ability to monitor secure radio channels and provide secure communications with distributed crews who operate remotely operated systems like the RQ–4, and MQ–9, similar to what exists for the U–2? Is there a modernization plan to provide secure crew communications to link all USAF distributed ISR operations crews?

Ms. THORNTON. [The information was not available at the time of printing.]

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